MORU Tropical Health Network

2024 MORU Major International Programme (MIP) Annual Report


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Mahidol Oxford Tropical Medicine Research Unit (MORU)

# 2024

# MORU Major International Programme (MIP)

# ANNUAL REPORT

MORU Tropical Health Network

wellcome

Mahidol University

NUFFIELD DEPARTMENT of MEDICINE

UNIVERSITY OF OXFORD

# 2024 MORU Major International Programme (MIP) Annual Report

Mahidol Oxford Tropical Medicine Research Unit (MORU)

Designed by:
Suriyong Khamla-iad
Wannachat Chaichan

Produced by: John Bleho

# Table of Contents



## MORU Bangkok-based Departments



## MORU Units



## Annexes

# Executive summary

The Wellcome MORU Major International Programme (MIP) has had a very busy 2024. We continued to conduct research working toward the objectives and themes set out and agreed upon during the 2020-2025 Wellcome core grant renewal process, and at the same time focussed on developing our plans for 2025-2032. Towards the end of 2023 we decided that the central theme of our future research would be to specifically address inequities in health care experienced by resource-poor populations. We spent the next year developing our new research agenda using an equitable priority-setting process and creating a new MORU Framework for advancing health equity.

Our 2020-2025 plans were necessarily adjusted to address the COVID-19 pandemic, which was declared just a month after the 2020 Wellcome Site Review Visit and dominated research for the next two years. However, much of our COVID-19 work did fit into the agreed objectives and themes and led to very successful new lines of research, and in 2023 and 2024 we were able to focus again on the disease-specific plans outlined in our 2020-2025 core renewal proposal.

In 2024, and indeed throughout the preceding pandemic years, our outputs in terms of publications have been maintained at pre-pandemic levels. MORU staff authored or co-authored 300 academic publications, and our total publication output this core cycle represents more than one third of all the papers we have published in our 45-year history. Our work has directly influenced health policy and generated substantial health impact the resource-limited populations we serve.

## Highlights of 2024 by Objectives and Themes

These research highlights are arranged below according to our 2020-2025 objectives and themes laid out in the 2019 renewal application. A more detailed narrative on our achievements is found in the department- and unit-specific chapters that make up much of the rest of this annual report.

### **Objective A.** Find solutions to important public health problems of regional and global relevance

#### Theme 1. Defining and understanding big public health problems

#### a. Epidemiology and diagnostics

The MORU MIP's network of 6 research units, five of which have diagnostic microbiology laboratories, and 60 collaborative clinical study sites has continued to provide up to date epidemiological information on a wide range of infectious diseases. Through our close links with national Ministries of Health (MoHs) these findings are rapidly communicated to policymakers, often with the addition of sophisticated mapping and spatiotemporal analyses. Specific research studies provide more detailed community and hospital-based findings. Highlights include:

- Conducting a cross-sectional household health survey to define the hidden burden of disease in rural communities in Bangladesh, Cambodia and Thailand[1].

1. Zhang M, Htun NSN, Islam S, *et al*. Defining the hidden burden of disease in rural communities in Bangladesh, Cambodia and Thailand: a cross-sectional household health survey protocol. *BMJ Open*. 2024 Mar 23;14(3):e081079. doi: 10.1136/bmjopen-2023-081079. PMID: 38521526; PMCID: PMC10961499.



- The first comprehensive systematic review and meta-analysis to assess the global and regional seroprevalence, incidence, mortality of, and risk factors for scrub typhus[2].
- Provision to MOHs across Southeast Asia analyses of malaria transmission and of genetic report cards on malaria parasites (through the GenRe project) in near real time, assisting malaria elimination[3].
- The GenRe project in Africa identified the AF1 'cryptotype', a cluster of related falciparum malaria parasites widely distributed throughout Africa and dispersed among local geno-types (*Figure 1*)[4].

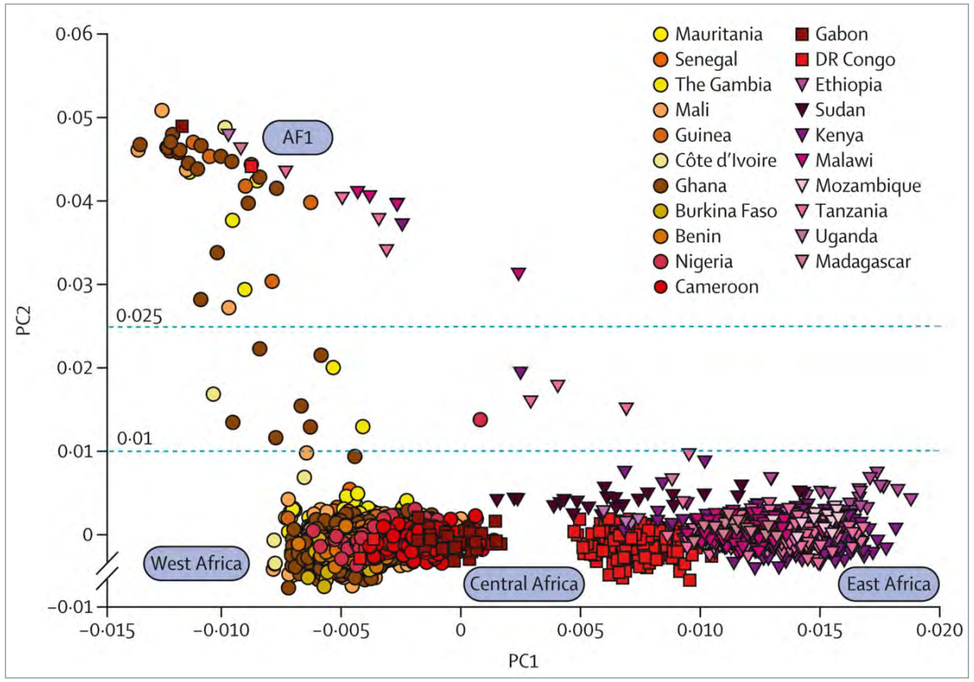



Figure 1. Whole genome sequencing of 3,783 African *P. falciparum* malaria parasites, showing the AF1' cryptotype' (4).

Diagnostics are an integral part of this work. We have developed a highly multiplexed fever diagnostics platform which is now being integrated into our epidemiological studies.

#### b. Aetiology in the patient care pathway

Our Village Health Worker (VHW) networks and associated Primary Care Centres, under the auspices of SMRU, MAM, the Malaria & Critical Illness department and the Southeast Asian Community Trials Network (SEACTN), have been active in developing diagnostics and interventions to assist

2. Wang Q, Ma T, Ding F, Lim A, Takaya S, Saraswati K, Sartorius B, Day NPJ, Maude RJ. Global and regional seroprevalence, incidence, mortality of, and risk factors for scrub typhus: A systematic review and meta-analysis. *Int J Infect Dis*. 2024 Sep;146:107151. doi: 10.1016/j.ijid.2024.107151. Epub 2024 Jul 2. PMID: 38964725; PMCID: PMC11310856.
3. Pongsoipetch K, Walshe R, Mukem S, Kamsri T, Singkham N, Sudathip P, Kitchakarn S, Maude RR, Maude RJ. Mapping malaria transmission foci in Northeast Thailand from 2011 to 2021: approaching elimination in a hypoendemic area. *Malar J*. 2024 Jul 17;23(1):212. doi: 10.1186/s12936-024-05026-6. PMID: 39020432; PMCID: PMC11253324.
4. Miotto O, Amambua-Ngwa A, Amenga-Etego LN, *et al*. IIdentification of complex *Plasmodium falciparum* genetic backgrounds circulating in Africa: a multicountry genomic epidemiology analysis. *Lancet Microbe*. 2024 Dec;5(12):100941. doi: 10.1016/j.lanmic.2024.07.004. Epub 2024 Nov 7. PMID: 39522520; PMCID: PMC11628469.

in the patient care pathway. SEACTN has by 2024 recruited over 90,000 patients. Apart from informing outbreak detection and prediction models and transmission modelling, the findings have been used in cost-effectiveness analyses of interventions that could improve the management of febrile illness in remote populations. This includes development of an electronic decision support tool and initiation in 2024 of a community-based cluster-randomised clinical trials to test this[5].

## c. Development of novel diagnostics

The MORU Laboratory Network has developed and tested a range of new diagnostics for undifferentiated fever, malaria, scrub typhus, and melioidosis. Some of these support our research, and others have entered the translational pathway for further development as products. Two tests for the diagnosis of melioidosis developed by MORU have now attained Thai FDA approval and are marketed, with one of these tests now eligible for reimbursement under the Thai MOPH universal healthcare scheme (*Figure 2*).


Figure 2. Two marketed melioidosis diagnostic tests developed by MORU. The MUTM Melioidosis Antibody Test Kit (*left*) and the Melioidosis Real Time PCR Kit (*right*).

## d. Malaria diagnostics

In 2024 we introduced a robot-processed species-specific PCR and high sensitivity malaria qPCR. These very high-throughput assays are now used in our malaria epidemiology and elimination studies across the region and in processing the samples for clinical trial endpoint determination. Some studies, such as the new Mass Drug Administration and Vaccine village cluster-randomised malaria elimination trial (MVDA) in the Bangladesh Chittagong Hill Tracts, are predicted to produce nearly 100,000 samples requiring genetic analysis.

## e. Epidemiology and mapping to assist policymakers

In 2024 we engaged extensively with governments across the region to assist in population and disease epidemiology and mapping. Examples include mapping of villages across Cambodia and Bangladesh, regional collection of travel surveys by NMCPs to quantify population movements of people with malaria, mathematical modelling for the Global Fund to predict the impact of chloroquine mass drug administration across the Greater Mekong Subregion, evaluations of spatial cluster detection methods and prediction models for dengue for the Thailand MOPH, and analyses of spatiotemporal distribution of tuberculosis in Indonesia.

We also completed analyses of spatiotemporal distribution of suicide in Thailand and an analysis of spatiotemporal patterns of attendances for mental health services to inform policy and resource allocation in Thailand.

## f. Understanding antibacterial and antimalarial drug resistance

<u>Antimicrobial drug resistance</u>

The ACORN Clinical AMR surveillance network project continued with 19 surveillance sites active across nine African and Asian countries (*Figure 3*)[6] , with implementation of site-based bacterial whole genome sequencing capacity in at least one location per country and over 42,000 clinical infection episodes captured. This was published in 2024. In collaboration with the Singapore-based ADVANCE-ID team the closely related ACORN-HAI study is now well underway focussing on hospital-acquired infections, and a new lightweight version of ACORN for wider deployment is also being initiated.

With MORU's help in 2024, our AutoMated tool for Antimicrobial resistance Surveillance System (AMASS) was rolled out by the Thai MOPH in 127 public hospitals across Thailand. AMASS supports hospitals that have electronic data records to analyse and utilise their data for immediate action at both hospital and national levels[7] . As a result of our work In Thailand the incidence of AMR infections (as opposed to the less informative proportional measure) has become a key national indicator.

Local development of a microbiology laboratory information management system (LIMS) within the MORU/ACORN network, and advocacy for better data management tools (via the Surveillance and Epidemiology of Drug Resistant Infections Consortium; SEDRIC) led to the Wellcome-funded SEDRI-LIMS project. This open-source microbiology feature-rich LIMS is now being piloted across multiple LMICs. This feeds directly into WHO surveillance protocols and laboratory diagnostic guidelines for AMR[8,9].

Our network of microbiology laboratories, and the clinical studies feeding them clinically well-characterised samples, has identified new AMR threats in the region, such as AmpC beta-lactamases detected in Southeast Asian *Escherichia coli* and *Klebsiella pneumoniae* isolates[10], and colistin-resistant *E. coli* isolated from both pigs and humans in Laos[11].

<u>Antimalarial drug resistance</u>

A population genomics and transcriptomics study on isolates of *P. falciparum* from Cambodia, where artemisinin resistance is common, showed that the genes *PfRAD5* and PfWD11 are associated with resistance and in their non-wild-type forms upregulate their respective alternatively/aberrantly spliced isoforms, suggesting their involvement in the protective response to artemisinins (*Figure 4*)[12]. This adds to our understanding of the underlying mechanisms of artemisinin resistance.


5. Chew R, Wynberg E, Liverani M, *et al*. Evaluation of an electronic clinical decision support algorithm to improve primary care management of acute febrile illness in rural Cambodia: protocol for a cluster-randomised trial. *BMJ Open*. 2024 Oct 18;14(10):e089616. doi: 10.1136/bmjopen-2024-089616. PMID: 39424394; PMCID: PMC11492946.
6. Mo Y, Ding Y, Cao Y, *et al*. ACORN (A Clinically-Oriented Antimicrobial Resistance Surveillance Network) II: protocol for case based antimicrobial resistance surveillance. *Wellcome Open Res*. 2023 Aug 16;8:179. doi: 10.12688/wellcomeopenres.19210.2. PMID: 37854055; PMCID: PMC10579854.
7. Srisuphan V, Klaytong P, Rangsiwutisak C, Tuamsuwan K, Boonyarit P, Limmathurotsakul D. Local and timely antimicrobial resistance data for local and national actions: the early implementation of an automated tool for data analysis at local hospital level in Thailand. *JAC Antimicrob Resist*. 2023 Jul 15;5(4):dlad088. doi: 10.1093/jacamr/dlad088. PMID: 37457885; PMCID: PMC10349292.
8. World Health Organization. (World Health Organization, Geneva, 2024).
9. World Health Organization, "Technical consultation on the WHO Antimicrobial Resistance Diagnostic Initiative: strategic and operational framework for strengthening bacteriology and mycology diagnostic capacity," (Geneva, 2024).
10. Roberts T, Ling CL, Watthanaworawit W, Cheav C, Sengduangphachanh A, Silisouk J, Hopkins J, Phommasone K, Batty EM, Turner P, Ashley EA. AmpC β-lactamases detected in Southeast Asian *Escherichia coli* and *Klebsiella pneumoniae. JAC Antimicrob Resist*. 2024 Nov 28;6(6):dlae195. doi: 10.1093/jacamr/dlae195. PMID: 39610980; PMCID: PMC11604056.
11. Phomsisavath V, Roberts T, Seupsanith A, *et al.* Investigation of *Escherichia coli* isolates from pigs and humans for colistin resistance in Lao PDR- a cross-sectional study. One Health. 2024 Apr 30;18:100745. doi: 10.1016/j.onehlt.2024.100745. PMID: 38725959; PMCID: PMC11079391.
12. Nayak S, Peto TJ, Kucharski M, *et al*. Population genomics and transcriptomics of *Plasmodium falciparum* in Cambodia and Vietnam uncover key components of the artemisinin resistance genetic background. *Nat Commun*. 2024 Dec 5;15(1):10625. doi: 10.1038/s41467-024-54915-6. PMID: 39639029; PMCID: PMC11621345.

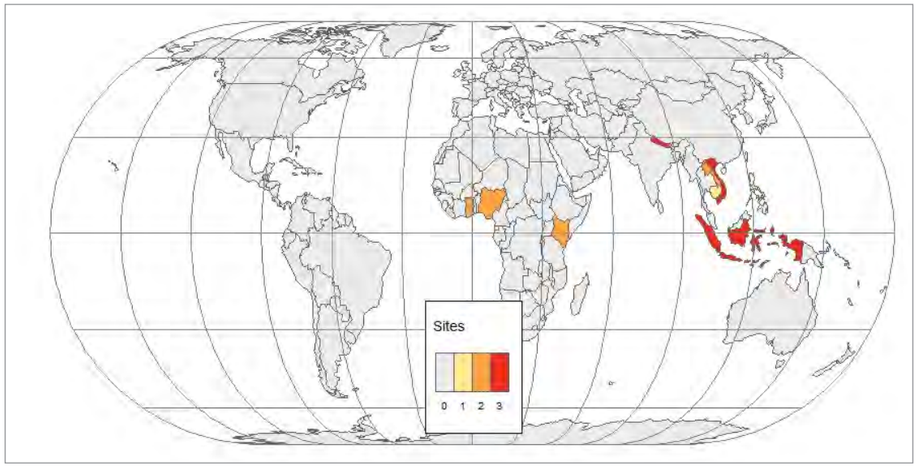



Figure 3. Map of countries with sites in the ACORN Network.

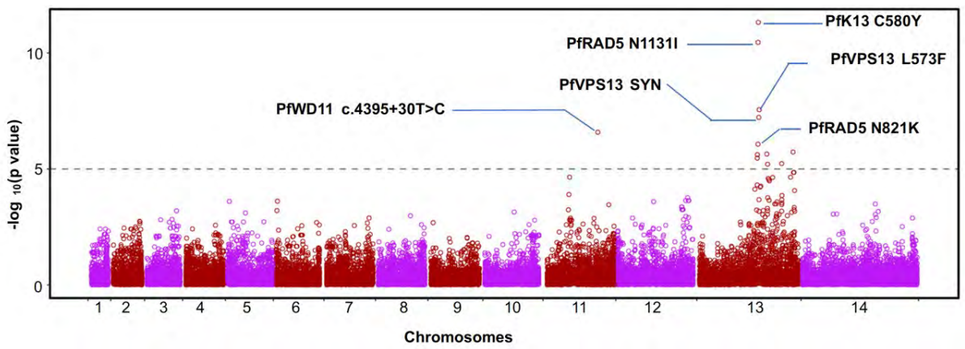



Figure 4. SNPs linked to clearance half-life by genome-wide association in Cambodian *P. falciparum* samples (12).

Before the civil war in Myanmar began after the military coup of 2021, the malaria elimination task force (METF) of SMRU had over half a decade almost eliminated falciparum malaria from most of Karen State. This was achieved by a combination of over 1,000 village malaria post workers providing early diagnosis and treatment, and targeted mass drug administration (MDA). A major concern was that MDA may select for artemisinin resistant infections, increasing their prevalence. A study involving genotyping over 5,000 samples from Karen State show that this drug pressure did not result in an increase in artemisinin resistance[13], a finding that has important applications for malaria elimination efforts worldwide.

Artemisinin resistance has emerged and is spreading in East Africa, threatening malaria control and elimination efforts on the continent where the clinical burden of malaria is by far the greatest. MORU has joined with colleagues in Africa to advocate for an organised response to this[14].

### g. Pathophysiology and pathobiology (T1g)

Throughout 2024 we continued to carry out Discovery Research to improve our understanding of infectious disease pathogens, including *Plasmodium* species, *Burkholderia pseudomallei*, *Orientia tsutsugamushi* and SARS-CoV-2. Highlights include:

13. Nayak S, Peto TJ, Kucharski M, *et al*. Molecular markers of artemisinin resistance during falciparum malaria elimination in Eastern Myanmar. *Malar J*. 2024 Dec 5;15(1):10625. doi: 10.1038/s41467-024-54915-6. PMID: 39639029; PMCID: PMC11621345.
14. Dhorda M, Kaneko A, Komatsu R, *et al*. Artemisinin-resistant malaria in Africa demands urgent action. *Science*. 2024 Jul 19;385(6706):252-254. doi: 10.1126/science.adp5137. Epub 2024 Jul 18. PMID: 39024426.



- Our large cohort of melioidosis cases and environmental *B. pseudomallei* isolates from Northeast Thailand was analysed in the largest genomics / transcriptomics study to date in this disease[15]. The results showed the importance of environmental adaptation to lineage success and dissemination, suggesting that melioidosis control efforts should integrate both clinical and environmental public health containment measures.
- The nasopharynx is an important reservoir of disease-associated and antimicrobial-resistant bacterial species. A study in Cambodian children showed that combining culture, MALDI TOF MS, targeted metagenomic sequencing was a technically feasible approach to exploring the nasopharyngeal microbiota composition[16].
- In a mother-infant cohort from SMRU in Thailand a combined genomics and proteomics approach was used to characterise the development of the humoral immune response to diverse pneumococcal strains, yielding clinically important insights[17].

## Theme 2. Patient care

### a. Community health

We have a holistic and multi-faceted approach to improving community health. This includes improvements in preventative care such as vaccine availability and delivery, increasing access to care by extending the role of village health workers beyond vertical programmes such as malaria, and improving referral systems. It also includes providing an evidence base for positive impacts on health from improvements in housing. Follow-up continued in 2024 on the Star Homes randomised controlled trial (RCT) in Tanzania, which will report in 2025. It has already provided insights into healthcare-seeking behaviour in this population[18].

### b. Clinical trials

Randomised controlled clinical trials (RCTs), along with other interventional and clinical observational studies, are a cornerstone of our work. RCTs in particular are essential for providing high quality evidence for improvements in health care. In 2024, 14 randomised controlled trials (RCTs) were completed, 2 new ones were initiated, 12 were ongoing with continued recruitment. These RCTs enrolled 14,294 study participants. In addition 1,971 participants were enrolled in non-RCT interventional studies, and 189,438 participants in observational studies. 2024 highlights include:

- Completion of multinational clinical trials in Africa and Asia on the efficacy, safety and tolerability of two different Triple Artemisinin Combination Therapies (TACTs); these are currently being analysed and will be published in 2025. This is part of the much broader DeTACT project to develop and deploy TACTs. In response to DeTACT the Chinese pharmaceutical company Fosun Pharma has now developed a fixed-dose combination artemether-lumefantrine-amodiaquine. As part of a GHIT-funded consortium involving MORU, Fosun Pharma, Marubeni, and MMV this will be tested in a multinational randomized controlled trial in 4 African countries and in Thailand with recruitment beginning in 2025.

15. Seng R, Chomkatekaew C, Tandhavanant S, *et al*. Genetic diversity, determinants, and dissemination of *Burkholderia pseudomallei* lineages implicated in melioidosis in Northeast Thailand. *Nat Commun*. 2024;15(1):5699. Published 2024 Jul 7. doi:10.1038/s41467-024-50067-9.
16. Pol S, Kallonen T, Mäklin T, Sar P, Hopkins J, Soeng S, Miliya T, Ling CL, Bentley SD, Corander J, Turner P. Exploring the pediatric nasopharyngeal bacterial microbiota with culture-based MALDI-TOF mass spectrometry and targeted metagenomic sequencing. *mBio*. 2024 Jun 12;15(6):e0078424. doi: 10.1128/mbio.00784-24. Epub 2024 Apr 29. PMID: 38682956; PMCID: PMC11237702.
17. Croucher NJ, Campo JJ, Le TQ, Pablo JV, Hung C, Teng AA, Turner C, Nosten F, Bentley SD, Liang X, Turner P, Goldblatt D. Genomic and panproteomic analysis of the development of infant immune responses to antigenically-diverse pneumococci. *Nat Commun*. 2024 Jan 8;15(1):355. doi: 10.1038/s41467-023-44584-2. PMID: 38191887; PMCID: PMC10774285.
18. Mshamu S, Meta J, Sanga C, Day N, Mukaka M, Adhikari B, Deen J, Knudsen J, Pell C, von Seidlein L. Care seeking for childhood illnesses in rural Mtwara, south-east Tanzania: a mixed methods study. *Trans R Soc Trop Med Hyg*. 2024 Jul 5;118(7):465-473. doi: 10.1093/trstmh/trae022. PMID: 38700078; PMCID: PMC11224983.

- The world's largest study of COVID-19 chemoprevention, the multi-country COPCOV trial (*Figure 5*), was published in 2024 and showed that chloroquine or hydroxychloroquine prophylaxis provided moderate protection against COVID-19 (*Figure 6*)[19].

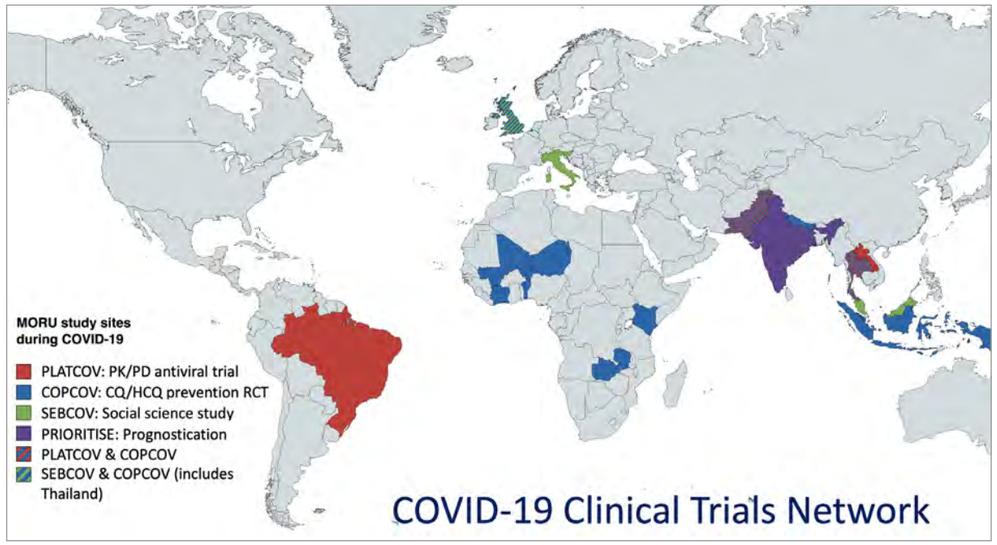



Figure 5. MORU MIP COVID-19 Clinical Research Network 2020-2025.

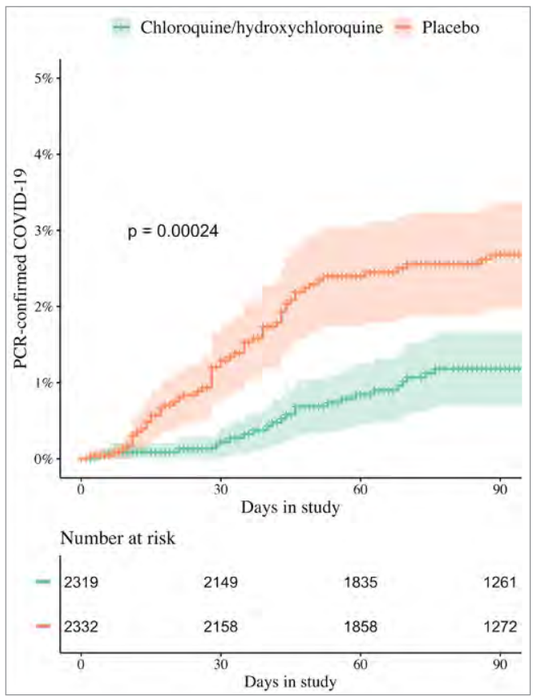



Figure 6. Results of COPCOV study - preventing PCR-confirmed COVID-19. (19).

19. Schilling WHK, Mukaka M, Callery JJ, *et al*. Evaluation of hydroxychloroquine or chloroquine for the prevention of COVID-19 (COPCOV): A double-blind, randomised, placebo-controlled trial. *PLoS Med*. 2024 Sep 12;21(9):e1004428. doi: 10.1371/journal.pmed.1004428. PMID: 39264960; PMCID: PMC11392261.

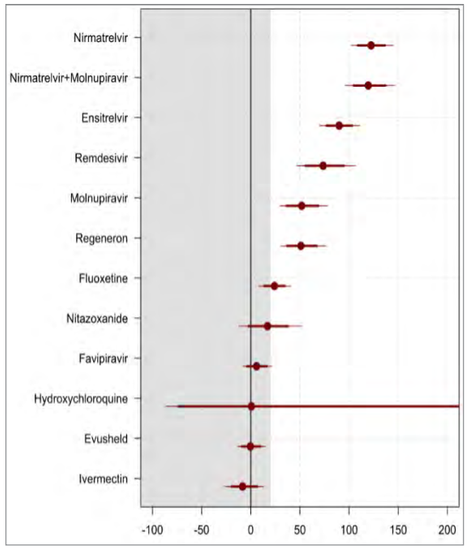



Figure 7. Viral clearance results from the PLATCOV platform trial.

For testing the antiviral effect of new and repurposed drugs against SARS-CoV-2 we developed the PLATCOV pharmacokinetics/pharmacodynamics approach, using the viral load in throat swabs as the pharmacodynamic measure[20]. By 2024 we had recruited over 2,100 patients with mild-moderate COVID-19 into an adaptive trial, which provided genotype-phenotype response assessment of therapeutic monoclonal antibodies, and showed that ivermectin and favipiravir are ineffective, fluoxetine provides minor benefit, molnupiravir and remdesivir are effective, and that enseltrelevir and ritonavir-boosted nirmatrelvir are the most potent available antivirals (Figure 7)[21,22].

In 2024 we extended this approach and to study antiviral efficacy in two further viral respiratory illnesses: influenza, arguably the most likely pathogen to cause the next pandemic; and Respiratory Syncytial Virus (RSV). Clinical trials are underway in both of these diseases.

## c. Critical illness

At the other end of the patient care pathway from community health, we have built with support from Wellcome Innovations Flagship funding a Critical Care Network across 9 Asian and 6 African countries. This has enabled detailed information to be collected on critical care case mix and outcomes[23], clinical trials, and quality improvement projects. A trial in Bangladesh on the use of procalcitonin testing to de-escalate antibiotic treatment was completed in 2024 and will be reported in 2025.

## d. Pharmacometric studies

Uniquely amongst the Wellcome MIPs the MORU Network has a major focus on pharmacology, with a world class pharmacology laboratory and pharmacometrics group. This capability enables us to quantitatively assess and optimise anti-infective treatment, particularly in important neglected populations such as children, pregnant and breast-feeding women, and the malnourished, for whom existing recommended drug dosing regimens are often wrong. Highlights of 2024 include:

- We showed that primaquine for vivax malaria radical cure can be safely used in breast-feeding

20. Wongnak P, Schilling WHK, Jittamala P, *et al*. Temporal changes in SARS-CoV-2 clearance kinetics and the optimal design of antiviral pharmacodynamic studies: an individual patient data meta-analysis of a randomised, controlled, adaptive platform study (PLATCOV). *Lancet Infect Dis*. 2024 Sep;24(9):953-963. doi: 10.1016/S1473-3099(24)00183-X. Epub 2024 Apr 24. PMID: 38677300.
21. Schilling WHK, Jittamala P, Watson JA, *et al*. Antiviral efficacy of molnupiravir versus ritonavir-boosted nirmatrelvir in patients with early symptomatic COVID-19 (PLATCOV): an open-label, phase 2, randomised, controlled, adaptive trial. *Lancet Infect Dis*. 2024 Jan;24(1):36-45. doi: 10.1016/S1473-3099(23)00493-0. Epub 2023 Sep 28. Erratum in: *Lancet Infect Dis*. 2023 Dec;23(12):e511. doi: 10.1016/S1473-3099(23)00649-7. PMID: 37778363; PMCID: PMC7615401.
22. Luvira V, Schilling WHK, Jittamala P, *et al*. Clinical antiviral efficacy of favipiravir in early COVID-19 (PLATCOV): an open-label, randomised, controlled, adaptive platform trial. *BMC Infect Dis*. 2024 Jan 15;24(1):89. doi: 10.1186/s12879-023-08835-3. PMID: 38225598; PMCID: PMC10789040.
23. Njoki C, Simiyu N, Kaddu R, *et al*. EPidemiology, clinical characteristics and Outcomes of 4546 adult admissions to high-dependency and intensive care units in Kenya (EPOK): a multicentre registry-based observational study. *Crit Care Explor*. 2024 Feb 1;6(2):e1036. doi: 10.1097/CCE.0000000000001036. PMID: 38356864; PMCID: PMC7615640.

women, as negligible quantities are transferred to the infant in breast milk[24]. This led to a change in the WHO malaria treatment guidelines.
- Through population pharmacometric assessment of antimalarial drugs in pregnancy we showed that pregnant women should receive the normal adult dose of amodiaquine and piperaquine[25].
- We demonstrated that in pregnant women venous plasma concentrations of mefloquine, but not lumefantrine and piperaquine, could be predicted by capillary plasma samples with an acceptable level of agreement[26]. This simplifies the conduct of clinical studies involving mefloquine.

### e. Medicine quality

Our Medicine Quality Research Group (MQRC), which works closely with IDDO, has continued to be a global leader in the fight against the critical but neglected problem of Substandard and Falsified (SF) pharmaceuticals. In 2024 the group built the first Dashboard (DAFODIL) for collating and curating data on the pros and cons of diverse medicine quality screening devices for detecting SF medicines and vaccines in supply chains. They also furthered their extensive work on new methods to identify SF medicines, including novel use of isotope ratio mass spectrometry to identify falsified antimalarials[27].

## Theme 3. Maternal and child health

### a. Pregnancy

The nearly four decades of antenatal and obstetric experience in SMRU clinics, working with a highly marginalised population, has created a carefully and prospectively collected multi-decade cohort. During the COVID-19 pandemic the Thai-Myanmar border was closed and SMRU opened a new clinic on the Myanmar side. The impact of this has now been assessed and published[28]. The results show no increase in stillbirths or maternal deaths, though there was an increase in the proportion of pregnancies with unknown outcome. This shows the feasibility and value of supporting antenatal and obstetric care in a complex emergency (the period also covered the outbreak of civil war). SMRU continued its research on the mental health of pregnant women in this vulnerable community[29].


24. Wattanakul T, Gilder ME, McGready R, Hanpithakpong W, Day NPJ, White NJ, Nosten F, Tarning J, Hoglund RM. Population pharmacokinetic modelling of primaquine exposures in lactating women and breastfed infants. *Nat Commun*. 2024 May 8;15(1):3851. doi: 10.1038/s41467-024-47908-y. PMID: 38719803; PMCID: PMC11078975.
25. Ding J, Hoglund RM, Tagbor H, Tinto H, Valéa I, Mwapasa V, Kalilani-Phiri L, Van Geertruyden JP, Nambozi M, Mulenga M, Hachizovu S, Ravinetto R, D'Alessandro U, Tarning J. Population pharmacokinetics of amodiaquine and piperaquine in African pregnant women with uncomplicated *Plasmodium falciparum* infections. *CPT Pharmacometrics Syst Pharmacol*. 2024 Nov;13(11):1893-1903. doi: 10.1002/psp4.13211. Epub 2024 Sep 3. PMID: 39228131; PMCID: PMC11578137.
26. Saito M, Wilaisrisak P, Pimanpanarak M, Viladpai-Nguen J, Paw MK, Koesukwiwat U, Tarning J, White NJ, Nosten F, McGready R. Comparison of lumefantrine, mefloquine, and piperaquine concentrations between capillary plasma and venous plasma samples in pregnant women with uncomplicated falciparum and vivax malaria. *Antimicrob Agents Chemother*. 2024 May 2;68(5):e0009324. doi: 10.1128/aac.00093-24. Epub 2024 Apr 10. PMID: 38597636; PMCID: PMC11064628.
27. Newton PN, Chesson LA, Mayxay M, Dondorp A, Tabernero P, Howa JD, Cerling TE. Forensic investigation of falsified antimalarials using isotope ratio mass spectrometry: a pilot investigation. *Sci Rep*. 2024 Feb 18;14(1):3995. doi: 10.1038/s41598-024-54168-9. PMID: 38369604; PMCID: PMC10874941.
28. Prins TJ, Watthanaworawit W, Gilder ME, *et al*. COVID-19 pandemic, pregnancy care, perinatal outcomes in Eastern Myanmar and North-Western Thailand: a retrospective marginalised population cohort. *BMC Pregnancy Childbirth*. 2024 Oct 2;24(1):637. doi: 10.1186/s12884-024-06841-0. PMID: 39358743; PMCID: PMC11448279.
29. Ashley-Norman T, Fellmeth G, Brummaier T, Nosten S, Oo MM, Phichitpadungtham Y, Wai K, Khirikoekkong N, Plugge E, McGready R. Persistent depression in pregnant refugee and migrant women living along the Thai-Myanmar Border: a secondary qualitative analysis. *Wellcome Open Res*. 2024 Mar 28;7:231. doi: 10.12688/wellcomeopenres.17744.2. PMID: 39381722; PMCID: PMC11459118.




### b. Neonatal care

Both SMRU and COMRU continue to work to improve the outcome of babies born in low-resource settings. Highlights from 2024 include:
- Identifying major gaps in the coverage of empirical antibiotic regimens given to neonates with serious infections when compared with the resistance patterns of infecting pathogens[30].
- Identification of high-risk *Escherichia coli* clones that cause neonatal meningitis and are associated with recrudescent infection[31].
- Completion of the Saving Babies' Lives (SBL) study, a cluster-randomised trial implemented by Angkor Hospital for Children and COMRU testing neonatal interventions to reduce perinatal mortality in rural Cambodia. This is being analysed and the results will inform Cambodian government plans for resource appropriate and effective interventions to reduce perinatal mortality.

### c. Child health

Child health is a major focus of the MIP, and many related studies are reported elsewhere in this summary (eg malaria and pharmacometrics). Additional 2024 highlighted studies include:
- In the Paediatric Intensive Care Unit at Angkor Hospital for Children in Cambodia an observational study has led to the development of a prognostic model for critically ill children in locations with emerging critical care capacity[32].
- A retrospective analysis of SMRU clinic databases in two Thai-Myanmar border refugee camps showed that between 2000 and 2018 child mortality and incidence of infectious diseases in children under 5 (SDG 3.3) fell by 69% and by up to 92%, respectively[33]. This demonstrates the real impact of sustained funding and (often consequent) improvements in health care on child health.
- Mobile medical teams of MAM have identified over 1,100 children with severe disabling rickets in very remote communities in north Myanmar (Nagaland), and treated them with calcium and Vitamin D which appeared to be effective and improved, often dramatically, bone deformabilities. The detailed aetiology is currently being investigated.
- The MORU MIP is an active member of SMAART (Severe Malaria in African children: A Research and Trials consortium), and are collaborating with its KIMORU site in Kinshasa on a study to test interventions in severe malaria.

## Theme 4. Malaria elimination

### a. Targeted malaria elimination strategies

As described above we are trialling mass drug administration, the R21 vaccine, or both as aids to malaria elimination in villages in the Chittagong Hill Tracks in Bangladesh with high levels of asymptomatic parasitaemia (the MVDA study).


30. Williams PCM, Jones M, Snelling TL, Duguid R, Moore N, Dickson B, Wu Y, Saunders J, Wijeratne P, Douangnouvong A, Ashley EA, Turner P. Coverage gaps in empiric antibiotic regimens used to treat serious bacterial infections in neonates and children in Southeast Asia and the Pacific. *Lancet Reg Health Southeast Asia*. 2023 Oct 31;22:100291. doi: 10.1016/j.lansea.2023.100291. PMID: 38482147; PMCID: PMC10934317.
31. Nhu NTK, Phan MD, Hancock SJ, *et al*. High-risk *Escherichia coli* clones that cause neonatal meningitis and association with recrudescent infection. Elife. 2024 Apr 16;12:RP91853. doi: 10.7554/eLife.91853. PMID: 38622998; PMCID: PMC11021048.
32. Chandna A, Keang S, Vorlark M, *et al*. A Prognostic Model for Critically Ill Children in Locations With Emerging Critical Care Capacity. *Pediatr Crit Care Med*. 2024 Mar 1;25(3):189-200. doi: 10.1097/PCC.0000000000003394. Epub 2023 Nov 10. PMID: 37947482; PMCID: PMC10904005.
33. Benner MT, Mohr O, Kaloy W, Sansoenboon A, Moungsookjarean A, Kaiser P, Carrara VI, McGready R. Mother, child and adolescent health outcomes in two long-term refugee camp settings at the Thai-Myanmar border 2000-2018: a retrospective analysis. *Prim Health Care Res Dev*. 2024 May 9;25:e27. doi: 10.1017/S146342362400015X. PMID: 38721695; PMCID: PMC11091483.

Another important tool for reducing transmission is single low dose primaquine, given either as part of MDA or with schizonticidal malaria treatment to patients with symptomatic malaria. The latter is recommended by WHO in low malaria transmission setting but currently not in high transmission setting in Africa. With the arrival of artemisinin resistance in Africa, this is now being reconsidered. We have started a programme of development of a child-friendly primaquine formulation which we will trial in Africa. In addition, as there is only one WHO pre-qualified manufacturer of 15mg primaquine tablets (Sanofi), we have conducted a bioequivalence study showing that a formulation from a new manufacturer (IPCA) provides equivalent exposure, opening the door to pre-qualification[34].

## b. Preventing reintroduction of falciparum malaria

Village malaria workers (VMWs) are vital in successful malaria elimination efforts, and expanding their roles is important to: i) keep their relevance in the community when malaria declines and ii) expand care delivery beyond malaria. These are both important MORU aims and our focus on the health of community health worker networks continues[35,36].

## c. Ivermectin

Our work on developing the use of ivermectin as a tool for malaria elimination continued in 2024. We have developed a method for measuring ivermectin in plasma[37], conducted in-vitro studies of efficacy of ivermectin and its metabolites against *P. falciparum* in primary human hepatocytes[38] and studied their impact on mosquitoes[39], field tested the effect of ivermectin in cattle on Anopheles survival (40), and assessed an ivermectin formulation developed for small children[40].

## d. Role of vaccines in malaria elimination

The R21 falciparum malaria vaccine is the second vaccine to have been licenced and WHO pre-qualified for malaria, and is now being deployed to immunise children in Africa. We carried out a healthy volunteer study which showed good immunogenicity in Thai adults and found no safety issues or interactions with the drugs used in MDA for malaria elimination[41]. We have now designed a cluster randomized trial to evaluate the R21/MM vaccine in combination with mass drug administration in the Chittagong Hill Tracts in Bangladesh in a village cluster-randomised trial. In 2024 extensive community engagement efforts were carried out, and recruitment began in January 2025.

## e. Targeting high risk groups

The ability to target high risk groups in rural areas with village health worker networks and strategies such as early diagnosis and treatment and mass drug administration appears to be central to successful elimination efforts. Unfortunately the civil war in Myanmar which followed the 2021 military coup has left most rural areas vulnerable to malaria resurgence or re-introduction. MAM's 2,250 and SMRU's 1,100 village health workers have continued to work despite the severe deterioration of the rest of the health system. Falciparum and vivax malaria are slowly increasing in these areas though and returning as a major public health threat in many other parts of Myanmar. Studies in Myanmar to predict and prevent reintroduction, such as through sero-epidemiological surveys, have been largely suspended.

## f. Mathematical modelling to support elimination efforts

Using data from the intensive follow-up conducted during the SPf66 vaccine clinical trial conducted on the Thai-Myanmar border in the 1990s, we conducted a modelling analysis showing that vivax hypnozoites have an activation half-life of 4 months and are likely activated by symptomatic malarial illness[42]. This increases our understanding of vivax relapse, and these modelling techniques could be used to inform malaria elimination interventions.

## g. Eliminating vivax malaria

To control and eliminate vivax malaria National Malaria Programmes need to be able to deploy safe radical cure, and ideally a vivax vaccine. Radical cure requires drugs active against vivax hypnozoites, and at present the only available drugs are the 8-aminoquinolines primaquine and tafenoquine. We showed in collaboration with IDDO that non-invasive methaemoglobin levels are a good surrogate measure for the total primaquine dose (which determines its efficacy)[43]. In 2024 we initiated a new multi-centre clinical trial of tafenoquine that aims to confirm that a higher (450mg) adult dose of tafenoquine is more effective than the currently recommended dose (300mg). We are also currently carrying out development of a paediatric formulation of primaquine, so that it can be given at the correct dose.

The problem with the 8-aminoquinolines is that they cause haemolysis in individuals with glucose-6-phosphate dehydrogenase (G6PD) deficiency. To address this problem we conducted an adaptive trial of a novel ascending dose "controlled haemolysis" primaquine regimen in healthy G6PD deficient volunteers (*Figure 8*)[44]. This showed that in patients with Southeast Asian G6PDd variants, full radical cure treatment can be given in under 3 weeks compared with the current 8-week regimen. We now plan a carefully designed programme of research to assess whether this regimen can safely be applied in a population with the more severe Mediterranean type G6PD deficiency in Afghanistan, where vivax is a major public health problem, but have so far been unable to source funding for this.


34. Nguyen Ngoc Pouplin J, Kaendiao T, Rahimi BA, Soni M, Basopia H, Shah D, Patil J, Dholakia V, Suthar Y, Tarning J, Mukaka M, Taylor WR. Bioequivalence of a new coated 15 mg primaquine formulation for malaria elimination. *Malar J*. 2024 Jun 5;23(1):176. doi: 10.1186/s12936-024-04947-6. PMID: 38840151; PMCID: PMC11155120.
35. Nguyen H, Jongdeepaisal M, Tuan DA, Khonputsa P, Ngo T, Pell C, Liverani M, Maude RJ. Sustaining village malaria worker programmes with expanded roles: Perspectives of communities, healthcare workers, policymakers, and implementers in Vietnam. *PLOS Glob Public Health*. 2024 Aug 6;4(8):e0003443. doi: 10.1371/journal.pgph.0003443. PMID: 39106235; PMCID: PMC11302919
36. Jongdeepaisal M, Sirimatayanant M, Khonputsa P, Hein PS, Buback L, Beyeler N, Chebbi A, Maude RJ. Expanded roles of community health workers to sustain malaria services in the Asia-Pacific: A landscaping survey. *PLOS Glob Public Health*. 2024 Aug 14;4(8):e0003597. doi: 10.1371/journal.pgph.0003597. PMID: 39141646; PMCID: PMC11324099.
37. Kaewkhao N, Hanpithakpong W, Tarning J, Blessborn D. Determination of ivermectin in plasma and whole blood using LC-MS/MS. *Wellcome Open Res*. 2024 Aug 5;9:231. doi: 10.12688/wellcomeopenres.20613.2. PMID: 39355658; PMCID: PMC11443190.
38. Annamalai Subramani P, Tipthara P, Kolli SK, Nicholas J, Barnes SJ, Ogbondah MM, Kobylinski KC, Tarning J, Adams JH. Efficacy of ivermectin and its metabolites against Plasmodium falciparumliver stages in primary human hepatocytes. *Antimicrob Agents Chemother*. 2024 Aug 7;68(8):e0127223. doi: 10.1128/aac.01272-23. Epub 2024 Jun 21. PMID: 38904389; PMCID: PMC11304735.
39. Khemrattrakool P, Hongsuwong T, Tipthara P, Kullasakboonsri R, Phanphoowong T, Sriwichai P, Hanboonkunupakarn B, Jittamala P, Tarning J, Kobylinski KC. Impact of ivermectin components on *Anopheles dirus* and *Anopheles minimus* mosquito survival. *Parasit Vectors*. 2024 May 15;17(1):224. doi: 10.1186/s13071-024-06294-6. PMID: 38750608; PMCID: PMC11097567.
40. Kobylinski KC, Satoto TBT, Nurcahyo W, *et al*. Impact of standard and long-lasting ivermectin formulations in cattle and buffalo on wild Anopheles survival on Sumba Island, Indonesia. *Sci Rep*. 2024 Nov 30;14(1):29770. doi: 10.1038/s41598-024-81743-x. Erratum in: *Sci Rep*. 2025 Jan 29;15(1):3637. doi: 10.1038/s41598-025-87906-8. PMID: 39616234; PMCID: PMC11608319.
41. Hanboonkunupakarn B, Mukaka M, Jittamala P, *et al*. A randomised trial of malaria vaccine R21/Matrix-M™ with and without antimalarial drugs in Thai adults. *NPJ Vaccines*. 2024 Jul 6;9(1):124. doi: 10.1038/s41541-024-00920-1. PMID: 38971837; PMCID: PMC11227592.
42. Mehra S, Nosten F, Luxemburger C, White NJ, Watson JA. Modeling the within-host dynamics of *Plasmodium vivax* hypnozoite activation: An analysis of the SPf66 vaccine trial. *Proc Natl Acad Sci U S A*. 2024 Dec 17;121(51):e2401024121. doi: 10.1073/pnas.2401024121. Epub 2024 Dec 10. PMID: 39656209; PMCID: PMC11665876.
43. Fadilah I, Commons RJ, Chau NH, et al. Methaemoglobin as a surrogate marker of primaquine antihypnozoite activity in *Plasmodium vivax* malaria: A systematic review and individual patient data meta-analysis. *PLoS Med*. 2024 Sep 27;21(9):e1004411. doi: 10.1371/journal.pmed.1004411. PMID: 39331646; PMCID: PMC11469483.
44. Pukrittayakamee S, Jittamala P, Watson JA, Hanboonkunupakarn B, Leungsinsiri P, Poovorawan K, Chotivanich K, Bancone G, Chu CS, Imwong M, Day NPJ, Taylor WRJ, White NJ. Primaquine in glucose-6-phosphate dehydrogenase deficiency: an adaptive pharmacometric assessment of ascending dose regimens in healthy volunteers. *Elife*. 2024 Feb 6;12:RP87318. doi: 10.7554/eLife.87318. PMID: 38319064; PMCID: PMC10945527.

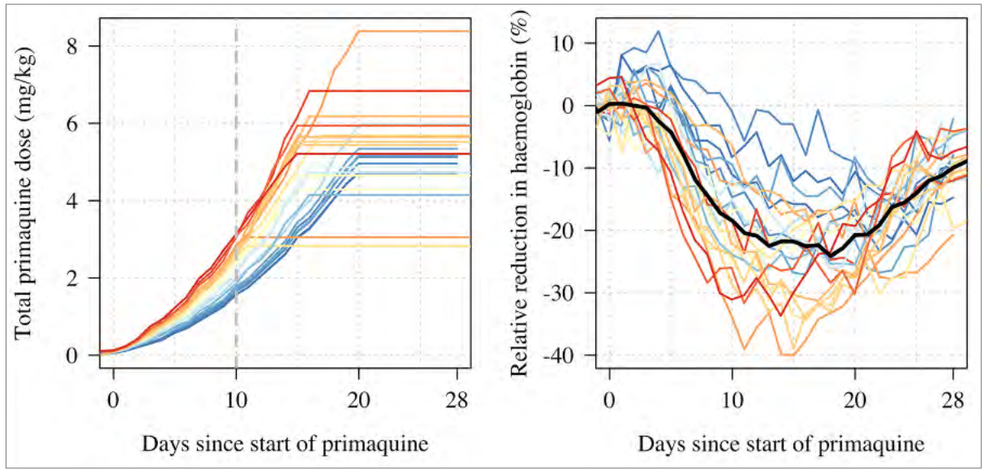



Figure 8. Ascending dose primaquine affect and relative haemoglobin reduction in G6PDd male hemizygote volunteers (44).

## **Objective B.** Maximise public health impact

### a. ITPA

Supported by Wellcome ITPA funding we have over the last 7 years built a team dedicated to promoting and supporting the translation of our research into impact on health, the Mahidol-Oxford Translational Innovation Partnership (MOTIP). By 2024 MOTIP had developed a portfolio of over 120 translational projects from across both the MORU Network and Mahidol's Faculty of Tropical Medicine. This initiative has been incredibly successful, changing the 'translation culture' within the MORU MIP and Mahidol's Faculty of Tropical Medicine (FTM), our partner organisation. MOTIP has provided seed funding to 63 projects across 10 countries, moving projects along the translational pathway, helping them avoid the various 'valleys of death', and producing two fully Thai-FDA licenced and marketed products.

### b. Amplifying the impact of our institutional partners

The MORU MIP, which has research units in five countries, works closely with our collaborators, national partners and government agencies to improve their own research output and health impact.

In 2023 the MOTIP team successfully established TROPMED-DC, a diagnostics development hub run in collaboration with FTM. In 2024 this has thrived, with multiple novel diagnostics in development. TROPMED-DC supports researchers involved in developing new diagnostics by facilitating access to equipment and specimens that are bio-banked in different labs at MORU and FTM, engaging with industry partners, navigating regulatory pathways, and raising funding.

In Laos LOMWRU has built national microbiology laboratory capacity for AMR surveillance, supported by the UK Fleming Fund, and throughout 2024 supported five regional microbiology laboratories.

In the One Health area we continued to support the Lao Veterinary Research One Health Laboratory based at the National Animal Health Laboratory to improve the diagnosis of veterinary and One Health pathogens, and supported infrastructure and workforce development for the Cambodian One Health and veterinary pathogen diagnostics at the National Animal Health and Production Institute in Phnom Penh. In Thailand we have completed reconstruction and renovation of the Thai Government's national animal BSL-3 containment laboratories in Pak Chong, which is the regional reference laboratory for foot and mouth disease and other regionally important pathogens. We also managed and coordinated the construction of a biosafety training facility on the same site.

### c. Health economics research

For policymakers to consider deploying scientifically-proven interventions at scale a cost-effectiveness case has to be made. Most of our large projects involving development of new interventions have a health economics component, and where required we carry out standalone economic evaluations on diseases and interventions which may improve the health of the populations with whom we work. For example in 2024 we:

- Conducted a cost-effectiveness analysis of surgical masks, N95 masks compared to wearing no mask for the prevention of COVID-19 among health care workers in India, in collaboration with PGIMER. This showed that N95 masks were dominant compared with surgical masks, and surgical masks were dominant compared with no mask[45].
- Showed that a short course antibiotic strategy for ventilator-associated pneumonia was cost-effective in all economic settings[46]. This was based on data derived from a MORU MIP multicentre clinical trial, also published in 2024[47].

### d. Policy 'think tanks' to advise governments

We have continued to strengthen our collaborations and capacity-building efforts in health economics and health technology assessment (HTA) by working closely with regional partners. This includes ongoing support for the newly established Unit for Health Evidence and Policy (UHEP) in Lao PDR, and collaboration with PGIMER in India on N95 mask use among healthcare workers. Our MAEMOD Department maintains active collaborations with Thailand's Health Intervention and Technology Assessment Program (HITAP, MoPH), the Bureau of Vector Borne Diseases (Department of Disease Control), and the Department of Livestock Development (Ministry of Agriculture and Cooperatives).

### e. Direct engagement with policymakers

MORU Network engagement with policymakers continues to expand. In 2024 we worked closely with government policymakers in Thailand, Cambodia, Lao PDR, Bangladesh, and, though indirectly, Myanmar. Salient examples include:

- Supporting the Department of Healthcare and Rehabilitation (DHR) of the Lao Ministry of Health (MoH) on nationwide implementation of the antibiotic treatment guidelines (developed by LOMWRU), in paper and electronic form[48].
- Leading the Thailand Melioidosis Network, and developing and supporting the MOPH's National Action Plan (NAP) for melioidosis.
- Automating the generation of notifiable bacterial disease reports in Thailand, to provide a more accurate national view of infectious disease burden[49].
- Contributing and implementing the Thailand National Action Plan for AMR, and assisting with nationwide AMR data collection through the AMASS tool.


45. Sharma M, Sra H, Painter C, Pan-Ngum W, Luangasanatip N, Chauhan A, Prinja S, Singh M. Cost-effectiveness analysis of surgical masks, N95 masks compared to wearing no mask for the prevention of COVID-19 among health care workers: Evidence from the public health care setting in India. *PLoS One*. 2024 May 20;19(5):e0299309. doi: 10.1371/journal.pone.0299309. PMID: 38768249; PMCID: PMC11104672.
46. Cai Y, Booraphun S, Li AY, Kayastha G, Tambyah PA, Cooper BS, Graves N, Mo Y. Cost-effectiveness of a short-course antibiotic treatment strategy for the treatment of ventilator-associated pneumonia: an economic analysis of the REGARD-VAP trial. *Lancet Glob Health*. 2024 Dec;12(12):e2059-e2067. doi: 10.1016/S2214-109X(24)00327-9. Epub 2024 Nov 4. PMID: 39510104; PMCID: PMC11579304.
47. Mo Y, Booraphun S, Li AY, Domthong P, Kayastha G, Lau YH, Chetchotisakd P, Limmathurotsakul D, Tambyah PA, Cooper BS; REGARD-VAP investigators. Individualised, short-course antibiotic treatment versus usual long-course treatment for ventilator-associated pneumonia (REGARD-VAP): a multicentre, individually randomised, open-label, non-inferiority trial. *Lancet Respir Med*. 2024 May;12(5):399-408. doi: 10.1016/S2213-2600(23)00418-6. Epub 2024 Jan 22. PMID: 38272050.
48. Chansamouth V, Douangnouvong A, Thammavongsa P, Sombandith X, Keomany S, Rattana S, Newton PN, Day NP, Turner P, Mayxay M, van Doorn HR, Ashley EA. Understanding hospital antimicrobial prescribing decisions and determinants of uptake of new local antimicrobial prescribing guidelines in Laos. *Wellcome Open Res*. 2024 Sep 12;9:183. doi: 10.12688/wellcomeopenres.20884.2. PMID: 39301442; PMCID: PMC11411237.
49. Lim C, Klaytong P, Hantrakun V, et al. Automating the Generation of Notifiable Bacterial Disease Reports: Proof-of-Concept Study and Implementation in Six Hospitals in Thailand. A*m J Trop Med Hyg*. 2024 May 28;111(1):151-155. doi: 10.4269/ajtmh.23-0848. PMID: 38806021; PMCID: PMC11229635

Policy engagement is now built into most major research programmes. An example is the TACTs (DeTACT) programme, which has employed policy engagement specialists in Africa who have engaged with Ministries of Health across the continent.

In addition, many MORU staff sit on numerous national, regional and WHO policy-advising committees. In 2024 MORU authors contributed to WHO treatment guidelines on malaria and diphtheria, and to the 2024 2nd edition of the WHO Laboratory Biosecurity Manual[50].

## **Objective C.** Build a sustainable, equitable and innovative research network

### a. Training

Training the next generation of researchers and research leaders is a critical and integral part of our mission to reduce inequities and improve health in resource-poor populations. In 2024 our training department extended our extensive range of mandatory and area-specific training, and upgraded the mechanisms of electronic delivery of training to those unable to join in person trainings.

Our postgraduate training programme is thriving, with 67 DPhil/PhD students and 33 Masters students. In 2024 6DPhil/PhD and 14 Masters students graduated. With OUCRU and support from Wellcome we launched the MORU-OUCRU Discovery Research Academy (MODRA), to support promising future leaders develop their skills to be internationally competitive at securing funding for their research and career development. The first cohort of 15 academy members have been selected and are actively taking part in this very popular programme.

### b. EDI

See separate report on ‘Advancing health equity at MORU’ in Chapter 1c.

### Community, public and stakeholder engagement

Engagement is a core activity across the Network. At MORU, our engagement work is anchored by a network of adult and youth advisory groups that provide valuable insights and advice on how we conduct research and deliver our health programmes. These groups are designed to prioritize listening to communities, ensuring that our healthcare research and programmes are ethical, responsive to community needs, and aimed at maximizing health impact[51].

In 2024, we continued working closely with our existing advisory groups and launched the MORU CAB-NET—a network of facilitators dedicated to exchanging best practices and coordinating CAB group activities at MORU. In 2024, CAB facilitators met three times, including a two-day in-person meeting in Bangkok. We have also produced a new video to showcase our CAB work: https://youtu.be/aJa0Nswp480?si=aqqN29J6aKZ8s67b.

Alongside study-specific engagement activities, we also conducted broader outreach on health topics central to our research, including malaria, tuberculosis, antimicrobial resistance[52], and scrub typhus[53]. These activities were delivered through community meetings, public talks (such as the Pint of Science festival in Thailand and Laos), workshops, and science-arts initiatives.


50. World Health Organization, Laboratory biosecurity guidance 2nd edition. (2024).
51. Perrone C, Kanthawang N, Cheah PY. A hill tribe community advisory board in Northern Thailand: lessons learned one year on. *Int J Equity Health*. 2024 Nov 18;23(1):241. doi: 10.1186/s12939-024-02323-z. PMID: 39558319; PMCID: PMC11574996
52. Poomchaichote T, Kiatying-Angsulee N, Boonthaworn K, Naemiratch B, Ruangkajorn S, Prapharsavat R, Thirapantu C, Sukrung K, Limmathurotsakul D, Osterrieder A, Cheah PY. Embedding community and public voices in co-created solutions to mitigate antimicrobial resistance (AMR) in Thailand using the 'Responsive Dialogues' public engagement framework. *Antimicrob Resist Infect Control*. 2024 Jul 4;13(1):71. doi: 10.1186/s13756-024-01416-2. PMID: 38965593; PMCID: PMC11225371.
53. C. Perrone et al., Community engagement around scrub typhus in northern Thailand: a pilot project. *Trans R Soc Trop Med Hyg*, (2024).


We also actively participated in key awareness events such as World Malaria Day and World Antimicrobial Awareness Week. In 2024, we organized the second annual Young Cartoonists against AMR Contest (*Figure 9*).


Figure 9. The first-prize winning cartoon by Pattarathida Buddeewong and Chanakan Sukkla, second-year medical illustration students, Khon Kaen University, Thailand, illustrates how people can prevent the spread of AMR.

# MORU MIP Research Units

## MORU Units

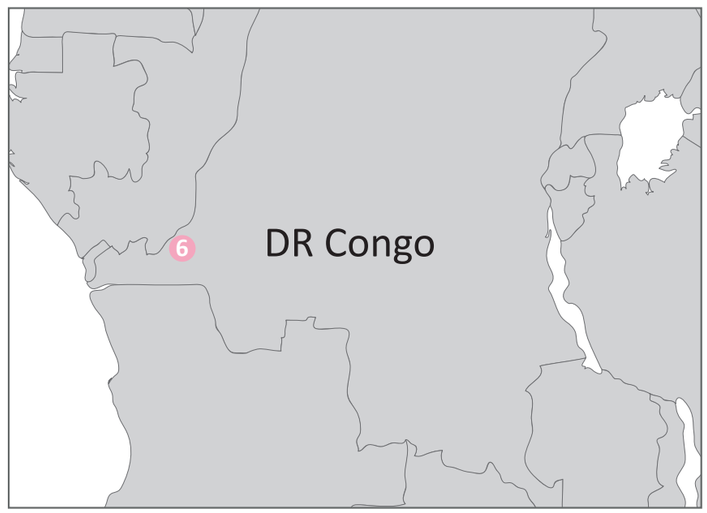
**1 Mahidol Oxford Tropical Medicine Research Unit (MORU)**
Mahidol University, Bangkok

**2 Shoklo Malaria Research Unit (SMRU)**
Mae Ramat, Thailand

**3 Lao-Oxford-Mahosot Hospital Wellcome Trust Research Unit (LOMWRU)**
Vientiane, Lao PDR

**4 Cambodia-Oxford Medical Research Unit (COMRU)**
Siem Reap, Cambodia


**5 Myanmar Oxford Clinical Research Unit (MOCRU)**
Yangon, Myanmar



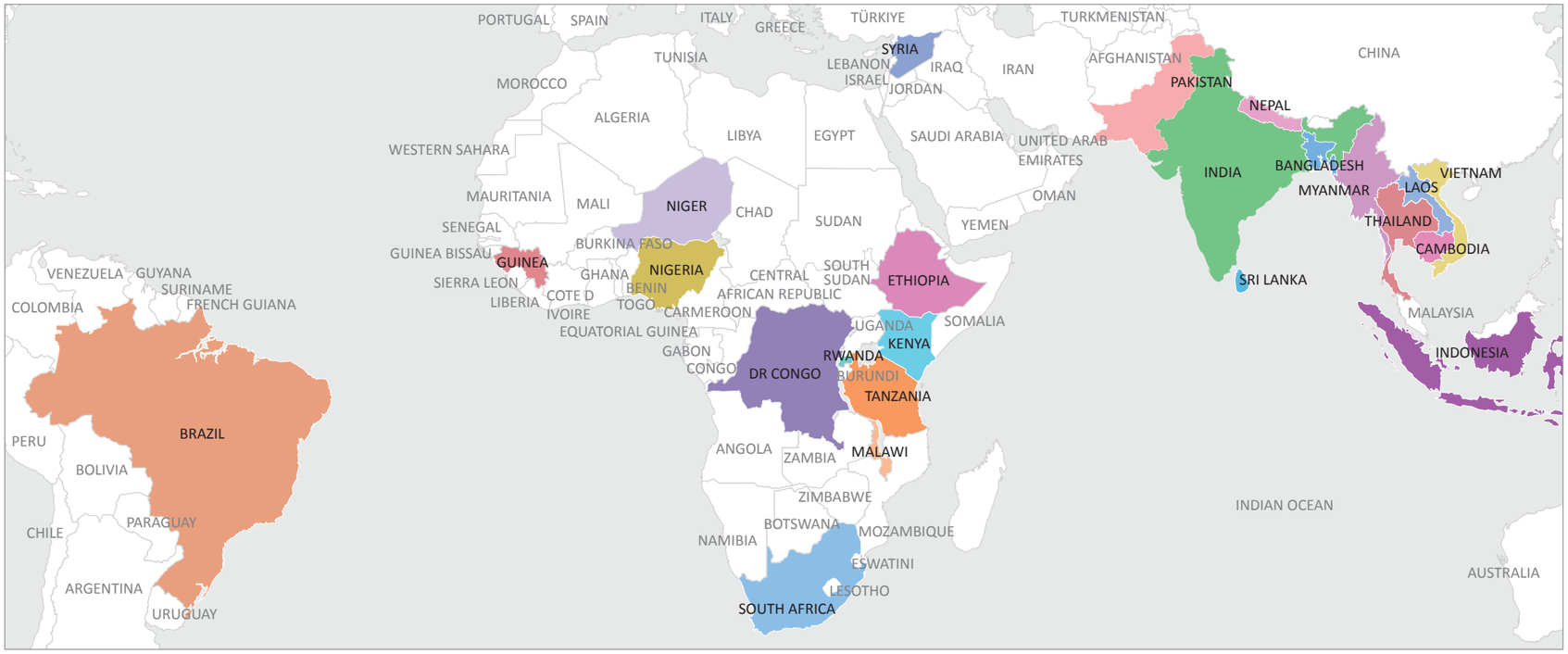



**6 KIMORU**
Kinshasa School of Public Health, DR Congo

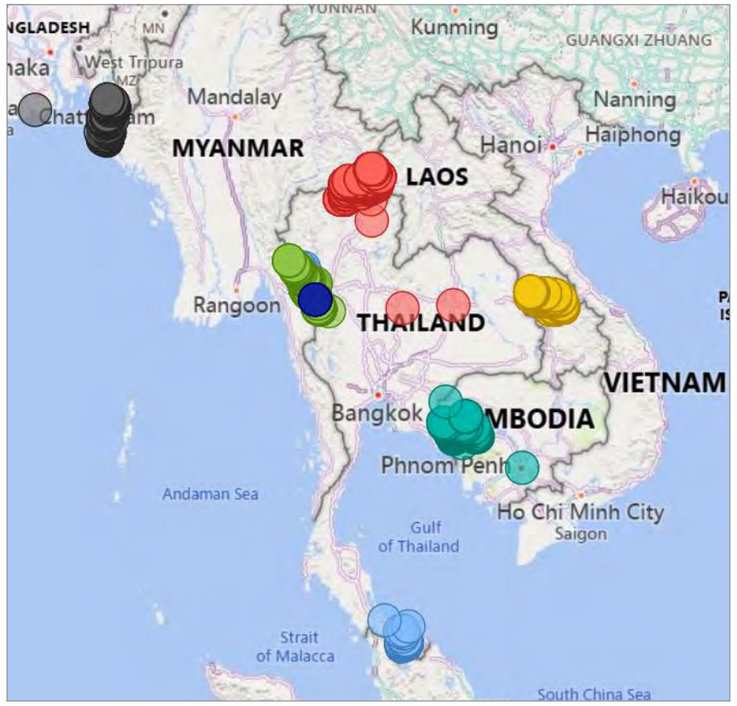
**7 Ubon Ratchathani Unit**
Ubon Ratchathani, Thailand

**8 Chiangrai Clinical Research Unit (CCRU)**
Chiangrai, Thailand

# Map of collaborative study sites where MORU worked in 2024




## Community Trials in 2024




## Malaria Clinical trials in 2024


## Acute Respiratory Infection Clinical Trials in 2024

# Advancing health equity at MORU

At MORU, we are committed to integrating equity across all aspects of our work. This commitment extends to our research focus and priority-setting, community engagement activities, research participation practices, and the composition and practices of our research teams. These initiatives are supported by a dedicated Bioethics & Engagement Department and an active Equity, Diversity, and Inclusion (EDI) Committee. We recognise that advancing health equity requires a sustained focus on the health challenges affecting the most disadvantaged populations. We have developed a framework for achieving this (*Figure 1*).


*Figure 1. The MORU Framework for Advancing Health Equity.*

## Our research focus: What we do, where, and with whom

The primary way we address equity is through the research we do, where we do it, and the communities and collaborators we undertake it with. In 2024, we continued to advance large-scale studies aimed at improving treatment outcomes for neglected health challenges, including malaria, scrub typhus, and antimicrobial resistance—conditions that disproportionately impact underserved populations.

## Priority setting: How we decide our research agenda

In September 2023, we initiated a formal equitable priority-setting exercise to guide our thematic focus for the period from October 2025 to September 2032. Throughout 2024, we engaged in extensive consultations with regional and local stakeholders, including ministries of health and national malaria control programmes. We also consulted our network of Community Advisory Boards (CABs). Insights from these consultations played a critical role in shaping our core funding application and ensuring that our research priorities are responsive to local health needs.

## Community engagement: How we work with the people we are helping

We target the populations most in need and work in partnership with them. In 2024, we maintained a network of CABs, comprising members from migrant communities, hill tribe populations, and ethnic minority groups. In 2024, we expanded our community engagement efforts to reach new and often marginalised communities, including Muslim communities in conflict-affected areas of southern Thailand, poor farming communities at risk of melioidosis in northeastern Thailand, and communities living with disabilities. A seventh CAB, in Laos, opened in 2025. These initiatives help ensure that our research include perspectives of the most disadvantaged communities.

## Research participants: How we ensure our research findings are representative

We are committed to promoting equity in research participation, particularly among groups that have historically been excluded due to barriers such as language differences and limited access to research sites. In 2024, we strengthened our programme of outreach activities, developing innovative methods and materials to raise awareness and encourage participation. For example, we co-created an informational video with our Hill Tribe Community Advisory Board (Thai, Akha, and Lahu languages, with English subtitles), which can be accessed here:
https://zenodo.org/records/13985754

Additionally, in collaboration with our Youth Community Advisory Boards and the Multi-Regional Clinical Trials Center (MRCT) of Brigham and Women's Hospital and Harvard University, we developed paediatric information materials. Thai-language MRCT posters translated by CR-CAB Chiang Rai are available here:
https://zenodo.org/records/13954153

## Our teams: Reflecting values of equity in how we work and how we value our people

To advance health equity necessitates a diverse team of researchers and operational staff which reflects our regional communities, and a working culture that promotes equity and justice and maintains a working, learning and social environment that respects the rights and dignity of all our staff and students. Our Equity, Diversity, and Inclusiveness Committee (EDIC) remains highly active, meeting monthly to drive forward our EDI agenda which is fully supported by and implemented through our management team. Throughout 2024, we organised a series of talks and events focused on critical issues such as gender equity and disability inclusion.

# Organisation Chart

# MORU Major International Programme (MIP)

University of Oxford
Nuffield Department of Medicine
**Head – Richard Cornall**

Mahidol University
Faculty of Tropical Medicine
**Dean – Weerapong Phumratanaprapin**

MOU between Oxford, FTM and Wellcome Trust

Wellcome Trust /
Oxford Asia Research Units
**Chairman – Nicholas White**

Wellcome Trust
**CEO John-Arne Røttingen**

MOU between Oxford, FTM and Wellcome Trust

MORU MIP
**Director – Nicholas Day**
**Deputy Director – Arjen Dondorp**

**Units**

**SMRU (Mae Ramat, Thailand)**
**Director – François Nosten**
**Deputy Director – Rose McGready**

**LOMWRU (Laos)**
**Director – Elizabeth Ashley**

**COMRU (Cambodia)**
**Director – Paul Turner**

**MOCRU (Myanmar)**
**Director – Frank Smithuis**

**KIMORU (DR Congo)**
**Director – Caterina Fanello**

**Clinical Director – Marie Onyamboko**

**Operations & Administration**
**COO – David Burton**

Finance
Chief Financial Officer
**Sasitorn Chuaynoo**

Accounts Reporting
**Paweena Apiwatudomkhun**

Financial Accounting
**Parina Wright**

HR & Administration
**Kanchana Pongsaswat**

Logistics & Purchasing
**Winai Kaewkong**

IT
**Dean Sherwood**

Operations Officer
**Gary Harkness**

Grant Management / Fundraising
**Dave Gandy**

Health & Safety
**USO – Stuart Blacksell**
**CSO – Wirongrong Chierakul***

Compliance and Assurance
**Pattira Intanil**

Media & Communications
**John Bleho**

Training & Development
**Nantamon Netikul**

Regional Academic Training Leader (for OUCRU and MORU)
**Leigh Jones**

**Clinical Trials Support Group (CTSG)**
**Greg Fegan**

Statistics
**Mavuto Mukaka**

Data Management
**Naomi Waithira**

Clinical Research Operations & Delivery

Clinical Research Submission

**Medicine Quality Research Group**
**Paul Newton, Head**
**Céline Caillet, Deputy Head**

**Bioethics & Engagement**
**Phaik Yeong Cheah**

**MORU (Bangkok, Thailand)**
**Nicholas Day**
**Deputy Directors – Direk Limmathurotsakul, Wirichada Pan-ngum**

**Malaria & Critical Illness**
**Arjen Dondorp, Head**
**Lorenz von Seidlein, Deputy Head**

Malaria Clinical Team

Malaria Lab
**Kesinee Chotivanich***

Molecular Malaria Lab
**Mallika Imwong***

ICU Clinical Team

Genetic Surveillance Group
**Olivo Miotto**

IDDO/WWARN
**Mehul Dhorda**

SML & EQA Coordinator
**Ranitha Vongpromek**

Clinical Trials Technologist
**Ketsanee Srinamon**

**Microbiology**
**Direk Limmathurotsakul***

Core Operations
**Vanaporn Wuthiekanun**

Molecular Microbiology
**Liz Batty**
**Janjira Thaipadungpanit***

Tropical Immunology
**Susanna Dunachie**

Cell Biology
**Jeanne Salje**

Melioidosis Genomics
**Claire Chewapreecha***, Head

Biorisk & Zoonosis/ Diagnostics/Safety
**Stuart Blacksell**

Rickettsiosis

CCRU (Chiangrai)
**Carlo Perrone**

AMASS Group (AMR-DRI)

Ubon Ratchathani Melioidosis Laboratory Unit

Ubon/Sepsis Group

Mo Yin ADVANCE-ID Group

**Clinical Pharmacology**
**Joel Tarning**

Pharmacometrics
**Richard Hoglund**

Bioanalysis
**Urairat Koesukwiwat**

Discovery
**Joel Tarning**

**Mathematical & Economics Modeling**
**Wirichada Pan-ngum***

Neglected Tropical Diseases Modeling (NTDM) Group
**Wirichada Pan-ngum***

Drug-Resistant Infection and Disease Dynamics (DRIaDD) Group
**Ben Cooper**

Economics & Implementation Research Group (EIRG)
**Yoel Lubell**

Mahidol Oxford Translation and Innovation Programme (MOTIP)
**Maneerat Ekkapongpisit**

Research Software Engineering (RSE)
**Sompob Saralamba**

**Epidemiology**
**Richard Maude**
**Chawarat Rotejan-aprasert*, Deputy Head**
**Worarat Khuenpetch, Administrator**

GroupMappers (Bangladesh)
**Sazid Ibna Zaman**
**Md Nurullah**

Health GeoLab Secretariat

Data Science
Geospatial Dynamics
Geographic Information
Country Coordination
Visitors

Health Policy

Field Epidemiology

**Medical Therapeutics Unit (MTU)**
**Nicholas White**
**Sasithon Pukrittayakamee***

Clinical Investigators

Research Physicians

Ward Staff

Clinical Laboratory

Staff

Analysis

Admin

**Line management / Command line**

**Communication / Stakeholder line**

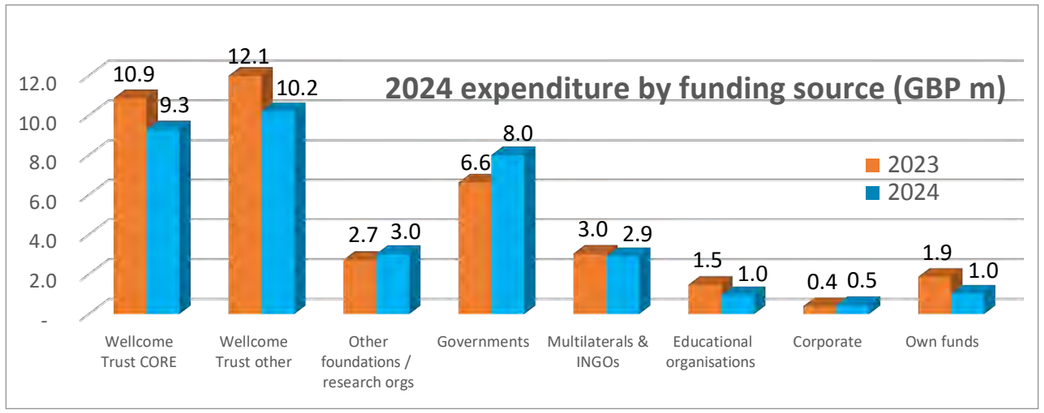
*** MORU staff with position within FTM**

# MORU Financial Strategy and 2024 Annual Review

MORU's financial strategy is to use and leverage the Wellcome CORE grant as a platform to effectively increase the scale and impact of its research activities. During 2024 the financial level of activities reduced as large COVID research projects started to phase out and the Core grant started coming to an end (more investment in early years). Some diversification of income streams and projects were made as the overall percentage of Wellcome funded research reduced.

## Where does our money come from?

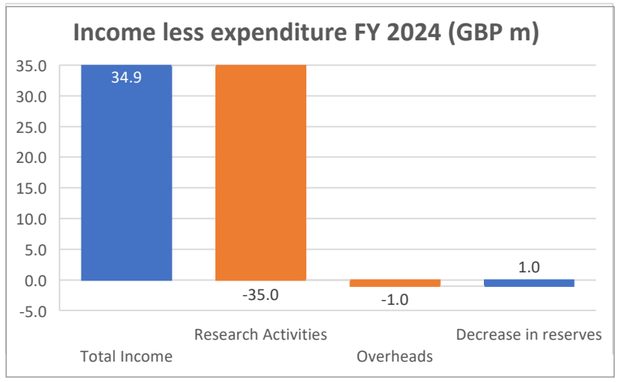
In 2023/24 MORU external recognisable and attributable income decreased by £2.4M from the previous year from 37.3m GBP to 34.9m GBP. Own funds used decreased from 1.9m GBP to 1.0m GBP.




The largest individual donor was Wellcome Trust who provided support for 54% of all MORU expenditure (down from 59% in 2022/23). The main increase in income was from Government funding that went from 17% to 22% with a large contribution with US government agencies. The remaining income was predominantly donor contracted funding from organisations across the corporate, research foundation and educational sectors.

In 2023/24 expenditure was matched by income with reduction in overall unrestricted operational reserves.

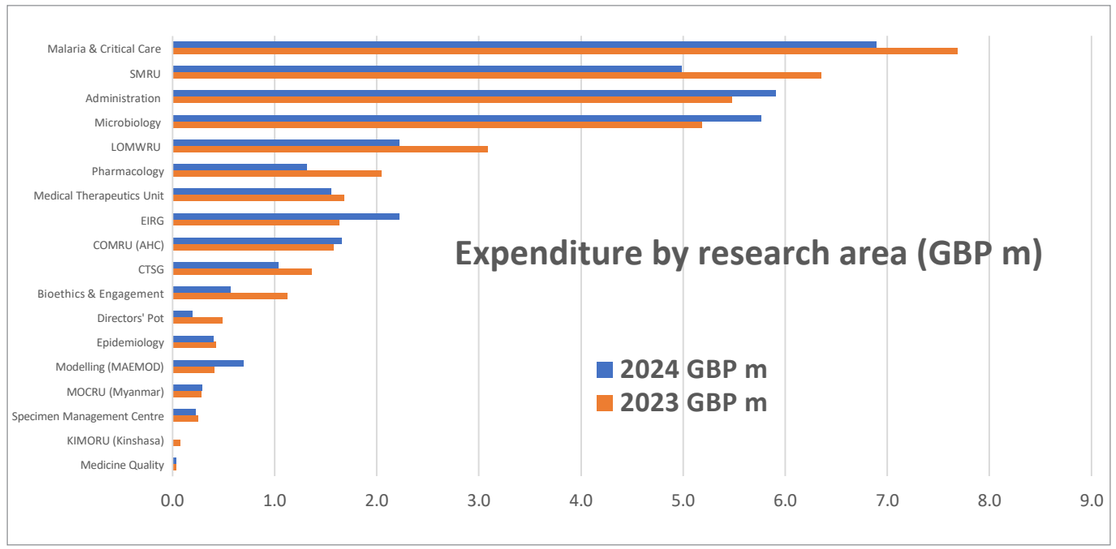
A number of accrued balances from fixed price contracts were utilized to carry out particular research, necessary maintenance and purchase new systems and software.




The MORU Major International Programme (MIP) consists of a number of integrated departments, research units and study sites. Activity concluded or reduced on the large multicentre COVID-19 trials (COPCOV/PLATCOV) and resources were deployed on other global trials such as ACORN and the Critical Care and Rural Fever Flagships.



Further significant areas of expenditure were in Malaria research and for activities in the Shoklo Malaria Research Unit (SMRU) on the Thai-Myanmar border.




## How was the money spent?

Salaries account for half of MORU expenditure. The proportionate % of equipment expenditure reduced as infrastructure investment was targeted to the earlier years of the Wellcome core award.

| Expenditure by cost category (GBP m) | | | | |
|---|---|---|---|---|
| | 2023 | 2024 | 2023 | 2024 |
| Staff costs | 18.8 | 17.6 | 48% | 49% |
| Other direct costs | 10.7 | 11.2 | 27% | 31% |
| Consumables | 4.3 | 3.4 | 11% | 9% |
| Equipment | 3.3 | 1.3 | 8% | 4% |
| Travel & subsistence | 1.6 | 1.5 | 4% | 4% |
| Overheads | 0.5 | 0.9 | 2% | 3% |
| **Total Expenditure** | **39.2** | **35.9** | | |

*(Overheads represent contributions to host organisations and external services provided.)*

## Assumptions

MORU is not a distinct organisation but a consolidation of activities across the University of Oxford and Mahidol University under common leadership. The financial figures represent a combination of independently audited financial statements of Thailand-managed donor contracts and an extract of University of Oxford-administered contracts. Annualised expenditure is based on 1 October-30 September accounting periods, held in multiple accounting systems and subject to disparate accounting principles

As such there may be reporting discrepancies and no responsibility will be taken by MORU for the adverse consequences of using these figures for whatever purpose. Please do contact MORU if you would like further analysis or information.


The molecular malaria laboratory, directed by Prof Mallika Imwong, focuses on molecular genetic correlates of antimalarial drug resistance and supports our large clinical and epidemiological malaria studies with sensitive qPCR detection methods and molecular epidemiological tools. © MORU. Photographer: Gerhard Jørén.

# Malaria & Critical Illness

*Improving health for the many people who live in malaria endemic countries and for patients with critical illness in resource-limited settings.*

The Malaria & Critical Illness Department conducts research that focuses on the diagnosis, pathophysiology, prevention, elimination, and treatment of malaria. A critical issue for the department is the emergence and spread of antimalarial drug resistance. In addition, our research has a focus on improving critical care in resource limited settings.

Headed by Prof Arjen Dondorp, MORU's Malaria & Critical Illness Department consists of closely interacting teams that:

- Conduct treatment studies in severe and uncomplicated falciparum malaria;
- Improve the treatment of vivax malaria;
- Investigate the growing problem of antimalarial drug resistance;
- Develop approaches to malaria prevention and elimination, including evaluation of malaria vaccines;
- Research the pathophysiology and treatment of severe malaria;
- Perform quantitative and qualitative assessments of ICU care in the region, linked to locally led quality improvement projects; and
- Trial novel interventions to improve critical care in resource-limited settings.

The Department's capabilities and facilities include, in close collaboration with other MORU departments:

- Clinical trials
- Pathophysiological studies in patients and the malaria laboratory
- Drug development and evaluation
- Vaccine evaluation
- Behavioural and social sciences
- Molecular parasitology
- Pharmacokinetics /pharmacodynamics
- Quality improvement in ICU care in LMICs

The clinical team is responsible for community- and hospital-based malaria studies and critical illness studies within our network of study sites, where we work closely with our local collaborators. The malaria laboratory in Bangkok, headed by Prof Kesinee Chotivanich, supports clinical research through a wide range of laboratory studies on pathophysiological mechanisms and antimalarial pharmacodynamics in *Plasmodium falciparum* and *P. vivax*.

The molecular malaria laboratory, directed by Prof Mallika Imwong, focuses on molecular genetic correlates of antimalarial drug resistance and supports our large clinical and epidemiological malaria studies with sensitive qPCR detection methods and molecular epidemiological tools. Studies on the genetic epidemiology of malaria in the Greater Mekong Subregion (GMS) are led by Olivo Miotto, supplemented by transcriptomic studies in collaboration with the Nanyang Technological University in Singapore (Prof Zbynek Bozdech).

The local DeTACT clinical trial team conducts ECG training at the Tanzania National Institute of Medical Research unit in Korogwe. © MORU. Photographer: Mehul Dhorda.

The department works closely with all the other MORU departments, as well as with the wider MORU network, including SMRU, KIMORU, MOCRU and LOMWRU. In 2024, the department was actively involved in two major multinational projects with participation of countries in both Asia and Africa, *Developing Triple Artemisinin-based Combination Therapies (DeTACT)* and Critical Care Asia Africa (CCAA). Its studies on severe falciparum malaria are conducted in close collaboration with KIMORU in the Democratic Republic of the Congo (DRC) and the Severe Malaria Africa consortium (SMAART). The genetic studies on falciparum malaria are run by the molecular malaria laboratory and the genetic epidemiology group, in close collaboration with the Wellcome Sanger Institute (through the GenRe-Mekong project), and Nanyang Technical University in Singapore.

## Top 5 publications in 2024

1. Regional action needed to halt antimalarial drug resistance in Africa. Martinez-Vega R, Ishengoma DS, Gosling R, Rosenthal PJ, Dondorp A, Barnes KI, Nsanzabana C, Djimde AA, Ochola-Oyier LI, Tibenderana J, Chimumbwa J, Golassa L, Kapologwe NA, Mbacham WF, Kamya MR, Fidock DA, Komatsu R, von Seidlein L, Dhorda M. *Lancet*. 2025 Jan 4;405(10472):7-10. doi: 10.1016/S0140-6736(24)02706-5. Epub 2024 Dec 12. PMID: 39674185; PMCID: PMC11838165.

2. Resistant malaria parasites gaining momentum in Africa. Mlugu EM, Dondorp AM, Barnes KI. *Lancet Infect Dis*. 2024 Nov;24(11):1181-1182. doi: 10.1016/S1473-3099(24)00413-4. Epub 2024 Aug 16. PMID: 39159634.

3. Population genomics and transcriptomics of *Plasmodium falciparum* in Cambodia and Vietnam uncover key components of the artemisinin resistance genetic background. Nayak S, Peto TJ, Kucharski M, Tripura R, Callery JJ, Quang Huy DT, Gendrot M, Lek D, Nghia HDT, van der Pluijm

RW, Dong N, Long LT, Vongpromek R, Rekol H, Hoang Chau N, Miotto O, Mukaka M, Dhorda M, von Seidlein L, Imwong M, Roca X, Day NPJ, White NJ, Dondorp AM, Bozdech Z. *Nat Commun*. 2024 Dec 5;15(1):10625. doi: 10.1038/s41467-024-54915-6. PMID: 39639029; PMCID: PMC11621345.

4. Artemisinin-resistant malaria in Africa demands urgent action. Dhorda M, Kaneko A, Komatsu R, Kc A, Mshamu S, Gesase S, Kapologwe N, Assefa A, Opigo J, Adoke Y, Ebong C, Karema C, Uwimana A, Mangara JN, Amaratunga C, Peto TJ, Tripura R, Callery JJ, Adhikari B, Mukaka M, Cheah PY, Mutesa L, Day NPJ, Barnes KI, Dondorp A, Rosenthal PJ, White NJ, von Seidlein L. *Science*. 2024 Jul 19;385(6706):252-254. doi: 10.1126/science.adp5137. Epub 2024 Jul 18. PMID: 39024426.

5. Peeling the onion: how complex is the artemisinin resistance genetic trait of malaria parasites? Kucharski M, Nayak S, Gendrot M, Dondorp AM, Bozdech Z. *Trends Parasitol*. 2024 Nov;40(11):970-986. doi: 10.1016/j.pt.2024.09.002. Epub 2024 Oct 1. PMID: 39358163.

## Major achievements in 2024

- Completed the TACT-CV study and the large DeTACT project, evaluating 2 triple artemisinin based combination therapies (TACTs) – artemether-lumefantrine-amodiaquine, and artesunate-mefloquine-piperaquine – for treating and preventing multi-drug resistant falciparum malaria in Africa and Asia. The results of the study have led to the development of a fixed-dose combination of artemether-lumefantrine-amodiaquine, which will be trialled in a large multinational study starting in 2025.
- Established Critical Care Africa Asia (CCAA), an ICU network in 9 Asian and 6 African countries, in which an electronic registry was implemented, aspects of the quality of care were evaluated, initiated a quality-improvement project, and executed clinical trials on COVID-19 and other diseases.
- Contributed to the successful malaria elimination efforts in the eastern GMS through molecular surveillance of drug resistance in falciparum malaria, community engagement projects, and evaluating interventions for malaria elimination such as chemoprophylaxis in forest goers.
- Prof Dondorp chaired the regional steering committee of the Global Fund Regional Artemisinin-resistance Initiative (RAI) for the GMS, which was funded with nearly USD $800m from the Global Fund. Based on experience from the GMS, MORU is ideally positioned to provide support in the fight against the recently detected emergence of artemisinin resistance in East Africa. The MORU malaria team is fully engaged in international consortium to establish similar funding levels for an artemisinin resistance initiative for East Africa.
- Continued the nearly completed Star Homes Project in Tanzania, building 110 novel-design houses and evaluating their impact on reducing infectious disease transmissions, climate, and mosquito densities in comparison to traditional housing.
- After having assessed the immunogenicity of the novel *P. falciparum* malaria vaccine R21/MM in combination with antimalarial drugs in healthy adult Thai volunteers, we conducted the critical preparations for a cluster randomized trial to evaluate R21/MM vaccine in combination with mass drug administration in eastern Bangladesh in 2025.

The Star Homes Project in Tanzania aims to estimate the health benefits of improvements in housing on malaria transmission. *Right*, one of the 110 Star Homes dotted across 55 villages in rural Mtwara, in the coastal south-eastern region of Tanzania. © MORU. Photographer: Lorenz von Seidlein.

## Our Team

Head of Malaria & Critical Illness
**Prof Arjen Dondorp**

Deputy Head
**Prof Lorenz von Seidlein**

IDDO/WWARN Group Leader
**Mehul Dhorda, PhD**

SML & EQA Coordinator
**Ranitha Vongpromek**

Clinical Trials Technologist
**Ketsanee Srinamon**

EQA Technologist
**Praphai Chaijun**

EQA Technician
**Kwanruthai Wattanasumpunno**

Lab Manager
**Cholrawee Promnarate**

Senior Lab Technician
**Thanawat Assawariyathipat**

SML Technologist
**Phongtawee Thaweekan**

SML Technician
**Khanitsorn Khanitcharangkoon**

Lab Support Administrator
**Ontida Mongkol**

Lab Assistant
**Kittiphon Rungrueang**

Lab Data Entry
**Panuphong Suesatluesakun**

Senior Informatics Fellow, Head of Genetic Surveillance Group
**Prof Olivo Miotto**

Scientific Coordinator
**Varanya Wasakul**

GMS Coordinator
**Supaporn Mahaphontrakoon**

Research Scientists
**Wipawee Songsaeng**
**Ethan Booth**

Executive Administrator
**Pannapat Masingboon**

Head of Clinical Malaria
**Prof Arjen Dondorp**

Malaria Clinical Team

Senior Researchers
**Prof Lorenz von Seidlein**
**Prof Bob Taylor**
**Dr Prakaykaew Charunwatthana**

Postdocs and Clinical Researchers
**Dr Katherine Plewes**
**Tom Peto, PhD**
**Dr Rupam Tripura**
**Dr James Callery**
**Dr Bipin Adhikari**

Consultants
**Prof Abul Faiz**
**Dr Ghulam Rahim Awab**
**Chris Pell, PhD**
**Judith Recht**
**Thoopmanee Kaendiao**

DeTACT Coordinators
**Chanaki Amaratunga, PhD**
**Mehul Dhorda, PhD**
**DeTACT study site leads**

Head of Malaria Laboratory
**Prof Kesinee Chotivanich**

Malaria Lab

Research Scientist
**Tianrat Piteekan**

Lab Technicians
**Achaporn Yipsirimetee**
**Patpannee Khanthagan**
**Amornrat Promsongsil**
**Pornpawee Chiewpoo**
**Sirinatda Sa-nguan**
**Niyada Nuntharattanapong**
**Praewpairint Dechachat**
**Manita Lunprom**

Research Assistants /Coordinators
**Chaiyaporn Pattanarudee**
**Nattinan Kaewviset**
**Thanyaporn Supapoat**

Head of Molecular Malaria Laboratory
**Prof Mallika Imwong**

Molecular Malaria Lab

Lab Manager
**Kanokon Suwannasin**

Lab Coordinator
**Jureeporn Duanguppama**

Quality Manager
**Wanassanan Madmanee**

Technical Supervisor
**Watcharee Pagornrat**

Research Assistant
**Pannipa Udompan**

Senior Research Scientist
**Raweewan Sangsri**

Lab Technicians
**Jindarat Kouhathong**
**Siranapa See-daeng**

Consultant
**Yupawadee Pimpat**

Molecular Data Analyst
**Petcharat Namwong**

Head of ICU in LMIC
**Prof Arjen Dondorp**

ICU Clinical Team

Clinical Researchers
**Dr Rashan Haniffa**
**Abi Beane**
(Coordinators)

**Dr Rebecca Inglis**

Consultants
**Prof Marcus Schultz**
**Prof Ramani Moonesinghe**
**Dr Duncan Wagstaff**
**Dr Luigi Pisani**

Crit Care Africa Asia (CCAA)
**Country and site leads**
**Consultants**

Project Manager, CCAA
**Stephen Corcoran**

Prof Direk Limmathurotsakul heads the Microbiology Department which has a US Select Agent Program-certified BSL-3 laboratory and BSL-2 molecular and serology laboratories. Microbiology's research focusses on AMR/DRI and sepsis, melioidosis, treatment and prevention of infectious diseases, developing RDTs, cell biology and tropical immunology. © MORU. Photographer: Gerhard Jørén.

# Microbiology

*Conducts research into clinical and laboratory aspects of bacterial and viral illnesses in Thailand and South and Southeast Asia (SEA). Works closely with the microbiology labs of MORU Units SMRU (Thailand), LOMWRU (Lao PDR) and COMRU (Cambodia), and with other Wellcome Major International Programmes (particularly OUCRU in Viet Nam). Collaborates with research organisations in Thailand and across SE Asia.*

Led by Prof Direk Limmathurotsakul, the Microbiology Department In Bangkok has a US Select Agent Program-certified BSL-3 laboratory and BSL-2 molecular and serology laboratories. The Department's research focusses on:

- Antimicrobial resistance/drug-resistance infections (AMR/DRI) and sepsis;
- Melioidosis;
- Scrub typhus and rickettsiosis;
- SARS-CoV-2 infection (COVID-19);
- Emerging infectious diseases;
- Developing and evaluating rapid diagnostic tests (RDTs);
- The treatment and prevention of infectious diseases;
- Tropical immunology; and
- Cell biology.

Microbiology collaborates with local Thai hospitals, and has clinical research lab facilities and teams at study sites in Sunpasitthiprasong Hospital, Ubon Ratchathani, and the Chiangrai Clinical Research Unit (CCRU) in Chiangrai Prachanukroh Hospital.

Headed by Gumphol Wongsuvan, Microbiology clinical research facilities and hosted groups at Sunpasitthiprasong Hospital include a BSL-2 Melioidosis Laboratory, our AMR/DRI/Sepsis/Melioidosis Genomics team, Melioidosis Lab Unit, and Melioidosis Clinical Study and ADVANCE-ID groups. Clinical studies ongoing in 2024 at Ubon Ratchathani include:

- Observational study for clinical characteristics, current practices and outcomes of melioidosis-suspected and melioidosis-confirmed patients in Thailand and Laos (MEL-OB1).
- *Burkholderia pseudomallei* and Host Genetics cohort study (BurkHostGEN).

Prof Stuart Blacksell and Dr Jantana Wongsantichon lead the Diagnostics section, which focuses on developing advanced molecular and serological assays for detecting pathogens causing acute febrile illnesses. Their work emphasises high-throughput, multi-pathogen diagnostics to improve accuracy, enhance disease management in endemic regions, and provide diagnostics for rickettsial pathogens.

Led by Dr Carlo Perrone, CCRU focuses on improving disease diagnostics, treatment and prevention, and carries out hospital and community-based research on acute febrile illness, scrub typhus, AMR/DRI, and on research ethics in vulnerable populations. In 2024, CCRU's ongoing registered clinical studies and activities included causes of deaths in the Southeast Asian Community Trials Network (SEACTN), the Scrub Typhus Antibiotic Resistance Trial (START; NCT03083197) and the Quick and Easy Scrub Typhus Diagnostics (QuEST).

CCRU team members recruit the first SEACTN Work Package-B patient at Mae Chan Hospital in January 2023. Located close to the Myanmar border and not far from Laos, the hospital serves a large hill tribe and migrant population. Work Package B will help define the infectious causes of fever in these and other rural populations so CCRU can plan targeted interventions. © MORU. Photographer: Nidanuch Tasak.

## Our Team

Head of Microbiology
**Prof Direk Limmathurotsakul**

Core Operations
**Vanaporn Wuthiekanun,** Head
Bangkok
**Premjit Amornchai**
**Sayan Langlah**
**Juthathip Mongkolsapaya**

### AMR-DRI/ Melioidosis/ Sepsis
**Prof Direk Limmathurotsakul,** Head

AMASS Group (AMR-DRI)
**Chalida Rangsiwutisak**
**Preeyarach Klaytong**

Ubon Ratchathani Unit
**Gumphol Wongsuvan,** Head
**Christine Dolecek**
**Yaowaret Dokket**
**Arreya Faosap**

Melioidosis Clinical Study Group
**Praweennuch Watanachaiprasert**
**Papachaya Phuangsombat**
**Rampaipan Wongwattanasatean**
**Pornpan Suntornsut**

Mo Yin ADVANCE-ID Group
**Sornsuda Setaphan**
**Mayura Malasit**
**Chonlada Maharach**
**Pitchayanant Ariyaprasert**
**Kesorn Angchagun**

### Molecular Microbiology
**Liz Batty**
**Janjira Thaipadungpanit,** Co-Heads

Bioinformatician
**Chantisa Keeratipusana**

Postdoc Researcher
**Aorarat Suntronpong**

Lab Technicians
**Panuvit Rienpradub**
**Preedanuch Thongchan**

DPhil Students
**Witchayoot Huangsuranun**
**Mintra Thongyen**
**Saranya Wongrattan-apipat**
**Napasorn Prakthong**

### Tropical Immunology
**Prof Susanna Dunachie,** Head

Sr Immunologist / Group Deputy
**Barbara Kronsteiner**

Project Manager
**Jennifer Hill**

Postdoctoral Research Assistant
**Martha Zewdie**

DPhil Students
**Priyanka Abraham**
**Mohammad Ali**
**Sandra Adele**
**Isabel Neale**
**Isanawidya Paramita**
**Yanie Tayipto**

Personal Assistant
**Rachel Ho**

### Cell Biology
**Asst Prof Jeanne Salje,** Head, Honorary Visiting Research Fellow

Postdoc Researchers
**Chitrasak Kullapanich**
**Naphat Satapoomin**

### Biorisk & Zoonosis/ Diagnostics/ Safety
**Prof Stuart Blacksell,** Head

Diagnostics
**Jantana Wongsantichon**
**Ampai Tanganuchit-charnchai**
**Yazid Abdad**
**Puntanat Tattiyapong**
**Suphasuta Khongpraphan**
**Lhokaew, Aticha** (+ MPhil Student)
**Suttiphong Wongsana**
**Phattaranit Tanunchai**
**Asama Vinitsorn**

Serology
**Jaison Kolenchery**

DTRA Projects
**Tom Hughes**
**Sriwanna Sanyakamdhorn**
**Malinee Oychua**
**Somjai Kamolsiripichaiporn**
**Jeeranan Areerob**
**Lida Kong**
**Theng Heng**
**Jim Young**
**Syseng Khounsy**
**Pakayluck Manatham**
**Alex Inthavong**
**Phoummavanh Inthapanya**
**Adisone Temmarath**
**Sivone Panyasith**
**Mark Wheatley**

Safety
**Soiratchaneekorn Ruanchaiman**
**Peerapol Maroongruang**
**Naphatsakorn Woratecha**

External Projects (FAO/WHO)
**Tom Hughes**
**Mei-Ho Lee**

PhD Students
**Sandhya Dhawan** (Biosafety)
**Le Kim Khanh** (Diagnostics)
**Artharee Rungrojn** (Diagnostics)

Postgraduate Student Administrator
**Pawadee Boonyakanjanapon**

Project Administrator & PA
**Tanyalak Warangkakun**

### Melioidosis Genomics
**Claire Chewapreecha,** Head, Wellcome Int'l Intermediate & Sanger Int'l Fellow

Postdoctoral Fellow
**Arin Wongprommoon**

PhD Students
**Chalita Chomkatekaew**
**Phumrapee Boonklang**

Research Assistant
**Sukritpong Pakdeerat**

### Rickettsiosis
**Prof Nick Day,** Acting Head

**Wirongrong Chierakul**
**Piengchan Sonthayanon**
**Kartika Saraswati**

PhD
**Suthida Chuenklin**

### Chiangrai Clinical Research Unit (CCRU)
**Carlo Perrone,** Head

**Nidanuch Tasak**
**Nipaphan Kanthawang**
**Areerat Thaiprakhong**
**Chaloemporn Lamai**
**Nattida Toonin**
**Duanghathai Yasaeng**
**Kwanchanok Supaluck**

CR-CAB Coordinator
**Bulakorn Tinoi**

SEACTN consultants
**Patcharaporn Panyadee**
**Rujira Yuin**
**Nattika Klahan**
**Pawanphat Narongchai**
**Jutawan Maikum**

Honorary Member
- **Narisara Chantratita**

## Top 5 publications in 2024

1. Frequency of antimicrobial-resistant bloodstream infections in 111 hospitals in Thailand, 2022. Tuamsuwan K, Chamawan P, Boonyarit P, Srisuphan V, Klaytong P, Rangsiwutisak C, Wannapinij P, Fongthong T, Stelling J, Turner P, Limmathurotsakul D. *J Infect*. 2024 Oct;89(4):106249. doi: 10.1016/j.jinf.2024.106249. Epub 2024 Aug 22. PMID: 39173918; PMCID: PMC11409609..

2. Benchmarking CRISPR-BP34 for point-of-care melioidosis detection in low-income and middle-income countries: a molecular diagnostics study. Pakdeerat S, Boonklang P, Angchagun K, Chomkatekaew C, Apichaidejudom N, Dokket Y, et al. *Lancet Microbe*. 2024 Apr;5(4):e379-e389. doi: 10.1016/S2666-5247(23)00378-6. Epub 2024 Mar 13. PMID: 38493790; PMCID: PMC10990966.

3. Melioidosis in patients with COVID-19 exposed to contaminated tap water, Thailand, 2021. Tantirat P, Chantarawichian Y, Taweewigyakarn P, Kripattanapong S, Jitpeera C, Doungngern P, et al. *Emerg Infect Dis*. 2024 Apr;30(4):791-794. doi: 10.3201/eid3004.231476. PMID: 38526300; PMCID: PMC10977828.

4. Genetic diversity, determinants, and dissemination of *Burkholderia pseudomallei* lineages implicated in melioidosis in northeast Thailand. Seng R, Chomkatekaew C, Tandhavanant S, Saiprom N, Phunpang R, et al. *Nat Commun*. 2024 Jul 7;15(1):5699. doi: 10.1038/s41467-024-50067-9. PMID: 38972886; PMCID: PMC11228029.

5. Diagnostic accuracy of DPP Fever Panel II Asia tests for tropical fever diagnosis. Dhawan S, Dittrich S, Arafah S, Ongarello S, Mace A, Panapruksachat S, Boutthasavong L, Adsamouth A, Thongpaseuth S, Davong V, Vongsouvath M, Ashley EA, Robinson MT, Blacksell SD. *PLoS Negl Trop Dis*. 2024 Apr 10;18(4):e0012077. doi: 10.1371/journal.pntd.0012077. PMID: 38598549; PMCID: PMC11034646.

## Major achievements in 2024

- Collaborated and supported the Office of Permanent Secretary, Ministry of Public Health (MoPH), Thailand in implementing the AutoMated tool for Antimicrobial resistance Surveillance System (AMASS; www.amass.website) for AMR surveillance in 127 public hospitals in Thailand.
- Led policy changes in monitoring and evaluating the burden of AMR at public referral hospitals in Thailand. These included changing from monitoring AMR proportion to AMR frequency, and using AMR frequency to identify hospitals that have the highest AMR burden after adjusting for hospital size, thereby allowing the MoPH to focus on actions at those hospitals (including auditing the implementation of antimicrobial stewardship and infection prevention control programme).
- Completed the enrolment of the multinational MEL-OB1 study, an observational study of suspected and confirmed melioidosis.
- Developed primers and probes to repeat regions of the *O. tsutsugamushi* genome, with preliminary findings showing a 50% increase in sensitivity compared to traditional primers using a real-time PCR assay. The primers have been incorporated and are being tested in a highly automated insulated isothermal PCR (iiPCR) device in secondary hospitals in areas of high endemicity in Northern Thailand in an attempt to provide an alternative to the inaccurate antibody-based point-of-care tests.
- Successfully co-organized with the Faculty of Tropical Medicine, Mahidol University Thailand, and Wellcome Connecting Science the 2-7 Feb 2025 workshop *Antimicrobial Resistance in Bacterial Pathogens – Asia*.
- Successfully collaborated with multiple networks and delivered a consensus viewpoint to support for the WHO to include leptospirosis, melioidosis and rickettsiosis into the WHO list of neglected tropical diseases. https://doi.org/10.1371/journal.pntd.0012796.

Prof Richard Maude (*back row*, *centre*) and the Epidemiology Department at MORU work to address the scientific questions most pertinent to national disease control and elimination agendas, and to generate evidence to inform policy decisions. © MORU. Photographer: Gerhard Jørén.

# Epidemiology

*Well-integrated with Ministries of Health and international organizations, MORU Epidemiology focusses on translation science combining geospatial data collection and analysis with policy research.*

The Epidemiology Department at MORU, headed by Prof Richard Maude, works in close collaboration with other departments and units across the MORU Major International Programme (MIP), national disease control programmes, and a broad range of other collaborators including The Global Fund, World Health Organization (WHO), United Nations International Children's Emergency Fund (UNICEF) and United Nations Population Fund (UNFPA). In all projects, the Epidemiology Department works with policymakers as partners to address the scientific questions most pertinent to national disease control and elimination agendas, and to generate evidence to inform policy decisions.

We have staff and students based in Bangladesh, Cambodia, Lao PDR, Malaysia, the Philippines, South Africa, Thailand, and the United Kingdom.

The Epidemiology Department's primary research aims to quantify the burden of acute febrile illnesses including malaria, dengue and scrub typhus in South and SE Asia over space and time, and investigate their determinants to inform planning of disease control and elimination strategies. To do this, we use a mixed methods approach combining field research, surveillance, data science and policy engagement with staff embedded in Ministries of Health (MoH). We also provide methodological, analytical and engagement support to projects across the MORU MIP.

Core components include:
- Clinical and epidemiological field studies.
- Collation and analysis of secondary data from a wide range of partners.
- Disease trend and risk factor analysis.
- Disease burden estimation.
- Mapping, spatial statistical analysis and modelling.
- Stakeholder interviews and health policy analysis.
- Building epidemiology, modelling and mapping capacity across the region.

Epidemiology's key capabilities and facilities include:
- Host and co-chair of APMEN Surveillance and Response Working Group since 2021.
- Established MORU Health GeoLab as regional entity to support collection and use of geospatial data by Asia-Pacific Ministries of Health.
- Established network of 49 schools in Chiang Rai province to conduct studies on COVID-19 and mental health in Thailand.
- Built GroupMappers team in Bangladesh to support MoH with spatial data collection and analysis to inform policy decisions and guide strategy for communicable disease control.
- Supports UN agencies with guideline and toolkit development on collection and use of geospatial data and technologies.

Key research areas:
- Malaria: MoH in Bangladesh, Cambodia, Indonesia, Lao PDR, Thailand and Viet Nam.
- Dengue: MoH in Bangladesh, East Timor and Thailand; Global Arbovirus Initiative, WHO.
- Scrub typhus.
- Acute febrile illness.
- Mental health: MoH Thailand.
- Environmental health: Ministry of Public Health (MoPH), Thailand.

## Our Team

Head of Epidemiology
**Prof Richard Maude**

Administrator
**Worarat Khuenpetch** (Thailand)

Postgraduate Assistant
**Pawadee Boonyakanjanapon** (Thailand)

Statistician, Deputy Head of Epidemiology
**Assoc Prof Chawarat Rotejanaprasert** (Thailand)

### GroupMappers (Bangladesh)

GroupMappers Lead, GIS Specialist
**Sazid Ibna Zaman**

Program Coordinator
**Md Nurullah**

Data Manager
**Mst Asfat Ara Joly**

GIS Analysts
**Asraf Khan**
**Noyon Chandra Shil**

GIS Interns
**Nur Sani**
**Md Hasubur Rahman Shanto**

Research Associates
**Sabrina Mohammad Amin**
**Hasibul Ahmed Pulok**

Research Assistant
**Shuvo Kumar Chowdhury**

Research Intern
**Devolina Rai Saha**

IT Project Manager
**Md Mahmudul Hasan**

IT Team Leader
**Khalilur Rahman Ridoy Khan**

IT Intern
**Shohanur Rahman Sabbir**

Accounts and Admin
**Kazi Jubayer Hossain**

Office Assistant
**Md Ishaq Miah**

### Health GeoLab Secretariat

Health GeoLab Coordinator and Technical Assistance Lead
**Steeve Ebener** (Philippines)

Health GeoLab Training Lead
**Neriza Pantanilla** (Philippines)

### Data Science

Social Scientist and DPhil Student
**Monnaphat Jongdeepaisal** (Thailand)

APMEN SRWG Coordinator
**Massaya Sirimatayanant** (Thailand)

### Health Policy

Research Physician
**Rapeephan Maude** (Thailand)

Research Physician and PhD Student
**Ratchaneewan Sinitkul** (Thailand)

PhD Student
**Tom Hughes** (Malaysia)

Research Assistants (Thailand)
**Orathai Prasert**
**Supitsara Maneenat**
**Thanapol Sangkun**
**Phenpisa Khampan**
**Shane Punyaa**

### Field Epidemiology

### Geospatial Dynamics

DPhil Students
**Yalda Jafari** (UK)

**Qian Wang** (Thailand)

**Amandip Sahota** (Singapore)

**Tara Wagner-Gamble** (Thailand)

**Malia Sjefte** (Thailand)

Consultant
**Nawaphan Metchanun** (Thailand)

### Geographic Information Systems (GIS)

GIS Specialist and PhD Student
**Pengby Ngor** (Cambodia)

Spatial Data Engineer (Vacant)

DPhil Students
**Afrida Asad** (Bangladesh)

**Luzia Freitas** (East Timor)

### Country Coordination

**Suwanna Mukem** (Thailand)

**Didar Uddin** (Bangladesh)

**Yav Net** (Cambodia)

### Visitors

Statistician
**Kristen Aiemjoy** (USA/Thailand)

Research Physician
**Frank Kagoro** (Switzerland)

Research Physician
**Greta Tam** (UK)


Attended by high-level leaders including Ministers of Health from across Asia Pacific, the 8th Asia Pacific Leaders' Summit on Malaria Elimination in Port Moresby, Papua New Guinea addressed the challenge of malaria elimination. MORU Epidemiology Head Prof Richard Maude (*3rd right*) is Co-Chair of the Asia Pacific Malaria Elimination Network Surveillance and Response Working Group (APMEN SRWG). © MORU. Photo: APLMA.

## Top 5 publications in 2024

1. Comparative evaluation of spatiotemporal methods for effective dengue cluster detection with a case study of national surveillance data in Thailand. Rotejanaprasert C, Chinpong K, Lawson AB, Maude RJ. *Sci Rep*. 2024 Dec 28;14(1):31064. doi: 10.1038/s41598-024-82212-1. PMID: 39730684; PMCID: PMC11680836..

2. Expanded roles of community health workers to sustain malaria services in the Asia-Pacific: A landscaping survey. Jongdeepaisal M, Sirimatayanant M, Khonputsa P, Hein PS, Buback L, Beyeler N, Chebbi A, Maude RJ. *PLOS Glob Public Health*. 2024 Aug 14;4(8):e0003597. doi: 10.1371/journal.pgph.0003597. PMID: 39141646; PMCID: PMC11324099.

3. Perspectives and challenges in developing and implementing integrated dengue surveillance tools and technology in Thailand: a qualitative study. Rotejanaprasert C, Armatrmontree P, Chienwichai P, Maude RJ. *PLoS Negl Trop Dis*. 2024 Aug 14;18(8):e0012387. doi: 10.1371/journal.pntd.0012387. PMID: 39141623; PMCID: PMC11324148..

4. Mapping malaria transmission foci in Northeast Thailand from 2011 to 2021: approaching elimination in a hypoendemic area. Pongsoipetch K, Walshe R, Mukem S, Kamsri T, Singkham N, Sudathip P, Kitchakarn S, Maude RR, Maude RJ. *Malar J*. 2024 Jul 17;23(1):212. doi: 10.1186/s12936-024-05026-6. PMID: 39020432; PMCID: PMC11253324.

5. Global and regional seroprevalence, incidence, mortality of, and risk factors for scrub typhus: A systematic review and meta-analysis. Wang Q, Ma T, Ding F, Lim A, Takaya S, Saraswati K, Sartorius B, Day NPJ, Maude RJ. *Int J Infect Dis*. 2024 Sep;146:107151. doi: 10.1016/j.ijid.2024.107151. Epub 2024 Jul 2. PMID: 38964725; PMCID: PMC11310856.

## Major achievements in 2024

- In 2024, MORU Epidemiology produced 30 peer-reviewed publications.
- Completed an Asia-Pacific wide systematic review and landscaping survey plus qualitative research in Cambodia, Thailand and Vietnam on expanding the roles of malaria community health workers for the Global Fund (GF) RAI3E to inform national plans for malaria elimination in the Greater Mekong Subregion (GMS).
- Hosted APMEN SRWG, a group of 22 national malaria control programmes (NMCPs) and 54 country partners and organised the annual in-person meeting of the APMEN SRWG in Kuching, Malaysia and a regional workshop on use of climate data by NMCPs.
- Completed village profiling study to characterise the study sites for SEACTN.
- Continued to support GenReMekong with regional collection of travel surveys by NMCPs to quantify population movements of people with malaria.
- Ran a workshop with the Indonesia MoH and OUCRU to develop a plan for research and technical support needs for malaria elimination.
- Conducted mathematical modelling to predict the impact of chloroquine mass drug administration for the GF RAI4E to guide funding decisions for its implementation in the GMS.
- Completed a systematic review of the efficacy and impact of the 1-3-7 strategy for malaria elimination in collaboration with its' inventor from China.
- Continued to support the Cambodia NMCP for mapping villages and counting population expanding from malaria endemic areas to the whole country.
- Completed an assessment of the relationship between malaria and climate and a characterisation of the national surveillance and response efforts for the Laos NMCP.
- Performed ongoing analyses of the dengue situation and factors driving spatiotemporal patterns for the Thailand MOPH.
- Conducted evaluations of spatial cluster detection methods and prediction models for dengue for the Thailand MOPH.
- Completed a qualitative assessment for the MOPH to inform integration of dengue surveillance tools and technology in Thailand.
- Produced modelled estimates of the global burden of scrub typhus, including global maps of environmental suitability and collating global dataset on prevalence and incidence.
- Conducted analyses of spatiotemporal distribution of tuberculosis in Indonesia.
- Supported analysis for the Chinese Center for Disease Control and Prevention of the association between Severe Fever with Thrombocytopenia Syndrome and meteorological and socioeconomic factors.
- Supported the government of Bangladesh with surveillance data collection and analysis for malaria and rabies.
- Supported the government of Bangladesh to develop a successful major funding proposal to the GF to strengthen surveillance and develop an infectious disease early warning system.
- Conducted training workshops on geo-enabling health systems for MOHs, UNICEF, UNFPA and WHO staff across the Asia-Pacific region - to support childhood vaccination and Emergency Obstetric and Neonatal Care.
- For UNICEF, led an assessment in Cambodia of the many village and population datasets from across the government and developed an action plan to create single high quality country master lists for use across Ministries.
- Completed analyses of spatiotemporal distribution of suicide in Thailand and globally.
- Completed analysis of spatiotemporal patters of attendances for mental health services to inform policy and resource allocation in Thailand.
- Conducted community engagement activities and piloting of novel detection tools for children's mental health in 49 schools and communities in Thailand.

In 2024, Clinical Pharmacology processed 17,640 clinical trial samples, and developed and validated two novel LC-MS assays for anti-infective drugs. © MORU. Photographer: Gerhard Jørén.

# Clinical Pharmacology

*Using cutting-edge facilities, expertise in mass spectroscopy and pharmacometrics, and direct access to large-scale patient trials, we conduct research to improve the treatment of infectious and neglected tropical diseases in underserved populations and evaluate drugs' pharmacological properties and therapeutic outcomes.*

Established in 2003 to develop accurate and sensitive drug measurements of antimalarial drugs in biological fluids in clinical trials patients, Clinical Pharmacology has grown into a globally renowned laboratory dedicated to drug pharmacology research, with a specific emphasis on infectious diseases and neglected tropical diseases (NTDs). We address important global health issues, including optimisation of drug dosing in underserved groups of patients, such as children and pregnant women.

Led by Prof Joel Tarning, Clinical Pharmacology collaborates closely with other MORU departments and Units, the wider Oxford network, and external partners, mainly by supporting large and small projects with optimal clinical trial design, drug measurements in clinical trial samples, and pharmacometric modelling and simulation. We are a large and diverse team of ~30 and focus on clinical pharmacology research. Our key scientific directions are pharmacometric data analysis, bioanalytical method development, drug quantification in clinical trial samples, multi-omics-based research, falsified/substandard (SF) medicine, and basic pharmacology. Our scientific output has had a major global impact on the treatment of malaria and other diseases.

The Pharmacometric team, headed by Richard Hoglund, PhD, employs pharmacokinetic and pharmacodynamic modelling-based approaches to understand and characterise the dynamic relationship between drug dosing, drug exposure and treatment outcome. The applied methodologies encompass both model-free evaluations and population-based modelling and simulation. The team also supports other MORU departments with optimal clinical trial design to maximise the information gained from clinical trials.

Led by Urairat Koesukwiwat, PhD, the Bioanalysis team specialises in precise and sensitive LC-MS drug measurements in clinical trial samples, including plasma, whole blood, and dried blood spots on filter paper. The team processes 15,000-20,000 clinical samples annually. Since 2014, the laboratory has held full ISO accreditation (ISO 15189 and 15190) for drug quantification. The team plays a pivotal role in maintaining the laboratory's commitment to excellence and adheres to the highest quality standards and regulatory guidelines.

The Discovery team, headed by Prof Joel Tarning, focuses on omics-based research, bioanalytical method development, medicine quality research, and basic pharmacology. Discovery develops innovative LC-MS methods, particularly using filter paper methodologies, to facilitate and enable drug quantification in pharmacokinetic field trials. The metabolomic, proteomic, and lipidomic research theme employs high-resolution/high-accuracy LC-MS evaluations on *in-vitro* and clinical patient samples to characterise unknown metabolites, enhance diagnostics, understand pathophysiology, and elucidate mechanisms of drug action and resistance. The medicine quality research involves assessment of commercially available drug products and trial medication, and development of novel technologies to detect and quantify substandard and falsified medicines.

## Our Team

Head of Clinical Pharmacology
**Prof Joel Tarning**

**Administration**

Purchasing & Logistics
**Chanjira Theerapongsakul**

Department Administrator & PA
**Sasithorn Ruangsilapasert**

**Pharmacometrics**

Head of Pharmacometrics
**Richard Hoglund, PhD**

Senior Scientists
**Thanaporn Wattanakul, PhD**
**Junjie Ding, PhD**
**Piyanan Assawasuwannakit, PhD**
**Frauke Assmus, PhD**

Scientists
**Kanoktip Puttaraksa, PhD**
**Ayorinde Adehin, PhD**
**Supada Plitphonganphim, PhD**

Consultants
**Prasert Yodsawat**
**Kalayanee Chairat**

PhD Students
**Nicharee Jiracheep**
**Cintia Cruz**

MSc Student
**Ersi Loshaj**

**Bioanalysis**

Bioanalytical Laboratory Manager
**Urairat Koesukwiwat, PhD**

Laboratory Analysts
**Chanchira Chanprasert**
**Phettree Niamyim**

Laboratory Technicians
**Pak Jansawangkul**
**Wannasiri Charuthan**

Laboratory Assistant
**Supap Rungruang**

**Discovery**

Head of Discovery
**Prof Joel Tarning**

Senior Scientists
**Warunee Hanpithakpong, PhD**
**Daniel Blessborn, PhD**
**Phornpimon Tipthara, PhD**
**Natpapat Kaewkhao, PhD**

Research Assistant
**Kanyarat Sueksakit**

Technician
**Rattawan Kullasakboonsri**

Honorary Research Fellow
**Kevin Kobylinski, PhD**

PhD Students
**Yamin Granberg**
**Norapat Nitaramorn**
**James Callery**
**Clifford Banda**

A diverse team of ~30, Clinical Pharmacology's key scientific directions are pharmacometric data analysis, bioanalytical method development, drug quantification in clinical trial samples, multi-omics-based research, falsified/substandard medicine, and basic pharmacology. © MORU. Photographer: Gerhard Jørén.

## Top 5 publications in 2024

1. Population pharmacokinetic modelling of primaquine exposures in lactating women and breastfed infants. Wattanakul T, Gilder ME, McGready R, Hanpithakpong W, Day NPJ, White NJ, Nosten F, Tarning J, Hoglund RM. *Nat Commun*. 2024 May 8;15(1):3851. doi: 10.1038/s41467-024-47908-y. PMID: 38719803.

2. Comparison of WHO versus national COVID-19 therapeutic guidelines across the world: not exactly a perfect match. Cokljat M, Cruz CV, Carrara VI, Puttaraksa K, Capriglioni C, Insaurralde SM, Rousseau-Portalis M, Roldan A, Watson JA, Tarning J, White NJ, Guerin PJ. *BMJ Glob Health*. 2024 Apr 22;9(4):e014188. doi: 10.1136/bmjgh-2023-014188. PMID: 38649182

3. In-host modeling of dengue virus and non-structural protein 1 and the effects of ivermectin in patients with acute dengue fever. Ding J, Mairiang D, Prayongkul D, Puttikhunt C, Noisakran S, Kaewjiw N, Songjaeng A, Prommool T, Tangthawornchaikul N, Angkasekwinai N, Suputtamongkol Y, Lapphra K, Chokephaibulkit K, White NJ, Avirutnan P, Tarning J. *CPT Pharmacometrics Syst Pharmacol*. 2024 Dec;13(12):2196-2209. doi: 10.1002/psp4.13233. Epub 2024 Sep 23. PMID: 39308445

4. Impact of standard and long-lasting ivermectin formulations in cattle and buffalo on wild Anopheles survival on Sumba Island, Indonesia. Kobylinski KC, Satoto TBT, Nurcahyo W, Nugraheni YR, Testamenti VA, Winata IPBA, Pono YL, Timoria D, Assawasuwannakit P, Chambers M, Baird JK, Tarning J, von Seidlein L, Bøgh C. *Sci Rep*. 2024 Nov 30;14(1):29770. doi: 10.1038/s41598-024-81743-x. PMID: 39616234

5. Medication adherence framework: A population-based pharmacokinetic approach and its application in antimalarial treatment assessments. Ding J, Hoglund RM, Tarning J. *CPT Pharmacometrics Syst Pharmacol*. 2024 May;13(5):795-811. doi: 10.1002/psp4.13119. Epub 2024 Mar 25. PMID: 38528724

From *left*: Junjie Ding, Senior Scientist, Richard Hoglund, Head of Pharmacometrics, Joel Tarning, Head of Clinical Pharmacology, Clinical Pharmacology. © MORU. Photographer: Gerhard Jørén.

## Major achievements in 2024

- Processed a large number of clinical trial samples in 2024 (n = 17,640) and developed and validated novel LC-MS assays for two anti-infective drugs. The majority of samples processed in the laboratory were collected at clinical study sites in Africa (n = 14,648; 12 study sites) with the remaining samples collected in Asia (n = 2,992; 5 study sites).
- Expanded our research capacity, particularly in laboratory-based basic pharmacology research by establishing a cell-culture laboratory, with the capacity to study metabolism pathways and distribution of drugs across specific cells. This capability allows us to study the dynamic interplay between host and drug, and generate essential *in-vitro* data to parameterise physiologically-based pharmacokinetic (PBPK) models.
- Addressed the health inequity in breastfeeding women with regards to the radical cure of *vivax* malaria, and showed that primaquine is safe to use for lactating women, as negligible amounts are administered to infants through breastmilk. This work contributed to updating the 2024 WHO Guidelines for malaria to now include lactating women in the radical cure of *vivax* malaria. In addition, we conducted a pooled individual patient data meta-analysis of primaquine and concluded that a higher dose should be used in children <5 years.
- Dose-evaluation of antimalarial treatments in pregnancy, demonstrating that a standard adult dosing of amodiaquine and piperaquine should be used in the treatment of pregnant women.
- Compared WHO and national COVID-19 therapeutic guidelines worldwide and reported substantial differences in their recommendations. Furthermore, the temporal changes in SARS-CoV-2 clearance kinetics was analysed in order to optimise antiviral pharmacodynamic studies, and we evaluated the prevention of COVID-19 in a large clinical trial showing a 20% reduction associated with hydroxychloroquine and chloroquine preventive treatment.
- Developed a mechanistic in-host pharmacometric model of dengue virus infection and evaluated the effects of ivermectin in patients with acute dengue fever. We developed a dynamic model capable of describing the time-course of the dengue virus as well as the non-structural protein 1, but ivermectin did not provide any clinical benefit in the treatment of dengue.
- A veterinary trial on Sumba Island in Indonesia demonstrated that a commercially available, long-lasting ivermectin formulation in cattle met WHO requirements for novel endectocides for malaria control.
- A novel pharmacometric framework of assessing medication adherence was developed and applied to the assessment of antimalarial drugs used in seasonal malaria chemoprevention. This could be a highly useful approach when evaluating programmatic implementation of preventive and curative antimalarial treatment programs in endemic areas.

MORU Bioethics & Engagement's Tassawan Poomchaichote (*right*) discusses the new strategy of the MORU Major International Programme (MIP) with Bangkok Health Research Ethics Interest Group (HREIG) members in Bangkok, Dec 2024. © MORU/Nicky Almasy.

# Bioethics & Engagement

*Coordinates an active community and stakeholder engagement programme throughout the MORU network. We are a dedicated bioethics and engagement team with members based at MORU Bangkok, SMRU on the Thai-Myanmar border, the Chiangrai Clinical Research Unit (CCRU) near Thailand's Golden Triangle, and the Siem Pang Health Centre in Cambodia.*

The Bioethics & Engagement team is international and multidisciplinary and has extensive experience in engagement with under-served communities such as migrants, hill tribe communities, and other ethnic groups. We engage with these communities to ensure that our research generates evidence that directly addresses health inequities faced by these groups.

We are one of the leading bioethics research groups in Southeast Asia. We specialise on the ethics of conducting research in low-resource settings, where research is often conducted in communities whose residents lack formal education and access to healthcare.

**Capabilities and facilities**

Bioethics & Engagement combines experience in bioethics and social science research with expertise in engagement and public and patient involvement. We work with MORU researchers and staff to conduct inclusive stakeholder mapping with a focus on vulnerable and underserved groups, and to formulate project objectives and outcomes. We have a track record in developing and conducting innovative and participatory local and national engagement initiatives which are evaluated using qualitative and quantitative methods. We produce and co-create accessible communication materials to share our research with non-academic audiences, and routinely disseminate our work to academic audiences and public engagement practitioners.

**Key research areas**

Bioethics & Engagement works in two overlapping areas: bioethics research (informed consent, data sharing, and participant vulnerabilities in health research); and engagement and involvement with the public, communities, community advisory boards (CAB), policy makers and external stakeholders.

Members of the Chiangrai Hill Tribe Community Advisory Board visiting the Huai Mae Sai village, Dec 2024. © MORU/Nicky Almasy.

## Our Team

Head of Bioethics & Engagement
**Prof Phaik Yeong Cheah**

PA & Departmental Administrator, Bangkok
**Rita Chanviriyavuth**

**Bangkok**

Senior Research Manager and Evaluation Specialist
**Bhensri Naemiratch**

Senior PR & Communications Manager
**Natinee Kulpijit**

Science Communicator
**Kanpong Boonthaworn**

Study Coordinator
**Tassawan Poomchaichote**

Senior Social Scientist and CAB Network Coordinator
**Napat Khirikoekkong**

Social Science Researcher and Engagement Coordinator
**Supa-at Asarath**

Participant Liaison Officer
**Supanat Ruangkajorn**

Global Health Bioethics Network Fellow
**Bipin Adhikari**

**Thailand / Thai-Myanmar border**

Head of Public Engagement, SMRU
**Ladda Kajeechiwa**

Chiangrai Hill Hill Tribe Advisory Board coordinator, CCRU
**Bulakorn Tinoi**

Research Nurse & Public Engagement Supervisor, CCRU
**Nipaphan Kanthawang**

Senior Programme Coordinator, SMRU
**Khin Maung Lwin**

Postdoc Researcher
**Rashida Hussein**

**Cambodia**

Head of Public Engagement, Siem Pang
**Ean Mom**

**Postgraduate Students**

DPhil Student
**Naomi Waithira**

PhD Student
**Carlo Perrone**

**Oxford**

Engagement Evaluation and Learning Lead
**Anne Osterrieder**

## Top 5 publications in 2024

1. A hill tribe community advisory board in Northern Thailand: lessons learned one year on. Perrone C, Kanthawang N, Cheah PY. *Int J Equity Health*. 2024 Nov 18;23(1):241. doi: 10.1186/s12939-024-02323-z. PMID: 39558319; PMCID: PMC11574996.

2. Embedding community and public voices in co-created solutions to mitigate antimicrobial resistance (AMR) in Thailand using the 'Responsive Dialogues' public engagement framework. Poomchaichote T, Kiatying-Angsulee N, Boonthaworn K, Naemiratch B, Ruangkajorn S, Prapharsavat R, Thirapantu C, Sukrung K, Limmathurotsakul D, Osterrieder A, Cheah PY. *Antimicrob Resist Infect Control*. 2024 Jul 4;13(1):71. doi: 10.1186/s13756-024-01416-2. PMID: 38965593; PMCID: PMC11225371.

3. Interventions to address antimicrobial resistance: an ethical analysis of key tensions and how they apply in low- income and middle-income countries. Pokharel S, Adhikari B, Johnson T, Cheah PY. *BMJ Glob Health*. 2024 Apr 3;9(4):e012874. doi: 10.1136/bmjgh-2023-012874. PMID: 38569658; PMCID: PMC11002359..

4. Addressing the gap in health data management skills: an online self-guided course for researchers and health professionals. Waithira N, Mutinda B, Shah K, Kestelyn E, Bull S, Boggs L, Lang T, Cheah PY. *BMC Med Educ*. 2024 Nov 29;24(1):1397. doi: 10.1186/s12909-024-06405-y. PMID: 39614233; PMCID: PMC11607898.

5. Community engagement around scrub typhus in northern Thailand: a pilot project. Perrone C, Kanthawang N, Cheah PY, Intralawan D, Lee SJ, Nedsuwan S, Fuwongsitt B, Wangrangsimakul T, Greer RC. *Trans R Soc Trop Med Hyg*. 2024 Oct 1;118(10):666-673. doi: 10.1093/trstmh/trae028. PMID: 38708716; PMCID: PMC11443339.

## Major achievements in 2024

- Established a network of six community advisory boards (CABs). Our CABs offer advice and cultural and context-relevant perspectives on our research and health services, making our work more ethical and responsive to community needs. Some CABs help us to create research and health information materials, eg in 2024 the Siem Pang youth group produced three videos, leaflets and posters on health issues relevant to their community for wider distribution. The CABs are:
  - Tak Province Community Ethics Advisory Board (T-CAB), which celebrated its 15th anniversary in 2024.
  - Health Research Ethics Interest Group (HREIG),Bangkok;
  - Aileen Young Persons' Advisory Group, Mae Sot, Thailand;
  - Youth Advisory Group on Health and Research Engagement, Siem Pang, Cambodia;
  - Chiangrai Hill Tribe Advisory Board, Chiangrai, Thailand;
  - Pakistan Patient and Public Involvement and Engagement group, Karachi, Pakistan.
- Continued to engage with under-served groups, community consultations and awareness campaigns: religious groups, melioidosis survivors, and communities at risk of malaria, and scrub typhus at the Thai-Myanmar border and in Chiangrai.
- The SMRU engagement team continued to engage with Thai-Myanmar border migrant communities, villagers and local stakeholders. Activities included large-scale awareness campaigns, often in collaboration with local health authorities, stakeholder meetings and capacity-building workshops. The team also produced short movies on adolescent pregnancy and tuberculosis (TB) to stimulate discussion of sensitive topics amongst villagers, migrant workers and clinical staff. In 2024, the team's activities reached audiences of over 21,800 community members, health care workers, local leaders and other stakeholders.
- CCRU CIMIC project ("Co-creating information materials with communities to improve the Informed Consent process") completed its second phase, where participants from hill tribe communities evaluated videos co-created with hill tribe groups and dubbed in three hill tribe languages. By co-creating culturally sensitive and accessible resources with communities we aim to improve inclusion of under-served hill tribes in research.
- Ran the *Young Cartoonist Against AMR Contest 2024* in collaboration with Thailand's Drug System Monitoring and Development Centre during World AMR Awareness Week (Nov 2024), attracting 337 entries from 45 Thai provinces. The contest aimed to inspire and engage young people to become advocates for change by raising AMR awareness through comics.
- Conducted community dialogues for Southeast Asia Initiative to Combat SARS-CoV-2 Variants (SEACOVARIANTS) project with 119 participants across Thailand to learn about their communication challenges during COVID-19, and what information or actions would help them prepare for future pandemics. Our project focused on underserved groups who experienced the greatest communication barriers, such as urban migrants or visually impaired people.
- Continued to support participant engagement and recruitment for the Malaria Infection Studies Thailand (MIST) project and concluded data collection and analysis for the MIST-Ethics project. This helped us understand how participants and their families, members of the public and other stakeholders experience or view the MIST studies and identify ethical considerations to improve future studies.
- Organised *Pint of Science* events in May and Nov 2024, with nearly 200 attending in Bangkok and over 260 in Vientiane, Laos.
- Launched MORU CAB-NET, a network of facilitators to exchange best practices, and coordinate CAB group member meetings. In 2024, CAB facilitators met three times, including in-person in Bangkok.
- Held a MORU Tropical Network Public Engagement Day (8 Feb 2024), to showcase engagement projects run by staff and students to inspire and share learnings.
- Continued to co-lead the international Just Transitions for AMR group (with OUCRU).

Young Person's Advisory Group (Y-PAG) met in March 2024 in Mae Sot to discuss personal data sensitivities for Thai-Myanmar border youth.© MORU. Photographer: Supa-at Asarath.

Led by Assoc Prof Wirichada Pan-ngum (*3rd left, front row*), MAEMOD is a multidisciplinary department with activities ranging from modelling canine population mobility and informing rabies vaccination campaigns, to running large scale randomised trials of interventions to mitigate the spread of AMR, and supporting and optimising translational research and innovation across the MORU Major International Programme (MIP). © MORU.

# Mathematical and Economic Modelling (MAEMOD)

*An established modelling unit with strong links to national and regional policy-makers, we shape regional and international healthcare policy via timely modelling of emerging research questions and strong international collaboration.*

Historically, MAEMOD has engaged in mathematical modelling of the transmission of many infectious diseases, and understanding the cost-effectiveness and economic impacts of preventative and curative interventions aimed at mitigating their impact. While maintaining a strong track record in these research areas, in recent years MAEMOD has grown into a multidisciplinary department, with activities ranging from the modelling of canine population mobility to inform rabies vaccination campaigns, to running large scale randomised trials of interventions to mitigate the spread of antimicrobial resistance (AMR), and supporting and optimising translational research and innovation across the MORU MIP. As such, MAEMOD's work contributes to research in a wide variety of clinical and geographic areas. MAEMOD consists of five groups:

- Neglected Tropical Diseases Modelling (NTDM), led by Assoc Prof Wirichada Pan-ngum, Head of MAEMOD;
- Drug-Resistant Infections and Disease Dynamics Bacterial Resistance Analysis (DRIaDD) headed by Prof Ben Cooper;
- Economics and Implementation Research Group (EIRG) led by Prof Yoel Lubell;
- Mahidol Oxford Translation and Innovation Programme (MOTIP), born out of the Wellcome-funded Institutional Translational Partnership Award, headed by Maneerat Ekkapongpisisit, PhD; and
- The Research Software Engineering (RSE) Team, led by Sompob Saralamba, PhD.

In MAEMOD's interdisciplinary environment, working with clinical and laboratory experts in infectious diseases, the NTDM and RSE teams can maximise the impacts of modelling, ranging from designing a study to data collection, and responding to decision questions in a timely, low-required resources manner. The team is well connected to several regional and national health sectors.

DRIaDD aims to understand the burden and dynamics of drug-resistant infections and emerging pathogens, and establish best practices in quantifying the burden of AMR using comparative analysis of selected data sets and synthetic data generated using mechanistic models. Working with the RSE team on the Wellcome-funded project, Antimicrobial Resistance, Prescribing, and Consumption Data to Inform Country Antibiotic Guidance and Local Action (ADILA), DRIaDD has developed a dashboard that performs model-based analyses using local data to generate and interpret empirical antibiotic usage reports that inform antibiotic prescribing guidelines (building upon the WHO's recently published AWaRe guidance).

EIRG have a considerable track record of running large scale observational studies and interventional trials embedded in primary care, and particularly in rural, underserved areas. Beyond quantitative end-points assessing the impact of interventions, these studies often combine qualitative components such as exploration of patient and healthcare workers attitudes towards new interventions and practices, economic evaluation, and health system research to identify barriers and opportunities to facilitate intervention uptake.

MAEMOD's key research areas are:

- Diagnostic tools development and community surveillance platform in rural setting.
- Epidemiological and economic modelling for health interventions in the local context.
- Advanced modelling techniques to look at different interventions against antimicrobial resistance in both hospital and community settings.

## Our Team

Head of MAEMOD
**Assoc Prof Wirichada Pan-ngum, PhD**

Project Coordinator
**Sureeporn Thongkuna**

**Head of EIRG**
**Prof Yoel Lubell**

SEACTN, Spot Sepsis Project Management
**Watcharintorn Thongpiam**
**Krongkarn Nareepon**
**Porawit Sangplob**

Senior Research Fellow
**Assoc Prof Marco Liverani**

SEACTN - Postdoc Researcher
**Dr Nan Shwe Nwe Htun**

SEACTN Project Coordinator, DPhil Student
**Dr Arjun Chandna**

SEACTN - Clinical Researcher, DPhil Student
**Dr Chris (Rusheng) Chew**

SEACTN - Epidemiologist, DPhil Student
**Meiwen Zhang**

Consultants
**Elke Wynberg**
**Suh Young Kang**
**Prach Chanbroset**
**Abdullah Saeed Khan**

**Head of DRIaDD**
**Prof Ben Cooper**

Senior Scientist
**Cherry Lim**

Research Associate, Deputy Director ADVANCE-ID network
**Mo Yin**

Postdoc Researchers
**Raneem Aizook**
**Sean Cavany**
**Alicia Gill**
**Mark Pritchard**
**Myo Maung Maung Swe**

Research Assistant, DPhil Student
**Mathupanee Oonsivilai**
(co-supervised by Assoc Prof Wirichada Pan-ngum)

DPhil Students
**Oraya Srimokla**
**Rachel Otuko**
**Lucien Swetschinski**
**Freddie Fell**
**Toby Bonvoisin**

**MOTIP Director**
**Maneerat Ekkapongpisit, PhD**

Project Managers
**Grid Ganjina**
**Chawitar Noparatvarakorn**

Health Economist
**Puttarin Kulchaitanaroaj, PhD**

Project Consultants
**Adshariya Agsornintara**
**Maytouch Lojanarungsiri**
(resigned Nov '24)

**Head of RSE**
**Sompob Saralamba, PhD**

Research Software Engineer
**Tanaphum Wichaita**

**Head of NTDM**
**Assoc Prof Wirichada Pan-ngum, PhD**

Postdoc (partial)
**Phrutsamon Wongnak**

Health Economist
**Chris Painter**

DPhil Students
**Tara Wagner-Gamble**
**Amandip Sahota**
**Ainura Moldokmatova**

PhD Students
**Pavadee Chuaicharoen**
**Weerakorn Thichimpa**
**Aung Myint Thu**
**Yamin Frazal**

Prof Yoel Lubell (*back row, centre*) and the SEACTN team meet with Bangladesh Rural Advancement Committee (BRAC) collaborators at a study site in Cox's Bazar, Bangladesh. © MORU.

## Top 5 publications in 2024

1. Cost-effectiveness analysis of a multiplex lateral flow rapid diagnostic test for acute non-malarial febrile illness in rural Cambodia and Bangladesh. Chew R, Painter C, Pan-Ngum W, Day NPJ, Lubell Y. *Lancet Reg Health Southeast Asia*. 2024 Mar 16;23:100389. doi: 10.1016/j.lansea.2024.100389. PMID: 38523864; PMCID: PMC10958476.

2. Sustainable antimicrobial resistance surveillance: time for a global funding mechanism. Painter C, Limmathurotsakul D, Roberts T, van Doorn R, Mayxay M, Lubell Y, Day NPJ, Turner P, Ashley EA. *Lancet Infect Dis*. 2025 Feb;25(2):e99-e103. doi: 10.1016/S1473-3099(24)00649-2. Epub 2024 Dec 17. PMID: 39706207.

3. Early warning systems for malaria outbreaks in Thailand: an anomaly detection approach. Srimokla O, Pan-Ngum W, Khamsiriwatchara A, Padungtod C, Tipmontree R, Choosri N, Saralamba S. *Malar J*. 2024 Jan 8;23(1):11. doi: 10.1186/s12936-024-04837-x. PMID: 38191421; PMCID: PMC10775623.

4. Evaluation of an electronic clinical decision support algorithm to improve primary care management of acute febrile illness in rural Cambodia: protocol for a cluster- randomised trial. Chew R, Wynberg E, Liverani M, Rekol H, Nguon C, Dysoley L, Vanna M, Callery JJ, Mishra A, Adhikari B, Tripura R, Chandna A, Fegan G, Waithira N, Maude RJ, Day NPJ, Peto TJ, Lubell Y. *BMJ Open*. 2024 Oct 18;14(10):e089616. doi: 10.1136/bmjopen-2024-089616. PMID: 39424394; PMCID: PMC11492946.

5. Individualised, short-course antibiotic treatment versus usual long-course treatment for ventilator-associated pneumonia (REGARD-VAP): a multicentre, individually randomised, open-label, non-inferiority trial. Mo Y, Booraphun S, Li AY, Domthong P, Kayastha G, Lau YH, Chetchotisakd P, Limmathurotsakul D, Tambyah PA, Cooper BS; REGARD-VAP investigators. *Lancet Respir Med*. 2024 May;12(5):399-408. doi: 10.1016/S2213-2600(23)00418-6. Epub 2024 Jan 22. PMID: 38272050.

Led by Maneerat Ekkapongpisit, PhD (*2nd left*), the MOTIP team assists MORU MIP researchers translate their research into health impacts, through pump-priming funds, access to expertise, capacity building activities and training, outreach to external funding, and partnership development. © MORU. Photographer: Gerhard Jørén.

## Major achievements in 2024

- The South and Southeast Asian Community Based Trials Network (SEACTN) flagship programme recruited over 90,000 patients, the findings from which are being used to inform outbreak detection and prediction models, transmission modelling, and cost-effectiveness analyses of interventions that could improve the management of febrile illness in remote, under¬served populations in South and SE Asia.

- Combined epidemiological models with cost-effectiveness analyses to support policy changes for immunisation programmes (eg rota virus, measles), screening strategies (eg hepatitis C), treatment guidelines (eg REGARD-VAP), transmission reduction (nosocomial transmission of respiratory viral infec¬tions in the community) and dog sterilisation campaign.

- Defined the impact of different treatment strategies for *Acinetobacter* spp. bacteraemia in Thai¬land through a casual inference framework.

- Established the Research Software Engineering (RSE) team. Led by Sompob Saralamba, RSE supports MAEMOD and MORU researchers in computational techniques and software development. Throughout the year, the RSE team joined in multiple research projects.

- MOTIP helps support translating research into health impacts, through pump-priming funds, access to expertise, capacity building activities and training, outreach to external funding, and partnership development. MOTIP supports several projects within MAEMOD (eg Electronic Nose Prototype and Software) to detect dengue infections from breath and serum samples, web application to classify *P. falciparum* blood-stage morphology and guide antimalarial treatments against drug resistance. The web application is available at https://parasight.vercel.app/.

MTU co-Head Prof Sasithon Pukrittayakamee (*back row, 3rd from right*), and her team are conducting major clinical research studies on the treatment of uncomplicated malaria, the treatment of epidemic viral respiratory infections, and a human challenge model for *P. vivax* vaccine. © MORU. Photographer: Gerhard Jørén.

# Medical Therapeutics Unit (MTU)

*Redefining the pharmacometric assessment of infectious diseases and leading clinical assessments of novel therapeutics and vaccines.*

The Medical Therapeutics Unit (MTU) investigates, analyses, and models pathological responses in malaria, G6PD deficiency, *Plasmodium vivax* relapse, and data from antiviral drug pharmacometric and pharmacodynamic studies.

Our main clinical activity in 2024 has been the conduct of the world's largest chemoprevention and pharmacometric (PK-PD) studies of COVID-19 (COPCOV, PLATCOV) and influenza (AD ASTRA). These innovative PK-PD studies provide a methodology for the rapid assessment, evaluation and monitoring of antiviral interventions in respiratory infection epidemics and pandemics. This was a conspicuous and costly gap during the COVID-19 pandemic.

Located in a ward of the Hospital for Tropical Diseases, Faculty of Tropical Medicine (FTM), and jointly overseen by Prof Sasithon Pukrittayakamee and Prof Sir Nick White, MTU is staffed by experienced doctors and nurses who conduct a portfolio of different clinical studies in both patients and healthy volunteers..

MTU works closely with MORU Malaria, Clinical Pharmacology, molecular biology and statistics and FTM's Mahidol Vivax Research Unit to provide near real time research outputs which inform and guide national and international policies.

Currently, MTU is conducting three major clinical research studies at the Hospital for Tropical Diseases in Bangkok:

- Assessment of antimalarial therapeutics: pharmacokinetics, pharmacodynamics and drug interactions.
- Pharmacometric assessments in acute viral respiratory infections.
- Development and deployment of a human challenge model for evaluation of *P. vivax* vaccines and treatments.

Dr Podjanee Jittamala, Dr Borimas Hanboonkunupakarn, Dr Kittiyod Poovorawan and Dr Panita Looareesuwan lead the various MTU clinical studies in the ward.

Other members of the team conduct clinical research on:

- COVID-19 prevention and treatment (Dr Will Schilling, Dr Simon Boyd, Dr Tim Seers and Dr Ellen Beer).
- Primaquine and, in particular, the development of a paediatric formulation (Prof Bob Taylor);
- Cutaneous leishmaniasis (Prof Bob Taylor).
- Chagas disease pharmacometrics in Brazil and Argentina (Dr Cintia Cruz).
- *P. vivax* relapse modelling (Somya Mehra); and antimalarial pharmacometrics.

The MTU's capabilities and facilities include:

- Experienced team conducting experimental clinical, therapeutic, pharmacometric, and entomological studies.
- Near real time analyses of drug levels, parasitaemia, and viral loads.
- Innovative statistical and pharmacometric study designs and assessments.
- Links to national and international policymakers.

## Our Team

Medical Therapeutics Unit (MTU) co-Head (MORU)
**Nicholas White**

Medical Therapeutics Unit (MTU) co-Head (FTM)
**Sasithon Pukrittayakamee**

- Malaria Laboratory Head **Kesinee Chotivanich**
- Clinical Pharmacology Head **Joel Tarning**
- Molecular Parasitology Head **Mallika Imwong**

**Clinical Investigators**
**Bob Taylor**
**Thoopmanee Kaendiao**

**Research Physicians**
**Podjanee Jittamala**
**Kittiyod Poovorawan**
**Borimas Hanboonkunupakarn**
**Ellen Beer**
**Simon Boyd**
**Tim Seers**
**Panita Looareesuwan**

**Ward Staff**
**Somrutai Aurboonkasem**
**Pawanrat Leungsinsiri**
**Pawinee Phulsawat**
**Puttha Panpumchan**
**Chayayisa Sookprasert**
**Jutatip Sunjirat**
**Petcharida Supapoj**

**Clinical Laboratory Staff**

**Analysis**
**Chayada Piantham**
**William Schilling**
**Cintia Cruz**
**Phrutsamon Wongnak**
DPhil, Clarendon Research Fellow
**Somya Mehra**

**Admin**
**Thanyaporn Supapoat**

Training during a site initiation visit (SIV) of the PLATCOV and AD ASTRA clinical trials in Kathmandu, Nepal in June 2024. © MORU. Photo: Ellen Beer.

## Top 5 publications in 2024

1. Evaluation of hydroxychloroquine or chloroquine for the prevention of COVID-19 (COPCOV): A double-blind, randomised, placebo-controlled trial. Schilling WHK, Mukaka M, Callery JJ, Llewelyn MJ, Cruz CV, Dhorda M, Ngernseng T, Waithira N, Ekkapongpisit M, Watson JA, Chandna A, … Cheah PY, Taylor WRJ, Batty EM, Chotivanich K, Pukrittayakamee S, Phumratanaprapin W, von Seidlein L, Dondorp A, Day NPJ, White NJ; COPCOV Collaborative Group. *PLoS Med*. 2024 Sep 12;21(9):e1004428. doi: 10.1371/journal.pmed.1004428. PMID: 39264960; PMCID: PMC11392261.

2. Temporal changes in SARS-CoV-2 clearance kinetics and the optimal design of antiviral pharmacodynamic studies: an individual patient data meta-analysis of a randomised, controlled, adaptive platform study (PLATCOV). Wongnak P, Schilling WHK, Jittamala P, Boyd S, Luvira V, et al; PLATCOV Collaborative Group. *Lancet Infect Dis*. 2024 Sep;24(9):953-963. doi: 10.1016/S1473-3099(24)00183-X. Epub 2024 Apr 24. PMID: 38677300.

3. A randomised trial of malaria vaccine R21/Matrix-M™ with and without antimalarial drugs in Thai adults. Hanboonkunupakarn B, Mukaka M, Jittamala P, Poovorawan K, Pongsuwan P, Stockdale L, Provstgaard-Morys S, Chotivanich K, Tarning J, Hoglund RM, Chimjinda N, Ewer K, Ramos-Lopez F, Day NPJ, Dondorp AM, Hill AV, White NJ, von Seidlein L, Pukrittayakamee S. *NPJ Vaccines*. 2024 Jul 6;9(1):124. doi: 10.1038/s41541-024-00920-1. PMID: 38971837; PMCID: PMC11227592.

4. Primaquine in glucose-6-phosphate dehydrogenase deficiency: an adaptive pharmacometric assessment of ascending dose regimens in healthy volunteers. Pukrittayakamee S, Jittamala P, Watson JA, Hanboonkunupakarn B, Leungsinsiri P, Poovorawan K, Chotivanich K, Bancone G, Chu CS, Imwong M, Day NPJ, Taylor WRJ, White NJ. *Elife*. 2024 Feb 6;12:RP87318. doi: 10.7554/eLife.87318. PMID: 38319064; PMCID: PMC10945527.

5. Effect of primaquine dose on the risk of recurrence in patients with uncomplicated *Plasmodium vivax*: a systematic review and individual patient data meta-analysis. Commons RJ, Rajasekhar M, Edler P, Abreha T, Awab GR, *et al*; WorldWide Antimalarial Resistance Network (WWARN) Vivax Primaquine Dosing Efficacy, Tolerability and Safety Study Group. *Lancet Infect Dis*. 2024 Feb;24(2):172-183. doi: 10.1016/S1473-3099(23)00430-9. Epub 2023 Sep 22. PMID: 37748496; PMCID: PMC7615564.

## Major achievements in 2024

- Conducted studies on the latest antiviral treatments against COVID-19, influenza, and RSV.
  MTU made significant progress in addressing two major global health concerns: epidemic viral respiratory infections and malaria. Our clinical trials focused on the latest antiviral treatments against COVID-19, influenza, and respiratory syncytial virus (RSV). By using adaptive designs, we kept pace with the evolution of drug resistance, contributing to treatment guidelines in Thailand and other countries. The PLATCOV study began in September 2021 and has recruited more than 2,000 adult patients with uncomplicated COVID-19 infection. The results of the published study showed that Favipiravir and Ivermectin have no anti-COVID-19 activity, while effective drugs that translate as a percentage of faster viral clearance than no treatment are; Paxlovid (84%), Molnupiravir (37%), Remdesivir (42%), and Regeneron (60% for the delta strain and 25% for the Omicron variant). We are now looking at combination therapies as new treatment options, as drug resistance is common for viruses.

- Completed a study on the Pf vaccine (R21/Matrix-M) combined with antimalarial drugs for malaria prophylaxis.
  As global malaria elimination has been delayed, not least due to the emergence of drug resistance, we are focussing on the two most prevalent malaria parasites: *Plasmodium falciparum* (Pf) and *P. vivax* (Pv). Ongoing and completed studies are on the Pf vaccine (R21/Matrix-M) combined with antimalarial drugs for malaria prophylaxis and a human-challenged model of *Pv*. Following the MTU randomized, controlled trial of R21/Matrix-M™ that confirmed the vaccine's safety and immunogenicity in combination with dihydroartemisinin/piperaquine plus single low dose primaquine, collaborating investigators in Bangladesh launched a large cluster randomised trial on malaria prophylaxis with R21/Matrix-M™ in the Chittagong Hill Tracts in February 2025.

- Established challenging studies on human-challenged model of Pv.
  As *Pv* is the most dominant malaria parasite in most countries outside Africa, there remains a large unmet need for its prevention and treatment. A collaborative study between MTU and other departments at Mahidol University aims to establish the safety of human infections with sporozoite and erythrocytic stages of *Pv*. Over 50 volunteers have already participated in the model in the MTU. This study design allows a safe and rapid assessment of malaria interventions, such as vaccines and new antimalarial drug regimens. These challenging studies have been endorsed by all stakeholders, including the community and Mahidol University.

- Conducted clinical trials and intensive reviews to develop effective primaquine regimens that are safe for both normal and G6PD-deficient individuals.
  Primaquine, the 8-aminoquinoline drug, is the only short acting drug allowing the radical cure of *Pv* infections, that is the clearing of the hypnozoites are responsible for *Pv* relapse. Single low dose primaquine is used to clear gametocytes, the sexual forms of all Plasmodium species. Higher doses of primaquine can cause haemolysis in individuals with G6PD deficiency, leading to hesitancy in its use. We have conducted clinical trials and intensive reviews to develop effective primaquine regimens that are safe for both normal and G6PD-deficient individuals. These 2024 published data from MTU aim to reduce further the worldwide reluctance to use primaquine.

CTSG assists MORU Major International Programme (MIP) investigators by providing input in the design, delivery, analysis and reporting of their projects, and supports clinical trials and studies. © MORU. Photographer: Gerhard Jørén.

# Clinical Trials Support Group (CTSG)

*An integrated and experienced, multidisciplinary Clinical Trials Unit that provides clinical research support so MORU MIP investigators can deliver research projects from inception through publication of findings and on to archiving of generated data, all in compliance with scientific, regulatory and ethical standards.*

The Clinical Trials Support Group (CTSG) helps investigators from all Units and scientifically focused Departments of the MORU MIP. This includes input in the design, delivery, analysis and reporting of their projects. We specifically conduct research on implementation of FAIR principles to enhance discoverability, usability and integration of health-related data in LMICs.

CTSG also supports clinical trials and studies across the global South and for diseases with high local burdens where the MORU MIP is established. These two studies illustrate the wide geographic range and scope of work supported by CTSG:

- The three continent, multi-country COPCOV randomised controlled trial (RCT) assessed the efficacy of the prophylactic use of chloroquine or hydroxychloroquine in preventing symptomatic COVID-19. The largest pre-exposure prophylaxis study in COVID-19, COPCOV recruited from 26 sites in 11 countries and involved all of CTSG's groups (Clinical Research Operations, Data Management and Statistics). COPCOV required approvals from and interactions with 25 different Ethics Committees and involved multiple global (master) protocol versions plus amendments as well as 16 country specific protocols.
- MEL-OB1, an Observational Study to Evaluate Clinical Characteristics of Adult Patients with Suspected or Confirmed Melioidosis, is a locally relevant study on melioidosis conducted in conjunction with a US based company with funding from the US NIH's National Institute of Allergy and Infectious Diseases (NIAID) to develop a new treatment for this potentially fatal disease. We began this observational study of melioidosis in north-eastern (NE) Thailand and Laos, opening a site in each country with another planned in NE Thailand for early 2025. Once MEL-OB1 is completed, US based commercial partner AN2 Therapeutics has funding from NIAID to design and deliver an RCT of their novel antibiotic, epetraborole, as a treatment for melioidosis. MEL-OB1 will provide key information to help design this future RCT and CTSG staff are supporting these sites so they can deliver this future trial.

Whilst CTSG's work focus has primarily been RCTs, CTSG, particularly its Data Management group, have supported numerous large scale observational surveillance studies involving hundreds of thousands of study participants across Asia and Africa, thousands of community health workers, 19 hospitals (ACORN), and a similar number of health facilities (SEACTN). Indeed, the CTSG portfolio is split approximately 40:60 in terms of interventional (including RCTs) and observational studies.

CTSG's services include power and sample size calculations (Statistics group) and randomization design and applications or lists, data collection tool development and deployment and subsequent database construction and use (Data Management Group) using a variety of systems (eg MACRO, ODK, REDCap) depending on the specific needs of each project. Research governance and oversight, plus the delivery and monitoring of specific trials and studies, are managed by Clinical Research Submissions and Operations & Delivery sections. The former handles trial registration (for eg clinicaltrials.gov or one of the WHO approved International Clinical Trials Registry Platform registries such as ISRCTN, TCTR or PACTR) , ethics and reporting functions, while the latter handles the monitoring and delivery functions either directly using CTSG staff or via management of contracted third party entities. CTSG designs and maintains management information systems to help monitor individual studies using MS Power BI and the portfolio of studies CTSG supports using the Studyline system. Data analysis and reporting are undertaken using statistical programmes and analysis tools such as Stata, R and Python.

## Our Team

Head of Clinical Trials Support Group (CTSG)
**Prof Greg Fegan**

Research staff at sister units

**Head of Data Management**
**Naomi Waithira**

Data Managers
**Marja Schilstra**
**Thatsanun Ngernseng**
**Kulthida Chaikul**
**Vanapol Chamsukhee**
**Atthanee Jeeyapant**
**Chonticha Menggred**
**Brian Mutinda**
**Mawin Bucha**

Research Assistant
**Keitcheya Chotwatthanawathit**

Database Designer
**Pantira Koomklang**

Clinical Data Assistants
**Wanida Jansuaidee**
**Panor Kiatkungwanglai**
**Achara Mukdaprakorn**

System Administrator
**Montri Ridjaibun**

Programmer
**Prapass Wannapinij**

**Clinical Research Operations & Delivery**

Program Managers
**Jaruwan Tubprasert**
**Pongphaya Pongsuwan**
**Prayoon Yuentrakul**

Clinical Research Associates
**Maliwan Hongsuwan**
**Nuttakan Tanglakmankhong**
**Wongsatorn Phatsuntia**

Senior Clinical Trials Assistant
**Akanittha Poonchai**

Clinical Trials Assistants
**Nisarat Sorotpinya**
**Thanyatip Thita**
**Ashaya Ingkasatien**

Clinical Trials Admin Coordinator
**Thanaporn Champathai**
(also ASO)

**Clinical Research Submissions**

Program Manager
**Salwaluk Panapipat**

Regulatory Affairs Specialist
**Varaporn Kruabkontho**

Clinical Trials Assistants
**Orawan Anunsittichai**
**Saiy Chaiwang**
**Nhathita Panatreswas**

**Head of Statistics**
**Prof Mavuto Mukaka**

Statisticians
**Sue Lee**
**Chiraporn Taya**
**Natenapa Chimjinda**
**Phrutsamon Wongnak**

## Top 5 publications in 2024

1. A randomised trial of malaria vaccine R21/Matrix-M™ with and without antimalarial drugs in Thai adults. Hanboonkunupakarn B, Mukaka M, Jittamala P, Poovorawan K, Pongsuwan P, Stockdale L, Provstgaard-Morys S, Chotivanich K, Tarning J, Hoglund RM, Chimjinda N, Ewer K, Ramos-Lopez F, Day NPJ, Dondorp AM, Hill AV, White NJ, von Seidlein L, Pukrittayakamee S. *NPJ Vaccines*. 2024 Jul 6;9(1):124. doi: 10.1038/s41541-024-00920-1. PMID: 38971837; PMCID: PMC11227592.

2. Population genomics and transcriptomics of *Plasmodium falciparum* in Cambodia and Vietnam uncover key components of the artemisinin resistance genetic background.Nayak S, Peto TJ, Kucharski M, Tripura R, Callery JJ, Quang Huy DT, Gendrot M, Lek D, Nghia HDT, van der Pluijm RW, Dong N, Long LT, Vongpromek R, Rekol H, Hoang Chau N, Miotto O, Mukaka M, Dhorda M, von Seidlein L, Imwong M, Roca X, Day NPJ, White NJ, Dondorp AM, Bozdech Z. *Nat Commun*. 2024 Dec 5;15(1):10625. doi: 10.1038/s41467-024-54915-6. PMID: 39639029; PMCID: PMC11621345.

3. Evaluation of hydroxychloroquine or chloroquine for the prevention of COVID-19 (COPCOV): A double-blind, randomised, placebo-controlled trial. Schilling WHK, Mukaka M, Callery JJ, et al *PLoS Med*. 2024 Sep 12;21(9):e1004428. doi: 10.1371/journal.pmed.1004428. PMID: 39264960; PMCID: PMC11392261.

4. Data sharing and reuse in clinical research: Are we there yet? A cross-sectional study on progress, challenges and opportunities in LMICs. Waithira N, Mukaka M, Kestelyn E, Chotthanawathit K, Thi Phuong DN, Thanh HN, Osterrieder A, Lang T, Cheah PY. *PLOS Glob Public Health*. 2024 Nov 20;4(11):e0003392. doi: 10.1371/journal.pgph.0003392. PMID: 39565766; PMCID: PMC11578489.

5. Addressing the gap in health data management skills: an online self-guided course for researchers and health professionals. Waithira N, Mutinda B, Shah K, Kestelyn E, Bull S, Boggs L, Lang T, Cheah PY. *BMC Med Educ*. 2024 Nov 29;24(1):1397. doi: 10.1186/s12909-024-06405-y. PMID: 39614233; PMCID: PMC11607898.

## Major achievements in 2024

- CTSG staff, across all its functional domains, were part of the large multidisciplinary team that published the largest COVID prevention trial, COPCOV, that appeared in *PLoS Medicine* and quickly gathered over 20,000 views and 1,000 tweets within 2024 following its publication in mid-September of 2024.
- We conducted three statistical short courses as follows: *Statistical Analysis using R software in Bangkok* in August; *Statistical Analysis using R software* in Laos in November; and jointly with OUCRU colleagues, *an Advanced Statistics Course in Survival Analysis* in May This course drew attendees from MORU, OUCRU (Viet Nam, Indonesia), Menzies (Australia), SMRU, MOCRU and COMRU.
- We implemented the Oxford University Research Services' Studyline portfolio management system and entered 120+ currently running projects into this new web-based system that were previously stored in a legacy MS-Access system.
- Following the introduction of a new ethics system, WorkTribe, in late 2024 by Oxford University, CTSG staff created documentation and training resources to aid investigators in its use.
- We have enabled timely decision-making in clinical trials, large-scale surveillance efforts, and hospital-based studies:
  - **For adaptive clinical trials**, we facilitated rapid data accumulation and analyses allowing for treatment adaptations in the PLATCOV (COVID-19), AD ASTRA (Influenza), and ARSYNAL (RSV) platform trials. These studies are conducted in Thailand, Nepal, Laos, and Brazil.
  - **Community-based surveillance**: We completed mobile-based data collection in over 300 villages across Cambodia, Bangladesh, Laos, and Thailand to investigate causes of febrile illness in rural communities. Over 200,000 patients were screened and 100,000 followed up in the SEACTN studies. Data generated from this work are being utilised in 8 PhD projects.
  - **Hospital-based surveillance**: We concluded data collection and curation for antimicrobial resistance surveillance in 19 hospitals in Asia and Africa. The software developed for reporting and analysis is openly shared, equipping hospitals with tools for sustained AMR surveillance.
  - **RCTs**: Our team continues to provide data management for clinical trials. In 2024, we delivered analytical datasets for: R21, a malaria vaccine trial; DeTACT, a Phase 3 study on a new therapy for uncomplicated malaria in 11 hospitals across Asia and Africa; and Procalban, a trial on point-of-care test for sepsis, among others.
- CTSG's expertise in the setting up, conduct and delivery of clinical trials was yet again underscored in 2024 by requests to participate in national, regional and international fora. This included:
  - A request for, and delivery of, training in GCP for the Thai Ministry of Public Health;
  - A regional workshop on the regulatory and ethical review of clinical trials in Nepal in April 2024 hosted by the Good Clinical Trials Collaborative;
  - The delivery of a programme of work funded by the European and Developing Countries Clinical Trials Partnership (EDCTP) with a key a component of this work being capacity development of Ethiopian colleagues to be able to carry out definitive clinical trials leading to regulatory approval of new drugs or formulations; and
  - Expert input into a WHO-funded project looking at developing a maturity framework for assessing clinical trials units across the globe.

MORU CTSG staff working with Ethiopian colleagues from the Armauer Hansen Research Institute (AHRI) Ethiopia in July 2024. © MORU. Photographer: Prayoon Yuentrakul.

MORU's focus on developing national staff members continues to pay off, with the graduation of a further two cadres of the Make a Difference Programme (MaD). © MORU. Photographer: Gerhard Jørén.

# Operations & Administration

*Led by Chief Operating Officer (COO) David Burton, MORU's Operations & Administration teams provide multifunctional support to Departments, Units and study sites across the MORU Major International Programme (MIP).*

Chief Finance Officer (CFO) Sasithorn Chuaynoo leads the **Finance and accounting** teams. The GL & Financial Accounting team oversees cash management, payments and advances and ensures Thailand-based activities are compliant with the Thai Financial reporting standards for Non-Publicly Accountable Entities. The MORU accounts reporting team oversees project financial management and financial reporting.

**Fundraising/Grant Management** is led by Grants & Contracts Manager Dave Gandy. The team is split between Pre-Award and Post-Award providing integrated support for the Principal Investigator (PI) throughout the project life-cycle of each donor grant. The Pre-Award team gather and communicate funding opportunities and closely support PIs in securing and managing monies for their research projects. The Post Award team help with set-up of the grant, financial reporting, monitoring and the close out of the project.

The **Purchasing and Logistics** team, led by Winai Kaewkong, procures materials, equipment, and essential supplies to support MORU's research activities. The team ensures compliance with national regulations in logistics operations, manages the Equipment Register (ER) and inventories, and coordinates the efficient distribution of resources across the MORU MIP.

HR & Administration Manager Kanchana Pongsaswat leads the **Bangkok**-based **Human Resources and Administration** team, which provides recruitment, induction and admin services for the 240 plus employees working for MORU Bangkok and associated study sites, and additional HR leadership and support for all 920 personnel employed across the MORU MIP.

The IT team, led by Head of IT Dean Sherwood, provides **Information Technology** and **Cybersecurity** services across the MORU MIP including design, implementation, management, availability, and disaster recovery for MORU datacentres, applications, network infrastructure, and cloud services. This is accomplished through technologies such as Managed Detection and Response services, comprehensive IT infrastructure monitoring and alerting, rigorous endpoint security controls, automated virtual machine backup verification, and offsite cloud data replication.

Gary Harkness, **MORU Operations** Officer, provides a broad range of operational support with specific focus on supporting Oxford contracted employees, Business Continuity Planning, the ERP (Enterprise Resource Planning) system, Oracle NetSuite, supported by the NetSuite Administrator, Tanathnun Wijitnukul.

The **Compliance & Quality Assurance** Department (CQAD) is led by Compliance and Quality Assurance Manager Pattira Intanil. CQAD ensure documentation for Laboratory and Research projects comply with applicable standards and guidelines, and that the MORU Quality Management System (QMS) fully supports MORU research activities. This is achieved through a robust version control document management system.

All MORU Training and Leadership activities are coordinated and delivered by **Training & Development (T&D)** Manager Nantamon Netikul (Ploy) and Training and Development Officer Sasipim Arttayakul (Mameow). They also manage a virtual training platform (Bridge) which supports training delivery.

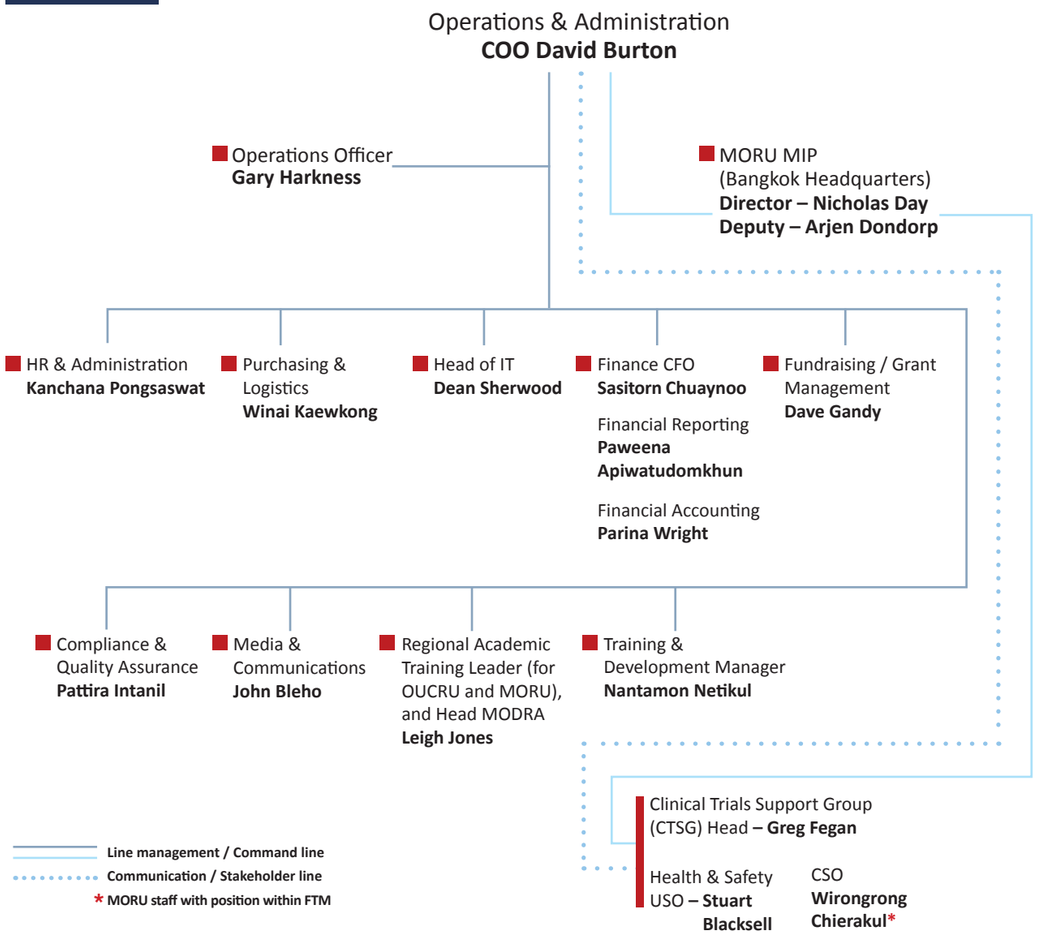
Leigh Jones is the **Regional Academic Training Leader**. In MORU she is supported by Pawadee Boonyakanjanapon (Postgraduate Student Assistant). Leigh's primary aim is to establish, promote and develop a culture of training excellence by providing the best environment, support and training particularly for post-graduate students and early career scientists. Leigh also leads the new MORU-OUCRU Discovery Research Academy (MODRA).

MORU's **Health and Safety** function is led by Senior Microbiologist Prof Stuart Blacksell who ensures that all working areas, especially the laboratories, fully comply with UK regulatory requirements, relevant national law, and University of Oxford Safety policies. He is supported in this by the MORU Network Safety Manager Dr Jaison Kolenchery, who liaises with the NDM health and safety management to ensure regulatory conformity, with all incidents reported and managed through the University of Oxford-based incident management system, and a MORU Network Health and Safety Committee.

**Communications** activities are led by John Bleho, a specialist Media & Communications Manager who supports the MORU MIP in all media interactions, newsletters, maintenance of the website and social media activities.

In addition, HR & Training, Logistics, IT, Health & Safety, Compliance, Security, Communications, Finance, Admin, Legal / Research Services, Contracts and Funding teams based in the University of Oxford provide the MORU MIP with valuable support, as do operations teams based in each MORU Unit.

## Our Team




HR & Administration Manager Kanchana Pongsaswat (*right*) leads the Bangkok-based Human Resources and Administration team, PA & Executive Assistants Pawinee (Joy) Pawthong (*left*) and Buaboun (Jan) Ariyalikit (*middle*). © MORU. Photographer: Gerhard Jørén.

## Major achievements in 2024

Within the framework of a five-year Wellcome supported Organisational Strengthening programme, MORU made continual improvements to its operational infrastructure and capabilities during 2024. The Organisational Strengthening Committee (OSC), with representatives from MORU, Wellcome, and Oxford, has overseen the targeted investment of resources under five distinct aspects of MORU operational support.

Under the **PEOPLE** area, the **Training and Development** department continues to provide high-quality training to the MORU network on the bespoke designed digital training platform (Bridge). In 2024, the MORU specific Making a Difference (MaD) **Leadership** programme provided additional support to the three cadres of aspiring multi-disciplinary leaders from across the MORU MIP. **Career path support** initiatives were informed by an annual Training Needs Assessment with targeted leadership for individuals and teams.

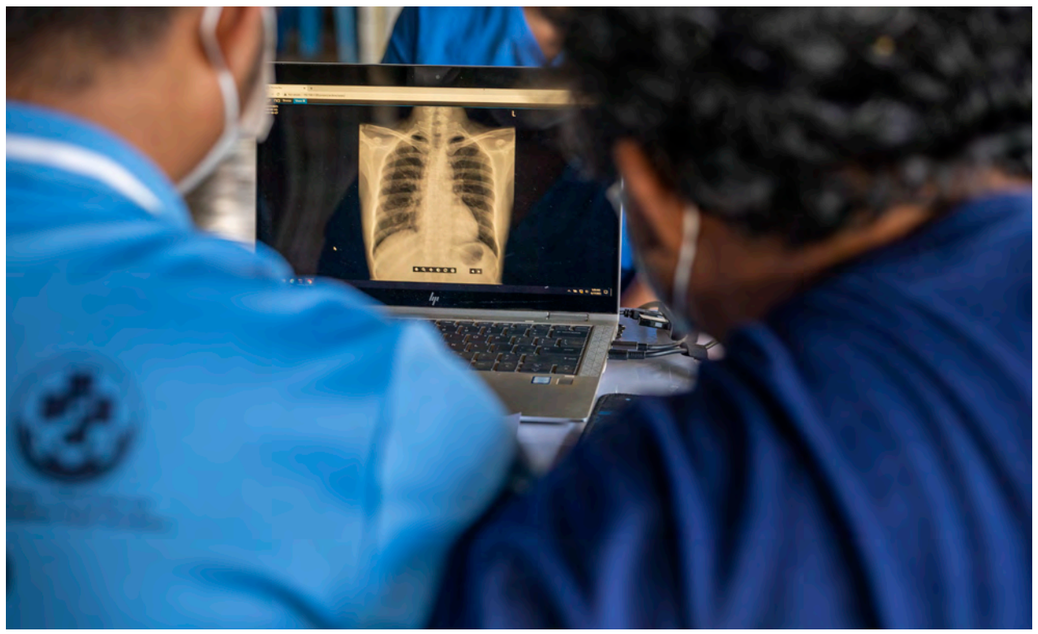
Under the **TEAMS** focus area in 2024, there was support of MORU staff members through team building exercises. Key employees were formally recognised for their high-quality work and supported in their career development through targeted training and mentoring. There has been a review of all data related roles and new positions and responsibilities proposed for adoption in the new core funding cycle (2025-2032).

Under **RISK** there were several areas of improvement. The **risk management** process was further developed with the appointment of a dedicated risk officer in the Compliance and Quality Assurance team. There were a number of actions and risk mitigations taken in 2024 including further investment in software to manage cyber risks, ie. full adoption of Falcon Complete and steps to improve the sustainability of the MORU MIP with the planning of the establishment of a Thailand Foundation (new legal entity).

To support the development of reporting and **Business Intelligence**, the MORU ERP (Oracle NetSuite) was further enhanced. There was significant work on updating asset and inventory management, increasing the integrity and accuracy of the information held. New POWER BI dashboard reporting areas came online including budget reporting, clinical trial recruitment data, student information, and staff headcounts. There was automation of processes through M365 / power automate / e-sign etc including annual leave, expenses, conflict of interest, contracting, policy acknowledgement.

For the **Equality, Diversity & Inclusion** (EDI) focus area, MORU had engaged the EW Group in 2022 to undertake an independent external review of MORU's Equity, Diversity and Inclusion (EDI) culture and an EDI action plan was generated. In 2024, actions taken included all-staff meetings to discuss and implement giving a voice to all staff and to make sure that they feel heard and valued, and specific EDI events were organised and run by the EDI Committee (EDIC).

In Nov 2024, the MORU-OUCRU Discovery Research Academy (MODRA) Workshop 2 in Ho Chi Minh City, Viet Nam equipped 15 early- to mid-career researchers with the skills to secure and manage research funding effectively. © MORU. Photographer: Vinh Quang Nguyen.



The SMRU/BHF tuberculosis (TB) and Community & Public Engagement (CEPE) teams conduct both in-clinic and outreach TB screening with chest X-ray machines to reach Thai-Myanmar border migrant communities. © MORU. Photographer: Gerhard Jørén.

# Shoklo Malaria Research Unit (SMRU)

*SMRU conducts unique cohort studies in maternal and child health, and malaria treatment and prevention. Our research agenda is based on community engagement and our experience in providing frontline care to the marginalised population we serve, enabling rapid implementation of research findings.*

Founded in 1986 and based on the border between Thailand and Myanmar, the Shoklo Malaria Research Unit (SMRU) is the oldest and largest of the MORU units. It operates jointly with the Borderland Health Foundation (BHF), a Thai registered body that oversees the humanitarian work while SMRU focuses on the research projects with the support of MORU Bangkok-based departments.

Following the official opening in late 2022 of new offices and laboratory in Mae Ramat, 35 km north of SMRU's original Mae Sot base, SMRU-BHF are now firmly established in Mae Ramat in two sites: the BHF building with all the administration and the various departments and Mae Ramat Hospital where the SMRU laboratories now operate.

In the new premises, SMRU-BHF continue their mission to provide evidence-based quality health care to marginalised populations, mostly farmers and migrant workers on both sides of the Thai-Myanmar border, through a combination of research (SMRU) and humanitarian activities (BHF). Infectious diseases such as malaria, TB, dengue, hepatis B and rickettsioses exert a large burden on this mostly poor and marginalised community with limited access to healthcare.

Many of our research findings have global applicability. For example SMRU research has influenced the global treatment recommendations for malaria and malaria in pregnancy.

Composed of doctors, scientists, technicians, nurses, medical assistants, midwives, cleaners, drivers and support staff from a variety of ethnic backgrounds, the SMRU-BHF team is a dedicated, living example of equity, diversity and inclusion. We operate clinics on both sides of the border and a large malaria elimination program in Karen state in Myanmar. The main pillars of our work are:

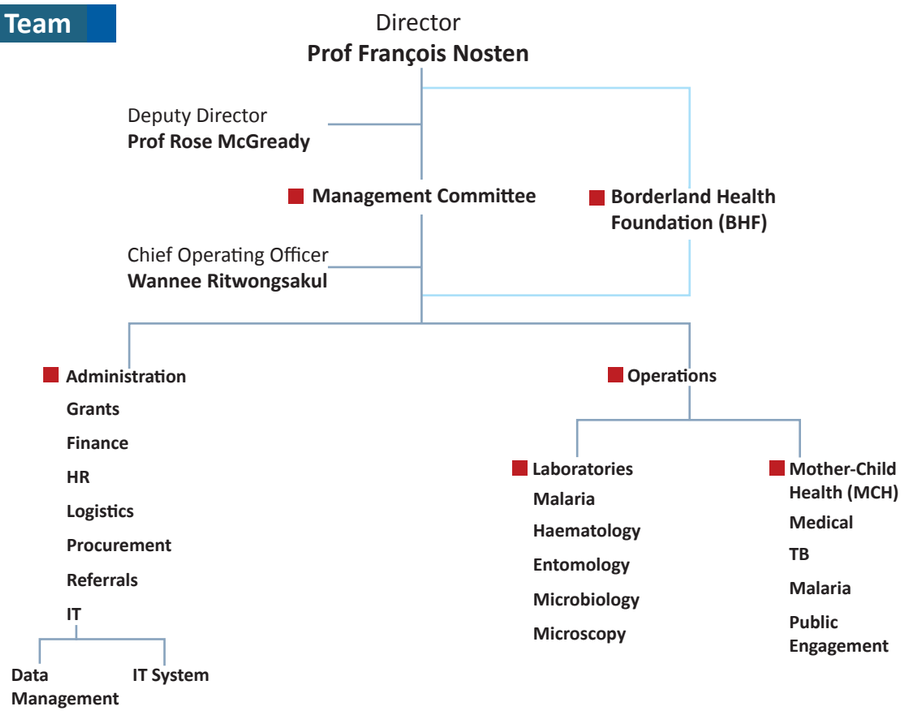
- **Malaria**, with a large malaria elimination program in Karen state in Myanmar;
- **Maternal and Child Health (MCH)** with antenatal care, delivery facilities and special care baby units; and
- **Tuberculosis (TB)** with four treatment centres, on each side of the border, and active screening activities in in Thailand and Myanmar border communities.

In 2024, the SMRU activities intensified, while BHF rapidly expanded its humanitarian activities because of the deteriorating situation in Myanmar and violence arising from the military takeover and the continuous political instability.

SMRU's training component continued during 2024: Mellie Gilder (DPhil) and PhD students Taco Jan Prins and Aung Myint Thu, plus 3 MSc students, and 3 BSc students and numerous training sessions of local team members.


Community health workers (CHW) from border communities paint sunflower petals to show their confidence levels in sharing sexual and reproductive health knowledge to marginalized and undocumented migrants. Orange: complete confidence; lime green: confident; dark green: not confident. Lower right insert is final product - from a new CHW! © MORU. Photo: @SMRU Media.

## Our Team




SMRU medic/midwife Nan San Mwe (*left*) during a Mother-Child Health (MCH) outreach consultation in a Myanmar migrant workers community in Thailand. © MORU. Photographer: Gerhard Jørén.

## Top 5 publications in 2024

1. Non-invasive detection of bilirubin concentrations during the first week of life in a low-resource setting along the Thailand-Myanmar border. Bancone G, Gilder ME, Win E, Gornsawun G, Moo PK, Archasuksan L, Wai NS, Win S, Hanboonkunupakarn B, Nosten F, Carrara VI, McGready R. *BMJ Paediatr Open*. 2024 Sep 28;8(1):e002754. doi: 10.1136/bmjpo-2024-002754. PMID: 39343446; PMCID: PMC11440201.

2. Design of a targeted blood transcriptional panel for monitoring immunological changes accompanying pregnancy. Brummaier T, Rinchai D, Toufiq M, Karim MY, Habib T, Utzinger J, Paris DH, McGready R, Marr AK, Kino T, Terranegra A, Al Khodor S, Chaussabel D, Syed Ahamed Kabeer B. *Front Immunol*. 2024 Jan 30;15:1319949. doi: 10.3389/fimmu.2024.1319949. PMID: 38352867; PMCID: PMC10861739.

3. Identification of Southeast Asian Anopheles mosquito species using MALDI-TOF mass spectrometry. Chaumeau V, Piarroux M, Kulabkeeree T, Sawasdichai S, Inta A, Watthanaworawit W, Nosten F, Piarroux R, Nabet C. *PLoS One*. 2024 Jul 5;19(7):e0305167. doi: 10.1371/journal.pone.0305167. PMID: 38968228; PMCID: PMC11226003.

4. A drug repurposing approach reveals targetable epigenetic pathways in *Plasmodium vivax* hypnozoites. Maher SP, Bakowski MA, Vantaux A, Flannery EL, Andolina C, Gupta M, Antonova-Koch Y, Argomaniz M, Cabrera-Mora M, Campo B, Chao AT, Chatterjee AK, Cheng WT, Chuenchob E, Cooper CA, Cottier K, Galinski MR, Harupa-Chung A, Ji H, Joseph SB, Lenz T, Lonardi S, Matheson J, Mikolajczak SA, Moeller T, Orban A, Padín-Irizarry V, Pan K, Péneau J, Prudhomme J, Roesch C, Ruberto AA, Sabnis SS, Saney CL, Sattabongkot J, Sereshki S, Suriyakan S, Ubalee R, Wang Y, Wasisakun P, Yin J, Popovici J, McNamara CW, Joyner CJ, Nosten F, Witkowski B, Le Roch KG, Kyle DE. *bioRxiv* [Preprint]. 2024 Mar 25:2023.01.31.526483. doi: 10.1101/2023.01.31.526483. PMID: 36778461; PMCID: PMC9915689.

5. Molecular markers of artemisinin resistance during falciparum malaria elimination in Eastern Myanmar. Thu AM, Phyo AP, Pateekhum C, Rae JD, Landier J, Parker DM, Delmas G, Watthanaworawit W, McLean ARD, Arya A, Reyes A, Li X, Miotto O, Soe K, Ashley EA, Dondorp A, White NJ, Day NP, Anderson TJC, Imwong M, Nosten F, Smithuis F. *Malar J*. 2024 May 8;23(1):138. doi: 10.1186/s12936-024-04955-6. PMID: 38720269; PMCID: PMC11078751.

## Major achievements in 2024

- SMRU produced 34 publications in peer reviewed scientific journals.
- Completed the fever aetiology project.
- Continued the clinical trial of the combination treatment with tafenoquine for *P. vivax* despite the difficulties on the border.
- Contained the rise in malaria cases in Kayin state (eastern Myanmar).
- Investigated Abbott's defective malaria rapid diagnostic test (RDT).
- Completed recruitment of the participants for the trial of iron deficiency anaemia in pregnant women.
- Began a study on the use of biosensor and cord blood for the detection of G6PD deficiency.
- Generated new data on the transcriptomics of *P. vivax* gametocytes.
- Completed the molecular identification of over 100,000 mosquito vectors of various vector-borne diseases.
- Completed the recruitment of the clinical trial assessing the micro-nutrients in a tuberculosis cohort.
- Continuous monitoring of outbreaks of vaccine-preventable diseases by respiratory pathogen surveillance, in collaboration with Mae Ramat Hospital and the Thai Ministry of Public Health.
- Completed the recruitment of the clinical trial on the Immunogenicity of COVID-19 vaccines among tuberculosis patients.
- Completed investigation of workplace polices regarding best practices for breastfeeding for working women in low resource settings resulting in improved workplace protection at SMRU/BHF.
- Completed a community based, participatory action study on the awareness on adolescent pregnancy in marginalised migrant populations on the Thai-Myanmar border.
- Completed the only study in Myanmar and Thailand that confirmed COVID-19 infection with PCR in pregnancy.
- Completed the study of pharmacokinetics of amino-8-quinoline in postpartum lactating women.
- Following studies done at SMRU, the Global Malaria Programme changed its policy on the use of primaquine in lactating mothers.
- Published a study comparing venous and capillary sampling for the pharmacokinetics (PK) of antimalarials.

Dr Vilada Chansamouth (*centre*) and LOMWRU's World AMR Awareness Week team in Nov 2024. LOMWRU drafted and evaluated adherence to the Lao National Antimicrobial Prescribing Guidelines - now implemented country-wide. Dr Vilada is supporting the Laos Ministry of Health (MoH) to set up national antimicrobial use surveillance. © MORU. Photo: Elizabeth Ashley.

# Lao-Oxford-Mahosot Hospital-Wellcome Trust Research Unit (LOMWRU)

*A strong academic and technical partner to the MOH in Laos, LOMWRU is known for its advanced laboratory and clinical research capability. We conduct policy relevant research, train Lao scientists and technicians, and build national capacity for diagnostic microbiology and biosafety. Through these activities we strengthen the research culture in Laos.*

LOMWRU is situated within the Infectious Diseases Building of Mahosot Hospital, a 650-bed primary to tertiary hospital in Vientiane, the capital of Lao PDR (Laos). Laos shares borders with China, Thailand, Cambodia, Myanmar and Viet Nam and has a population of 7.4 million with a GDP per capita in 2023 of $2,075 per annum.

Part of the Mahosot Hospital Microbiology Department, LOMWRU supports Mahosot's diagnostic microbiology and virology laboratories. The virology laboratory is also partly supported by the Unité des Virus Émergents (UVE) in Marseille, France, with funding from the Institut de Recherche pour le Développement (IRD). We are a collaborative team of 97 staff: 24 Lao government staff (microbiology lab technicians and scientists), and 73 project staff (academic, technical, operations).

Our multidisciplinary research focuses on infectious diseases and antimicrobial resistance (AMR) in Laos with the goal of reducing morbidity and mortality. We conduct clinical research, evaluate new diagnostics, and make a substantial contribution to national surveillance of respiratory viruses, dengue, Japanese Encephalitis (JE), antibiotic resistance, and antimalarial drug resistance.

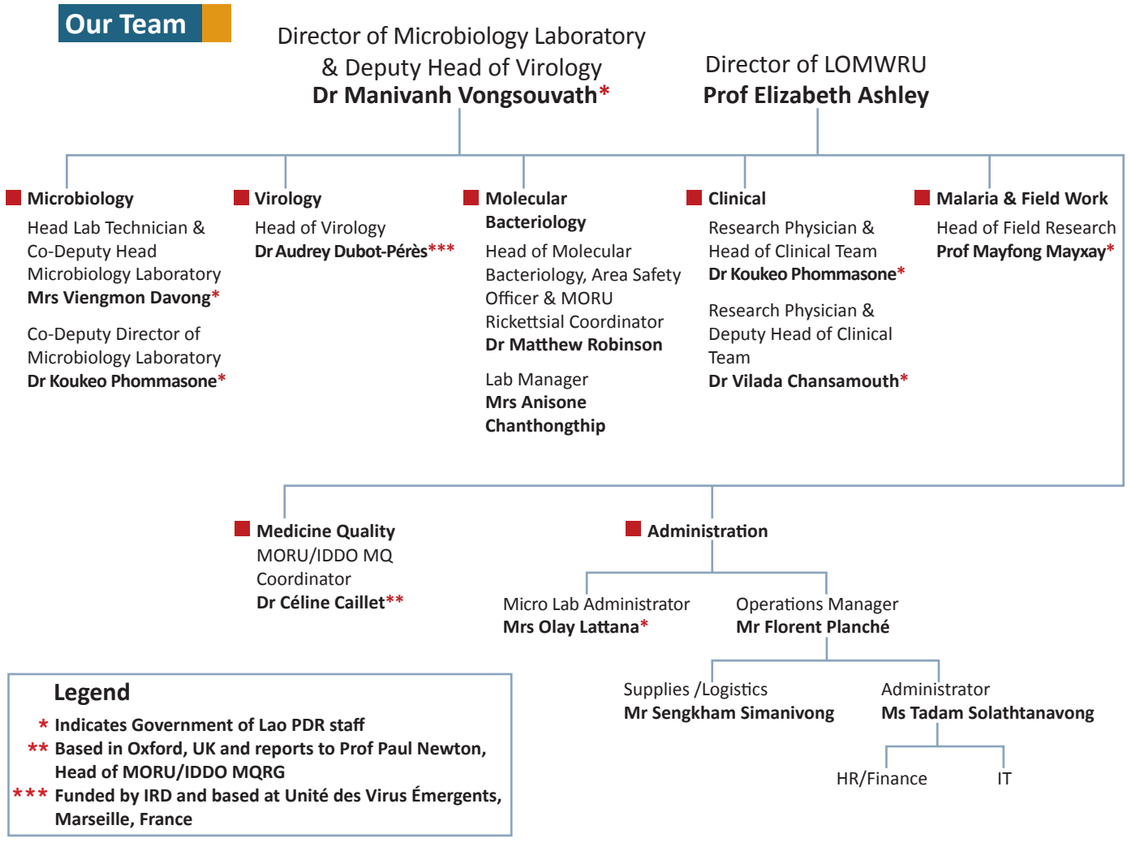
Increasingly, we conduct health economics research, aiming to provide useful data to inform Lao government policy decisions, particularly for prioritisation and rational use of new medicines and health technologies. There is a small Medicine Quality Research Group (MQRG) team in Vientiane, led by Paul Newton and Céline Caillet at the University of Oxford.

In 2024 we were part of several MORU network-led projects in Laos, including:

- ACORN (A Clinically Oriented AMR Resistance Network);
- SEACTN (South and Southeast Asia Community Trials Network), managed in Laos by Koukeo Phommasone, into which we have recruited more than 23,000 participants;
- The Critical Care Registry network;
- PLATCOV (Finding treatments for COVID-19: A phase 2 multi-centre adaptive platform trial to assess antiviral pharmacodynamics in early symptomatic COVID-19);
- AD-ASTRA (ADaptive ASsessment of TReatments for influenzA: A phase 2 multi-centre adaptive randomised platform trial to assess antiviral pharmacodynamics in early symptomatic influenza infection);
- Spot Sepsis (an evaluation of biomarkers aiming to identify children with infectious diseases at risk of poor outcomes earlier) and GenRe-Mekong (malaria genomic epidemiological surveillance);
- MEL-OB1 (A prospective observational study for clinical characteristics, current practices and outcomes of melioidosis-suspected and melioidosis-confirmed patients in Thailand and Laos). This will be followed by a trial of epetraborole for the treatment of melioidosis.

Dr Cindy Chu, LOMWRU senior research physician, is leading the SEADOT project, a dose-optimisation study of tafenoquine for the radical cure of vivax malaria taking place in four countries and funded by the United States NIH. We are also developing rectal formulations of ceftriaxone for the treatment of neonatal sepsis in remote areas (PI Elizabeth Ashley), funded by the UK Medical Research Council.

## Our Team

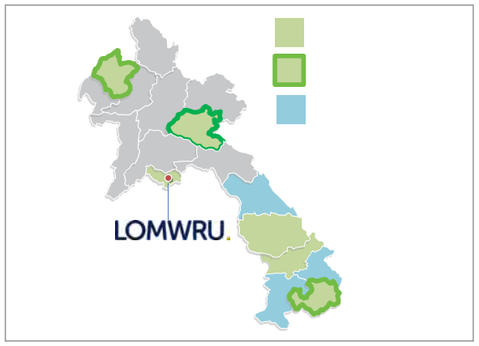



SEADOT PI Dr Cindy Chu (*centre*) and LOMWRU colleagues in Khammouan province in March 2024 to assess potential sites for SEADOT, a dose-optimisation study of tafenoquine for the radical cure of vivax malaria. © MORU. Photo: Cindy Chu.

## Top 5 publications in 2024

1. AmpC β-lactamases detected in Southeast Asian *Escherichia coli* and *Klebsiella pneumoniae*. Roberts T, Ling CL, Watthanaworawit W, Cheav C, Sengduangphachanh A, Silisouk J, Hopkins J, Phommasone K, Batty EM, Turner P, Ashley EA. *JAC Antimicrob Resist*. 2024 Nov 28;6(6):dlae195. doi: 10.1093/jacamr/dlae195. PMID: 39610980; PMCID: PMC11604056.

2. Investigation of *Escherichia coli* isolates from pigs and humans for colistin resistance in Lao PDR-a cross-sectional study. Phomsisavath V, Roberts T, Seupsanith A, Robinson MT, Nammanininh P, Chanthavong S, Chansamouth V, Vongsouvath M, Theppangna W, Christensen P, Blacksell SD, Mayxay M, Ashley EA. *One Health*. 2024 Apr 30;18:100745. doi: 10.1016/j.onehlt.2024.100745. PMID: 38725959; PMCID: PMC11079391.




3. Dry swabs and dried saliva as alternative samples for SARS-CoV-2 detection in remote areas in Lao PDR. Sibounheuang B, Boutthasavong L, Chommanam D, Phommasone K, Panapruksachat S, Praphasiri V, Bouttavong S, Sisavath H, Christy NCV, Letizia AG, Mayxay M, Vongsouvath M, Ashley EA, Dubot-Pérès A. *Open Forum Infect Dis*. 2024 Jul 23;11(8):ofae433. doi: 10.1093/ofid/ofae433. PMID: 39145142; PMCID: PMC11322834.

Figure. LOMWRU partner sites in 2024.

4. Sustainable antimicrobial resistance surveillance: time for a global funding mechanism. Painter C, Limmathurotsakul D, Roberts T, van Doorn HR, Mayxay M, Lubell Y, Day NPJ, Turner P, Ashley EA. *Lancet Infect Dis*. 2025 Feb;25(2):e99-e103. doi: 10.1016/S1473-3099(24)00649-2. Epub 2024 Dec 17. PMID: 39706207.

5. Understanding hospital antimicrobial prescribing decisions and determinants of uptake of new local antimicrobial prescribing guidelines in Laos. Chansamouth V, Douangnouvong A, Thammavongsa P, Sombandith X, Keomany S, Rattana S, Newton PN, Day NP, Turner P, Mayxay M, van Doorn HR, Ashley EA. *Wellcome Open Res*. 2024 Sep 12;9:183. doi: 10.12688/wellcomeopenres.20884.2. PMID: 39301442; PMCID: PMC11411237.

## Major achievements in 2024

- Microbiology Laboratory capacity building for AMR surveillance in Laos as part of the Fleming Fund Country Grant. We continued to support 5 provincial hospital diagnostic labs.
- Currently supporting the Department of Healthcare and Rehabilitation, MoH to set up national antimicrobial use surveillance (Vilada Chansamouth).
- Expanded whole-genome sequencing activities, adding RSV, dengue and AMR sequencing to SARS-CoV-2 and influenza, and trained more technicians in sequencing.
- Dr Vilada Chansamouth graduated with a DPhil from the University of Oxford (*Evaluating the impact of a Lao language mobile phone antimicrobial use guideline application on antimicrobial prescribing in the Lao PDR*).
- Dr Patricia Tabernero graduated with a PhD from the University of Alcalá, Madrid (*Understanding the prevalence and burden of poor quality antibiotics and anti-tuberculosis medicines*).
- Nine MSc students graduated and two physicians were awarded a Manaaki New Zealand Scholarship to study for an MSc in Public Health.
- We published 46 publications in peer-reviewed journals.
- Participated in the Lao national AMR committee, which is updating the National Strategic Plan to combat AMR.
- Organised Pint of Science Laos, which was held on 13-14 May 2024 at CoreBeer and attracted the biggest audience so far, with over 260 attendees over the two nights.

A stall at a wildlife market in Laos with lizards, squirrels and wild birds for sale. Trading wildlife at markets brings diverse species into contact, usually in dense and unsanitary conditions, increasing the risk of mixing, amplification, and transmission of pathogens among host species, including humans. Photo: K. Yoganand/ World Wildlife Fund via AP.

The AHC-COMRU AMR stewardship team includes Intensive care paediatricians, clinical microbiologists, and pharmacists. © MORU. Photographer: Gerhard Jørén.

# Cambodia-Oxford Medical Research Unit (COMRU)

*A child health and antimicrobial resistance (AMR) focused research unit with world class diagnostic microbiology facilities, fully integrated into Cambodia's leading non-governmental paediatric healthcare organisation, and with long-standing links to the Cambodian Ministry of Health (KH MoH).*

Located within Angkor Hospital for Children (AHC), Siem Reap, COMRU is led by paediatric clinical microbiologist Prof Paul Turner and paediatrician Assoc Prof Claudia Turner. The MORU-AHC collaboration began in 2006 and was formalised as COMRU in 2012, with the unit becoming fully embedded as a hospital department in 2018.

Working within the broad themes of infectious disease epidemiology and newborn survival, COMRU has undertaken detailed febrile illness aetiology studies, pathogen-specific studies for key species (community and hospital colonisation: *Escherichia coli*, *Klebsiella pneumoniae*; epidemiology, clinical features, outcomes: *Burkholderia pseudomallei*, *Salmonella* Typhi, *Staphylococcus aureus*; colonisation and vaccine impact: *Streptococcus pneumoniae*), and health system wide work to determine neonatal mortality in rural northern Cambodia.

International collaborations have centred on global pathogen genomic surveillance work. COMRU has provided most of the Cambodian strains for *Streptococcus pneumoniae* (Global Pneumococcal Sequencing project) and *Salmonella* Typhi (International Typhoid Consortium / TyphiNET). Current collaborations have expanded the organism scope to include important AMR relevant species (*Escherichia coli* and *Klebsiella pneumoniae*), and potentially vaccine preventable infections (non-typeable *Haemophilus influenzae*).

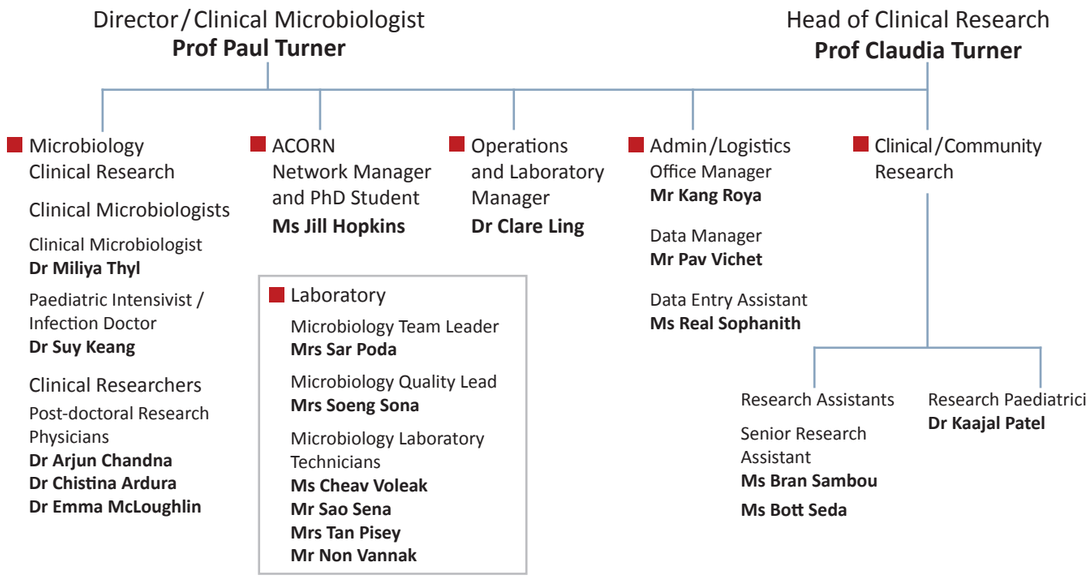
Recent COMRU studies have focused on identifying interventions to improve newborn survival, and on improving access to treatment for sepsis / febrile illness. Local AMR surveillance work at AHC-COMRU informed the development and implementation of the Wellcome-funded ACORN international AMR surveillance project (described further below).

AHC and COMRU are active participants in several Cambodian MoH activities, as a sentinel surveillance site (for AMR, influenza-like illness, and severe acute respiratory infections), a member of the AMR Technical Working Group and AMR National Action Plan Writing Group, and a contributor to National Clinical Practice Guidelines for paediatrics.

Paul Turner, COMRU director, is an active participant in several on-going WHO activities, including the AMR Diagnostic Initiative, Pneumococcal Colonisation Detection Methods Working Group, and the Development Group for tests of neonatal sepsis and possible serious bacterial infections in newborns and young infants, and the Standard Operating Procedures for Bacteriology Development Group.

ACORN2 investigators met in Nairobi, Kenya 17-19 Sept 2024 to review preliminary analyses of AMR surveillance data from across the ACORN network. COMRU and OUCRU-Hanoi established ACORN, a clinical AMR surveillance network in 9 countries across Asia and Africa. Photo: KEMRI-Wellcome.

## Our Team



The team from the ISO15189 accredited AHC-COMRU Microbiology Laboratory. © MORU. Photo: Gerhard Jørén.

## Top 5 publications in 2024

1. A prognostic model for critically ill children in locations with emerging critical care capacity. Chandna A, Keang S, Vorlark M, Sambou B, Chhingsrean C, Sina H, Vichet P, Patel K, Habsreng E, Riedel A, Mwandigha L, Koshiaris C, Perera-Salazar R, Turner P, Chanpheaktra N, Turner C. *Pediatr Crit Care Med*. 2024;25(3):189-200. PMCID: PMC10904005.

2. Exploring the pediatric nasopharyngeal bacterial microbiota with culture-based MALDI-TOF mass spectrometry and targeted metagenomic sequencing. Pol S, Kallonen T, Maklin T, Sar P, Hopkins J, Soeng S, Miliya T, Ling CL, Bentley SD, Corander J, Turner P. *mBio*. 2024;15(6):e0078424. PMCID: PMC11237702.

3. Genomic and panproteomic analysis of the development of infant immune responses to antigenically-diverse pneumococci. Croucher NJ, Campo JJ, Le TQ, Pablo JV, Hung C, Teng AA, Turner C, Nosten F, Bentley SD, Liang X, Turner P, Goldblatt D. *Nat Commun*. 2024;15(1):355. PMCID: PMC10774285.

4. Coverage gaps in empiric antibiotic regimens used to treat serious bacterial infections in neonates and children in Southeast Asia and the Pacific. Williams PCM, Jones M, Snelling TL, Duguid R, Moore N, Dickson B, Wu Y, Saunders J, Wijeratne P, Douangnouvong A, Ashley EA, Turner P. *Lancet Reg Health Southeast Asia*. 2024;22:100291. PMCID: PMC10934317.

5. AmpC beta-lactamases detected in Southeast Asian *Escherichia coli* and *Klebsiella pneumoniae*. Roberts T, Ling CL, Watthanaworawit W, Cheav C, Sengduangphachanh A, Silisouk J, Hopkins J, Phommasone K, Batty EM, Turner P, Ashley EA. *JAC Antimicrob Resist*. 2024;6(6):dlae195. PMCID: PMC11604056.

## Major achievements in 2024

### Scientific

- Completed recruitment, data cleaning, and analysis of ACORN2 AMR surveillance network data. Results were presented at an investigator meeting in September 2024 and have been submitted for publication and as a pre-print (submitted Dec-2024, posted online Jan 2025: https://papers.ssrn.com/sol3/papers.cfm?abstract_id=5095387).

COMRU research assistants Bran Sambou and Bott Seda collecting data on the AHC paediatric intensive care unit for the MORU-MSF Spot Sepsis study. Photo: Angkor Hospital for Children.

- Completed enrolment and laboratory work for a prospective evaluation of the InBios AMD *B. pseudomallei* rapid test in children with pneumonia and skin / soft tissue infections.

- Commenced work on a CRISPR-Cas9 based diagnostic test development and evaluation for identification of select bacterial pathogens and associated AMR (funded by the Research Council of Norway and co-led by Prof Jukka Corander, University of Oslo).

### Capacity building

- Contributed to the development of global Standard Operating Procedures for bacteriology as part of the WHO AMR Diagnostic Initiative.

- Implemented the Wellcome funded SEDRI-LIMS laboratory information management system (SedriLims) as part of the early adopter scheme.

- Worked with the KH Ministry of Environment to update and pilot national procedures for export of genetic material under the Nagoya protocol.

- Participated in a KH MoH initiative to train microbiology laboratory technicians for deployment in provincial hospitals: the COMRU microbiology team welcomed two technicians from Banteay Meanchey for a six-month training placement.

Serotyping of pneumococcal isolates by in-house latex agglutination. The AHC-COMRU microbiology contributes all of the Cambodia data for the Global Pneumococcal Sequencing project, a vital component of international pneumococcal disease surveillance and vaccine development efforts. © MORU. Photo: Gerhard Jørén.

A mobile TB team with portable laboratory and X-ray machine for TB screening in remote villages.
© MORU/MOCRU.

# Myanmar-Oxford Clinical Research Unit (MOCRU)

*In close association with Medical Action Myanmar (MAM) and with a focus on populations at increased risk and usually excluded from service, MOCRU conduct research to identify health problems and evaluate MAM's prevention and treatment strategies for important local diseases, including malaria, TB, HIV, hepatitis C, sexually transmitted infections (STI), rickets, and COVID-19.*

Established in 2013 and led by Frank Smithuis, MOCRU works closely with MAM, a medical aid organisation with a well-established infrastructure of 1,245 staff, 19 clinics and 2,250 Community Health Workers (CHWs) supervised by 70 mobile medical teams spread across Myanmar.

This relationship gives MOCRU access to a broad range of health interventions implemented at scale, as MAM conducted over 2.2 million patient consultations in 2024 alone. MOCRU conducts the research to identify the problems, and evaluates MAM's solutions. This allows us to answer critically important questions around prevention and treatment strategies for locally important diseases, including malaria, tuberculosis (TB), HIV, hepatitis C, sexually transmitted infections (STI), rickets, and COVID-19.

Working in Myanmar has never been easy. Approval for even the most risk-free prospective research projects is often very problematic. The situation worsened after the military took power in February 2021 and the violence that ensued. The functioning of the Department of Health (DoH) and government hospitals was hampered severely due to a nationwide strike (which started in 2021 and was ongoing throughout 2024). Health care has been drawn into the political conflict and services plummeted. The incidences of malaria, TB, STIs and HIV have increased substantially.

The conflict also affected our research plans. Several large studies awaiting Ethics Review Board (ERB) approval after several years of preparation had to be cancelled. Other studies (TruenatTM TB, HIV drug resistance) had to be re-negotiated, or are still pending approval, while some were stopped because of a lack of access (mass screening and treatment for elimination of malaria).

Only studies in MAM patient care projects that were approved before 2021 are going on, such as studying options for new interventions to reduce HIV transmission among key-affected and excluded risk groups (injecting drug users, female sex workers, MSM and transgender women). In addition, we conducted retrospective analyses of interventions addressing major health problems encountered by MAM, focussing on TB, malaria and rickets. The urgent need to identify solutions for major health problems is why we continue operations under these difficult circumstances.

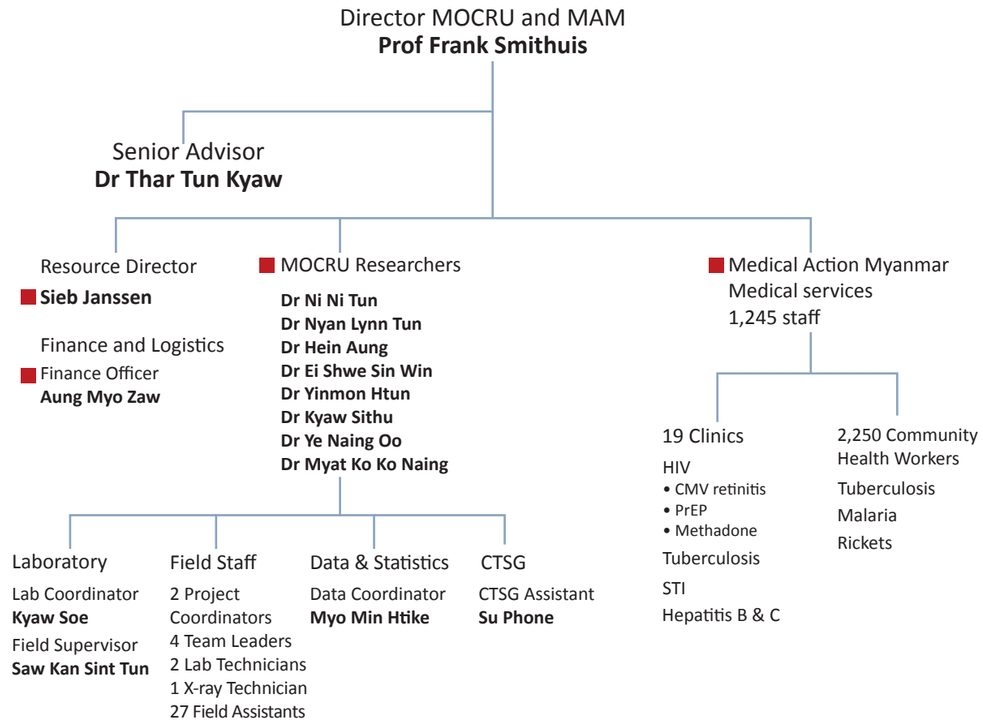
MOCRU conducts evaluations of large prevention and treatment strategies for locally important diseases. The evaluations are relevant for Myanmar, the region and beyond. The strategies focus on:

- Remote and hard to reach communities with no public health care services; and
- Key affected populations who are (or feel) excluded from services.

Our key research areas are:

- Malaria elimination (Pf) and control (Pv).
- TB control through improved screening and diagnosis in remote communities and urban slums.
- HIV prevention and treatment for key affected and excluded people.
- Rickets: its aetiology, diagnosis, prevention and treatment.
- Healthcare services for people who are routinely excluded from public health services.

## Our Team



## Top publications in 2024

1. Improving access to integrated community-based HIV, HCV and harm reduction services for people who inject drugs in Putao district, North Myanmar. Tun NN, Oo CL, New CM, Lynen L, Decroo T, Smithuis F, Gils T. *J Int AIDS Soc*. 2024 Sep;27(9):e26355. doi: 10.1002/jia2.26355. PMID: 39267362; PMCID: PMC11393298.

2. Uptake and challenges with daily oral pre-exposure prophylaxis among men who have sex with men and transgender women, suburban Yangon, Myanmar. Tun NN, Smithuis F, Tun NL, Hteik MMM, Ko MK, Lynen L, Decroo T, Florence E, Gils T. *Int Health*. 2025 Jan 3;17(1):23-32. doi: 10.1093/inthealth/ihae025.

3. Molecular markers of artemisinin resistance during falciparum malaria elimination in Eastern Myanmar. Thu AM, Phyo AP, Pateekhum C, Rae JD, Landier J, Parker DM, Delmas G, Watthanaworawit W, McLean ARD, Arya A, Reyes A, Li X, Miotto O, Soe K, Ashley EA, Dondorp A, White NJ, Day NP, Anderson TJC, Imwong M, Nosten F, Smithuis F. *Malar J*. 2024 May 8;23(1):138. doi: 10.1186/s12936-024-04955-6. PMID: 38720269; PMCID: PMC11078751.

Awareness discussion about rickets in a Naga community. The aetiology, diagnosis, prevention and treatment of rickets is a key MOCRU research area. © MORU/MOCRU. Photo: MAM.

## Major achievements in 2024

**Malaria**

- Integrated malaria care and basic health care in remote areas by introducing CHWs with an integrated healthcare package, and evaluated its effect on malaria elimination. Falciparum malaria was eliminated in 6 years in the first pilot project. We then advocated for a wider introduction of integrated health care by CHW for malaria elimination. The Global Fund for ATM now approve funding for integrated basic health care as a key malaria elimination strategy in the Greater Mekong Sub-region (GMS).
- Piloted mass drug administration (MDA) in Myanmar and demonstrated that it was successful and did not select for artemisinin resistance. MDA is now accepted by the Myanmar malaria program as an intervention to speed up malaria elimination.

**Tuberculosis**

- Evaluated the sensitivity, specificity, positive predictive value and negative predictive value of existing and new variables (signs, symptoms and risk factors) used for presumptive TB referral. Initial analysis indicates that risk factors are crucial for identifying TB, with a higher sensitivity than symptoms.
- Introduced and evaluated active screening strategies for TB in hard-to-reach communities.
- Evaluated and trained medical officers, and used computer-aided detection (CAD) software packages for TB screening and triage using mobile chest x-rays in remote communities.

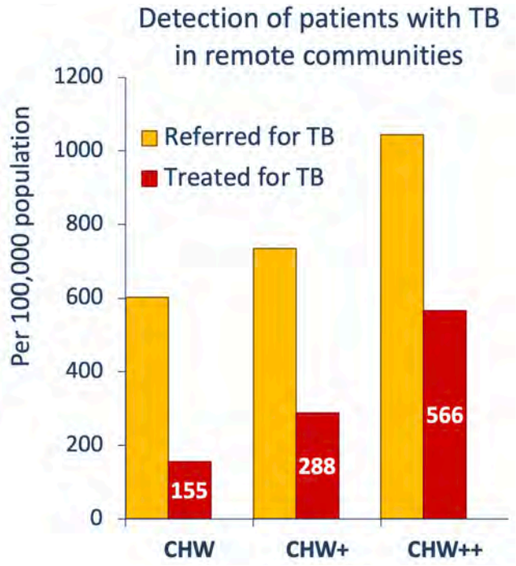



Figure 1. Comparison of the effects of different screening strategies on the detection of patients with TB.

Detection of TB patients increased substantially over 3 phases (*see Figure 1*):

1. CHWs trained to conduct passive case finding for TB and referred suspected patients to the local hospital;
2. CHW+: A mobile team visited the villages 1x/year and conducted active case finding and supported referral; and
3. CHW++: Active case finding included screening for risk factors and CXR when suspected TB.

The TB treated / referral ration increased from 26% to 39% to 54%, which is very important for sick people from remote communities who have to travel far under very difficult circumstances.

**HIV management for key at risk populations in low-resource settings**

- Introduced and studied results of HIV interventions (including PrEP, opiate substitution therapy, tele-mentoring for HCV treatment in remote communities) for key at risk populations (KAP) excluded from health care services (FSW, MSM, TGW and PWID), then advocated to national health authorities for policy changes and more HIV services for KAP.
- Conducted active screening of cervicitis (GC and CT) among female sex workers in a mining area and analysed the prevalence, incidence and risk factors.

MAM supported referral of a severely ill patient, suspected of having TB, to the nearest hospital. © MORU/MOCRU. Photo: MAM.

**Rickets**

- Identified for the first time in more than 100 years children with severe clinical rickets in very remote communities in Nagaland. After raising awareness, MAM mobile medical teams found another 425 children with rickets – about 1 in 5 children had rickets in some villages – then conducted active screening in 20 villages with the highest case load to early detect and treat nutritional rickets and vitamin D deficiency. We are now doing a retrospective analysis for aetiological factors to improve prevention and treatment. So far 1,100 children and lactating women have been put on treatment with calcium and vitamin D. However, health authorities appear reluctant to accept that rickets is an issue in Myanmar.

Attendees at one of the regular informal medicine quality meetings organised by MQRG in October 2024 in Oxford.

# Medicine Quality Research Group (MQRG)

*Our research focusses on improving our understanding of substandard and falsified (SF) medicines and vaccines, a major impediment to equity in access to health care, and improving the accuracy of screening and forensic technologies to determine their contents, origins and trade routes, to inform policy and implementation.*

Part of the NDM Centre for Global Health Research (CGHR), and the Infectious Diseases Data Observatory (IDDO) in Oxford, MORU's Medicine Quality Research Group (MQRG) aims to:

- Improve our understanding of the epidemiology of SF medical products and their impact on patient outcomes, health systems, and antimicrobial resistance (AMR).
- Improve the diagnostic accuracy of innovative screening technologies for post-market surveillance of medicines and vaccines.
- Evaluate innovative pharmaceutical forensics techniques to better understand SF product trade routes.
- Engage with health workers and policymakers to improve global medicine supply quality.

We focus on substandard (due to errors in factories and supply chains) and falsified (aka counterfeit or fraudulent) SF medical products, especially medicines and vaccines. We aim to better understand the SF problem, a major impediment to equity in health care access, to inform policy and implementation, and produce innovative solutions to counter SF products.

Within the MQRG we create new web-based tools such as the Medicines Quality Monitoring Globe, the Medicine Quality literature Surveyor and DAFODIL, Epione, and monitor the global epidemiology of SF medical products, creating a hub that shares data and ideas across multiple stakeholders. Across our numerous collaborations, MQRG works with numerous multidisciplinary collaborators to perform genomic eDNA analysis, stable isotope analysis, multiple reference laboratory chemical techniques, Raman and Near-infrared spectroscopy, MALDI-ToF, plastic and ink analysis, trade route network analysis, and diverse mathematical modelling approaches to estimate impact.

Our key research areas are:

- Evaluation/development of screening devices and novel techniques to detect SF vaccines and protect the global vaccine supply - the VIE Consortium.
- Building collaborative regional platforms to independently evaluate devices to detect SF medicines and vaccines.
- Forensic analysis and testing of innovative techniques to estimate origin of falsified medicines/vaccines and transfer these techniques to real-world use - the FORESFA Collaboration
- Map SF medical products research groups, especially in LMICs and in areas where risk is high but research infrastructure minimal, and facilitate more research groups and collaborations.
- Utilise artificial intelligence to enhance functionality and sustainability of the Globe, Surveyor & Dashboard systems that the group runs.

There was significant progress in 2024 with new collaborations and the first data and papers from these major MQRG projects that began during the COVID-19 pandemic:

- The Wellcome Collaborative Award [Forensic epidemiology and impact of substandard and falsified antimicrobials on public health (FORESFA)]
- The Vaccine Identity Evaluation (VIE) consortium
- The ABACUS Wellcome Discretionary Award project evaluating antibiotic quality in four countries
- Development of a dashboard, DAFODIL, that will be released in 2025, to interpret the medicine and vaccine quality screening devices evidence base
- Investigation of screening techniques for detecting cough syrups adulterated with toxic diethylene glycol (DEG) and ethylene glycol (EG), which have recently killed hundreds of children; and development of a target product profile for DEG/EG detection technologies

## Our Team

Head of the MQRG
**Prof Paul Newton** (UK)

Deputy Head of MQRG
**Dr Céline Caillet** (UK)

Research Pharmacists
**Khonsavath Bellingham** (Lao PDR)
**Dr Noudy Sengxeu** (Lao PDR)
**Ngan Thi Do** (Viet Nam)
**Andrea Soult** (Spain)
**Shan Jiang** (UK)
**Viengsavanh Pimxayvong** (Lao PDR)
**Dr Gesa Gnegel** (UK)
**Thitthiphone Olinh** (Lao PDR)
**Kongchack Phommachack** (Lao PDR)
**Julia Gabel** (Oxford)

Research Physician
**Dr Inthaphavanh Kitignavong** (Lao PDR)

Health Systems Specialist
**Christiane Hagel**

Research Pharmacist & FORESFA Coordinator
**Dr Cathrin Hauk** (UK)

Research Pharmacists & DPhil Students
**Stella Nanyonga** (UK)
**Kerlijn Van Assche** (UK)

Software Engineer, Data Scientist and DPhil Student
**Alberto Olliaro** (UK)

Data Manager
**Lawrence Adipo** (UK)

Honorary Visiting Research Fellows
**Michael Deats** (UK)
**Prof Clark Freifeld** (USA)
**Prof Pavel Matousek** (UK)

Full-time MQRG member
Part-time MQRG member
Note: Country indicated denotes usual work base, not nationality.

## Top 5 publications in 2024


Research Pharmacist Dr Noudy Sengxeu (*centre*) in the WHO pre-qualified laboratory at MEDS in Nairobi.
© MORU. Photo courtesy of Céline Caillet.

1. Using matrix assisted laser desorption ionisation mass spectrometry combined with machine learning for vaccine authenticity screening. Clarke R, Bharucha T, Arman BY, Gangadharan B, Gomez Fernandez L, Mosca S, Lin Q, Van Assche K, Stokes R, Dunachie S, Deats M, Merchant HA, Caillet C, Walsby-Tickle J, Probert F, Matousek P, Newton PN, Zitzmann N, McCullagh JSO. *npj Vaccines*. 2024 Aug 28;9(1):155. doi: 10.1038/s41541-024-00946-5. PMID: 39198486; PMCID: PMC11358428.

2. Stable isotope ratio analysis: an emerging tool to trace the origin of falsified medicines. Roncone A, Kelly SD, Giannioti Z, Hauk C, Caillet C, Newton PN, Perez-Mon, C, Bontempo L. *TrAC Trends in Analytical Chemistry*, 174, 117666. doi: 10.1016/j.trac.2024.117666.

3. Forensic investigation of falsified antimalarials using isotope ratio mass spectrometry: a pilot investigation. Newton PN, Chesson LA, Mayxay M, Dondorp A, Tabernero P, Howa JD, Cerling TE. *Sci Rep*. 2024 Feb 18;14(1):3995. doi: 10.1038/s41598-024-54168-9. PMID: 38369604; PMCID: PMC10874941.

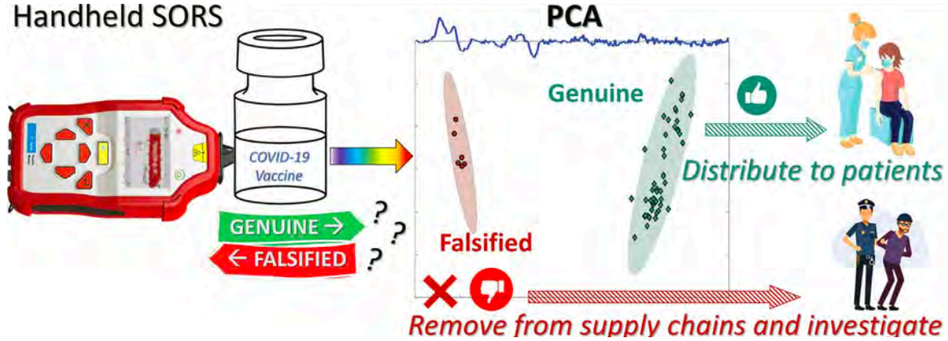
4. Repurposing rapid diagnostic tests to detect falsified vaccines in supply chains. Bharucha T, Gangadharan B, Clarke R, Fernandez LG, Arman BY, Walsby-Tickle J, Deats M, Mosca S, Lin Q, Stokes R, Dunachie S, Merchant HA, Dubot-Pérès A, Caillet C, McCullagh J, Matousek P, Zitzmann N, Newton PN. *Vaccine*. 2024 Mar 7;42(7):1506-1511. doi: 10.1016/j.vaccine.2024.01.019. Epub 2024 Feb 14. PMID: 38355318.

5. Medical products quality and public health, Manson's Tropical Diseases (Twenty-Fourth Edition), Newton PN, Caillet C. Editors Farrar J, Garcia P, Hotez P, Junghanss T, Kang G, Lalloo D, White NJ. *Elsevier*. 2024, Pages 43-48, ISBN 9780702079597. doi: 10.1016/b978-0-7020-7959-7.00006-3.


Dr Gesa Gnegel (*3rd from left*) and Dr Céline Caillet (*4th from left*) present their new work, *Choosing portable screening devices for the detection of substandard and falsified medicines - an online resource to guide national medicines regulators*, at the World Health Summit in Berlin Oct 2024.

## Major achievements in 2024

- Demonstrated the accuracy of novel screening devices such as MALDI-ToF to detect SF vaccines, including to check for falsified vial labels.
- Built the first Dashboard (DAFODIL) for collating and curating data on the +/- of diverse medicine quality screening devices for detecting SF medicines and vaccines in supply chains.
- Improved the International Pharmacopeia method for thin layer chromatography for the detection of DEG and EG in cough syrups and innovated to explore new techniques for their detection.
- Completed the ABACUS study of antibiotics quality in four countries to provide data to investigate link between SF and AMR.
- As part of the FORESFA Collaboration, published the first detailed analysis of evidence base and research needs to better understand SF antimicrobials as drivers of AMR.
- Co-created an exhibition on SF medicines in the Museum of History of Science, Oxford.
- Engaged with multiple partners on the dangers of and solutions for SF COVID-19 vaccines, informing policy and implementation. FORESFA engaged with key stakeholders (WHO, WOAH, Europol, Interpol, UNODC, World Customs Organization (WCO), multiple NMRA (UK, Nigeria, Laos) and pharmaceutical manufacturers). The MQRG was invited to present the DAFODIL Dashboard at the WHO Member State Mechanism and World Health Summit.
- Forty participants from across Europe attended our informal medicine quality meeting in Oxford in October 2024 to discuss SF medical product research.




How a handheld Spatially Offset Raman Spectroscopy (SORS) detects falsified COVID-19 vaccines — even if the vials are unopened. SORS performs chemical analysis by shining a laser light into an unopened vial of the vaccine and inspecting the light emanating from the vial to indicate the presence of different ingredients within.

A patient is screened for malaria. © MORU. Photographer: Caterina Fanello.

# Kinshasa-Oxford Medical Research Unit (KIMORU), DR Congo

*KIMORU conducts high-impact research in the Democratic Republic of the Congo (DRC) to address critical health priorities, with a particular focus on malaria, a leading cause of morbidity and mortality among children and pregnant women.*

By leveraging clinical science research expertise and fostering strong local partnerships, we aim to improve health outcomes for the most vulnerable populations through innovative, sustainable solutions. KIMORU, led by Dr Caterina Fanello (MORU) and Dr Marie Onyamboko (KSPH), operates in collaboration with the Kinshasa School of Public Health (KSPH) as part of the MORU MIP. Through partnerships with leading international research institutions and close integration with local organizations — such as the National Malaria Control Program (NMCP) and the Institut National de Recherche Biomédicale — we combine global expertise with local knowledge to tackle major health challenges. Additionally, our work is endorsed by the Congolese Ministry of Health (MoH) and contributes to national health strategies.

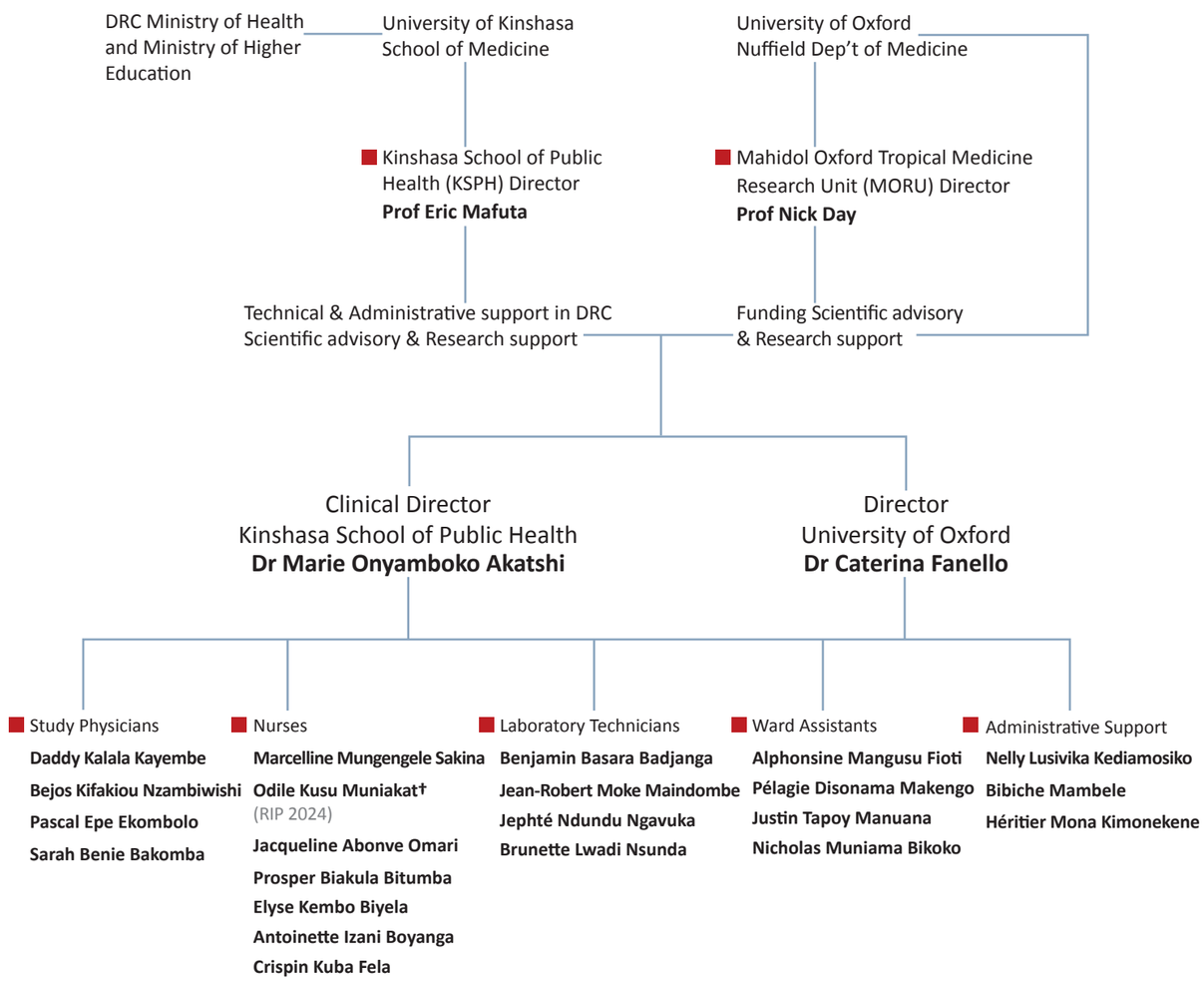
Based along the Congo River at Maluku Referral Hospital in semi-urban eastern Kinshasa, KIMORU facilities include:

- Two paediatric research wards
- An on-site laboratory
- Dedicated research offices
- Administrative and archival support at the University of Kinshasa campus

Additionally, a network of partner hospitals and maternity clinics across Kinshasa enables us to conduct larger clinical and surveillance studies.

KIMORU is committed to strengthening local research capacity through the development and implementation of cutting-edge research, including genomics and molecular diagnostics. Our team is currently working on malaria care by improving diagnosis and treatments, particularly for co-infections, and are expanding and strengthening antimicrobial resistance (AMR) surveillance. Additionally we are developing a surveillance framework to study the impacts of climate and environmental changes on malaria transmission to inform adaptation strategies. Through these efforts, KIMORU is strengthening health systems in the DRC and beyond, contributing to evidence-based policies and improved health outcomes.

## Our Team



## Top publications in 2024

1. Pregnant women as a sentinel population for genomic surveillance of malaria in the Democratic Republic of the Congo: a population-based study. Onyamboko M, Wasakul V, Bakomba SB, Kayembe DK, Nzambiwishe BK, Ekombolo PE, Badjanga BB, Maindombe JM, Ngavuka JN, Lwadi BN, Drury E, Ariani C, Goncalves S, Chamsukhee V, Waithira N, Verschuuren TD, Lee SJ, Miotto O, Fanello C. *Lancet Glob Health*. 2025 Mar;13(3):e479-e487. doi: 10.1016/S2214-109X(24)00497-2. PMID: 40021306; PMCID: PMC11868776.

2. Identification of complex *Plasmodium falciparum* genetic backgrounds circulating in Africa: a multicountry genomic epidemiology analysis. Miotto O, Amambua-Ngwa A, Amenga-Etego LN, Abdel Hamid MM, Adam I, Aninagyei E, Apinjoh T, Awandare GA, Bejon P, Bertin GI, Bouyou-Akotet M, Claessens A, Conway DJ, D'Alessandro U, Diakite M, Djimdé A, Dondorp AM, Duffy P, Fairhurst RM, Fanello CI, Ghansah A, Ishengoma DS, Lawniczak M, Maïga-Ascofaré O, Auburn S, Rosanas-Urgell A, Wasakul V, White NFD, Harrott A, Almagro-Garcia J, Pearson RD, Goncalves S, Ariani C, Bozdech Z, Hamilton WL, Simpson V, Kwiatkowski DP. *Lancet Microbe*. 2024 Dec;5(12):100941. doi: 10.1016/j.lanmic.2024.07.004. Epub 2024 Nov 7. PMID: 39522520; PMCID: PMC11628469.

## Major achievements in 2024

- Advanced AMR surveillance. AMR remains a critical yet understudied health challenge in the DRC. In 2024, KIMORU launched a feasibility study, funded by GRAM, to assess the integration of blood cultures into routine care, leading to the establishment of the first local AMR surveillance program at our referral hospital. This initiative allows for systematic monitoring of AMR trends and enhances clinical decision-making through evidence-based practices. It also provides new insights into severe malaria comorbidities, particularly in children, where AMR significantly increases mortality risk. Additionally, by integrating AMR surveillance with maternal health research, we aim to reduce maternal mortality—one of the highest globally. Our findings serve as a critical foundation for expanding AMR research and strengthening antimicrobial stewardship in resource-limited settings This work has been conducted in collaboration with Prof Andrew Stewardson, Monash University, Australia.
- Strengthened malaria surveillance. Having established an innovative genomics surveillance system in Kinshasa to monitor antimalarial drug resistance leveraging pregnant women attending antenatal care services (in collaboration with Prof Olivo Miotto and his team), we have worked to develop further this framework to include how malaria transmission dynamics respond to climate and environmental risk factors in the rapidly evolving urban setting. Expanding this surveillance model will generate critical data to inform strategic public health interventions and enhance resilience in low-resource settings.
- Advancing maternal health research. In addition, we collected valuable clinical data on the health of pregnant women and sociological data on access to and use of antenatal care services among those participating in the surveillance. These data are part of the Master's thesis in Public Health by Dr Sarah Bakombe, which will be completed in 2025. The analysis of these data is being conducted with the support of Dr Sue Lee. This work contributes to a deeper understanding of the health challenges faced by pregnant women in DRC and will inform future interventions aimed at improving maternal health outcomes in the region.
- Improved patient care through clinical research. Over the past year, KIMORU has continued to contribute to high-impact national and international clinical trials aimed at improving malaria treatment and paediatric care, including these studies:
    - Developing Triple Artemisinin-based Combination Therapies (DeTACT): As part of a multinational initiative funded by UK Aid (FCDO) and Wellcome Trust, we contributed to DeTACT, a landmark trial evaluating the efficacy, safety, and tolerability of triple artemisinin-based combination therapies (TACTs) for uncomplicated malaria. This approach has the potential to prevent the spread of artemisinin resistance, a major threat to global malaria control.
    - PROTECtS: Funded by the Canadian Institutes of Health Research and led by Dr Katherine Plewes, this clinical trial investigates the renoprotective effects of paracetamol in severe paediatric malaria. This research holds the potential to provide a simple and accessible therapeutic strategy to prevent and reduce Acute Kidney Injury (AKI), a serious complication of severe malaria, significantly contributing to mortality.
    - 1-STEP AS: We finalized the results of the clinical trial conducted in Tanzania and DRC, led by Dr Tom Peto and funded by FOSUN. This trial tested a novel, bioequivalent formulation of injectable artesunate requiring only a single-step reconstitution for paediatric severe malaria patients. Our findings demonstrated that it is quicker, cheaper, and simpler to administer than the conventional formulation, while maintaining similar drug efficacy and safety. The manuscript is currently under review for publication.
    - SMAART : As part of the Severe Malaria Africa – A Consortium for Research and Trials (SMAART) project, funded by Wellcome Trust, we are preparing for a multinational clinical trial set to launch in April 2025. This study will generate critical evidence to refine severe malaria treatment strategies across Africa, potentially improving outcomes for thousands of children.

Paediatric portable lung ultrasound imaging. © MORU/KIMORU. Photographer: Caterina Fanello.

# Annex A
# MORU MIP Staff

## Science & Strategy Committee (SSC)

**Nicholas Day** — MORU Major International Programme (MIP) Director (Chair of Committee)

| | |
|---|---|
| **Weerapong Phumratanaprapin** | Dean of the Faculty of Tropical Medicine (FTM) |
| **Arjen Dondorp** | Head of Malaria Department / Deputy Director MORU MIP |
| **Nicholas White** | Chair of the Wellcome Trust Oxford Asia Research Units |
| **Direk Limmathurotsakul** | Head of Microbiology / Deputy Director MORU BKK |
| **Wirichada Pan-Ngum** | Head of Mathematical Modeling Department / Deputy Director MORU BKK |
| **David Burton** | Chief Operating Officer (COO) |
| **Sasitorn Chuaynoo** | Chief Financial Officer (CFO) |
| **Sasithon Pukrittayakamee** | Head of FTM Trial Group |
| **Elizabeth Ashley** | Director, LOMWRU |
| **François Nosten** | Director, SMRU, Chair of the Borderland Health Foundation (BHF) |
| **Joel Tarning** | Head of Clinical Pharmacology Department |
| **Yoel Lubell** | Head of Economics and Implementation Research Group (EIRG), MAEMOD Department |
| **Greg Fegan** | Head of Clinical Trials Support Group (CTSG) |
| **Naomi Waithira** | Head of Data Management, CTSG |
| **Phaik Yeong Cheah** | Head of Bioethics & Engagement Department |
| **Richard Maude** | Head of Epidemiology Department |
| **Paul Turner** | Director COMRU |
| **Frank Smithuis** | Director MOCRU |
| **Rose McGready** | Deputy Director SMRU |
| **Caterina Fanello** | Director KIMORU |
| **Paul Newton** | Head of Medicine Quality Research Group (MQRG) |
| **Jetsumon Prachumsri** | Deputy Dean for Research, FTM |
| **Kesinee Chotivanich** | Deputy Dean for International Relations, FTM |
| **David Gandy** | Grants & Contract Manager, MORU |

## MORU Bangkok-based Departments

### Operations and Administration

**David Burton** — Chief Operating Officer

| | |
|---|---|
| **Apiwatudomkhun, Paweena** | Accounting Manager, Reporting & AR |
| **Ariyalikit, Buaboun** | Travel Administrator & Executive Assistant |
| **Arttayakul, Sasipim** | Training & Development Officer |
| **Athicombandhitkul, Wasinee** | Purchasing & Logistics Officer |
| **Banyatsil, Dumrong** | HR & Administrative Assistant |
| **Bleho, John** | Consultant, Media & Communications |
| **Bunsiri, Ketsinee** | Post-award Grant Officer |
| **Buttakote, Supatra** | Accountant |
| **Chanhom, Pinyada** | Senior Accountant |
| **Channirutti, Chanida** | Purchasing & Logistics Officer |
| **Chomthoranin, Natchaleo** | Senior HR Officer |
| **Chuaynoo, Sasitorn** | Chief Financial Officer |
| **Chumintrajug, Supaporn** | Purchasing & Logistics Officer |
| **Corcoran, Stephen** | Project Manager, CCAA |
| **Dachkun, Kridsana** | Senior Accountant |
| **Day, Nick** | MORU Director |
| **Deddoung, Manusanun** | Senior Compliance & QA Officer |
| **Gandy, David** | Grants & Contracts Manager |
| **Hannay, Patrick** | DeTACT Grant Manager |
| **Harkness, Gary** | Operations Officer |
| **Intanil, Pattira** | Compliance & QA Manager |
| **Itthakam, Apichet** | Inventory Control Officer |
| **Jenkosol, Intira** | Pre-award Grant Officer |
| **Jones, Leigh** | Regional Academic Training Leader (for OUCRU and MORU), and Head MORU-OUCRU Discovery Research Academy (MODRA) |
| **Kaewkong, Winai** | Deputy Purchasing & Logistics Officer |
| **Ketkaew, Jirawan** | Compliance & QA Officer |
| **Leelakitkul, Shinawit** | Finance Assistant |
| **Netikul, Nantamon** | Training & Development Manager |
| **Nitsuwat, Supatrabhorn** | Purchasing & Logistics Officer |
| **Pattachari, Thanyaporn** | Compliance & QA Officer |
| **Phonlawat, Pasakorn** | IT Service Desk |
| **Pongsaswat, Kanchana** | HR & Administration Manager |
| **Pornthong, Montha** | Janitor |
| **Powtong, Pawinee** | PA & Executive Assistant |
| **Ruangchai, Kittinan** | Senior Purchasing & Logistics Officer |
| **Saowara, Noppamard** | Post-award Grant Officer |
| **Sherwood, Dean** | Head of IT |
| **Sriwattana, Nantawat** | IT Service Desk |
| **Sukhapiwat, Pornjarus** | Consultant |
| **Suwimon, Em-orn** | Junior Accountant |
| **Tangtrakul, Patchareeya** | Senior Accounting Supervisor |
| **Thaipichit, Prachanihathai** | Post-award Grant Officer |
| **Thajaeng, Aemmarin** | Compliance & QA Officer |
| **Thumjoho, Manop** | Messenger & Admin Assistant |
| **Tutsanawiwat, Chutporn** | IT Technical Support |
| **Vipatbovornvong, Bovornvich** | Purchasing & Logistics Officer |
| **Vorachaihirung, Vanunthakarn** | Junior Grants Officer |
| **Voratarntrakul, Anan** | Post-award Team Leader |
| **Wijitnukul, Tanathnun** | Consultant/Netsuite Administrator |
| **Wongkaewchua, Ketchaya** | Accounts Reporting Officer |
| **Wongsaming, Jeerawan** | Senior Accountant |
| **Wright, Parina** | Accounting Manager – Operating & AP |

### Malaria & Critical Illness

**Arjen Dondorp** — Head of Department
**Lorenz von Seidlein** — Deputy Head of Department

| | |
|---|---|
| **Adhikari, Bipin** | Clinical Researcher |
| **Amaratunga, Chanaki** | DeTACT Coordinator |
| **Assawariyathipat, Thanawat** | Senior Lab Technician, IDDO/WWARN |
| **Awab, Ghulam Rahim** | Consultant |
| **Beane, Abigail** | Coordinator Crit Care Asia Africa (CCAA) |
| **Booth, Ethan** | Research Scientist |
| **Callery, James** | Postdoc Researcher |
| **Chaijun, Praphai** | EQA Technologist, IDDO/WWARN |
| **Charunwatthana, Prakaykaew** | Research Physician |
| **Chiewpoo, Pornpawee** | Lab Technician |
| **Chotivanich, Kesinee** | Head of Malaria Laboratory |
| **Corcoran, Stephen** | Project Manager (CCAA) |
| **Dechachat, Praewpairint** | Lab Technician |
| **Dhorda, Mehul** | DeTACT Coordinator, Group Leader IDDO/WWARN |
| **Duanguppama, Jureeporn** | Lab Coordinator |
| **Faiz, Abul** | Consultant |
| **Haniffa, Rashan** | Coordinator Crit Care Asia Africa (CCAA) |
| **Inglis, Rebecca** | Clinical Researcher |
| **Imwong, Mallika** | Head of Molecular Malaria Laboratory |
| **Kaendiao, Thoopmanee** | Consultant |
| **Kaewviset, Nattinan** | Research Assistant/Coordinator |
| **Khanitcharangkoon, Khanitsorn** | SML Technician |
| **Khanthagan, Patpannee** | Lab Technician |
| **Kouhathong, Jindarat** | Lab Technician |
| **Lunprom, Manita** | Lab Technician |
| **Madmanee, Wanassanan** | Quality Manager |
| **Mahaphontrakoon, Supaporn** | GMS Coordinator, GenRe-Mekong Team |
| **Masingboon, Pannapat** | Executive Administrator |
| **Miotto, Olivo** | Senior Informatics Fellow, Head of Genetic Surveillance Group |
| **Moonesinghe, Ramani** | Consultant |
| **Mongkol, Ontida** | Lab Support Administrator IDDO/WWARN |
| **Namwong, Petcharat** | Molecular Data Analyst |
| **Nuntharattanapong, Niyada** | Lab Technician |
| **Pagornrat, Watcharee** | Technical Supervisor |
| **Pattanarudee, Chaiyaporn** | Research Assistant/Coordinator |

| | |
|---|---|
| **Pell, Christopher** | Consultant |
| **Peto, Tom** | Postdoc Researcher |
| **Pimpat, Yupawadee** | Consultant |
| **Pisani, Luigi** | Consultant |
| **Piteekan, Tianrat** | Research Scientist |
| **Plewes, Katherine** | Consultant |
| **Promnarate, Cholrawee** | Lab Manager, IDDO/WWARN |
| **Promsongsil, Amornrat** | Lab Technician |
| **Recht, Judith** | Consultant |
| **Rungrueang, Kittiphon** | Lab Assistant, IDDO/WWARN |
| **Sa-nguan, Sirinatda** | Lab Technician |
| **Sangsri, Raweewan** | Senior Research Scientist |
| **Schultz, Marcus** | Consultant |
| **See-daeng, Sirinapa** | Lab Technician |
| **Songsaeng, Wipawee** | Research Scientist |
| **Srinamon, Ketsanee** | Clinical Trials Technologist, IDDO/WWARN |
| **Suesatluesakun, Panuphong** | Lab Data Entry, IDDO/WWARN |
| **Supapoat, Thanyaporn** | Research Assistant/Coordinator |
| **Suwannasin, Kanokon** | Lab Manager |
| **Taylor, Bob** | Senior Clinical Research Fellow Clinical |
| **Thaweekan, Phongtawee** | SML Technologist, IDDO/WWARN |
| **Tripura, Rupam** | Researcher |
| **Udompan, Pannipa** | Research Assistant |
| **Vongpromek, Ranitha** | SML & EQA Coordinator, IDDO/WWARN |
| **von Seidlein, Lorenz** | Senior Researcher and Deputy Head |
| **Wagstaff, Duncan** | Consultant |
| **Wasakul, Varanya** | Scientific Coordinator, GenRe-Mekong project |
| **Wattanasumpunno, Kwanruthai** | EQA Technician, IDDO/WWARN |
| **Yipsirimetee, Achaporn** | Research Scientist |

## Microbiology

### Direk Limmathurotsakul — Head of Department

| | |
|---|---|
| **Abdad, Yazid** | Senior Scientist, High-Throughput Lab Manager |
| **Abraham, Priyanka** | DPhil Student, Tropical Immunology Group (Oxford) |
| **Adele, Sandra** | DPhil Student, Tropical Immunology Group (Oxford) |
| **Ali, Mohammad** | DPhil Student, Tropical Immunology Group (Oxford) |
| **Amornchai, Premjit** | BSL3 Lab Manager |
| **Angchagun, Kesorn** | Research Nurse, Mo Yin ADVANCE-ID Group |
| **Areerob, Jeeranan** | Consultant, DTRA Projects |
| **Ariyaprasert, Pitchayanant** | Research Nurse, Mo Yin ADVANCE-ID Group |
| **Batty, Elizabeth** | Senior Bioinformatician, Co-Head Molecular Microbiology |
| **Blacksell, Stuart** | Senior Researcher, Head of Biorisk & Zoonosis / Diagnostics / Safety |
| **Boonklang, Phumrapee** | PhD student, Melioidosis Genomics, Sanger PhD scholar (Cambridge) |
| **Boonyakanjanapon, Pawadee** | Postgraduate Student Administrator |
| **Chantratita, Narisara** | Senior Scientist and Honorary Member |
| **Chewapreecha, Claire** | Head Melioidosis Genomics, Wellcome International Intermediate and Sanger International Fellow |
| **Chierakul, Wirongrong** | Senior Physician |
| **Chomkatekaew, Chalita** | PhD Student, Melioidosis Genomics, Prince Mahidol PhD scholar (Cambridge) |
| **Chuenklin, Suthida** | PhD Student, Rickettsiosis |
| **Dhawan, Sandhya** | PhD Student, Biosafety |
| **Dokket, Yaowaret** | Lab Technician, Melioidosis Clinical Study Group |
| **Dolecek, Christiane** | Senior Researcher |
| **Dunachie, Susanna** | Head, Tropical Immunology Group (Oxford) and Senior Researcher |
| **Faosap, Areeya** | Lab Technician, Melioidosis Clinical Study Group |
| **Heng, Theng** | Research Scientist Consultant, DTRA Projects, Cambodia |
| **Hill, Jennifer** | Project Manager, Tropical Immunology Group (Oxford) |
| **Ho, Rachel** | Personal Assistant, Tropical Immunology Group (Oxford) |
| **Huangsuranun, Witchayoot** | Lab Technician, Molecular Microbiology, and DPhil Student |
| **Hughes, Tom** | Consultant, FAO/WHO Projects/ DTRA Projects Manager |
| **Inthapanya, Phoummavan** | Consultant, DTRA Projects, Laos |
| **Kamolsiripichaiporn, Somjai** | Consultant, DTRA Projects |



| | |
|---|---|
| **Kanthawang, Nipaphan** | Research Nurse, CCRU |
| **Keeratipusana, Chantisa** | Bioinformatician, Molecular Microbiology |
| **Khanh, Le Kim** | PhD student, Diagnostics |
| **Khongpraphan, Suphasuta** | Lab Technician, Diagnostics |
| **Khounsy, Syseng** | Consultant, DTRA Projects, Laos |
| **Klahan, Nattika** | Consultant, SEACTN, CCRU |
| **Klaytong, Preeyarach** | Junior Researcher, AMASS Group (AMR-DRI) |
| **Kolenchery, Jaison** | Serology Project Manager, and MORU Network Safety Manager |
| **Kong, Lida** | Consultant, DTRA Projects, Cambodia |
| **Kronsteiner, Barbara** | Senior Immunologist / Tropical Immunology Group Deputy (Oxford) |
| **Kullapanich, Chitrasak** | Postdoc Researcher, Cell Biology |
| **Lamai, Chaloemporn** | Lab Technician, CCRU |
| **Langlah, Sayan** | Lab Technician, Core Operations |
| **Lee, Mei-Ho** | Consultant, FAO/WHO Projects |
| **Lhokaew, Aticha** | Lab Technician, Diagnostics and MPhil Student |
| **Maharach, Chonlada** | Research Nurse, Mo Yin ADVANCE-ID Group |
| **Maikum, Jutawan** | SEACTN Consultant, CCRU |
| **Malasit, Mayura** | Research Nurse, Mo Yin ADVANCE-ID Group |
| **Manatham, Pakayluck** | Consultant, DTRA Projects, Laos |
| **Maroongruang, Peerapol** | Senior Safety Officer |
| **Mongkolsapaya, Juthathip** | Senior Researcher |
| **Narongchai, Pawanphat** | Lab Technician, CCRU |
| **Neale, Isabel** | DPhil Student, Tropical Immunology Group (Oxford) |
| **Oyuchua, Malinee** | Pathogen Database Coordinator, DTRA Projects |
| **Pakdeerat, Sukritpong** | Research Assistant, Melioidosis Genomics |
| **Panyadee, Patcharaporn** | SEACTN Consultant, CCRU |
| **Panyasith, Sivone** | Consultant, DTRA Projects, Laos |
| **Paramita, Isanawidya** | DPhil Student, Tropical Immunology Group (Oxford) |
| **Perrone, Carlo** | Head, Chiangrai Clinical Research Unit (CCRU), and PhD Student |
| **Phuangsombat, Papachaya** | Research Nurse, Melioidosis Clinical Study Group |
| **Rangsiwutisak, Chalida** | Junior Programmer, AMASS Group (AMR-DRI) |
| **Rienpradub, Panuvit** | Lab Technician, Molecular Microbiology |
| **Ruanchaiman, Soiratchaneekorn** | Safety Manager |
| **Rungrojn, Artharee** | Lab Technician and PhD student, Diagnostics |
| **Salje, Jeanne** | Head, Cell Biology, Senior Researcher, and Honorary Visiting Research Fellow |
| **Saraswati, Kartika** | DPhil Student/Consultant, Rickettsiosis |
| **Setaphan, Sornsuda** | Research Assistant, Mo Yin ADVANCE-ID Group |
| **Sonthayanon, Piengchan** | Senior Scientist |
| **Suntronpong, Aorarat** | Research Scientist, Molecular Microbiology |
| **Supaluk, Kwanchanok** | Research Nurse, CCRU |
| **Tanunchai, Phattaranit** | Lab Technician, High-Throughput Lab |
| **Tanganuchitcharnchai, Ampai** | Serology Lab Manager |
| **Tasak, Nidanuch** | Head Research Nurse, CCRU |
| **Tattiyapong, Puntanat** | Postdoc Researcher, Diagnostics |
| **Tayipto, Yanie** | DPhil Student, Tropical Immunology Group (Oxford) |
| **Temmerat, Adisone** | Consultant, DTRA Projects, Laos |
| **Thaipadungpanit, Janjira** | Co-Head of Molecular Microbiology |
| **Thaiprakhong, Areerat** | Lab Manager, CCRU |
| **Thongchan, Preedanuch** | Lab Technician |
| **Tinoi, Bulakorn** | CR-CAB Coordinator |
| **Toonin, Nattida** | Research Nurse/PE Officer, CCRU |
| **Vinitsorn, Asama** | Lab Technician, High-Throughput Lab |
| **Warangkakun, Tanyalak** | Project Administrator & PA |
| **Watanachaiprasert, Praweennuch** | Research Nurse, Melioidosis Clinical Study Group |
| **Wheatley, Mark** | FMD RRL Project Manager, DTRA Projects |
| **Wongprommoon, Arin** | Postdoctoral Fellow, Melioidosis Genomics (Cambridge) |
| **Wongsana, Suttiphong** | Lab Technician, Diagnostics |
| **Wongsantichon, Jantana** | Senior Scientist, Diagnostics |
| **Wongsuvan, Gumphol** | Head, Ubon Ratchathani Melioidosis Laboratory Unit |
| **Wongrattanapipat, Saranya** | Lab Technician, Molecular Microbiology |

| | |
|---|---|
| **Wongwattanasatean, Rampaipan** | Research Nurse, Melioidosis Clinical Study Group |
| **Woratecha, Naphatsakorn** | Safety Administrator |
| **Wuthiekanun, Vanaporn** | Senior Scientist, Head Core Operations |
| **Yasaeng, Duanghathai** | Research Nurse, CCRU |
| **Young, Jim** | Consultant, DTRA Projects |
| **Yuin, Rujira** | SEACTN Consultant, CCRU |
| **Zewdie, Martha** | Postdoctoral Research Assistant, Tropical Immunology Group (Oxford) |

## Richard Maude — Head of Department

| | |
|---|---|
| **Aiemjoy, Kristen** | Statistician (USA/Thailand) |
| **Amin, Sabrina Mohammad** | Research Associate, GroupMappers (Bangladesh) |
| **Asad, Afrida** | DPhil Student (Bangladesh) |
| **Boonyakanjanapon, Pawadee** | Postgraduate Assistant (Thailand) |
| **Chowdhury, Shuvo Kumar** | Research Assistant, GroupMappers (Bangladesh) |
| **Ebener, Steeve** | Health GeoLab Coordinator, Technical Assistance Lead (Philippines) |
| **Freitas, Luzia** | DPhil Student (UK/East Timor) |
| **Hasan, Mahmudul** | Field Coordinator, GroupMappers (Bangladesh) |
| **Hossain, Kazi Jubayer** | Accounts and Admin, GroupMappers (Bangladesh) |
| **Hughes, Thomas** | PhD Student (Malaysia) |
| **Jafari, Yalda** | DPhil Student (UK) |
| **Joly, Asfat Ara** | Data manager, GroupMappers (Bangladesh) |
| **Jongdeepaisal, Monnaphat** | Social Scientist and PhD Student (Thailand) |
| **Kagoro, Frank** | PhD Student (Switzerland) |
| **Khampan, Phenpisa** | Research Assistant (Thailand) |
| **Khan, Asraf** | GIS Analyst, GroupMappers (Bangladesh) |
| **Khan, Khalilur Rahman Ridoy** | IT Team Leader, GroupMappers (Bangladesh) |
| **Khuenpetch, Worarat** | Administrative Assistant (Thailand) |
| **Maneenet, Supitsara** | Research Assistant (Thailand) |
| **Maude, Rapeephan** | Research Physician (Thailand) |
| **Metchanun, Nawaphan** | Consultant (Thailand) |
| **Miah, Md Ishaq** | Office Assistant, GroupMappers (Bangladesh) |
| **Mukem, Suwanna** | Country Coordinator (Thailand) |
| **Net, Yav** | Country Coordinator (Cambodia) |
| **Ngor, Pengby** | GIS Specialist and PhD Student (Cambodia) |
| **Nurullah, Md** | GIS Data Manager, GroupMappers |
| **Pantanilla, Neriza** | Health GeoLab Training Lead (Philippines) |
| **Phalivong, Sonexay** | GenRe-Mekong Project Coordinator (Lao PDR)* |
| **Prasert, Orathai** | Research Assistant (Thailand) |
| **Pulok, Hasibul Ahmed Pulok** | Research Associate, GroupMappers (Bangladesh) |
| **Punyaa, Shane** | Research Assistant (Thailand) |
| **Rotejanaprasert, Chawarat** | Statistician, Deputy Head of Epidemiology (Thailand) |
| **Sabbir, Shohanur Rahman** | IT Intern, GroupMappers (Bangladesh) |
| **Saha, Devolina Rai** | Research Intern, GroupMappers (Bangladesh) |
| **Sahota, Amandip** | DPhil Student (Singapore/Thailand) |
| **Sangkun, Thanapol** | Research Assistant (Thailand) |
| **Sani, Nur** | GIS Intern, GroupMappers (Bangladesh) |
| **Shanto, Md Hasubur Rahman** | GIS Intern, GroupMappers (Bangladesh) |
| **Shil, Noyon Chandra** | GIS Analyst, GroupMappers (Bangladesh) |
| **Sinitkul, Ratchaneewan** | Research Physician and PhD Student (Thailand/UK) |
| **Sirimatayanant, Massaya** | APMEN SRWG Coordinator (Thailand) |
| **Sjefte, Malia** | DPhil Student (Thailand) |
| **Tam, Greta** | Research Physician (UK) |
| **Uddin, Didar** | Country Coordinator (Bangladesh) |
| **Wagner-Gamble, Tara** | DPhil Student (Thailand) |
| **Wang, Qian** | DPhil Student (Thailand) |
| **Zaman, Sazid Ibna** | GroupMappers Lead, GIS Specialist (Bangladesh) |

***** GenReMekong project staff line managed by **LOMWRU**

## Clinical Pharmacology

### Joel Tarning — Head of Department

| | |
|---|---|
| **Adehin, Ayorinde** | Scientist |
| **Assawasuwannakit, Piyanan** | Consultant |
| **Assmus, Frauke** | Consultant |
| **Banda, Clifford** | PhD Student |
| **Blessborn, Daniel** | Senior Scientist |
| **Callery, James** | PhD Student |
| **Chairat, Kalayanee** | Consultant |
| **Chanprasert, Chanchira** | Lab Analyst |
| **Charuthan, Wannasiri** | Lab Technician |
| **Clark, Benjamin** | MSc Student |
| **Cruz, Cintia** | DPhil Student |
| **Ding, Junjie** | Senior Scientist |
| **Hanpithakphong, Warunee** | Senior Scientist |
| **Hatchwell, Emily** | MSc Student |
| **Hoglund, Richard** | Head of Pharmacometrics |
| **Jansawangkul, Pak** | Lab Technician |
| **Jiracheep, Nicharee** | PhD Student |
| **Kaewkhao, Natpapat** | Scientist |
| **Kobylinski, Kevin** | Honorary Research Fellow |
| **Koesukwiwat, Urairat** | Bioanalytical Laboratory Manager |
| **Kullasakboonsri, Rattawan** | Lab Technician |
| **Loshaj, Ersi** | MSc Student |
| **Niamyim, Phettree** | Lab Analyst |
| **Oke, Maria** | MSc Student |
| **Plitphonganphim, Supada** | Scientist |
| **Puttaraksa, Kanoktip** | Consultant |
| **Ruangsilaprasert, Sasithorn** | Department Administrator & PA |
| **Rungruang, Supab** | Lab Assistant |
| **Schubring, Maria** | MSc Student |
| **Sueksakit, Kanyarat** | Research Assistant |
| **Theeraphongsakul, Chanjira** | Purchasing & Logistics Officer |
| **Tipthara, Phornpimon** | Senior Scientist |
| **Wattanakul, Thanaporn** | Senior Scientist |
| **Yodsawat, Prasert** | Consultant |

### Phaik Yeong Cheah — Head of Department

| | |
|---|---|
| **Asarath, Supa-At** | Social Science Researcher and Engagement Coordinator, Bangkok |
| **Boonthaworn, Kanpong** | Science Communications Officer |
| **Chanviriyavuth, Rita** | Personal Assistant & Departmental Administrator, Bangkok |
| **Kajeechiwa, Ladda** | Head of Public Engagement, SMRU |
| **Kanthawang, Nipaphan** | Research Nurse and Master's Student, CCRU |
| **Khirikoekkong, Napat** | Sr Social Science Researcher |
| **Kulpijit, Natinee** | Senior PR & Communications Manager, Bangkok |
| **Lwin, Khin Maung** | Senior Programme Coordinator, SMRU |
| **Mom, Ean** | Head of Public Engagement, Siem Pang |
| **Naemiratch, Bhensri** | Senior Research Manager and Evaluation Specialist |
| **Osterrieder, Anne** | Engagement Evaluation and Learning Lead |
| **Perrone, Carlo** | PhD Student (CCRU/Microbiology) |
| **Poomchaichote, Tassawan** | Study Coordinator |
| **Ruangkajorn, Supanat** | Participant Liaison Officer |
| **Tinoi, Bulakorn** | Public Engagement Assistant, SMRU |
| **Thongdee, Primprapaporn** | Communication and Liaison Officer, SMRU |
| **Toonin, Nattida** | Research Nurse and Public Engagement Officer, CCRU |
| **Waithira, Naomi** | DPhil Student (CTSG) |

### Wirichada Pan-ngum — Head of Department

| | |
|---|---|
| **Agsornintara, Adshariya** | Consultant, MOTIP-TropMedDC |
| **Aizouk, Raneem** | Postdoc Researcher |
| **Aung Myint Thu** | PhD Student |
| **Bonvoisin, Toby** | DPhil Student |
| **Cavany, Sean** | Postdoc Researcher |
| **Chanbroset, Prach** | Consultant, EIRG, MOTIP |

| | |
|---|---|
| **Chandna, Arjun** | Project Coordinator, DPhil Student |
| **Chauicharoen, Pavadee** | PhD Student |
| **Chew, Chris (Rusheng)** | Clinical Researcher SEACTN, DPhil Student |
| **Cooper, Ben** | Head of DRIaDD Group, MRC Senior Research Fellow |
| **Ekkapongpisit, Maneerat** | MOTIP Director |
| **Fell, Freddie** | DPhil Student |
| **Frazal, Yamin** | PhD Student |
| **Ganjina, Grid** | Project Manager, MOTIP |
| **Gill, Alicia** | Postdoc Researcher |
| **Htun, Nan Shwe Nwe** | Postdoc Researcher, SEACTN |
| **Kang, Suh Young (Sophie)** | DPhil Student |
| **Khan, Abdullah Saeed** | Consultant, SEACTN |
| **Kulchaitanaroaj, Puttarin** | Health Economist, MOTIP |
| **Lim, Cherry** | Senior Scientist |
| **Liverani, Marco** | Senior Research Fellow, SEACTN |
| **Lojanarungsiri, Maytouch** | Project Consultant |
| **Lubell, Yoel** | Head of the EIRG, SEACTN PI |
| **Moldokmatova, Ainura** | DPhil Student |
| **Nareepon, Krongkarn** | SEACTN, Logistics Assistant |
| **Noparatvarakorn, Chawitar** | Project Manager, MOTIP |
| **Oonsivilai, Mathupanee** | Research Assistant, DPhil Student |
| **Otuko, Rachel** | DPhil Student |
| **Painter, Christopher** | Health Economist |
| **Pritchard, Mark** | Postdoc Researcher |
| **Sahota, Amandip** | DPhil Student |
| **Sangplob, Porawit** | SEACTN, Logistics Assistant |
| **Saralamba, Sompob** | Head of RSE |
| **Srimokla, Oraya** | DPhil Student |
| **Swe, Myo Maung, Maung** | Postdoc Researcher |
| **Swetschinski, Lucien** | DPhil Student |
| **Thichumpa, Weerakorn** | PhD Student |
| **Thongkuna, Sureeporn** | Project Coordinator |
| **Thongpiam, Watcharintorn** | SEACTN, Spot Sepsis Project Management |
| **Wagner-Gamble, Tara** | DPhil Student |
| **Wichaita, Tanaphum** | Research Software Engineer |
| **Wongnak, Phrutsamon** | Consultant/Postdoc Researcher (partial) |
| **Wynberg, Elke** | Consultant, SEACTN |
| **Yin, Mo** | Research Associate, Deputy Director ADVANCE-ID network |
| **Zhang, Meiwen** | DPhil Student, SEACTN - Epidemiologist |

### Nick White, Sasithon Pukrittayakamee — Co-Heads of Department

| | |
|---|---|
| **Athipunjapong, Jitthiwa** | Research Nurse |
| **Aurboonkasem, Somrutai** | Research Nurse |
| **Beer, Ellen** | Clinical Researcher/Consultant |
| **Boyd, Simon** | Clinical Researcher |
| **Cruz, Cintia** | Research Physician |
| **Hanboonkunupakarn, Borimas** | Research Physician, DPhil Student |
| **Jittmala, Podjanee** | Research Physician |
| **Kaendiao, Thoopmanee** | Research Associate |
| **Ketrak, Nichanan** | Consultant |
| **Leungsinsiri, Pawanrat** | Research Nurse (Head) |
| **Mehra, Somya** | Clarendon Research Fellow, DPhil Student |
| **Niroadephonth, Ountthiyar** | Administrative Assistant |
| **Panpumchan, Puttha** | Admin/Lab Assistant |
| **Petchnoi, Suphansa** | Financial & Admin. Assistant |
| **Phulsawat, Pawinee** | Research Nurse |
| **Pooworavan, Kittiyod** | Research Physician |
| **Pukrittayakamee, Sasithon** | Honorary Consultant |
| **Sararat, Chayanin** | Data Analyst |
| **Schilling, William** | Research Physician, DPhil Student |
| **Seers, Tim** | Research Physician |
| **Somboon, Patcharaporn** | Research Nurse |
| **Supapoat, Thanyaporn** | CTU Admin |
| **Taylor, Bob** | Senior Researcher |
| **Weerasekera, Chamarika** | Consultant, Medical Trainee |
| **Wongnak, Phrutsamon** | Consultant/Data Analyst |
| **Wongsuwan, Supachok** | Consultant |



### Greg Fegan — Head of Department

| | |
|---|---|
| **Anunsittichai, Orawan** | Clinical Trials Assistant |
| **Bucha, Mawin** | Data Manager |
| **Chaikul, Kulthida** | Data Manager |
| **Chaiwang, Saiy** | Clinical Trials Assistant |
| **Champathai, Thanaporn** | Clinical Trials Admin. Coordinator / Area Safety Officer |
| **Chamsukhee, Vanapol** | Data Manager |
| **Chimjinda, Natenapa** | Statistician |
| **Chotwatthanawathit, Keitcheya** | Research Assistant |
| **Hongsuwan, Maliwan** | Clinical Research Associate |
| **Ingkasatien, Ashaya** | Clinical Trials Assistant |
| **Jansuaidee, Wanida** | Clinical Data Assistant |
| **Jeeyapant, Atthanee** | Data Manager |
| **Kiatkungwanglai, Panor** | Clinical Data Assistant |
| **Koomklang, Pantira** | Database Designer |
| **Kruabkontho, Varaporn** | Regulatory Affairs Specialist |
| **Lee, Sue** | Statistician |
| **Menggred, Chonticha** | Data Manager |
| **Mukaka, Mavuto** | Head of Statistics |
| **Mukdaprakorn, Achara** | Clinical Data Assistant |
| **Mutinda, Brian** | Data Manager |
| **Ngernseng, Thatsanun** | Data Manager |
| **Panapipat, Salwaluk** | Program Manager |
| **Panatreswas, Nhathita** | Clinical Trials Assistant |
| **Phatsuntia, Wongsatorn** | Clinical Research Associate |
| **Pongsuwan, Pongphaya** | Program Manager |
| **Poonchai, Akanittha** | Lead Clinical Trials Assistant |
| **Ridjaibun, Montri** | System Administrator |
| **Schilstra, Marja** | Data Manager |
| **Sorotpinya, Nisarat** | Clinical Trials Assistant |
| **Tanglakmankhong, Nuttakan** | Clinical Research Associate |
| **Taya, Chiraporn** | Statistician |
| **Thita, Thanyatip** | Clinical Trials Assistant |
| **Tubprasert, Jaruwan** | Program Manager |
| **Waithira, Naomi** | Head of Data Management |
| **Wannapinij, Prapass** | Senior Programmer |
| **Wongnak, Phrutsamon** | Consultant/Statistician |
| **Yuentrakul, Prayoon** | Program Manager |

## MORU Units

### Shoklo Malaria Research Unit (SMRU)

#### François Nosten — Unit Director, Chair of the Borderland Health Foundation (BHF)

| | |
|---|---|
| **Ah Cee** | PE/CE Assistant |
| **Ako** | Medic |
| **Aornnicha** | Referral Staff |
| **Archasuksan, Laypaw** | Senior Laboratory Technician |
| **Aryalamloed, Surang** | Lab Assistant |
| **Aueangai, Patcharaporn** | Procurement Officer |
| **Aung Myat Min** | Physician |
| **Aung Myint Thu** | Department Head/ Program Lead |
| **Aung Pyae Phyo** | Senior Clinician Scientist |
| **Aung Than** | Physician |
| **Aye** | Driver |
| **Aye Be One** | M&E Assistant |
| **Aye Khin** | M&E Assistant |
| **Ba Wah** | In Charge Assistant (Nurse) |
| **Bancone, Germana** | Haematology Research Scientist |
| **Banyar Maung Maung** | Physician |
| **Baw Soh Wah** | PE/CE Assistant |
| **Bellar** | Storekeeper |
| **Boonrueng, Unchuleeporn** | Senior IT Helpdesk |
| **Buaborisut, Natthanicha** | Lab Technician |
| **Bunkham, Cholada** | Cleaner |
| **Busarakam** | Nurse |
| **Bway Htoo** | Clinical In Charge |
| **Bway Paw** | Nurse |
| **Cecilia** | Nurse |
| **Chaba** | PE/CE Assistant |
| **Chaloemvisutkul, Supalak** | Lab Technician |
| **Chanida** | Lab Assistant |
| **Chanita** | Research Staff |
| **Chaumeau, Victor** | Entomology Research Scientist |
| **Cheewa** | Midwife Junior |
| **Chi Chi Poe** | Sonographer |

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|---|---|
| **Chi Dah** | Field Officer |
| **Chokratakul, Sareena** | Finance Manager |
| **Christ Poe** | Video Editor & Graphic Designer |
| **Christine Wah** | Nurse |
| **Chumphu, Chiam** | Driver |
| **Dah Bu** | Research Staff |
| **Dah Dah** | PE/CE Assistant |
| **Dah Heh** | MCH In Charge |
| **Dahlia Khet** | Counsellor In Charge |
| **Dam Rong** | Logistician |
| **Dao Janta** | Nurse |
| **Darakamon, Muechae** | Storekeeper Assistant |
| **Daungdusadee, Moree** | Lab Technician |
| **Daw May Yee Win** | Midwife Junior |
| **Dechokonglap, Supavadee** | Bookkeeping Assistant |
| **Dee Mu Htoo** | Midwife Junior |
| **Deena** | Site Administrative Assistant |
| **Duang Dao** | Nurse |
| **E Molei** | Administrative Officer |
| **Eh Dah** | Health Worker |
| **Eh Dah Ler** | Health Worker |
| **Eh Hser Nay** | Counsellor |
| **Eh Ler Htoo** | HR Assistant |
| **Eh Moo** | Nurse |
| **Eh Mwee Paw** | Midwife Junior |
| **Elvina** | Nurse |
| **Gay Doh Paw** | Field Supervisor |
| **Gornsawun, Gornpan** | Sr. Lab Technician |
| **Hae Moo** | Lab Technician |
| **Hataipongphen, Supasak** | Logistic Assistant |
| **Hillda** | Medic |
| **Hinfonthong, Phattaraporn** | Lab Technician |
| **Hla Hla Than** | Trainer assistant |
| **Hla Po** | Laboratory Technician |
| **Hsa Dah** | M&E Assistant |
| **Hsar Eh** | Midwife Senior |
| **Hser** | Counsellor |
| **Hser Gay** | M&E Assistant |
| **Hser Gay Paw** | Nurse |
| **Hser Hser** | Lab Technician |
| **Hser Khu Moo** | Midwife Junior |
| **Hser Moo** | Nurse |
| **Hser Nay Htoo** | Nurse |
| **Hser Nay Moo** | Medic |
| **Htar Tin** | Midwife Junior |
| **Htee Hser Moo** | Nurse |
| **Htee K Paung** | Media Group Supervisor |
| **Htee Shee** | Field Supervisor |
| **Htet Htet Aung** | Study M&E Officer |
| **Htet Khing Luu** | PE/CE Assistant |
| **Htet Ko Ko Aung** | Physician |
| **Htile** | Medic |
| **Htoe Reh** | Cleaner |
| **Htoo Htoo Hlaing** | Midwife Assistant |
| **Htoo Paw** | Midwife Senior |
| **Htoo Plo** | PE/CE Assistant |
| **Htoo Pyi Thar** | Lab Technician |
| **Htun Htun Win** | Clinical In Charge |
| **Islamp** | Health Worker |
| **Jack** | Logistic Assistant |
| **Jaiprommin, Chalita** | Bookkeeping Assistant |
| **Jarntrah** | Sonographer |
| **Jaruwan** | Lab Assistant |
| **Jasper** | M&E Assistant |
| **Jeenpracha, Karaked** | Logistic Assistant (Sanitation) |
| **Jhon Aung Paing** | Janitor |
| **Jittatam, Aye Kyi Win** | MCH In Charge |
| **Jitthamsri, Jet** | Senior Logistic Assistant |
| **Ju Ju** | Survey Assistant |
| **K Por Thaw** | TB Administrator Assistant |
| **Ka Mwee Paw** | Midwife Junior |
| **Kaewkanya, Chalita** | Senior Laboratory Technician |
| **Kaewphanderm, Napaporn** | Sr. Lab Technician |
| **Kajeechiwa, Ladda** | CE Officer/PE Department Head |
| **Kamalatprawit, Wipa** | Finance Assistant |
| **Kamthakrua, Tanawat** | HR Junior Assistant |
| **Kanchai** | Medic |
| **Kasettrakan, Rakduang** | Referral Staff |
| **Kaweepornpai, Yupharet** | Lab Technician |
| **Kaweepornprai, Mithawe** | Driver |
| **Kaweepornprai, Surat** | Transportation In Charge |
| **Kay Cha** | Health Worker |
| **Kaynaytoo** | Lab Assistant |
| **Keereecharoen, Daydaypo** | Medic |
| **Kengpasankoon, Yokor** | Referral Staff |
| **Khachathonkun, Bancha** | Sr. Driver |
| **Khammang, Kasamavadee** | Lab Technician |
| **Khaung Klain** | Project Support Officer/ Program Assistance |
| **Khay Moe** | Nurse |
| **Khin Mai Tin** | Midwife Junior |
| **Khin Maung Lwin** | Country Representative |
| **Khongkhetkhram, Duangtip** | CE Field Coordinator |
| **Kiestra, Douwe** | IT Specialist |
| **Kiriamrung, Inthira** | Content Creator Assistant |
| **Kittikawee, Keerati** | Logistic and Supplier Supervisor |
| **Klay Htoo** | Medic |
| **Kler Paw** | Cleaner |
| **Kobphan, Pachinee** | Lab Technician |
| **Konkaew, Nong** | Security Guard |
| **Kritsanarangsan, Sureerat** | Training Coordinator |
| **Kulabkeeree, Thithiworada** | Sr. Lab Assistant |
| **Kyaw Khin Soe** | Medic |
| **Kyaw Yeah** | Health Worker |
| **Kyawkati** | Logistic Assistant |
| **Kyawt Kyawt** | Survey Assistant |
| **Kyi Thu Lwin** | Supply chain Management Assistant |
| **Ladda** | PE/CE Assistant |
| **Lamnamphai, Rattaphong** | Driver |
| **Laoongmak, Dilaual** | Lab Technician |
| **Lay Lay Wa** | Midwife Junior |
| **Lay Plar Soe** | Lab Technician |
| **Lay Wah Htoo** | Health Worker |
| **Lee, Jung-Yuan** | Co. Manager of Project and Grant |
| **Lin Mg Mg** | In Charge Assistant (Medic) |
| **Lu Lu** | PE/CE Assistant |
| **Lula** | Storekeeper Assistant |
| **Lwe Gay** | Security Guard |
| **Ma Hla Yee** | Cleaner |
| **Ma Myint Mo Win** | Social Worker |
| **Ma Naw Mu Htunt Awar** | Midwife Senior |
| **Ma Ngu Wah Hlaing** | In Charge Assistant (Midwife j |
| **Ma Phyo Thu Han** | Midwife Junior |
| **Ma Su Lwin Phyo** | Midwife Assistant |
| **Ma Thidar Oo** | Lab Technician |
| **Ma Zin Mar Htay** | Midwife Assistant |
| **Malla, Suwan** | Driver |
| **Manabakban, Phawichor** | Sr. HR Assistant |
| **Mansomsakunchai, Manlika** | Data Entry |
| **Mar Htoo Yar Phan** | Medic |
| **Marnit** | Storekeeper Assistant |
| **Mary Ellen** | Physician |
| **May Mon Mon Theint** | Physician |
| **May Myo Thwin** | MCH Coordinator |
| **May Thu Thu Aung** | Research Doctor |
| **Maylai** | M&E Assistant |
| **McGready, Rose** | Professor of Tropical Maternal and Child Health / SMRU Deputy |
| **Mee Mee** | Lab Technician |
| **Mg Aung Kyaw Hsan** | Storekeeper Assistant |
| **Mg Aye Chan** | Medic |
| **Mg Myo Chit Min** | Research Staff |
| **Mg Zaw Htay** | Admin Assistant |
| **MgHni** | Lab Technician |
| **Min** | Lab Technician |
| **Mingpraiwet, Kittima** | Nurse |
| **Misa, Prapatsorn** | Public Health Coordinator |
| **Monasikankird, Pattipat** | Logistic Manager |
| **Moo** | Sonographer |
| **Moo Khee Lar** | Medic |
| **Moo Paw Hei** | TB Administrator |
| **Mu Eh** | Midwife Junior |
| **Mu Klay** | Midwife Junior |
| **Mu Koung Hsou** | Nurse |
| **Mu Phang Sue** | Lab Assistant |
| **Mue Dah** | Nurse |
| **Mue Mue** | Medic |
| **Myat Mu Khin** | Procurement Officer |
| **Myint Zaw Oo** | Nurse |
| **Myo Min Hein** | Program Coordinator Assistant |
| **Myo Min Thant** | M&E Coordinator |
| **Nan Be Sein** | Nurse |
| **Nan Khin Linn Htet** | Midwife Junior |
| **Nan Khin San Myint** | In Charge Assistant (Medic) |

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| **Nan Khin Zar Moe** | Midwife Junior |
| **Nan Lin Lin Kyi** | Counsellor |
| **Nan Lin Lin Nwe** | Health Worker |
| **Nan Ma Lwam Po** | Midwife Junior |
| **Nan Ma Na San** | Midwife Junior |
| **Nan Moe Moe Win** | Data Entry |
| **Nan Nu Nu Aye** | Counsellor |
| **Nan Yin Yin Thein** | Medic |
| **Nant Mar Lar Tun** | Senior Accountant |
| **Naw Aye Aye Aung** | Health Worker |
| **Naw Aye Aye Mway** | Sonographer |
| **Naw Aye Chit** | Midwife Junior |
| **Naw Aye Mya Than** | Midwife Junior |
| **Naw Aye Sa Tar Phaw** | Midwife Junior |
| **Naw Blessing** | Counsellor |
| **Naw Blessing** | Social Worker |
| **Naw Bwe Say** | Data Entry |
| **Naw Chit Mat** | Midwife Junior |
| **Naw Dah** | Nurse |
| **Naw Dah** | Nurse |
| **Naw Dah Ler** | Nurse |
| **Naw Dah Ray** | PE/CE Assistant |
| **Naw Dar Dar Poe** | Midwife Junior |
| **Naw December Win** | Nurse |
| **Naw Decer Paw** | Field Officer |
| **Naw Due** | Cleaner |
| **Naw Eh** | Midwife Senior |
| **Naw Eh Hser Gay** | Health Worker |
| **Naw Eh Paw** | Health Worker |
| **Naw Eh Ta K'Paw** | Health Worker |
| **Naw Eh Taw Moo** | Health Worker |
| **Naw Ei Ei Soe** | PE/CE Assistant |
| **Naw Elvina** | Midwife Junior |
| **Naw Esther** | Field Officer |
| **Naw Gay** | Medic |
| **Naw Gay Htoo** | Cleaner |
| **Naw Gay Wah** | Midwife Junior |
| **Naw Gloria** | Lab Assistant |
| **Naw Hai Ti Ti** | PE Coordinator and T-CAB Facilitator |
| **Naw Hay Blut Paw** | Counsellor |
| **Naw Hay Blute Paw** | Counsellor |
| **Naw Hsa Tha Bwae Wah** | Medic |
| **Naw Hser Eh Moo** | Cleaner |
| **Naw Hser Khu** | Cleaner |
| **Naw Htoo** | Midwife Senior |
| **Naw Htoo Gay** | Sonographer |
| **Naw Jue Nay Wah** | Counsellor |
| **Naw Khu** | Cleaner |
| **Naw K'Nyaw Paw** | M&E Assistant |
| **Naw Ku Ku** | Midwife Junior |
| **Naw Lae Lai** | Nurse |
| **Naw Lay Lay** | Cook & cleaner |
| **Naw Len Da** | Midwife Senior |
| **Naw Ler Bwe Paw** | Nurse (Pharmacist) |
| **Naw Mar He Paw** | Cleaner |
| **Naw May Thwe Win** | Nurse |
| **Naw Moo Tha** | Lab Assistant |
| **Naw Mu Dah** | Midwife Junior |
| **Naw Mu Dah Tu** | Midwife Senior |
| **Naw Mu Lar** | Nurse |
| **Naw Nout Nor** | Lab Technician |
| **Naw Nyo Nyo Win** | Midwife Junior |
| **Naw P Lan Cho** | Health Worker |
| **Naw Paw** | Counsellor |
| **Naw Paw Day Nyar** | Health Worker |
| **Naw Paw Eh Wah** | Health Worker |
| **Naw Paw Gay** | Nurse |
| **Naw Paw Ler Lah** | Baby Tester |
| **Naw Paw Nay Thar** | Field Supervisor |
| **Naw Paw Paw** | Nurse |
| **Naw Paw Ray** | Cleaner |
| **Naw Paw Wah Wah** | Midwife Junior |
| **Naw Peh** | Nurse |
| **Naw Pic** | Midwife Junior |
| **Naw Pway Nay Moo** | Midwife Junior |
| **Naw Roh Paw** | Cook |
| **Naw San San Nwe** | Counsellor |
| **Naw Say Htoo Paw** | Midwife Junior |
| **Naw Say Ler Wah** | Midwife Junior |
| **Naw Say Say** | Counsellor |
| **Naw Su Su Maw** | M&E Assistant |
| **Naw Sunday Paw** | Sonographer |
| **Naw Ta Wah Wah** | Health Worker |
| **Naw Tha Dah Paw** | Lab Technician |
| **Naw Tha Mee Su** | In Charge Assistant (Counsellor) |
| **Naw Tha Moo** | Sonographer |
| **Naw Thaw Wah Paw** | Nurse |
| **Naw Thaye Gay Nay Moo** | Sonographer |
| **Naw Thu Lay Paw** | Midwife Senior |
| **Naw Tin Moe Moe Thet** | Midwife Junior |
| **Naw Victoria** | Sonographer |
| **Naw Win Wah Shwe** | Site Administrator |
| **Naw Ya** | Midwife Senior |
| **Naw Yu Lee** | Lab Assistant |
| **Naw Za Ree Na** | PE/CE Assistant |
| **Nay Htet Lin** | Health Worker |
| **Nay Win Tun** | Physician |
| **Netnirandon, Kittisak** | Driver |
| **Netnirandon, Pharanyu** | Driver |
| **Ni Ni Aung** | Clinical In Charge |
| **Ni Wah** | In Charge Assistant (Medic) |
| **Nipit** | Field Officer |
| **Nitikorn, Casla** | Storekeeper |
| **Niwetphongprai, Laaongsri** | Monitor |
| **Noe Noe** | Health Worker |
| **Nosten, Suphak** | Mediator & Communication |
| **Nu** | Medic |
| **Nway Nway Paing** | Physician |
| **Nyo Thwe Hlaing** | Midwife Junior |
| **Oakkararungrot, Yanada** | Lab Technician |
| **Pa Oo** | Security Guard |
| **Paksawayu, Aeloi** | Clinical In Charge |
| **Pan Aye** | Midwife Senior |
| **Panachuenwongsakul, Nuttapol** | Data Manager |
| **Panmaen, Prasroeth** | Security Guard |
| **Pateekhum, Chanapat** | Epidemiologist |
| **Pattarathammapong, Pitchayapa** | Procurement Officer |
| **Paw Eh Gay** | Counsellor |
| **Paw Eh Moo** | Data Entry |
| **Paw Gay** | Lab Technician |
| **Paw Kaw Khu** | Nurse (Outreach) |
| **Paw Lay Kee** | Health Worker |
| **Paw May Wah** | Midwife Junior |
| **Paw Mu** | Nurse |
| **Paw Pale** | Health Worker |
| **Paw Tha Dah** | Medic |
| **Paw Yeh** | Health Worker |
| **Phakdikhunnatham, Nattaporn** | Site Administrator |
| **Phattaraussawin, Mawin** | Logistic and Supplies Officer |
| **Phattharakokoedbun, Pase** | Lab Technician |
| **Phatthrakokoedbun, Muenue** | Lab Technician |
| **Phaw Khu Moo** | Lab Assistant |
| **Phichitphadungtham, Yuwapha** | Counsellor |
| **Phimanphanarak, Mueporjae** | MCH in Charge |
| **Phyu Sin Thant** | Midwife Junior |
| **Pilaseng, Kasiha** | Project Support Officer/ Program assistance |
| **Pimjai** | Nurse |
| **Pimolsornthong, Taklay** | Lab In Charge |
| **Pimrada** | Field Officer |
| **Pleh** | Health Worker |
| **Ploypoungtip, Amorn** | Senior Accountant |
| **Ploysai** | Midwife Junior |
| **Po Lay** | Security Guard |
| **Poe Poe** | PE/CE Assistant |
| **Poe Say** | Program Coordinator |
| **Poh Kay** | Data Entry |
| **Pondod, Atcharaporn** | Bookkeeping Assistant |
| **Pongpanapacharoen, Siriporn** | Lab Assistant |
| **Poollak, Ketnipa** | Health Data Coordinator |
| **Popo** | PE/CE Assistant |
| **Praisangdet, Norda** | Counsellor Supervisor Senior |
| **Pronchowadeesakul, Mayuree** | Lab Assistant |
| **Proux, Stephane** | Scientist |
| **Pyae Phyo Kyaw** | Data Manager |
| **Raksuansak, Jathee** | Lab Technician |
| **Ratstankumnurd, Sakoollchai** | Driver |
| **Rechard** | Program Manager Assistant |
| **Ritratana, Nitaya** | Lab Assistant |
| **Ritwongsakul, Wannee** | Administrator/COO |
| **Rojuya, Prayuth** | Driver |
| **Rongthong, Phatcharamai** | Lab Technician |
| **Rosy** | Midwife Junior |
| **Rosy Soe** | Midwife Junior |

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|---|---|
| **Rueangadunwit, Nidanut** | Bookkeeping Assistant |
| **Rungwilailaekhiri, Suthasana** | Sonographer In Charge |
| **Sa Kyaw Zin Htwe** | Health Worker |
| **Sa Nanda Aung** | Cleaner |
| **Sa Win Htay** | Gardener |
| **Saenkasettrakon, Phata** | Driver |
| **Saenmueangin, Jaratsree** | Lab Technician |
| **Sai Noon** | Technical Coordinator |
| **Sakhonmalee, Muenopi** | Data Entry |
| **Sakunnitiphap, Noloithu** | Sonographer |
| **Saman, Rattiporn** | Cleaner |
| **San Kyaw Swar Htoo** | Driver |
| **San Soe** | CE trainer & Supervisor |
| **San Wai** | Midwife Trainer |
| **San Win Oo** | Health Worker |
| **Sanabut, Nattaros** | Admin assistant |
| **Sandotwanaprai, Waraporn** | Data Entry |
| **Saneanurak, Laethoo** | Site Administrator |
| **Sanhathaikamon, Punika** | Midwife Senior |
| **Sapysinphanaphai, Oudom** | Driver |
| **Satanankan, Khruyo** | Logistic Assistant |
| **Satusatit, Thiraphap** | Driver |
| **Saw Any Sir** | Cook Assistant |
| **Saw Aung Hein** | Nurse |
| **Saw Aung Htet Oo** | Medic |
| **Saw Aung Htwe** | Medic |
| **Saw Aung That** | Medic |
| **Saw Aung Tun Hla** | Medic |
| **Saw Aye Ku** | Cook |
| **Saw Ba Tin** | Health Worker |
| **Saw Cha Chi Lay** | Nurse (Pharmacist) |
| **Saw Chit Nu** | M&E Assistant |
| **Saw Dah Soe** | Site Logistic |
| **Saw Day** | Nurse |
| **Saw Dellewe Htoo K'Nyaw** | Data Entry |
| **Saw Donal Htoo** | Data Entry |
| **Saw Eh Gay Htoo** | Health Worker |
| **Saw Eh Pho** | Site logistician |
| **Saw Eh Say** | Lab Technician |
| **Saw Ger Kler Moo** | Health Worker |
| **Saw Haslay** | Health Worker |
| **Saw Henry** | Data Entry |
| **Saw Hla June** | Clinic Site Security Guard |
| **Saw Hsue Paung** | Medic |
| **Saw Htaw Ray** | Security Guard |
| **Saw Htoo** | Counsellor |
| **Saw Htoo Bwe Muu** | Research Staff |
| **Saw Htoo Hsir** | PE/CE Assistant |
| **Saw Jamin** | Medic |
| **Saw Johnson** | Program Assistant |
| **Saw Kay Lay** | Field Officer |
| **Saw Khu Hser Wah** | Counsellor |
| **Saw Ku Aye** | Nurse |
| **Saw Ku Moo** | Cleaner & Cook |
| **Saw Kyal Zin Tun** | Health Worker |
| **Saw Kyaw Hae Balae** | Storekeeper Assistant |
| **Saw Kyi Lwin** | Lab Technician |
| **Saw Lawdoo** | Content Creator |
| **Saw Lay Taw** | Health Worker |
| **Saw Maung Aye** | Cook |
| **Saw Maung Khue** | Cleaner |
| **Saw Maung San San** | HR Junior Assistant |
| **Saw Mg Lu** | Health Worker |
| **Saw Min Maw Kun** | Data Entry |
| **Saw Moo Taw** | Data Entry |
| **Saw Muler** | Data Entry |
| **Saw Nay Kaw Htoo** | Capacity Building Officer |
| **Saw Nay Linn Htun** | Medic |
| **Saw Nay Wai Say Boss** | IT Helpdesk |
| **Saw Ngwe Thaw Zin** | Nurse |
| **Saw Paw Gay** | Pharmacy Stockkeeper |
| **Saw Pha Day** | Medic |
| **Saw Phee Do** | PE Coordinator |
| **Saw Phu Thit Oo** | Data Officer |
| **Saw Plosoe** | Health Worker |
| **Saw Poe Kyaw** | Cleaner |
| **Saw Poe Kyaw See** | Logistician |
| **Saw Poe Yeh Yeh** | Data Entry |
| **Saw Pu Dah** | Driver |
| **Saw San Oo** | Site Logistic/Security |
| **Saw Saw** | Data Entry |
| **Saw Shel Gay** | Nurse |
| **Saw Tar Doh Htoo** | Physician |
| **Saw Tar Lu Lu** | Sr. Project Coordinator |
| **Saw Tar Lweh Wah** | Health Worker |
| **Saw Taw Tha Pwee** | Field Officer |
| **Saw Tha Dah Gay** | Nurse |
| **Saw Than Min Htun** | Operation Manager |
| **Saw Than Zaw** | Health Worker |
| **Saw Thaw Thee Htoo** | Health Worker |
| **Saw Thein Min Oo** | Research Staff |
| **Saw Thet Naing Oo** | Site Logistic |
| **Saw Thu Kha** | Site Administrator |
| **Saw Thuta Aung** | Health Worker |
| **Saw Tin Win Hlaing** | Health Worker |
| **Saw Tun Pyae Oo** | Data Entry |
| **Saw Wah Htoo** | Site Logistic/Security |
| **Saw Wah Ray** | Lab Technician |
| **Saw Wie** | Nurse |
| **Saw Win Tun** | Operation Manager |
| **Sawangkeereekun, Suchada** | HR Assistant |
| **Sawhayblut** | Operation Support Officer |
| **Say Lar Heh** | Cleaner |
| **Say Say** | Midwife Junior |
| **Seechaikham, Suttinee** | HR Manager |
| **Seeminthu** | IT Systems Administrator |
| **Sein Hla Kyine** | Cook |
| **Siriwatwaree, Pichetchai** | Driver |
| **Sisukthippanya, Chanchai** | IT Helpdesk |
| **Sisukthippanya, Suphichai** | Senior Laboratory Assistant |
| **Sitipong** | Referral Supervisor |
| **Snay** | Nurse |
| **S'Nay Heh** | Cleaner |
| **Sombatrungjaroen, Sawat** | Driver |
| **Somboon, Patipan** | Assistant Program Coordinator |
| **Somrangwatjanakul, Surapol** | Data Entry |
| **Sonklinphai, Pholoihe** | Lab Technician |
| **Sriripim, Kasem** | Lab Technician |
| **Su Myat Soe** | Lab Technician |
| **Surachai** | Logistic Assistant |
| **Surachai** | Laboratory Technician |
| **Surasakpanya, Sompis** | Procurement and Store Manager |
| **Surata** | Research Assistant |
| **Surina, Sirirat** | Lab Assistant |
| **Sylverine Win** | Midwife Senior |
| **Ta Mlar Paw** | Sonographer |
| **Taluang, Penpitcha** | Assistant of Grant Officer |
| **Taw Pla Paw** | In Charge Assistant (Health Worker) |
| **Tawantochai, Wirawatn** | Lab In Charge |
| **Tee Kay** | Nurse |
| **Tengin, Nuttawut** | Admin Assistant |
| **Thae Thae Niang** | Research Staff |
| **Than Oo** | Midwife Junior |
| **Thaw Htwe Min** | Physician |
| **Thay Eh Taw Loh** | Counsellor |
| **Thidasan** | In Charge Assistant |
| **Thidazin** | Nurse |
| **Thitiphatsaranan, Woranit** | Site Administrator |
| **Thongdee, Primprapaporn** | Senior Admin Assistant |
| **Thu Lay Paw** | Clinical In Charge |
| **Trakoolcheangkaew, Muesuwa** | Lab Assistant |
| **Tu Tu Lay** | Nurse |
| **U Saw Sai Mg Mg** | Security Guard |
| **Vesupangkun, Thamolthanan** | Senior Procurement Officer |
| **Wai Linn Aung** | Training Coordinator |
| **Wai Wai** | Health Worker |
| **Wai Yan Naing** | Physician |
| **Wanaaudomkit, Ahrita** | Entomology Laboratory Administrator |
| **Wananiwej, Thada** | Data Entry |
| **Warisara** | Nurse |
| **Warongphamonphat, Kannaran** | Sonographer |
| **Wasisakun, Prapan** | Senior Laboratory Technician |
| **Watthanaworawit, Chintana** | Lab Data Management Officer |
| **Watthanaworawit, Pornsawan** | Lab & Safety Administrator |
| **Watthanaworawit, Wanitda** | Head of Microbiology & Molecular Laboratories |
| **Way K' Paw** | Data Entry |
| **Weerawithayakul, Suchanard** | Finance Assistant |
| **Wiladphaingern, Jacher** | Data Manager |

| | |
|---|---|
| **Wimon** | M&E Staff |
| **Win Cho** | M&E Assistant |
| **Win Htay** | Midwife Senior |
| **Win Pa Pa Htun** | Program Technical Coordinator |
| **Win Win Hlaing** | Midwife Senior |
| **Win Win Khaing** | Cleaner |
| **Winyoorat, Kanjana** | Sr. Grant Officer Assistant |
| **Wirachonphaophong, Jindaporn** | Clinical Research Assistant |
| **Wongaeka, Tiwa** | Logistic Assistant |
| **Wongaeka, Mueanfan** | Lab Technician |
| **Wongpee, Song** | Driver |
| **Woonsen** | Cleaner |
| **Yamin Shwe Sin** | Midwife Junior |
| **Yasan, Yuttana** | Lab Technician |
| **Yase, Nokhi** | Midwife Senior |
| **Yaw Kaw Kler** | Medic |
| **Yeh Htoo** | Midwife Junior |
| **Yotyingaphiram, Widi** | Clinical Research Officer (Senior) |

## Lao-Oxford-Mahosot Hospital-Wellcome Trust Research Unit (LOMWRU)

### Elizabeth Ashley — Unit Director

| | |
|---|---|
| **Atsamouth, Aphaphone** | Laboratory Technician |
| **Bellingham, Khonsavath** | Research Scientist |
| **Benjamin, Amelia Jane** | Clinical Fellow in Microbiology |
| **Boutthasavong, Latsaniphone** | Senior Laboratory Technician/ Deputy IDC lab Manager |
| **Bounkhoun, Toukta** | Research Physician |
| **Banmanivong, Noy*** | Cleaner |
| **Caillet, Céline** | Medicine Quality Research Group Coordinator/ Research Scientist |
| **Chu, Cindy** | Senior Research Physician |
| **Chansamouth, Vilada*** | Senior Research Physician |
| **Chanthaluanglath, Valin** | Nurse, Patient Follow up |
| **Chanthongthip, Anisone** | Laboratory Manager |
| **Chindavong, Touny** | Senior Data Entry Officer |
| **Chommanam, Danoy** | Research Physician |
| **Dadivong, Somxay** | Junior Clinical Researcher |
| **Davong, Viengmon*** | Deputy Head of Microbiology Laboratory / Lab Manager |
| **Duangmala, Souksavanh** | Laboratory Technician, Follow up |
| **Duangmala, Khuanta*** | Laboratory Technician |
| **Duangnouvong, Anousone** | Research Physician |
| **Dubot-Pérès, Audrey** | Virology Group Head |
| **Evans, Terry John** | Clinical Fellow in Microbiology |
| **Hanthongsay, Nilamith*** | Specimens Storage Manager |
| **Jaksuwan, Risara** | Laboratory Management Advisor |
| **Keodala, Malinar*** | Laboratory Technician |
| **Keokhamhoung, Dala** | Patient Follow Up/ Lab Technician |
| **Keomeuangneua, Saisathit** | HR and Administrative Officer |
| **Keomoukda, Phatsalin** | Laboratory Technician, Field |
| **Khamsy, Chanthachone** | Stock Officer |
| **Khounpaseuth, Khamxeng** | Laboratory Technician, Field |
| **Kouaykesone, Phoudthasone** | Data Quality Manager |
| **Kiedsathid, Padthana** | Laboratory Technician |
| **Kingkeoudom, Nar** | Data Entry Officer |
| **Lathsachak, Thongsavanh** | Laboratory Technician, Field |
| **Lattana, Olay*** | Head of Micro Lab Admin/ Senior Laboratory Technician |
| **Luangraj, Manophab** | Research Physician |
| **Mayxay, Mayfong*** | Head of Field Research/ Deputy Dean of University of Health Sciences |
| **Nalongsack, Manilung** | Research Pharmacist |
| **Olinh, Thitthiphone** | Research Pharmacist |
| **Opphalavong, Somphone** | Security Guard |
| **Panapruksachat, Siribun** | Molecular Bacteriologist |
| **Panyanouvong, Phonepasith*** | Senior Laboratory Technician |
| **Pimmalath, Chanthalyphone** | Finance Officer |
| **Pimxaythong, Viengsavanh** | Research Scientist |
| **Phalivong, Sonexay** | Project Coordinator (CMPE) |
| **Phianthanom, Bountherng*** | Laboratory Technician |
| **Phimolsannousith, Vilayouth** | Research Physician |
| **Phommadeechack, Vanheuang** | BSL3 Lab Manager/Research Scientist |
| **Phommahasay, Bounkhong*** | Laboratory Technician |
| **Phommasone, Koukeo*** | Senior Research Physician |
| **Phonemixay, Ooyanong** | Laboratory Technician |
| **Phouminh, Phonelavanh*** | Deputy Head of Micro Lab Administration & Senior Lab Technician |
| **Padith, Kaisone** | Laboratory Technician |
| **Phuklia, Weerawat** | Postdoctoral Scientist |
| **Phakhounthong, Khanxayaphone** | Research Physician, Field |
| **Phommavanh, Xaykhamphet** | Research Physician, Field |
| **Phommavong, Touy** | Research Physician, Field |
| **Phomsisavath, Vilaiphone** | Research Veterinarian |
| **Phoutthavong, Soulichanya** | Research Physician, Field |
| **Planché, Florent Guillaume Yoann** | Operations Manager |
| **Roberts, Tamalee** | Research Scientist |
| **Robinson, Matthew** | Group Head Molecular Bacteriology & Area Safety Advisor |
| **Seevanhthong, Khambang** | Research Physician, Field |
| **Sengdatka, Davanh*** | Laboratory Technician |
| **Sengduangphachanh, Amphonesavanh*** | Quality Control/ Senior Laboratory Technician |
| **Seubsanith, Amphaivanh*** | Laboratory Technician |
| **Sibounheuang, Bountoy*** | Senior Laboratory Technician |
| **Silichack, Lanoi*** | Laboratory Technician |
| **Silisouk, Joy*** | Senior Laboratory Technician |
| **Symanivong, Sengkham** | Purchase & Supply Administrator |
| **Symanivong, Souksavanh** | Field Administrator/Logistician, Field |
| **Simmalavong, Manivone*** | Deputy Head of Micro Lab Administration / Laboratory Technician |
| **Siratana, Vannavong** | Research Physician |
| **Singvongsa, Kikhamsen** | IT Support Manager |
| **Sihabout, Mongkhounthong** | Facilities Officer |
| **Souksavanh, Manila** | Laboratory Technician |
| **Solathtanavong, Tadam** | Administrative and HR Officer |
| **Soulivong, Ailatda** | Research Physician, Field |
| **Soukhammala, Sompasong** | Finance and Admin assistant |
| **Souvannasen, Vilason** | Laboratory Technician, Field |
| **Syhalath, Somsavanh*** | Laboratory Technician |
| **Symanivong, Sengmany** | Finance and HR Administrator |
| **Sydalay, Sengdavanh** | Research Physician |
| **Thammavong, Sompong** | Laboratory Technician |
| **Thammavong, Amphaivanh** | Research Pharmacist |
| **Thammavongsa, Peeyanout** | Research Physician |
| **Thalongsengchan, Mayulee** | Clinical research assistant |
| **Thepbandith, Sompany** | Senior Finance Officer |
| **Thongpaseuth, Soulignasack** | Senior Laboratory Technician |
| **Vang, Sao*** | Laboratory Technician |
| **Vannachone, Souphaphone** | Research Physician |
| **Vidhamaly, Vayouly** | Head of Clinical Trials Support Group |
| **Vilayhong, Poukky** | Research Physician |
| **Vilivong, Keoudomphone** | Study Coordinator |
| **Volavong, Souksakhone** | Specimens Storage Assistant |
| **Vongratsavai, Aeo** | HR and Administrative Assistant |
| **Vongsouvath, Manivanh*** | Director of Microbiology Laboratory / Deputy Virology Group Head |
| **Vongsouvath, Viengsavanh** | Administration Assistant |
| **Vongsouvath, Malavanh*** | Laboratory Technician |
| **Xaithilath, Parnthong** | Trainee Data Manager |
| **Xayaphet, Xaipasong** | Research Physician, Field |
| **Xayalath, Somdy** | Laboratory Technician, Field |
| **Xongmalaythong, Khamthasone** | Data Entry Officer |
| **Xayvanghane, Saiamphone** | Project Coordinator |
| **Xayasit, Buasy*** | Cleaner |
| **Yiaye, Touxiong** | Research Physician, Field |

* Indicates Government of Lao PDR staff

## Cambodia-Oxford Medical Research Unit (COMRU)

### Paul Turner — Unit Director

| | |
|---|---|
| **Ardura, Cristina** | Clinical Researcher |
| **Bott, Seda** | Research Assistant |
| **Bran, Sambou** | Research Assistant |
| **Chandna, Arjun** | Clinical Researcher |
| **Cheav, Voleak** | Laboratory Technician |
| **Hopkins, Jill** | ACORN Network Manager |

| | |
|---|---|
| **Kang, Roya** | Office Manager |
| **Ling, Clare** | Operations Manager |
| **McLoughlin, Emma** | Clinical Researcher |
| **Miliya, Thyl** | Clinical Microbiologist |
| **Non, Vannak** | Laboratory Technician |
| **Patel, Kaajal** | Clinical Researcher |
| **Pav, Vichet** | Data Manager |
| **Real, Sophanith** | Data Entry Assistant |
| **Sao, Sena** | Laboratory Technician |
| **Sar, Poda** | Microbiology Team Leader |
| **Soeng, Sona** | Microbiology Quality Lead |
| **Suy, Keang** | Clinical Microbiologist |
| **Tan, Pisey** | Laboratory Technician |
| **Turner, Claudia** | AHC Management Consultant / Head of Clinical Research |

## Myanmar-Oxford Clinical Research Unit (MOCRU)

**Frank Smithuis** — Unit Director

| | |
|---|---|
| **Aung, Htet Htet** | Clinical Research Assistant |
| **Aung, Hein** | MD, Researcher, PhD Student (Rickets Study) |
| **Aung, Htet Wai Yan** | Team Leader (Truenat Study) |
| **Aung, Kyaw Htet** | Lab Tech (Truenat Study) |
| **Aung, Zaw Seng** | Field Assistant (Truenat Study) |
| **Chan, Kyone** | Field Assistant (Truenat Study) |
| **Gin** | Field Assistant (Truenat Study) |
| **Htike, Myo Min Min** | Data Coordinator |
| **Hin, May Kyar** | Field Assistant (Truenat Study) |
| **Hlaing, Moe Tain San** | X-Ray Tech (Truenat Study) |
| **Htun, Khaing Myo** | Field Assistant (Truenat Study) |
| **Htun, Yinmon** | Research Officer |
| **Janssen, Sieb** | Resource Director |
| **Kyaw, Thar Tun** | Senior Advisor |
| **Kee** | Field Assistant (Truenat Study) |
| **Kway** | Field Assistant (Truenat Study) |
| **Khin, Par** | Field Assistant (Truenat Study) |
| **Khun** | Field Assistant (Truenat Study) |
| **Ko, Chit Ko** | Field Assistant (Truenat Study) |
| **Chaing, Mat** | Field Assistant (Truenat Study) |
| **Lone, Tan** | Field Assistant (Truenat Study) |
| **Ling, Hting Lat Shing** | Field Assistant (Truenat Study) |
| **Li, Sar** | Field Assistant (Truenat Study) |
| **Mon, Myo Myo** | MD/ Research Facilitator |
| **Mart, Kam** | Field Assistant (Truenat Study) |
| **Myint, Htun** | Field Assistant (Truenat Study) |
| **Naung, Saw** | Field Assistant (Truenat Study) |
| **Nyo, Pohn Dine** | Field Assistant (Truenat Study) |
| **Nan, Pan** | Field Assistant (Truenat Study) |
| **Naing, Myat Ko Ko** | Project Medical Coordinator (Truenat Study) |
| **Paing, Soe Yan** | Project Medical Coordinator (Truenat Study) |
| **Ra, Ki** | Field Assistant (Truenat Study) |
| **Soe, Kyaw** | Lab Coordinator |
| **Swe, Myo Maung Maung** | MD/Researcher Coordinator, DPhil Student |
| **Shan, Ngie** | Field Assistant (Truenat Study) |
| **Shin, Be Lar Jung** | Deputy Team Leader (Truenat Study) |
| **Shvr, Khan Tee Khin** | Deputy Team Leader (Truenat Study) |
| **San, Im Choke Aung** | Field Assistant (Truenat Study) |
| **Sinyu, Sarep** | Field Assistant (Truenat Study) |
| **Tun, Ni Ni** | MD/Researcher, PhD Student |
| **Tun, Nyan Lynn** | MD, Researcher, DPhil Student |
| **Tun, Saw Kan Sint** | Lab Supervisor |
| **Tun, Laung** | Deputy Team Leader (Truenat Study) |
| **Toe, Zar San** | Deputy Team Leader (Truenat Study) |
| **Thu, Min Khant** | Team Leader/ MD (Truenat Study) |
| **Thurein, Kyaw** | Lab Tech (Truenat Study) |
| **Tu, Kine** | Field Assistant (Truenat Study) |
| **Wai, Hla Phyo** | MD/ Project Coordinator (MSAT Study) |
| **Win, Thaw Tar** | Team Leader/ MD (Truenat Study) |
| **Zaw, Aye Sandar** | MD/Researcher |
| **Zaw, Aung Myo** | Finance Officer |

## Medicine Quality Research Group (MQRG)

**Paul Newton** — Medicine Quality Research Group Head
**Céline Caillet** — MQRG Deputy Head

| | |
|---|---|
| **Adipo, Lawrence** | Data Manager |
| **Bellingham, Khonsavath** | Research Pharmacist |
| **Caillet, Céline** | Research Pharmacist & Deputy Head |
| **Deats, Michael** | Honorary Visiting Research Fellow (part-time) |
| **Freifeld, Clark** | Honorary Visiting Research Fellow (part-time) |
| **Gabel, Julia** | Research Pharmacist |
| **Gnegel, Gesa** | Research Pharmacist |
| **Hagel, Christiane** | Researcher (part-time) |
| **Hauk, Cathrin** | Research Pharmacist and FORESFA Coordinator |
| **Jiang, Shan** | Research Pharmacist (part-time) |
| **Kitignavong, Inthaphavanh** | Research Physician (part-time) |
| **Matousek, Pavel** | Honorary Visiting Research Fellow (part-time) |
| **Nanyonga, Stella** | Research Pharmacist and DPhil Student |
| **Olliaro, Alberto** | Software Engineer, Data Scientist and DPhil Student |
| **Olinh, Thitthiphone** | Research Pharmacist |
| **Phommachack, Kongchack** | Research Pharmacist (part-time) |
| **Pimxayvong, Viengsavanh** | Research Pharmacist |
| **Sengxeu, Noudy** | Research Pharmacist (part-time) |
| **Soult, Andrea** | Research Pharmacist (part-time) |
| **Thi Do, Ngan** | Research Pharmacist (part-time |
| **Van Assche, Kerlijn** | Research Pharmacist and DPhil Student |

## Kinshasa-Oxford Medical Research Unit (KIMORU), DR Congo

**Caterina Fanello** — Director
**Marie Akatshi Onyamboko** — Clinical Director

| | |
|---|---|
| **Badjanga Basara, Benjamin** | Head Laboratory Technician |
| **Bakomba Benie, Sarah** | Study Physician |
| **Bikoko Muniama, Nicholas** | Ward Assistant |
| **Bitumba Biakula, Prosper** | Nurse |
| **Biyela Kembo, Elyse** | Nurse |
| **Boyanga Izani, Antoinette** | Nurse |
| **Ekombolo Epe, Pascal** | Study Physician |
| **Fela Kuba, Crispin** | Nurse |
| **Fioti Mangusu, Alphonsine** | Ward Assistant |
| **Kayembe Kalala, Daddy** | Chief Study Physician |
| **Kediamosiko Lusivika, Nelly** | Accountant |
| **Kimonekene Mona, Héritier** | Data Entry & Technical Support |
| **Maindombe Moke, Jean-Robert** | Laboratory Technician |
| **Makengo Disonama, Pélagie** | Ward Assistant |
| **Mambele, Bibiche** | Cashier |
| **Manuana Tapoy, Justin** | Ward Assistant |
| **Muniakat Kusu, Odile** | Deputy Head Nurse |
| **Ngavuka Ndundu Jephté** | Laboratory Technician |
| **Nsunda Lwadi, Brunette** | Laboratory Technician |
| **Nzambiwishi Kifakiou, Bejos** | Study Physician |
| **Omari Abonve, Jacqueline** | Nurse |
| **Sakina Mungengele, Marcelline** | Head Nurse |

# Annex B

# MORU MIP Publications 2024

The 300 publications below were authored or co-authored by MORU staff and published in 2024. They are arranged by subject and then first author. Each paper only appears once in the list, despite many papers spanning more than one topic. The most appropriate heading has been chosen in each case. This does though mean for example that not all studies reporting a social science study appear under the heading 'Bioethics and social science'.

## 1. Malaria

### Malaria biology, immunology, population biology and genomics

Peeling the onion: how complex is the artemisinin resistance genetic trait of malaria parasites? Kucharski M, Nayak S, Gendrot M, Dondorp AM, Bozdech Z. *Trends Parasitol*. 2024. Epub 20241001. doi: 10.1016/j.pt.2024.09.002. PMID: 39358163.

### Malaria epidemiology

Towards integrated malaria molecular surveillance in Africa. Dada N, Simpson VJ, Amenga-Etego LN, Oriero E, Miotto O, Torok ME, Juma EO, Williams NA, Rajatileka S, Ariani CV, Raman J, Ishengoma DS. *Trends Parasitol*. 2024;40(11):964-9. Epub 20241029. doi: 10.1016/j.pt.2024.09.005. PMID: 39477780.

Identification of complex *Plasmodium falciparum* genetic backgrounds circulating in Africa: a multicountry genomic epidemiology analysis. Miotto O, Amambua-Ngwa A, Amenga-Etego LN, Abdel Hamid MM, Adam I, Aninagyei E, Apinjoh T, Awandare GA, Bejon P, Bertin GI, Bouyou-Akotet M, Claessens A, Conway DJ, D'Alessandro U, Diakite M, Djimde A, Dondorp AM, Duffy P, Fairhurst RM, Fanello CI, Ghansah A, Ishengoma DS, Lawniczak M, Maiga-Ascofare O, Auburn S, Rosanas-Urgell A, Wasakul V, White NFD, Harrott A, Almagro-Garcia J, Pearson RD, Goncalves S, Ariani C, Bozdech Z, Hamilton WL, Simpson V, Kwiatkowski DP. *Lancet Microbe*. 2024;5(12):100941. Epub 20241107. doi: 10.1016/j.lanmic.2024.07.004. PMID: 39522520; PMCID: PMC11628469.

Molecular markers for malaria genetic epidemiology: progress and pitfalls. Ruybal-Pesantez S, McCann K, Vibin J, Siegel S, Auburn S, Barry AE. *Trends Parasitol*. 2024;40(2):147-63. Epub 20231220. doi: 10.1016/j.pt.2023.11.006. PMID: 38129280.

### Malaria diagnostics

Analytical sensitivity analysis and clinical impact modeling of Rapigen rapid diagnostic tests for malaria. Golden A, Slater HC, Jang IK, Walke S, Phan TT, Bizilj GT, Rashid A, Barney R, Das S, Rist MJ, McCarthy JS, Nosten F, Landier J, Imwong M, Hume JCC, Sagara I, Healy SA, Duffy PE, Ntuku H, Mumbengegwi D, Hsiang MS, Murphy SC, Rek J, Torres K, Gamboa D, Domingo GJ. *Am J Trop Med Hyg*. 2024. Epub 20240903. doi: 10.4269/ajtmh.24-0003. PMID: 39226907.

### Novel antimalarial drugs

MMV533, a promising new antimalarial on the horizon. Dondorp AM. *Lancet Infect Dis*. 2024. Epub 20241218. doi: 10.1016/S1473-3099(24)00730-8. PMID: 39708823.

On-target, dual aminopeptidase inhibition provides cross-species antimalarial activity. Edgar RCS, Malcolm TR, Siddiqui G, Giannangelo C, Counihan NA, Challis M, Duffy S, Chowdhury M, Marfurt J, Dans M, Wirjanata G, Noviyanti R, Daware K, Suraweera CD, Price RN, Wittlin S, Avery VM, Drinkwater N, Charman SA, Creek DJ, de Koning-Ward TF, Scammells PJ, McGowan S. *mBio*. 2024;15(6):e0096624. Epub 20240508. doi: 10.1128/mbio.00966-24. PMID: 38717141; PMCID: PMC11237774.

### Treatment of uncomplicated malaria

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# Annex C
## Collaborators 2024

*Collaborator(s), Project(s)/Study type, Institute*

### MORU Bangkok-based Departments

#### Malaria & Critical Illness

1. Prof Marcus Schultz, ICU studies, AMC, University of Amsterdam, the Netherlands
2. Prof Constance Schultz, Sepsis studies, AMC, University of Amsterdam, the Netherlands
3. Prof Rashan Haniffa, ICU Flagship-CCAA, University of Edinburgh, UK
4. Dr Abi Beane, ICU Flagship-CCAA, University of Edinburgh, UK
5. Prof Zbynek Bozdech, Transcriptome *Plasmodium falciparum*, Nanyang University, Singapore
6. Prof Dominic Kwiatkowski, Genomic epidemiology, Sanger Institute, Hinxton, UK (RIP)
7. Dr Victoria Simpson, MalariaGEN Network, Sanger Institute, Hinxton, UK
8. Dr Nhien Nguyen Thanh Thuy, Genetic surveillance of malaria, OUCRU, Viet Nam
9. Dr Sarah Auburn, Genetic surveillance of malaria, Menzies School of Health Research, Australia
10. Dr Jetsumon Sattabongkot Prachumsri, Transmission blocking assessment, Mahidol Vivax Research Unit, Mahidol University, Bangkok, Thailand
11. Peter Preiser, Transcription profile, mechanism of ATS resistance, Nanyang University, Singapore
12. Prof Leanne Tilley, Tracking *P. falciparum* pathways, University of Melbourne, Melbourne, Australia
13. Prof John Adams, Artemisinin-resistant parasites, liver stage, University of Florida, USA
14. Ministry of Public Health (MOPH) Thailand, QA/QC slide reading, TMI techniques, Thailand
15. Prof Nick Anstey, Studies on P. knowlesi, Menzies School of Health Research, Darwin, Australia
16. Prof Aniruddha Ghose, Studies on severe malaria and sepsis, Chittagong Medical College Hospital, Chittagong, Bangladesh
17. Cambodia's National Center for Parasitology, Entomology and Malaria Control (CNM), Studies on drug resistant malaria, Phnom Penh, Cambodia
18. Centre of Malariology, Parasitology, and Entomology, Vientiane, Lao PDR
19. Institute of Malariology, Parasitology and Entomology (IMPEQN), Quy Nhon, Viet Nam
20. National Institute of Malaria Research, India, Studies on drug resistant malaria, Delhi, India
21. Medicines for Malaria Venture (MMV), Studies on new antimalarial drugs, Geneva, Switzerland
22. Jakob Knudsen, Improved housing to prevent malaria transmission, The Royal Danish Academy of Fine Arts Schools of Architecture, Design and Conservation, Copenhagen, Denmark
23. Chris Pell, Social science aspects of malaria elimination, University of Amsterdam, the Netherlands
24. Jorge Salluh, Critical care physician from Brazil and a co-founder of Epimed Solutions
25. Steve Harris, Senior researcher, clinician and informatics consultant with expertise in organisational and strategic health development, University College London (UCL), UK
26. Prof Kevin Baird, Vivax malaria, EOCRU, Indonesia
27. Prof Kath Maitland, Severe malaria- SMAART consortium, Imperial College, London, UK
28. Prof Tom Williams, Determinants of severe malaria, Imperial College, London, UK
29. Prof C. Tuleu, Developing Paediatric Primaquine (DPP), University College London, UK
30. Prof A-M L'Heritier, DPP, École de Biologie d'Ingénieur, Cergy, France
31. Dr T. Kraus, DPP, Université de Bordeaux, France
32. Dr Julie Nguyen-Pouplin, DPP, ReMeD, Bordeaux, France
33. Prof P. Millet, DPP, ReMeD and Université de Bordeaux, France
34. Dr S. Sirima and Dr A. Ouedraogo, DPP Groupe Action de Recherche en Santé, Burkina Faso
35. Dr E. Gadisa and Mr. M. Teferi, DPP, Armauer Hansen Research Institute, Addis Ababa, Ethiopia
36. Mr. S. Mulla, DPP, IPCA Laboratories (Pharma company), Mumbai, India
37. Bilcare Research Pharma Packaging Innovations, DPP, Pune, India
38. Dr Alfred Ngwa, Genomic epidemiology, MRC Laboratories, The Gambia
39. Dr Lucas Amenga-Etego, Genomic epidemiology, University of Ghana, Accra, Ghana
40. Michele van Vugt, Long-term collaborator of MORU on a large variety of projects, AMC, University of Amsterdam, The Netherlands
41. Freek de Haan, Marketing positioning of new antimalarials, Centre of Excellence in Public Safety Management, Erasmus University, The Netherlands
42. Kamala Ley-Thriemer, Vivax malaria treatment studies, Menzies School of Health Research, Casuarina, Australia
43. Ben Ley, Lab aspects of vivax malaria projects, Menzies School of Health Research, Casuarina, Australia
44. Rob van der Pluijm, Lab aspects of vivax malaria projects, Institut Pasteur, Paris, France
45. Luigi Pisani, Critical Care Asia-Africa, Università di Bari, Italy

#### Microbiology

1. Susan Michie, Behaviour Change Trials and Social Science studies, University College London, UK
2. Simon Hay, Spatial modelling for burden of melioidosis and burden of AMR/DRI, University of Washington, USA
3. Sharon Peacock, AMR/DRI and melioidosis, University of Cambridge, UK
4. Soawapak Hinjoy, Toni Whistler, Siriluck Anunnatsiri, Rasana Wongratanacheewin, Ganjana Lertmemongkolchai, Chiyada Sitthidet, Kriangsak Kasemsupat, Prapit Teparrakkul, Kittisak Thanvisej, Rungrueng Kitphati, Sopon Iamsirithaworny, Prasit Palittapongarnpim, Somsak Thamthitiwat, Wipada Chaowagul, Ploenchan Chetchotisak and Surasak Wongratanacheewin, Thailand Melioidosis Network and Projects to make policy changes for melioidosis in Thailand, Bureau of Epidemiology, Ministry of Public Health, Thailand, CDC-TUC (Thailand Ministry of Public Health-US Centers for Disease Control and Prevention Collaboration), Khon Kaen University, Chiang Mai University, Chiang Rai Hospital, Udon Thani Sunpasitthiprasong Hospital, and NASTDA Thailand

5. Bart Currie, David Dance, Joost Wiersinga, Dionne Rolim, Ivo Stienmetz, Natkunam Ketheesan, Jay Gee, Gan Yunn Hwen, Eric Keim, Surasak Wongratanacheewin, Sheilla Nathan, Susanna Dunachie and Brian Angus on behalf of the committee, International Melioidosis Society (IMS), hub for melioidosis information, case reports and maps (www.melioidosis.info), and projects to make policy changes for melioidosis on a global scale, WHO-Geneva, US CDC, Australia, Thailand, Laos, Cambodia, Viet Nam, Singapore, Malaysia, Indonesia, India, Bangladesh, Sri Lanka, Brazil, countries in Africa, etc, among member of the network and contributed to IMS and www.melioidosis.info
6. Eoin West, Sepsis and host inflammatory responses and outcome in sepsis and melioidosis, University of Washington, USA
7. David Aucoin, Rapid diagnostic test for melioidosis, University of Nevada, USA
8. Philippe J Guerin, Data sharing platform for NTD, KEMRI, Kenya
9. Kittipong Chaisiri, Joint research projects, Mahidol University, Thailand
10. Serge Morand, Joint research projects, Kasetsart University, Thailand
11. Joann Prior and Adam Whelan, Immune response to *B. pseudomallei* and vaccine design, DSTL, Porton Down, UK
12. Chiranjay Mukhopadhyay. Impact of diabetes on the immune response to melioidosis and tuberculosis, Manipal Academy of Higher Education, India
13. Ivo Steinmetz, Diagnosis of *B. pseudomallei* from serum, University of Graz, Austria
14. Mitali Chatterjee, Immunology of SARS-CoV-2 and intracellular pathogens, Institute of Postgraduate Medical Education & Research, Kolkata, India
15. Sarah Gilbert, Andrew Pollard and Adrian Hill, Vaccine design for melioidosis and AMR, Oxford Vaccine Group, Department of Paediatrics and Jenner Institute, NDM, University of Oxford
16. Katharine Owen, Joint research projects, OCDEM, RDM, University of Oxford
17. Fazle Rabbi Chowdhury, The impact of diabetes on the host response to SARS-CoV-2 infection, Bangabandhu Sheikh Mujib Medical University Hospital, Dhaka, Bangladesh
18. Robed Amin, Joint research projects, Dhaka Medical College, Bangladesh
19. Sam Akech, The CINAMR (Clinical Information Network-Antimicrobial Resistance) Project: A pilot microbial surveillance using hospitals linked to regional laboratories in Kenya, KEMRI/Wellcome Trust Programme, Kenya
20. Nuvee Prapasarakul, Leptospirosis research, Department of Veterinary Microbiology, Faculty of Veterinary Science, Chulalongkorn University, Bangkok, Thailand
21. Santi Maneewatchararangsri, Joint research projects, Department of Molecular Tropical Medicine and Genetics, Faculty of Tropical Medicine, Mahidol University, Bangkok, Thailand
22. Kristy Farris, Scrub typhus diagnostics development and validation, Naval Medical Research Center, Maryland USA
23. John Stenos and Stephen Graves, Characterization of rickettsial isolates and real-time PCR diagnosis for rickettsial disease, Australian Rickettsial Reference Laboratory, Geelong, Australia
24. Beth Skaggs, Regional biosafety, US CDC, Bangkok, Thailand
25. Filip Claes, Regional biosafety, FAO Regional Office, Bangkok, Thailand
26. Russell Bush and Michael Ward, Tropical zoonoses, University of Sydney, Australia
27. Phouvong Phommachanh and Watthana Theppannga, Tropical zoonoses, National Animal Health Laboratory, Vientiane, Lao PDR
28. Sabine Dittrich, Deggendorf Institute of Technology, Germany
29. Javan Esfandiari, Tropical fever diagnostics development, Chembio, USA
30. Scott Vittarelli, Tropical biosafety support in SEA, Defense Threat Reduction Agency, US State Department, Washington, USA
31. Somponnat Sampattavanich and Siwanon Jirawatnotai, High content imaging screens for Orientia tsutsugamushi, Siriraj Hospital, Thailand
32. Lars Barquist, RNA sequencing of Orientia tsutsugamushi, University of Wurzberg, Germany
33. Graham Wright, Structured Illumination microscopy imaging, A*Star, Singapore
34. Paul J. Brett and Mary N. Burtnick, Developing a vaccine for melioidosis, Department of Microbiology and Immunology, University of Nevada, Reno School of Medicine, Reno, USA
35. Jacqueline Cliff, Department of Life Sciences, Brunel University, London, UK
36. Gregory J. Bancroft, Department of Immunology and Infection, London School of Hygiene & Tropical Medicine, London, UK
37. Rapid Response Team, metagenomic sequencing, Chan-Zuckerberg Biohub, San Francisco, USA
38. Peter Dazsek and John Epstein, Tropical zoonosis surveillance, EcoHealth Alliance, USA
39. Kaz Kojima, Global/Regional Biosafety, WHO, Geneva, Switzerland
40. Francis Yesurajan, Regional Biosafety, WHO, New Delhi, India
41. John Jones, Global/Regional Biosafety European Union project 81, UK
42. Allan Bennett, Global biosafety, Public Health England, UK
43. Julian Parkhill, Department of Veterinary Medicine, University of Cambridge, UK
44. Julian Knight, The Wellcome Centre for Human Genetics, University of Oxford, UK
45. Nicholas Croucher, Faculty of Medicine, Imperial College London, UK
46. Nicholas Thomson, Parasite and Microbe, Wellcome Sanger Institute, UK
47. Emma Davenport, Human Genetics, Wellcome Sanger Institute, UK
48. Jukka Corander, Department of Mathematics and Statistics, University of Helsinki, Finland
49. Sunee Korbsrisate, Department of Immunology, Faculty of Medicine, Siriraj Hospital, Mahidol University, Thailand
50. Lou Atkins, Joint research projects, Centre for Behaviour Change, University College London, UK
51. Fabiana Lorencatto, Joint research projects, Centre for Behaviour Change, University College London, UK
52. John Stelling, Joint research projects, Brigham and Women's Hospital and Harvard Medical School, Boston, MA, United States
53. Joseph Gillespie, University of Maryland, USA
54. Paul Klenerman, Mapping the immune response to infectious diseases by single cell RNA sequencing analysis, Peter Medawar Building for Pathogen Research, University of Oxford, UK
55. Gavin Screaton, Identification of monoclonocal antibodies to pathogens, The Wellcome Centre for Human Genetics, University of Oxford, UK
56. David Stuart and Yvonne Jones, SEACOVARIANTs, Dept of Structural Biology, NDM, University of Oxford, UK
57. Ellie Barnes, Epitope mapping of immune responses to SARS-CoV-2, Peter Medawar Building for Pathogen Research, University of Oxford, UK
58. Miles Carroll, Antibody responses to SARS-CoV-2, The Wellcome Centre for Human Genetics, University of Oxford, UK
59. Keith Hamilton, Biosafety Research Roadmap & Sustainable Laboratories Initiative, World Organisation for Animal Health, Paris, France
60. David Harper and Emma Ross, Biosafety Research Roadmap, Chatham House, London, UK

61. Kathrin Summermatter, Biosafety Research Roadmap & WHO technical advisory group on biosafety and biosecurity, University of Bern, Bern, Switzerland
62. Michael White, Multiplex serology development and validation, Institut Pasteur, Paris, France

## Epidemiology

1. Prayuth Sudathip, Rungrawee Tipmontree and Surawadee Kitchikarn, ENDGAME and RAI3E project, Bureau of Vector Borne Diseases, Ministry of Public Health, Bangkok, Thailand
2. Keobouphaphone Chindavongsa, Viengxay Vanisaveth and Virasack Banouvong, ENDGAME project, Centre for Malaria Parasitology and Entomology, Vientiane, Lao PDR
3. Siv Sovannaroth, Lek Desoley and Huy Rekol, Cambodia. ENDGAME, RAI2E and RAI3E projects, National Center for Parasitology, Entomology and Malaria Control, Phnom Penh, Cambodia
4. Thang Ngo, Tran Thanh Duong and Hoang Dinh Canh, ENDGAME and RAI3E projects, Viet Nam
5. Mosiqure Rahaman, Md Mosiqure Rahman, Nazmul Islam, Joint research projects on malaria in Bangladesh, National Malaria Elimination Programme, Dhaka, Bangladesh
6. Yongjua Laosiritaworn, Monitoring impact of COVID-19 lockdown in Thailand, Ministry of Public Health, Thailand
7. Wiparat Mnuyakorn, Maternal and Child Birth Cohort Study of Thai Children's Environmental Health in Bangkok and industrialized provinces, Ramathibodi Hospital, Bangkok, Thailand
8. Dominic Kwiatkowski, GenReMekong project, Sanger Institute, Cambridge, UK (RIP)
9. Hsiao-Han Chan, Impact of mobility on malaria and dengue in Thailand, National Tsing Hua University, Taiwan
10. Caroline Buckee, Joint research projects on population movement and infectious disease, Harvard School of Public Health, USA
11. Stefan Jaeger, Sameer Antani and George Thoma, Malaria Screener project, National Library of Medicine, National Institutes of Health, Bethesda, USA
12. Sarthak Das and Phone Si Hein, RAI2E, APMEN, Singapore
13. Tim Gant and Emma Marczylo, Maternal and Child Birth Cohort Study of Thai Children's Environmental Health in Bangkok and industrialized provinces, Centre for Radiation, Chemical and Environmental Hazards, Public Health England, UK
14. John Robert Medina, Epidemiology of Dengue in the Philippines, College of Public Health, University of the Philippines, Manila, the Philippines
15. Sara Aparicio, Joint research projects on remote sensing, European Space Agency, Rome, Italy
16. Laura Buback and Naomi Beyeler, Joint research project: RAI3E Sustaining village health worker programmes with expanded roles in the GMS, University of California San Francisco, USA
17. Karen Barnes, Mapping antimalarial resistance in Africa, University of Cape Town, South Africa
18. Tom Hughes and Peter Daszak, IDEEAL project, Ecohealth Alliance, New York, USA
19. Leo Braack, Dengue MYSCHOOL project, Malaria Consortium, Bangkok, Thailand
20. Hans Overgaard, Dengue MYSCHOOL project, Norwegian University of Life Sciences, Oslo, Norway
21. Julie Simpson, METF project, University of Melbourne, Australia
22. Alex Pompe, Monitoring the impact of COVID-19 control measures in SE Asia, Facebook, USA
23. Ravi Shankar Santhana Gopala Krishnan, GHFD project, WHO GIS Centre, Geneva, Switzerland
24. Anamay Shetty, Systematic review of impact of 1-3-7 strategy on malaria, Polygeia, UK
25. Fangyu Ding, Tian Ma and Dong Jiang, Spatiotemporal epidemiology of communicable diseases in China, College of Resources and Environment, University of Chinese Academy of Sciences, Beijing, China
26. Andrew Schroeder, Mobility data for public health decision making, Crisis Ready, USA
27. Rosalind Howes, Optimising physical access to G6PD testing in Bangladesh, FIND, Switzerland
28. Federica Maurizio, Emergency Obstetric and Neonatal Care Prioritisation in the Asia-Pacific, UNFPA, Switzerland
29. Francois van Loggerenberg, Mental Health in Thailand, Queen Mary University, London, UK
30. Worada Peetiya, Mental health projects in Thailand, Department of Psychiatry, Faculty of Medicine, Ramathibodi Hospital, Mahidol University
31. Asst Prof Tanawan Asarath, Mental health projects in Thailand, College of Public Health Sciences, Chulalongkorn University, Bangkok, Thailand
32. Wimonrat Wanpen, Mental health projects in Thailand, Department of Mental Health, Ministry of Public Health,, Bangkok, Thailand
33. Benn Sartorius, Estimating the global burden of scrub typhus, University of Queensland, Australia
34. Oliver Brady, Dengue prediction modelling, London School of Hygiene and Tropical Medicine, London, UK
35. Meerjady Sabrina Flora, Dengue risk mapping in Dhaka city, Institute of Epidemiology, Disease Control and Research, Ministry of Health and Family Welfare, Bangladesh
36. Kaushik Sarkar, Early warning systems, Institute for Health Modeling and Climate Solutions (IMACS), New Delhi, India
37. Simon Hay, Global Burden of Disease studies, Institute for Health Metrics and Evaluation, University of Washington, Seattle, WA, USA
38. Sunny Ibrahim and Ridwan Gustiana, geospatial mapping for vaccination in the Asia-Pacific, UNICEF, Bangkok, Thailand

## Clinical Pharmacology

1. Prof Philippe Guerin, Pooled meta-analyses of antimalarial drugs, Worldwide Antimalarial Resistance Network (WWARN), UK
2. Prof Saye Khoo, PK/PD and drug-drug interactions of antiviral and antimalarial drugs, University of Liverpool, UK
3. Prof Feiko ter Kuile, PK/PD of antimalarial drugs in pregnant women, Liverpool School of Tropical Medicine, UK
4. Rajinder Jalali, Shoibal Mukherjee, Amit Nasa, PK/PD of arterolane and piperaquine, Sunpharma, India
5. Prof Ric Price, PK/PD of primaquine and tafenoquine, Menzies, Australia
6. Prof James McCarthy, PK/PD of antimalarial drugs in the human challenge model, Queensland Institute of Medical Research (QIMR), Australia
7. Dr Julie Simpson, PK/PD modelling of antimalarial drugs, University of Melbourne, Australia
8. Prof Umberto D'Alessandro, Treatment of pregnant women with malaria, Medical Research Council Unit, The Gambia
9. Dr Ivan Scandale, PK/PD and development of drugs for neglected diseases, Drugs for Neglected Diseases Initiative (DNDi), Switzerland
10. Dr Panisadee Avirutnan, PK/PD of Ivermectin in paediatric dengue patients, Siriraj Hospital, Thailand
11. Dr Matthew Coldiron, Adherence of seasonal malaria chemoprevention (SMC) in Niger, Epicentre, France
12. Dr Graham Cooke, Efficacy, safety and pharmacology of Hep C drugs, Imperial College London, UK

13. Prof Guy Thwaites, PK/PD of antituberculosis drugs, Oxford University Clinical Research Unit (OUCRU), Viet Nam
14. Dr Bernhards Ogutu, Cardiotoxic effects of piperaquine, Kenya Medical Research Institute (KEMRI), Kenya
15. Prof John Adam, ivermectin hepatocyte cultures, University of Florida, USA
16. Prof Onrapak Reamtong, Metabolomics of novel anthelminthic agents, Mahidol University, Thailand
17. Prof Paul Newton, Falsified and substandard medicine, University of Oxford, UK
18. Dr Vijay Ivaturi, Center of Excellence in the area of predictive health care analytics, Centre for Pharmacometrics, MCOPS, Manipal Academy of Higher Education, India
19. Dr Melissa C. Kapulu, Immunological studies on malaria, Kenya Medical Research Institute (KEMRI), Kenya
20. Prof George M. Varghese, Treatment of severe scrub typhus, Christian Medical College, India
21. Prof Pierre Buffet, Drug development in malaria transmission, Université Paris Cité, France
22. Prof Christoph Thiemermann, Artesunate in severely injured patients with traumatic haemorrhage. Queen Mary University of London, UK
23. Prof Andrew Hooker, Developing optimal data inclusion in meta analysis, Uppsala University, Sweden.
24. Prof Richard Idro, Malaria chemoprevention in children Makerere University College of Health Sciences, Uganda
25. Robert Commons, PK/PD of primaquine and tafenoquine, Global Menzies School of Health Research, Australia
26. Karen Barnes, PK/PD of antimalarial drug in small children, University of Cape Town, South Africa

## Bioethics & Engagement

1. Prof Mike Parker, Prof Susan Bull, Prof Dorcas Kamuya, Prof Jennifer van Nuil and Prof Jantina de Vries Global Health Bioethics Network, University of Oxford, UK
2. Dr Joe Millum, Healthcare research priority setting, University of St Andrews, UK
3. Dr Jetsumon Prachumsri, Malaria Infection Study Thailand, Malaria Vaccine Research Unit, Thailand
4. Dr Katherine Littler, WHO Ethics Committee, Chair of the Global Forum for Bioethics in Research, Switzerland
5. Dr Liam Boggs and Prof Trudie Lang, Joint research projects, The Global Health Network, Oxford, UK
6. Dr Robert Terry, Dr Oommen John, Dr Calvin Ho, Dr Lauren Maxwell, Prof Phillippe Guerin and Dr Susan Bull, Data Sharing Working Group Working Group of the COVID-19 Clinical Research Coalition, Geneva, Switzerland
7. Dr Niyada Kiatying-Angsulee, AMR Week, Drug System Monitoring and Development Center, Chulalongkorn University, Thailand
8. Nithima Sumpradit and Sirima Punnin, AMR Week, Thai Food and Drug Administration, Ministry of Public Health, Thailand
9. Dr Sonia Lewycka, Just Transitions on AMR project, University of Oxford, UK
10. Dr Marina Joubert, Just Transitions on AMR project, Stellenbosch University, South Africa
11. Dr Edna Mutua, Just Transitions on AMR project, KEMRI-Wellcome Trust, Kenya
12. Dr Pablo Imbach, Just Transitions on AMR project, CATIE – Tropical Agricultural Research and Higher Education Center, Costa Rica
13. Dr Taciano Milfont, Just Transitions on AMR project, University of Waikato / Ministry for the Environment, New Zealand
14. Dr Sheila Varadan, Just Transitions on AMR project, University of Leiden, the Netherlands
15. Dr Caesar Atuire, Just Transitions on AMR project, University of Ghana, Ghana
16. Dr Claas Kirchhelle, Just Transitions on AMR project, University College Dublin, Ireland
17. Dr Kym Weed, Just Transitions on AMR project, University of North Carolina at Chapel Hill, USA
18. Prof Steve Hinchliffe, Just Transitions on AMR project, Wellcome Centre for Cultures and Environments of Health, University of Exeter, UK
19. Dr Mo Yin, Just Transitions on AMR project, National University of Singapore, Singapore
20. Prof Nenene Qekwana, Just Transitions on AMR project, University of Pretoria, South Africa
21. Prof Clare Chandler, Just Transitions on AMR project, London School of Hygiene and Tropical Medicine, UK
22. Dr Deepshikha Batheja, Just Transitions on AMR project, One Health Trust, India
23. Dr Nahitun Naher, Just Transitions on AMR project, Centre of Excellence for Health Systems and Universal Health Coverage (CoEHSUHC), BRAC University, Bangladesh
24. Dr Sander Chan, Just Transitions on AMR project, Radboud University, the Netherlands
25. Dr Voo Teck Chuan, Southeast Asia Bioethics Network, Centre for Biomedical Ethics, Yong Loo Lin School of Medicine, Singapore
26. Prof Tamra Lysaght, Southeast Asia Bioethics Network, University of Sydney
27. Prof Sharon Kaur and Dr Mohammad Firdaus Bin Abdul Aziz, Global Health Bioethics Network and Southeast Asia Bioethics Network, Faculty of Law, Universiti Malaya, Malaysia
28. Dr Renly Lim, Joint research projects, University of South Australia, Australia
29. Dr Ingrid Lynch, Joint research projects, South Africa Human Sciences Research Council, South Africa

## Mathematical and Economic Modelling (MAEMOD)

1. Department of Clinical Tropical Medicine, Student projects and staff proposals, Faculty of Tropical Medicine (FTM), Mahidol University, Bangkok, Thailand
2. Department of Helminthology, Student projects and staff proposals, FTM, Mahidol University, Bangkok, Thailand
3. Department of Medical Entomology, Student projects and staff proposals, FTM, Mahidol University, Bangkok, Thailand
4. Department of Microbiology and Immunology, Student projects and staff proposals, FTM, Mahidol University, Bangkok, Thailand
5. Department of Social and Environmental Medicine, Student projects and staff proposals, FTM, Mahidol University, Bangkok, Thailand
6. Department of Tropical Hygiene, Student projects and staff proposals, FTM, Mahidol University, Bangkok, Thailand
7. Department of Tropical Pediatrics, Student projects and staff proposals, FTM, Mahidol University, Bangkok, Thailand
8. Clinicians and researchers, Various research projects, Gastroenterological Association of Thailand
9. Dr Yot Teerawattananon, HITAP International, MoPH, Thailand
10. Assoc Prof Dr Wanrudee Isaranuwatchai HITAP, Department of Health, MoPH, Nonthaburi, Thailand
11. Prof Alex Cook, Saw Swee Hock School of Public Health, NUS, Singapore
12. Dr Weerapong Thanapongtharm, Department of Livestock Development, Bangkok, Thailand
13. Assoc Prof Anuwat Wiratsudakul, Faculty of Veterinary Science, Mahidol University, Nakhon Pathom, Thailand
14. Assoc Prof Charin Modchang, Rabies research and modelling, Department of Physics, Faculty of Science, Mahidol University, Bangkok, Thailand

15. Dr Sopon Iamsirithaworn, Director of the Division of Communicable Diseases of the Department of Disease Control (DDC), MoPH, Nonthaburi, Thailand
16. Prof Lisa J White, Department of Biology, University of Oxford, UK
17. Prof Proochista Ariana, MSc in International Health and Tropical Medicine, Centre for Tropical Medicine and Global Health, Nuffield Department of Medicine, University of Oxford, UK
18. Dr Joaquin Prada, Leptospirosis and soil transmitted helminth modelling, School of Veterinary Medicine, Faculty of Health and Medical Sciences, University of Surrey, UK
19. Prof Jodie McVernon, Assoc Prof Nic Geard, Prof Emma McBryde, Research proposals, SPARK (Strengthening Preparedness in the Asia-Pacific Region through Knowledge), The Peter Doherty Institute for Infection and Immunity, University of Melbourne, Australia
20. Asst Prof Dr Wiriya Mahikul, COVID-19 modelling and human contact patterns, Faculty of Medicine and Public Health, HRH Princess Chulabhorn College of Medical Science, Bangkok, Thailand
21. Asst Prof Dr Peeradone Srichan, School of Health Science, Mae Fah Luang University, Thailand
22. Asst Prof Dr Udomsak Narkkul, Department of Medical Science, School of Medicine, Walailak University, Thailand
23. Dr Supalert Natesuwan, CRP projects, Chiangrai Provincial Health Office, Thailand
24. Dr Kevin Tetteh, Biomarker projects, The Foundation for Innovative New Diagnostics (FIND), Switzerland
25. Dr Mark Jit, AMR modelling projects, LSHTM, UK
26. Dr Ruby Siddiqui, Hepatitis E project, Institute for Health Metrics and Evaluation, USA
27. Prof Marc Bonten, AMR work, University Medical Center Utrecht (UMCU), Utrecht, the Netherlands
28. Dr Warunee Punpanich Vandepitte, Department of Paediatrics, College of Medicine, Rangsit University, Bangkok, Thailand and Division of Infectious Diseases, Department of Paediatrics, Queen Sirikit National Institute of Child Health, Bangkok, Thailand
29. Mike Sharland, St Georges, University of London, UK
30. Friederike Maechler, Charité –Universitätsmedizin Berlin, Germany
31. Marianne van der Sande, Institute of Tropical Medicine, Antwerp, the Netherlands
32. Dr Olga Tosas, AMR surveillance in LMICs, WHO, Geneva, Switzerland
33. Prof Stephen Harbath, AMR work, University of Geneva Hospital, Switzerland
34. Dr Craig Maclean, AMR work, University of Oxford Zoology, UK
35. Dr Jonathan Edgeworth, AMR work, St Thomas' Hospital, London, UK
36. Dr Paul Tambyah, AMR work, NUS, Singapore
37. Prof Timothy Walsh, China/UK/Thailand Program on Poultry Biosafety for *Salmonella*, *E. coli* and Campylobacter, University of Oxford, UK
38. Dr Sheetal Silal, Wellcome Trust-funded research on malaria elimination in Southern Africa, University of Cape Town, South Africa
39. Dr Noppon Choosri, Scientific Software Development, Center of Data Analytics and Knowledge Synthesis for Healthcare, Chiang Mai University, Chiang Mai, Thailand
40. Dr Sakib Burza, OCBA, Médecins sans Frontières (MSF), Spain
41. Prof David Mabey, LSHTM, London, UK
42. Esther van Kleef, Institute of Tropical Medicine, Antwerp, The Netherlands
43. Prof Halidou Tinto, Institut de Recherche en Sciences de la Santé, Burkina Faso
44. Prof Delphin Phanzu Mavinga, Institut Médical Evangélique de Kimpese, DR Congo
45. Dr Vu Thi Lan Huong, Oxford University Clinical Research Unit (OUCRU), Hanoi, Viet Nam
46. Prof Dr Rosanna Peeling, LSHTM, London, UK
47. Dr Maytinee Teabrat, Alphasec, Thailand
48. Dr Kulachart Jangpatarapongsa, Faculty of Medical Technology, Mahidol University, Thailand
49. Dr Werasak Surareungchai, Biosensor Technology Laboratory, King Mongkut's University of Technology Thonburi, Thailand
50. Meena Sharma, Research Fellow, Centre for Public Health, Queens University Belfast, UK
51. Desmond Curran, Senior Director, Vaccines Global Evidence and Outcomes Portfolio Lead, GSK, Belgium
52. Daniel Molnar, RSV Value Evidence Lead, GSK, Belgium
53. Daniel Ribes, Senior Health Economist, Value Evidence and Outcomes, GSK, Belgium
54. Fred Verelst, GSK, Belgium
55. Dr Anchalee Avihingsanon, HIV-NAT Director, Thailand
56. Dr Win Min Han, HIV-NAT, Thailand
57. Prof Kevin Tetteh, FIND, Switzerland
58. Dr Deepak Kumar, Translational Research Office, University of Oxford, UK
59. Dr Kavita Subramaniam, Translational Research Office, University of Oxford, UK
60. Dr Joanna Miller, Global Health Facilitator, University of Oxford, UK
61. Dr Wang Yi, early HTA, MIDAS, Singapore
62. Prof Donovan Claire, Faculty of Education, Health & Human Sciences, Centre for Thinking and Learning, Institute for Lifecourse Development, University of Greenwich, London, UK
63. Dr Iqbal Elyazar, Student projects, Epidemiology and Geospatial Programme Manager, Deputy Director of OUCRU Indonesia, Indonesia
64. Dr Marc Choisy, Co-workshop organizing, Head of Mathematical Modelling, OUCRU, Ho Chi Minh city, Viet Nam
65. Asst Prof Dr Arthit Phosri, Department of Environmental Health Sciences, Faculty of Public Health, Mahidol University
66. Dr Aurelio A. de los Reyes and team members, Philippines Modeling and applications (ModApp) from Institute of Mathematics, University of the Philippine Diliman (UPD), the Philippines
67. Robin Goodwin, Department of Psychology, University of Warwick, UK
68. Prof Robin Thompson, Mathematical Institute, University of Oxford, UK
69. Assoc Prof Martha Betson, School of Veterinary Medicine, University of Surrey, UK
70. Assoc Prof Nic Geard, School of Computing and Information Systems, University of Melbourne, Australia
71. Dr Rob Moss, Senior Research Fellow, Melbourne School of Population and Global Health, University of Melbourne, Australia
72. Dr Shaun Morris, Division of Infectious Diseases at The Hospital for Sick Children (SickKids), Canada
73. Dr Inke Nadia D. Lubis , Universitas Sumatera Utara , Indonesia
74. Prof Sasheela Sri La Sri Ponnampalavanar, Universiti Malaya Medical Centre, Malaysia
75. Dr Kalisvar Marimuthu , National Centre for Infectious Diseases, Singapore
76. Dr Ng Oon Tek , National Centre for Infectious Diseases, Singapore

## Medical Therapeutics Unit (MTU)

1. Dr Nathalie Strub-Wourgraft, COVID-19 treatment, Drugs for Neglected Diseases Initiative, Geneva, Switzerland and PANTHER, Paris, France.

2. Dr Andrea Bosman, Severe malaria, Global Malaria Programme, WHO, Geneva, Switzerland
3. Dr Melba Gomes, Development of rectal ceftriaxone for neonatal sepsis, TDR, WHO, Geneva, Switzerland
4. Guilin Pharmaceutical Company, Development of a new parenteral artesunate formulation, Guilin Pharmaceutical Company, Guilin, PR China
5. Prof Philippe Guerin, Assessment of antimalarial and antiviral drug safety and toxicity, Worldwide Antimalarial Resistance Network (WWARN), University of Oxford, UK
6. Prof Julie Simpson, Studies of causal inference and antimalarial PK-PD modelling, University of Melbourne, Australia
7. Dr Aimee Taylor, Modelling of *P. vivax* relapses, TH Chan Harvard School of Public Health, Boston, MA, USA
8. Prof Chris Holmes, Artificial intelligence methods of clinical assessment, Turing Institute London, and Department of Statistics, University of Oxford, UK
9. Prof Israel Molina, Chagas disease pharmacometrics, Fiocruz, Minas Gerais, Brazil
10. Prof Jaime Altech, Chagas disease paediatric pharmacometrics, Hospital de Niños, Buenos Aires, Argentina
11. Dr Louisa Messenger, *T. cruzi* molecular biology, LSHTM, London, UK
12. Prof Ric Price, *P. vivax* assessment and treatment, Menzies School, Darwin, Australia
13. Dr Awab Gulam, Vivax malaria, Nangarhar Medical Faculty, Afghanistan
14. Prof Tom Williams, Modelling of severe malaria, Imperial College, London, UK
15. Prof Martin Llewellyn, COVID-19 therapeutics, University of Sussex Medical School, Brighton, UK
16. Prof Asim Beg, COVID-19 therapeutics, Aga Khan Medical School, Karachi, Pakistan
17. Prof Mauro Teixeira, COVID-19 therapeutics, University of Minas Gerais, Belo Horizonte, Brazil
18. Dr Chayada Piantham, Mathematical modelling of malaria transcription, Hokkaido University, Japan
19. Dr Somya Mehra, Malaria modelling, University of Melbourne, Australia
20. Prof Rob Commons, *P. vivax* assessment and treatment, Menzies School, Darwin, Australia
21. Ass Prof Abhailasha Karkey, COVID-19 and Influenza pharmacometric studies, OUCRU-Nepal, Kathmandu, Nepal
22. Prof Buddha Basnyat, COVID-19 and Influenza pharmacometric studies, OUCRU-Nepal, Kathmandu, Nepal

### Clinical Trials Support Group (CTSG)

1. Prof Marcus Schultz, ICU studies, AMC, University of Amsterdam, the Netherlands
2. Prof Feiko ter Kuile, Research projects, Liverpool School of Tropical Medicine, UK
3. Dr Proochista Ariana, Student projects, Nuffield Department of Medicine, Centre for Tropical Medicine and Global Health, University of Oxford, Oxford, UK
4. Prof Eric Ohuma, Student supervision, London School of Hygiene and Tropical Medicine, UK
5. Prof Kamija Phiri, Research proposals, College of Medicine, University of Malawi, Malawi
6. Prof Victor Mwapasa, Research proposals, College of Medicine, University of Malawi, Malawi
7. Prof Wilson Mandala, Research proposals, Malawi University of Science and Technology, Malawi
8. Prof Tobias Chirwa, Student projects, Wits School of Public Health, South Africa
9. Dr Marc Henrion, Student supervision, Liverpool School of Tropical Medicine, UK
10. Prof Trudie Lang, Joint projects in Data Management and Sharing, The Global Health Network, University of Oxford, UK
11. Dr Evelyne Kestelyne, Joint research projects, OUCRU, Viet Nam
12. Phillippe Guerin, Lauren Maxwell, Sauman Singh, Duduzile Ndwandwe, Sharon Kaur, Robert Terry Data Management and Sharing Working Group of the Coalition for Equitable Research in Low Resource Settings (CERCLE), Global
13. Dr Yaw Anokwa, Open Data Kit Platform development and rollout, GetODK, USA
14. Sonia Barbosa & Julian Gautier, Data Repository, IQSS Harvard University, USA
15. Prof Umberto D'Alessandro, Ivermectin safety in Small Children (ISSC), MRC The Gambia at LSHTM, The Gambia
16. Prof Sophie Moore, INDIGO RCT The Gambia, Kings' College London and MRC The Gambia at LSHTM, The Gambia
17. Dr Laura Merson, WHO CTU Maturity Framework Project, IDDO & ISARIC & Centre for Global Health & Tropical Medicine, University of Oxford, UK
18. Prof Jennifer Van Nuil, REUSE Study, OUCRU, Viet Nam

## MORU Units, Research Groups and Study Sites

### Shoklo Malaria Research Unit (SMRU)

1. Tim Anderson, Joint research projects, Texas Biomedical Research Institute, USA
2. Aimee Taylor and Daniel Neasfsey, Joint research projects, Broad Institute of MIT and Harvard, USA
3. Ric Price and Benedikt Ley, Joint research projects, Global and Tropical Health Division, Menzies School of Health Research and Charles Darwin University, Darwin, Australia
4. Olivo Miotto and Susannah Salter, Joint research projects, Wellcome Trust Sanger Institute, Hinxton, UK
5. Freya Fowkes and Kerryn Moore, Joint research projects, Macfarlane Burnet Institute of Medical Research, Melbourne, Australia
6. Kerryn Moore and Julie Simpson, Joint research projects, Centre for Epidemiology and Biostatistics, University of Melbourne, Melbourne, Australia
7. Gonzalo Domingo, Joint research projects, Diagnostics Program, PATH, Seattle, USA
8. Steven Kennedy, Joint research projects, Nuffield Department of Obstetrics & Gynaecology, University of Oxford, UK
9. Kevin Kain, Joint research projects, Canada Research Chair in Molecular Parasitology MaRS Center, Toronto, Ontario, Canada
10. Philippe Guerin, Joint research projects, WWARN, Centre for Tropical Medicine & Global Health, NDM, University of Oxford, UK
11. Manu Vatish and Neva Kandzija, Joint research projects, Nuffield Department of Women's & Reproductive Health, University of Oxford, UK
12. Dennis Kyle, Joint research projects, Center for Tropical and Emerging Global Diseases, University of Georgia, Athens, GA, USA
13. Laurent Renia, Joint research projects, Singapore Immunology Network (SIgN) Agency for Science, Technology, and Research (A*STAR), Biopolis, Singapore
14. Bruce Russel, Joint research projects, Department of Microbiology and Immunity, University of Otago, New Zealand
15. Emma Plugge and Gracia Fellmeth, Joint research projects, National Perinatal Epidemiology Unit, Nuffield Department of Medicine, Centre for Tropical Medicine and Global Health, University of Oxford, UK
16. Stephan Ehrhardt and Chloe Thio, Joint research projects, Johns Hopkins University, Bloomberg School of Public Health, Baltimore, MD, USA

17. Georges Snounou, Joint research projects, Laboratory of Malaria Biology, CEA, France
18. Hal Drakesmith, Joint research projects, MRC Human Immunology Unit, University of Oxford, UK
19. Wolfgang Stuetz, Joint research projects, University of Hohenheim Institute of Nutritional Sciences, Stuttgart, Germany
20. Damien Chaussabel, Basirudeen Syed Ahamed Kabeer, and Annalisa Terranegra, Joint research projects, SIDRA Medicine, Doha, Qatar
21. Elke Bergmann-Leitner, Joint research projects, WRAIR, Silver Spring, MD USA
22. Vincent Herbreteau, Joint research projects, IRD, Phnom Penh, Cambodia
23. Karine Le Roch, Joint research projects, University of California, Riverside, CA USA
24. Julie Reveilaud, Joint research projects, IRD, Montepellier, France
25. Renaud Piarroux, Joint research projects, INSERM, Paris, France
26. Daniel Parker, Joint research projects, University of California, Irvine, CA USA
27. David Burger, Joint research projects, Radboud University, Nijmegen, The Netherlands
28. Suho Kim, Joint research projects, SD Biosensor Inc., Gyeonggi-do, Republic of Korea
29. Caterina Fanello, Joint research projects, Kinshasa-Oxford Medical Research Unit (KIMORU), DR Congo
30. Ian Gassiep, Joint research projects, University of Queensland Centre for Clinical Research, Herston, Queensland, Australia
31. Robert Norton, Joint research projects, Pathology, Townsville Hospital, Townsville, Queensland, Australia and Faculty of Medicine, University of Queensland, Brisbane, Australia
32. Barbara Knust, Joint COVID-19 surveillance, Immigrant Refugee & Migrant Health, Division of Global Migration and Quarantine, CDC, USA
33. Nuttapong Wongjindanon, Joint COVID-19 surveillance, Immigrant, Refugee and Migrant Health Program, Thailand MOPH - U.S. CDC Collaboration, Thailand
34. Supakit Sirilak, Joint COVID-19 surveillance, Department of Medical Sciences, Ministry of Public Health, Thailand
35. Chavalit Kiatvitchukul, Joint COVID-19 surveillance, Regional Medical Sciences Center 2 Phitsanulok, MoPH, Thailand
36. Thanat Chookajorn, Joint COVID-19 surveillance, Faculty of Tropical Medicine (FTM), Mahidol University, Thailand
37. Jordi Landier, Joint research project (Malaria), France National Research Institute for Sustainable Development (IRD), INSERM, Aix Marseille, France
38. Florian Girond, Joint research project (Malaria), France National Research Institute for Sustainable Development (IRD), Cambodia
39. Ahmar Hashmi, Joint research projects (Malaria), Institute for Implementation Science, University of Texas Health Sciences Center, Houston, Texas, USA
40. Chaisiri Angkurawaranon, Joint research projects (MCH), Department of Family Medicine, Faculty of Medicine, Chiang Mai University, Chiang Mai, Thailand
41. Makoto Saito, Joint research projects (Malaria), Division of Infectious Diseases, Advanced Clinical Research Center, Institute of Medical Science, University of Tokyo, Tokyo, Japan
42. Valérie Briand, Joint research projects (Malaria), Infectious Diseases in Lower Income Countries, Research Institute for Sustainable Development, French National Institute of Health and Medical Research, University of Bordeaux, Bordeaux, France
43. Feiko O Ter Kuile, WWARN/IDDO, Oxford, UK; and Department of Clinical Sciences, Liverpool School of Tropical Medicine, Liverpool, UK
44. James Beeson, Central Clinical School and Department of Microbiology, Monash University, and Department of Infectious Diseases, University of Melbourne, Melbourne, Australia
45. Kasia Stepniewska, WWARN/IDDO, and Centre for Tropical Medicine and Global Health, Nuffield Department of Medicine, University of Oxford, Oxford, UK
46. Verena I Carrara, Global Health Institute, Department of Medicine, University of Geneva, Geneva, Switzerland
47. Kasem Kulkeaw, Joint research projects (Malaria / Lab), Department of Parasitology, Faculty of Medicine Siriraj Hospital, Mahidol University
48. Naomi Tschirhart, Interdisciplinary School of Health Sciences, Faculty of Health Sciences, University of Ottawa, Ottawa, Canada
49. Trygve Ottersen, Oslo Group on Global Health Policy, Department of Community Medicine and Global Health and Centre for Global Health, Institute of Health and Society, Faculty of Medicine, University of Oslo, Oslo, Norway
50. Matt King and Ben Amos, SEDRI-LIMS project, Arcta Solutions, United Kingdom
51. Thundon Ngamprasertchai, Joint research projects, Department of Clinical Tropical Medicine, Faculty of Tropical Medicine, Mahidol University, Bangkok, Thailand
52. Pablo Bifani, Joint research projects, A*STAR Infectious Diseases Labs, Agency for Science, Technology and Research (A *STAR), Singapore
53. Andy Clark, Joint research projects, RSV Age Study Consortium, London School of Hygiene and Tropical Medicine, London, UK
54. Dujdao Boodyod, Infectious disease surveillance/outbreak, Regional Medical Sciences Center 2, Phitsanulok, MoPH, Thailand
55. Amornrat Tatsanakit, Infectious disease surveillance/outbreak, Regional Medical Sciences Center 2, Phitsanulok, MoPH, Thailand
56. Suta Pattarakijroongroeng, Joint research projects, Mae Ramat hospital, Mae Ramat, Tak, Thailand
57. Sumet Wajanarogana, Joint research projects, Department of Basic Medical Science, Faculty of Medicine Vajira Hospital, Navamindradhiraj University, Bangkok, Thailand
58. Siriphan Boonsilp, Joint research projects, Department of Clinical Pathology, Faculty of Medicine Vajira Hospital, Navamindradhiraj University, Bangkok, Thailand
59. Katherine O'Flaherty, Joint research projects, Burnet Institute, Melbourne, Australia.
60. Paul Agius, Joint research projects, Faculty of Health, Deakin University, Melbourne, Australia
61. Mara Lawniczak, Joint research projects, Wellcome Sanger Institute, Hinxton, UK.
62. Kevin Kobylinski, Joint research projects, Armed Forces Research Institute of Medical Sciences, Bangkok, Thailand
63. Wenn-Chyau Lee, Joint research projects, Universiti Malaya, Kuala Lumpur, Malaysia
64. Standwell Nkhoma, Joint research projects, BEI Resources, American Type Culture Collection, Manassas, Virginia, USA
65. Ellen Kearney, Joint research projects, Burnet Institute, Melbourne, Australia
66. Angeline Rouers, Joint research projects, Singapore Immunology Network (SIgN) Agency for Science, Technology, and Research (A*STAR), Biopolis, Singapore

## Lao-Oxford-Mahosot Hospital-Wellcome Trust Research Unit (LOMWRU)

1. Department of Communicable Disease Control (DCDC), Ministry of Health (MoH), Lao PDR
2. Department of Health Care and Rehabilitation (DHR), MoH, Lao PDR
3. Centre of Malariology, Parasitology & Entomology (CMPE), MoH, Lao PDR
4. National Centre for Laboratory & Epidemiology (NCLE), MoH, Lao PDR
5. Food and Drug Department (FDD), MoH, Lao PDR
6. University of Health Sciences (UHS), MoH, Lao PDR

7. Provincial Hospitals of Luang Namtha, Xieng Khouang, Salavan, Savannakhet, Attapeu and Vientiane, Lao PDR
8. Central Hospitals in Vientiane Capital: Mittaphab, Setthathirath, National Children's, Mother & Child, Police and Army Hospitals, Lao PDR
9. Lao Tropical and Public Health Institute
10. Food & Drug Quality Control Laboratory, MoH, Lao PDR
11. National Animal Health Laboratory (NAHL), Lao PDR
12. Bureau of Food and Drug Inspection, MoH, Lao PDR
13. Savannakhet Provincial Health Office, Lao PDR
14. WHO Lao Country Office, Vientiane, Lao PDR
15. Institut de Recherche pour le Développement (IRD), Lao PDR
16. Centre d'Infectiologie Christophe Mérieux du Laos, Lao PDR
17. Institut Pasteur du Laos (IPL), Lao PDR
18. Health Frontiers, Vientiane, Lao PDR
19. Dr Mathieu Picardeau, Unité de Biologie des Spirochètes, Institut Pasteur, Paris, France
20. Dr Alain Pierret and Dr Anne Pando, Institut de Recherche pour le Développement, Lao PDR
21. Dr Olivier Ribolzi, Géosciences Environnement Toulouse, Université de Toulouse, France
22. Dr Lee Smythe and Dr Scott Craig, Leptospiral Reference Laboratory, Coopers Plains, Australia
23. London School of Hygiene and Tropical Medicine, London, UK
24. Prof Bart Currie, Menzies School of Health Research, Australia
25. Prof Al Richards, Rickettsial Diseases Research Program, Naval Medical Research Center, USA
26. Naval Medical Research Centre Asia Pacific, Singapore
27. Prof David Relman and Dr Stephen Popper, Department of Microbiology and Immunology, Stanford University, California, USA
28. Swiss Tropical and Public Health Institute, Basel/University of Basel, Switzerland
29. Dr Tim Barkham, Tan Tock Seng Hospital, Singapore
30. Dr Kate Bond, Dr Souly Phanouvong, Dr Jude Nwokike, Dr Victor Pribluda and Dr Mustapha Hajjou, United States Pharmacopeia, Rockville, Maryland, USA
31. Dr Todd French and Philip Bulterys, University of California - Los Angeles, USA
32. Dr Daniel Parker, University of California - Irvine, USA
33. Prof Fiona Russell, Murdoch Children's Research Institute (MCRI), University of Melbourne, Victoria, Australia
34. Prof John Crump, University of Otago, New Zealand
35. Prof Nicole Zitzmann and Dr Bevin Gangadharan, Department of Biochemistry, University of Oxford, UK
36. Infectious Diseases Data Observatory (IDDO), Centre for Tropical Medicine & Global Health, University of Oxford, UK
37. Dr Anders Omsland, Paul G Allen School for Global Health, Washington State University, WA, USA
38. Dr John Pettersson, University of Uppsala, Sweden
39. PATH, Seattle, USA
40. Prof Sabine Dittrich, Deggendorf Institute of Technology, Germany
41. Foundation for Innovative New Diagnostics (FIND), Geneva, Switzerland
42. Mathieu Pruvot and Amanda Fine, Wildlife Conservation Society, Wildlife Health Program, Bronx, New York, USA
43. Wildlife Conservation Society, Lao PDR Program, Vientiane, Lao PDR
44. Philippe Dussart and Paul Horwood, Institut Pasteur du Cambodge, Phnom Penh, Cambodia (now at Institut Pasteur du Madagascar, Antananarivo, Madagascar, and Australian Institute of Tropical Health and Medicine, James Cook University, Cairns, Australia, respectively)
45. Prof Xavier de Lamballerie, Unité des Virus Émergents, Aix-Marseille Université, Institut National de la Santé Et de la Recherche Médicale (INSERM), Institut de Recherche pour le Développement (IRD), France
46. Institute of Medical Microbiology, University of Zurich, Switzerland
47. Institute for Health Metrics and Evaluation, USA
48. Médecins sans Frontières, France
49. Duke-NUS Medical School, Singapore
50. Clinton Health Access Initiative, Lao PDR
51. Dr Martine Barons, University of Warwick, UK
52. Health Intervention and Technology Assessment Program, Bangkok, Thailand
53. InBios International Inc. Innovative Diagnostics, USA
54. Global Access Diagnostics, (UK, USA)
55. Dr Chanthala Souksakhone, National Blood Transfusion Centre, Lao Red Cross, Vientiane, Lao PDR
56. Fondation Mérieux, Lao PDR
57. Prof David Denning, Manchester Fungal Infections Group, UK
58. Prof David Modrý, Dr Vojtech Baláž, and Jana Kacmarikova, University of Veterinary Sciences Brno, Czechia
59. Prof Mike Wiley, University of Nebraska, USA
60. Mahidol Vivax Research Unit (MVRU), Thailand
61. Oxford University Clinical Research Unit (OUCRU), Viet Nam
62. Olivier Celhay, freelance consultant, Canada
63. MiraVista Diagnostics, Indianapolis, Indiana, USA
64. China Medical Board, Cambridge, MA, USA
65. National Dermatology Unit, MoH, Lao PDR
66. Cambodia Oxford Medical Research Unit (COMRU), Cambodia
67. Department of Livestock and Fisheries (DLF), Ministry of Agriculture, Vientiane, Lao PDR
68. Dr Jemma Bergfeld and Dr Frank Wong, Australian Centre for Disease Preparedness (ACDP), CSIRO, Geelong, Australia
69. Asia Pathogen Genomics Initiative, Duke-NUS Medical School, Singapore.
70. Dr Ahmar Hashmi, University of Texas, USA
71. Lao One Health University Network and Southeast Asia One Health University Network
72. Murdoch Children's Research Institute (Professor Fiona Russell), Melbourne, Australia
73. Dr Bhavin Rawal, Royal Brompton and Harefield NHS Foundation Trust, UK75, and Dr Kiattawee Chowongkomon, Department of Biochemistry, Faculty of Science, Kasetsart University, Bangkok, Thailand
74. Optimum Imaging Diagnostics (OIDx), Maine, USA
75. Prof Bayden Wood, and Mr Aaron McLean: Centre of Biospectroscopy, Monash University, Melbourne, Australia
76. Dr Michael Edstein, Dr Marina Chavchich, and Dr Wenjun Liu, Australian Defence Force Malaria and Infectious Disease Institute, Brisbane, Australia

## Cambodia-Oxford Medical Research Unit (COMRU)

1. Prof Jukka Corander, Joint research projects, University of Oslo, Norway
2. Dr Patricia Kingori, Joint research projects, ETHOX Centre, UK

3. Prof Stephen Bentley, Joint research projects, Wellcome Trust Sanger Institute, UK
4. Dr Nick Croucher, Joint research projects, Imperial College London, UK
5. Dr Li Yang Hsu, Joint research projects, National University of Singapore
6. Dr Mo Yin, Joint research projects, National University of Singapore, Singapore
7. Dr Sakib Burza, Joint research projects, Médecins sans Frontières, Spain
8. Prof Rogier van Dorn, ACORN project, OUCRU-Hanoi, Viet Nam
9. Prof Catherine Satzke, Joint research projects, Murdoch Childrens Research Institute, Australia
10. Prof YaeJean Kim, Joint research projects, Asian Network for Surveillance of Resistant Pathogens (ANSORP), South Korea
11. Prof Mike Sharland, ADILA project, St George's University of London, UK
12. National Antimicrobial Resistance Technical Working Group, Ministry of Health, Cambodia

## Myanmar-Oxford Clinical Research Unit (MOCRU)

1. Dr Khin Pyone Kyi, Hepatitis C treatment study, Myanmar Liver Foundation, Myanmar
2. National Malaria Control Programme, Malaria elimination, Myanmar
3. National TB Control Programme, Tuberculosis diagnostics (Truenat) and management in remote communities, Myanmar
4. National Hepatitis Control Program, Myanmar
5. Prof Moe Wint Aung, Rickets study, Department of Endocrinology, Yangon General Hospital, Myanmar
6. Prof Job v Woensel, Rickets related studies, University of Amsterdam, the Netherlands
7. Prof Timothy Walker, Tuberculosis diagnostics (Truenat) and management in remote communities, OUCRU, Viet Nam
8. Prof John Pettifor, Rickets studies, University of the Witwatersrand, South Africa
9. Prof Lutgarde Lynen, PrEP – prospective study and PrEP – Mixed-method study, Clinical Science Department, Institute of Tropical Medicine, Antwerp, Belgium
10. Prof Josephine van Olmen, University of Antwerp, related to HIV prevention studies, the Netherlands
11. Dr Eric Florence, PrEP - prospective study, Public Health Department, Institute of Tropical Medicine, Antwerp, Belgium
12. Thijs Reyniers, PrEP - Mixed-method study, Social Science Department, Institute of Tropical Medicine, Antwerp, Belgium
13. Prof Alice Unah Lee, HCV-PutaO study, University of Sydney. Hepatitis B Free Christian Friends of Korea, Australia
14. Prof David C. Hilmers, HCV-PutaO study, Departments of Internal Medicine and Pediatrics; Center for Space Medicine, Baylor Global Initiatives, USA
15. Gilead Pharmaceutical Company, HCV-PutaO study, USA
16. Dr David Heiden, CMV retinitis screening and treatment, USA
17. Dr Tom Decroo, HIV, HCV prevention and treatment related studies, Clinical Science Department, Institute of Tropical Medicine, Antwerp, Belgium
18. Tinne Gils, HIV, HCV prevention and treatment related studies, Clinical Science Department, Institute of Tropical Medicine, Antwerp, Belgium
19. Prof Christopher P. Conlon, HIV and HCV treatment study, Nuffield Department of Medicine, University of Oxford, Oxford University Hospitals NHS Foundation Trust, UK

## Medicine Quality Research Group (MQRG)

1. Dr Jennifer Young and Prof Adrian Linacre, Flinders University, Australia
2. UNODC, Vienna, Austria
3. Dr Simon Kelley, International Atomic Energy Authority, Vienna, Austria
4. Dr Wasif Khan and Mr Abdul Matin, icddr,b, Bangladesh
5. Dr Raffaella Ravinetto, Mr Saleh Aljadeeah, Institute of Tropical Medicine, Antwerp, Belgium
6. Dr Pierre-Yves Sacré, Prof Roland Marini and Prof Eric Ziemons, University of Liège, Belgium
7. Catherine Dujardin, Ministry of Foreign Affairs, Brussels, Belgium
8. INTERPOL, Lyon, France
9. Prof Sabine Dittrich, Deggendorf Institute of Technology, Germany
10. Prof Lutz Heide, University of Tübingen, Germany
11. Dr Daniel Amaoka-Sakyi and Dr Simon Mariwah, School of Medical Sciences, University of Cape Coast, Ghana
12. Dr Kwaku Poku Asante and Samuel Afari, Kintampo HRC, Ghana
13. Dr Pavan Mamidi, Ashoka University, New Delhi, India
14. Dr Luana Bontempo and Alberto Roccone, Food Quality and Nutrition Dept. Traceability Unit, Fondazione Edmund Mach, Trento, Italy
15. Dr Stephen Kigera and Mildred Wanyama, MEDS, Nairobi, Kenya
16. Food and Drug Department, Ministry of Health, Lao PDR
17. University of Health Sciences, Ministry of Health, Lao PDR
18. National Center for Food and Drug Analysis, Ministry of Health, Lao PDR
19. Bureau of Food and Drug Inspection, Ministry of Health, Lao PDR
20. Dr Khatia Munguambe, Dr Esperanca Sevene and Ms Helena Boene, Manhica Research Centre, Maputo, Mozambique
21. Jayasree Iyer, Access to Medicine Foundation, Haarlem, the Netherlands
22. EUROPOL, The Hague, the Netherlands
23. Prof Heiman Wertheim and Dr Annelie Monnier, Department of Medical Microbiology, Radboud University Medical Center, Nijmegen, the Netherlands
24. Prof Moji Christianah Adeyeye, National Agency for Food and Drug Administration and Control, Abuja, Nigeria
25. Foundation for Innovative New Diagnostics (FIND), Geneva, Switzerland
26. Christa Cepuch and Alain Alsalhani, MSF Access Campaign, Geneva, Switzerland
27. Rutendo Kuwana, Pernette Bourdillon-Esteves, Babatunde Jayeola, Fatima Guiet Mati, and Naseem Hudroge, Anita Sands Substandard and Falsified Medical Products Group, World Health Organisation (WHO), Geneva, Switzerland
28. Stanislas Barro, Theophile Segbo and Rachel Hinder, Global Head Anti-counterfeiting, Novartis Business Assurance & Advisory, Global Security, Basel, Switzerland
29. Dr Gerry Mshana, National Institute for Medical Research, Tanzania
30. Prof Nicole Zitzmann and Dr Bevin Gangadharan, Department of Biochemistry, University of Oxford, UK
31. Prof Philippe Guérin and the Infectious Diseases Data Observatory (IDDO), Centre for Tropical Medicine & Global Health, University of Oxford, UK
32. Prof Pavel Matousek, STFC Rutherford Appleton Laboratory, Harwell, Oxon, UK
33. Dr Elizabeth Pisani, London, UK
34. Prof Robert Ogden and Dr Carla Mon Perez, The Royal (Dick) School of Veterinary Studies and The Roslin Institute, Edinburgh, UK

35. Prof Heather Hamill and Prof Federico Varese, Department of Sociology, University of Oxford, UK
36. Prof Hamid Merchant, Department for Bioscience, University of East London, UK
37. Dr Nicola Rose, National Institute for Biological Standards and Control, MHRA, Potters Bar, UK
38. Medicines and Healthcare Products Regulatory Agency, London, UK
39. Dr Christopher Day, Dept. of Earth Sciences, University of Oxford, UK
40. Prof Claire Gwinnett, Professor of Forensic and Environmental Science, Criminal Justice and Forensic Science Department, Staffordshire University, UK
41. Prof David Mabey and Prof Heidi Hopkins, London School of Hygiene and Tropical Medicine, London, UK
42. Prof James McCullagh and Dr John Walsby-Tickle, Department of Chemistry, University of Oxford, UK
43. Prof Marya Lieberman, Department of Chemistry and Biochemistry, University of Notre Dame, USA
44. Dr Lesley Chesson and Dr Jim Ehleringer, IsoForensics Inc., and Dr Thure Cerling, University of Utah, USA
45. Dr Sachiko Ozawa, University of North Carolina, Eshelman School of Pharmacy, Chapel Hill, USA
46. Dr Benjamin Wilson, Dr Matthew Keller, GH Labs, Seattle, Washington, USA
47. Dr Souly Phanouvong, Dr Chaitanya Kumar Koduri, Dr Jude Nwokike and Dr Victor Pribluda, United States Pharmacopeia, Rockville, Virginia, USA
48. Prof Veronika Wirtz, School of Public Health, Boston University, Boston, USA
49. Prof Muhammad Zaman, Department of Biomedical Engineering, Boston University, Boston, USA
50. Prof Clark Freifeld, Boston Children's Hospital, Harvard University, Boston, USA
51. Prof Facundo Fernandez, Georgia Institute of Technology, Atlanta, Georgia, USA
52. Dr Nguyen Thi Kim Chuc, Dr Tran Khanh Toan and Ms Nga Thi Do, Hanoi Medical University, Hanoi, Viet Nam

## KIMORU Study Site, Kinshasa, DR Congo

1. Kinshasa School of Public Health, DRC
2. National Malaria Control Program Kinshasa, DRC
3. Ministry of Health, DRC
4. Institute National de Recherche Biomédical, Kinshasa DRC
5. Prof Octavie Lunguya, INRB, DRC
6. Prof Andrew Stewardson, Monash University Australia
7. Prof Daniel Parker University of California, Irvine, US
8. Prof Mike English, University of Oxford, UK
9. Dr K. Plewes, University of British Columbia, Canada
10. Prof K. Maitland, Imperial College, UK
11. Wellcome Trust Sanger Institute, Genomic Surveillance Unit, Hinxton, UK
12. FOSUN Pharmaceutical Company, PRC



# Annex D
# Expenditure by Grant and by Donor for 2024

| | Spend 2023 (GBP) | Spend 2024 (GBP) |
|---|---|---|
| **Wellcome Trust CORE grants** | 10,871,746 | **9,305,045** |
| **Wellcome Trust - Other grants (not CORE)** | 12,148,814 | **10,218,082** |
| **Other Foundations and Research Centres** | 2,734,612 | **3,032,268** |
| **Government** | 6,904,515 | **8,085,329** |
| **Multilaterals and International Non-Governmental Organisations** | 2,762,756 | **2,839,763** |
| **Corporations** | 399,223 | **457,442** |
| **Oxford and other Education** | 1,476,598 | **951,076** |
| **Own Funds** | 1,879,293 | **1,033,279** |
| | 39,177,557 | **35,922,284** |

| | Awarded | Currency | Start | End | Spend 2023 (GBP) | Spend 2024 (GBP) |
|---|---|---|---|---|---|---|
| **Wellcome Trust CORE grants** | | | | | | |
| Core Award (GBP) 2020-2025 | 18,669,280 | GBP | Oct-20 | Sep-25 | 3,977,476 | 3,602,801 |
| Core Award (THB) 2020-2025 | 25,819,774 | THB | Oct-20 | Sep-25 | 6,614,976 | 5,385,981 |
| Core Award (GBP) EPEC 2020-2025 | 1,052,234 | THB | Oct-20 | Sep-25 | 279,294 | 316,263 |
| | | | | | **10,871,746** | **9,305,045** |
| **Wellcome Trust - Other grants (not CORE)** | | | | | | |
| Clinical Excellence Awards for overseas-based clinicians | 1,591,642 | GBP | Sep-16 | Sep-23 | 540,134 | 91 |
| Discovery Research Hub entitled - MORU and OUCRU Discovery Research Academy | 159,522 | USD | Mar-24 | Feb-27 | - | 31,610 |
| MORU Costs 32TB - one task only | 14,845 | GBP | Jun-19 | May-24 | - | 6,477 |
| WT - *Plasmodium vivax* volunteer infection studies in Thailand (CHIM)-GBP | 2,519,659 | GBP | Nov-18 | Oct-25 | 338,242 | 283,705 |
| WT - Dr Vilada's Fellowship | 301,598 | GBP | Apr-19 | Jan-25 | 41,522 | 41,668 |
| WT - CHIM THB | 3,479,987 | GBP | Nov-18 | Oct-25 | 234,772 | 234,512 |
| Collaborative Award in Science, "SouthEast Asian Research Collaboration in Hepatitis (SEARCH)" | 150,333 | GBP | Mar-18 | Feb-23 | 73,268 | 35,817 |
| Fellowship Clare C- Dissecting the genetic basis of melioidosis infection | 642,424 | GBP | Aug-19 | Aug-25 | 91,293 | 53,514 |
| SEACTN - Rural Fever | 6,839,793 | GBP | Nov-19 | Oct-25 | 1,898,958 | 1,962,372 |
| WT Flagship - Transition | 925,103 | GBP | Oct-19 | Oct-22 | 281,221 | - |
| WT ICU flagship | 1,183,016 | GBP | Jan-20 | Jun-23 | 152,236 | - |
| WT ICU flagship THB | 3,802,344 | THB | Jan-20 | Jun-26 | 892,793 | 40,838 |

| | Awarded | Currency | Start | End | Spend 2023 (GBP) | Spend 2024 (GBP) |
|---|---|---|---|---|---|---|
| SMAART - severe malaria observational study | 1,211,970 | GBP | Jun-19 | Jun-25 | 69,308 | 100,200 |
| Tauran Fellowship - IMF - Evaluating the prevalence, incidence rates and mortality attributable to antibiotic-resistant bacterial infections and potential biases caused by underuse of blood culture in a tertiary-care hospital in South Sulawesi, Indonesia | 120,000 | GBP | Mar-20 | Sep-23 | 21,753 | - |
| Ivermectin Safety in Small Children | 655,067 | GBP | Apr-20 | Apr-25 | 94,558 | 232,110 |
| COPCOV | 6,799,832 | GBP | Mar-20 | Dec-22 | 1,723,851 | - |
| Spot Sepsis | 498,240 | GBP | May-20 | Jun-24 | 269,970 | 29,211 |
| LOMWRU PneuCAPTIVE - pneumococcal conjugate vaccine | 109,630 | USD | Mar-20 | Mar-24 | 20,177 | 16,903 |
| Investigating antimicrobial susceptibility of Rickettsia typhi | 257,984 | GBP | Sep-20 | Aug-25 | 60,366 | 43,226 |
| Thai - WT PY Cheah AMR May20 | 230,515 | GBP | Oct-20 | Mar-24 | 53,614 | - |
| SARS-CoV-2 genomic surveillance | 939,952 | GBP | Feb-21 | Jan-24 | 417,722 | 143,155 |
| *ACORN 2.0 - A Clinically Oriented antimicrobial Resistance Network* | 4,572,348 | GBP | Apr-21 | Sep-25 | 1,069,376 | 1,200,940 |
| International Master's Fellowships, Intra-host dengue virus genetic diversity among primary and secondary infections in Laos | 120,000 | GBP | Jul-21 | Mar-24 | 14,677 | 2,484 |
| Finding treatments for COVID-19: A phase 2 multi-centre adaptive platform trial to assess antiviral pharmacodynamics in early symptomatic COVID-19 (PLAT-COV) | 3,728,812 | GBP | Aug-21 | Dec-23 | 1,606,695 | 803,639 |
| WT AMASS award 'Automated tool (AMASS) to support generating and sharing AMR reports | 203,010 | GBP | Nov-21 | Oct-24 | 69,005 | 88,151 |
| Open Access 2021/2022 | 107,587 | GBP | Oct-21 | Sep-22 | 3,508 | - |
| Optimising pharmacometric assessment in phase 2 studies of Chagas disease | 999,674 | GBP | Jan-22 | May-25 | 121,769 | 233,757 |
| Prof White Principal Research Fellowship | 2,602,647 | GBP | Apr-22 | Oct-25 | 597,807 | 584,726 |
| Institutional Translational Partnership Award | 2,191,169 | THB | Jun-22 | May-25 | 221,405 | 564,686 |
| Chalita Fellowship | 120,000 | GBP | Nov-21 | Aug-23 | 31,446 | 31,874 |
| James Watson | 552,032 | GBP | Apr-22 | Mar-27 | 146,583 | - |
| WT - Open Access 2022/2023 | 131,250 | GBP | Oct-22 | Dec-23 | 114,863 | 45,201 |
| Collaboration for Research, Training and Implementation in Critical Care in Asia and Africa (CCAA) | 8,300,000 | GBP | Jan-23 | Dec-25 | 400,759 | 1,228,090 |
| Elucidation of host-pathogen interactions during Orientia tsutsugamushi infection and translation into new diagnostics | 296,245 | GBP | Aug-22 | Mar-27 | 4,177 | 62,200 |
| Developing a South East Asian Bioethics Network | 85,250 | GBP | Jun-23 | Aug-27 | - | 14,451 |
| Southeast Asia initiative to combat SARS-CoV-2 variants and future pandemics (SEACOVARIANTS) | 3,059,984 | GBP | Nov-22 | Oct-25 | 448,217 | 623,640 |
| 'Assessing how identification of oral antibiotics impacts appropriate community based antibiotic use in low and middle income countries (ABACUS II study) Radboud University and Oxford University | 22,000 | EUR | Jul-20 | Jan-24 | 21,609 | 6,463 |
| REAL2 - refining recommendations from REAL and scoping for and conduct of realist review of participatory engagement | 472,554 | GBP | Feb-23 | Sep-25 | 1,160 | - |
| A phase 2 multi-centre adaptive platform trial to assess antiviral pharmacodynamics in COVID-19 (PLATCOV) | 4,744,892 | GBP | Jan-24 | Dec-26 | - | 1,332,166 |
| Strengthening Community Engagement Infrastructure in Thailand and Cambodia | 136,074 | GBP | Jan-24 | Dec-25 | - | 27,091 |
| WT - Open Access 2023/2024 | 105,000 | GBP | Jan-24 | Dec-24 | - | 94,975 |
| Antimicrobial Resistance, Prescribing, and Consumption Data to Inform Country Antibiotic Guidance and Local Action – the ADILA project | 488,852 | GBP | Apr-22 | Sep-25 | - | 4,571 |
| A programme to build capacity in global health research ethics and community engagement across the Wellcome Trust Major Overseas Programmes | 303,013 | GBP | Oct-23 | Sep-28 | - | 13,568 |
| | | | | | 12,148,814 | 10,218,082 |
| **Other Foundations and Research Centres** | | | | | 2,734,612 | 3,032,268 |
| **Bill & Melinda Gates Foundation** | | | | | | |
| Oral ARV-1801 Study | 76,693 | USD | Feb-23 | Apr-25 | - | 990 |
| Evidence-based dashboard for regulators on drug quality screening devices | 2,238 | USD | Jul-24 | Apr-25 | - | 204 |
| Multi-country clinical performance and usability evaluation of a point-of-care (POC) test for glucose-6-phosphate dehydrogenase (G6PD) deficiency | 118,189 | USD | May-24 | Dec-24 | - | 3,243 |
| Gates - Malaria modelling GMS | 1,672,307 | USD | Nov-18 | May-23 | - | 24,361 |
| GMS genetic epidemilogy regional partnership (GenRe Phase 2) | 3,254,005 | USD | Nov-18 | Jan-25 | 283,084 | 426,951 |
| IDDO repositories - evidence for improving control policies and guidelines for malaria, visceral leishmaniasis and lymphatic filariasis | 30,935 | USD | Nov-20 | Jun-23 | 20,658 | 17,822 |
| Selecting Clinical Dose of a Long Acting Oral Formulation of Ivermectin | 158,685 | USD | Oct-21 | Dec-24 | 83,384 | 21,011 |
| MedinCell STM Project | 96,526 | USD | Dec-21 | Jun-23 | 32,710 | 55,670 |
| Pregnant women attending antenatal care services as a sentinel population for antimalarial drug resistance genetic surveillance in Africa | 50,111 | USD | Jun-21 | Jun-23 | - | 5,687 |
| Metagenomic sequencing to find causes of febrile illness in South and Southeast Asia | 131,872 | USD | Nov-22 | May-25 | 8,204 | 37,992 |
| Effectiveness of seasonal malaria chemoprevention in Nampula province, Mozambique: an observational study | 353,225 | USD | Dec-22 | Jul-23 | 338,422 | 14,802 |
| Effectiveness of seasonal malaria chemoprevention in Karamoja region, Uganda: an observational study | 461,704 | USD | Jul-23 | Dec-23 | 3,211 | 458,011 |
| | | | | | 769,673 | 1,066,744 |

| | Awarded | Currency | Start | End | Spend 2023 (GBP) | Spend 2024 (GBP) |
|---|---|---|---|---|---|---|
| **Australasian Society for Infectious Diseases Limited (ASID)** | | | | | | |
| Electronic clinical Decision support for Acute fever Management (EDAM) | 12,315 | AUD | May-24 | Mar-25 | - | 2,316 |
| | | | | | - | **2,316** |
| **Swiss National Science Foundation** | | | | | | |
| Developmental transcription in the obligate intracellular bacterium causing scrub typhus | 169,083 | GBP | Dec-20 | Nov-23 | 88,256 | 14,012 |
| | | | | | **88,256** | **14,012** |
| **RAKS Thailand Foundation** | | | | | | |
| Stop TB & AIDS through RTTR (STAR3) | 1,297,251 | USD | Jan-21 | Dec-23 | 437,280 | 101,163 |
| Stop TB and AIDS through RRTTPR | 989,047 | USD | Jan-22 | Dec-23 | 545,313 | 262,243 |
| | | | | | **982,593** | **363,406** |
| **Hanako Foundation** | | | | | | |
| Thai-Seidlein-Hanako | 3,584,367 | GBP | Jul-20 | Jun-25 | 885,261 | 642,462 |
| Mass Vaccination and Drug Administrations to eliminate malaria in Bangladesh (MVDA) | 3,573,922 | GBP | Jul-23 | Jun-27 | 4,548 | 875,863 |
| | | | | | **889,809** | **1,518,325** |
| **The Thrasher Fund** | | | | | | |
| Neonatal and infant exposures to tafenoquine and primaquine during treatment in lactating women: a pharmacokinetic study in healthy volunteers | 163,860 | USD | Feb-22 | Jan-25 | 4,281 | 4,305 |
| Evaluating Pediatric Ivermectin in Children Under 15 kilograms (EPIC-15) | 347,504 | USD | Jan-23 | Dec-25 | - | 61,116 |
| | | | | | **4,281** | **65,421** |
| **RCPA Foundation** | | | | | | |
| Diagnosis and prevalence of cutaneous leishmaniasis in Laos | 4,836 | AUD | Oct-23 | Sep-24 | - | 2,044 |
| | | | | | - | **2,044** |
| **Government** | | | | | **6,904,515** | **8,085,329** |
| **UK Department for International Development (DFID)** | | | | | | |
| Development of new technologies to improve health outcomes in LMICs (TRAC3): Development of Triple Artesiminin Combination Therapies (DeTACT) | 4,503,855 | GBP | Jul-18 | Sep-25 | 1,814,106 | 1,087,813 |
| | | | | | **1,814,106** | **1,087,813** |



| | Awarded | Currency | Start | End | Spend 2023 (GBP) | Spend 2024 (GBP) |
|---|---|---|---|---|---|---|
| **Department of Health and Social Care** | | | | | | |
| ONS-COVID-19 Infection Survey | 1,258,300 | GBP | Apr-20 | Mar-24 | 130,133 | 72,990 |
| Global Research on Antimicrobial Resistance (GRAM) Project | 10,000 | GBP | Aug-22 | May-25 | - | 9,657 |
| | | | | | **130,133** | **82,647** |
| **The Fleming Fund** | | | | | | |
| FlemingFund_LaosCountry_Grant2 Extension and uplift for B9D00380 | 167,762 | GBP | Jan-23 | Sep-23 | 102,671 | 72,699 |
| FlemingFund_LaosCountry_Grant2 | 401,774 | GBP | Jan-24 | Dec-25 | - | 94,753 |
| | | | | | **102,671** | **167,452** |
| **United States Navy** | | | | | | |
| Biosafety, Biosecurity and Biosurveillance Capacity Building in the Royal Kingdom of Cambodia and in the Socialist Republic of Vietnam | 587,010 | USD | Sep-23 | Sep-25 | - | 138 |
| | | | | | - | **138** |
| **Medical Research Council (MRC)** | | | | | | |
| A pilot assessment of miltefosine's efficacy and tolerability for treating cutaneous Leishmania | 203,925 | GBP | Apr-18 | Dec-23 | 20,647 | 7,865 |
| MICA: A bioequivalent study to WHO prequalify a new 15 mg primaquine tablet | 346,077 | GBP | Feb-21 | Jul-25 | 62,446 | 34,138 |
| An evaluation of the antimalarial vaccine candidateR21/matrix M for malaria elimination strategy in the Greater Mekong Sub-region | 286,373 | GBP | Jan-22 | Jul-24 | 145,266 | 110,686 |
| Ivermectin Treatment of Livestock for Malaria Control on Sumba Island | 80,595 | GBP | Jan-21 | Mar-24 | 99,455 | 135,028 |
| MICA: Developing a rectal formulation of ceftriaxone for community-based management of neonatal sepsis in low- and middle-income countries | 1,346,909 | GBP | Jul-22 | Jun-26 | 531,980 | 2,279 |
| Applied Global Health Research Board Networking Award | 18,000 | GBP | Nov-23 | Jan-24 | - | 2,016 |
| Azithromycin and cefixime combination versus azithromycin alone for the out-patient treatment of typhoid in South Asia; a randomised controlled trial | 107,029 | GBP | Mar-20 | Sep-25 | - | 230 |
| | | | | | **859,794** | **292,242** |
| **National Institute of Health Research (NIHR)** | | | | | | |
| Developing a vaccine to prevent death from melioidosis in people with type 2 diabetes mellitus in low and middle income countries | 337,916 | GBP | Feb-21 | Jan-26 | - | 426,494 |
| Development of Epetraborole as a Novel Therapeutic for Melioidosis and Additional Antimicrobial Resistant (AMR) Bacterial Biothreat Pathogens | 577,453 | USD | Jan-23 | Apr-25 | 12,049 | 237,602 |
| | | | | | **12,049** | **664,096** |

| | Awarded | Currency | Start | End | Spend 2023 (GBP) | Spend 2024 (GBP) |
|---|---|---|---|---|---|---|
| **US Defence Threat Reduction Agency (DTRA)** | | | | | | |
| Laboratory Renovations at Pak Chong Biological | 12,389,721 | USD | Sep-19 | May-25 | 1,312,170 | 2,671,792 |
| Thai - Direk - DTRA(InBios) | 179,386 | USD | Jan-20 | Jun-24 | 21 | 23 |
| Veterinary Laboratory Capacity Building and Zoonotic Disease Detection | 5,633,595 | USD | May-21 | Jun-25 | 676,400 | 1,069,773 |
| | | | | | **1,988,591** | **3,741,588** |
| **US Navy Region Centre Singapore (NRCS)** | | | | | | |
| DIGET TESTING IN LAOS | 182,727 | USD | Aug-23 | Aug-24 | - | 65,339 |
| CHARACTERIZATION OF SARS-COV-2 | 54,400 | USD | Sep-23 | Aug-24 | - | 32,753 |
| Expanded Fever Surveillance at Provincial Hospital in the Lao PDR | 424,417 | USD | Aug-20 | Jul-23 | 312,736 | 102,287 |
| Deployment of a Highly Multiplexed Sequencing Based Human Disease Panel for Novel Pathogen Detection. | 100,800 | USD | Sep-22 | Sep-24 | 46,737 | 53,951 |
| | | | | | **359,473** | **254,330** |
| **Department of Foreign Affairs and Trade (DFAT), UK** | | | | | | |
| Wildlife Interface Viromic Regional EID Surveillance (WIViREIDS) Laos | 87,613 | AUD | Mar-24 | Jun-25 | - | 4,451 |
| | | | | | **-** | **4,451** |
| **Department of Disease Control, Ministry of Public Health, Thailand** | | | | | | |
| Regional Artemisinin-resistance Initiative 4 Elimination (RAI4E) and the regional Integrated Health Response and RSSH package (IHRRP)_ Thailand | 461,244 | USD | Jan-24 | Dec-26 | - | 224,457 |
| PR-DDC-RAI3E Malaria Thailand | 706,099 | THB | Jan-21 | Dec-23 | 281,201 | 81,534 |
| | | | | | **281,201** | **305,991** |
| **National Institutes of Health (NIH), USA** | | | | | | |
| Analyzing the potential for future bat coronavirus emergence in SE Asia. | 48,777 | USD | Sep-22 | Aug-23 | 10,987 | - |
| Optimizing the dose of tafenoquine for the radical cure of *Plasmodium vivax* malaria in Southeast Asia | 791,036 | USD | Sep-23 | Aug-24 | - | 465,264 |
| Optimizing the dose of tafenoquine for the radical cure of *Plasmodium vivax* malaria in Southeast Asia | 774,360 | USD | Sep-24 | Aug-25 | - | 21,869 |
| | | | | | **10,987** | **487,133** |
| **Drugs for Neglected Diseases initiative (DNDi)** | | | | | | |
| PK/PD based on nonlinear mixed effect modelling | 1,237,439 | GBP | Sep-19 | Dec-24 | 366,672 | 288,881 |
| | | | | | **366,672** | **288,881** |

| | Awarded | Currency | Start | End | Spend 2023 (GBP) | Spend 2024 (GBP) |
|---|---|---|---|---|---|---|
| **Foundation for Innovative New Diagnostics (FIND)** | | | | | | |
| Applying Diagnostic Network Optimisation analysis to inform the introduction of G6PD testing into Bangladesh for improved malaria treatment | 16,737 | USD | Aug-22 | Mar-23 | 12,098 | 4,639 |
| | | | | | **12,098** | **4,639** |
| **Canadian Institutes of Health Research** | | | | | | |
| Evaluating the renoprotective effect of acetaminophen in pediatric severe falciparum malaria | 517,225 | GBP | Apr-19 | Mar-25 | 192,963 | 132,537 |
| | | | | | **192,963** | **132,537** |
| **National Health & Medical Research Council (Australia)** | | | | | | |
| Effectiveness of novel approaches to radical cure of vivax malaria (EFFORT) | 230,018 | USD | Nov-20 | Dec-23 | 35,162 | 1 |
| An observational study on the impact of severe childhood illness on the health, wealth and wellbeing of household members in Lao PDR | 7,609 | USD | Dec-21 | Nov-22 | (1,179) | - |
| An observational study on the impact of severe childhood illness on the health, wealth and wellbeing of household members in Lao PDR | 40,743 | USD | Apr-22 | Mar-24 | 24,681 | 14,078 |
| On target and on time, advancing molecular diagnosis of complicated childhood pneumonia for better patient outcomes and vaccine strategies | 18,420 | AUD | Jun-23 | Dec-25 | - | 12,413 |
| | | | | | **58,664** | **26,492** |
| **French Expertise International** | | | | | | |
| Expertise France - Health Systems Strengthening for Marginal | 1,119,227 | EUR | Mar-20 | Feb-24 | 279,769 | 218,995 |
| FEI- TB program | 1,282,350 | EUR | Jul-21 | Jun-24 | 318,533 | 303,060 |
| SMC-RST (WWARN): Boosting the impact of seasonal malaria chemoprevention (SMC) through simultaneous screening and treatment of SMC-Children's roommates in Burkina Faso | 58,548 | EUR | Jan-21 | Dec-23 | - | 299 |
| | | | | | **598,302** | **522,354** |
| **Research Council of Norway** | | | | | | |
| Thai-Maude-RCN-14Feb18 | 239,331 | NOK | Jan-19 | Mar-24 | - | (24,054) |
| Causal inference and discovery for the microbiome (CARDAMOM) | 94,910 | NOK | Mar-20 | Dec-24 | 25,029 | 26,500 |
| Rapid diagnosis of key aetiologies of sepsis and associated infections in LMICs using CRISPR-based assays. | 501,860 | NOK | Apr-24 | Dec-27 | - | 38 |
| | | | | | **25,029** | **2,484** |

| | Awarded | Currency | Start | End | Spend 2023 (GBP) | Spend 2024 (GBP) |
|---|---|---|---|---|---|---|
| **Centers for Disease Control and Prevention** | | | | | | |
| CDC on AMS project : Understanding variations in antimicrobial stewardship (AMS) programs in hospital networks in Asia through a newly developed context-specific tool | 47,863 | USD | Aug-21 | Jan-24 | 91,782 | 3,415 |
| | | | | | **91,782** | **3,415** |
| **Australian Defence Force Malaria and Infectious Disease Institute** | | | | | | |
| Detection of Dengue infections in patient blood or saliva samples using infrared spectroscopy. Feasibility study. | 29,094 | AUD | Apr-24 | Apr-26 | - | 3,626 |
| | | | | | **-** | **3,626** |
| **The British Academy** | | | | | | |
| BA Global Convening Programmes | 1,140,000 | GBP | Jan-23 | Jan-26 | - | 13,020 |
| | | | | | **-** | **13,020** |
| **Multilaterals and International Non-Governmental Organisations (NGOs)** | | | | | **2,762,756** | **2,839,763** |
| **Global Fund (GF) & The United Nations Office for Project Services (UNOPS)** | | | | | | |
| Consortium for Genetic Markers Surveillance in the Greater Mekong Subregion | 592,593 | USD | Jan-21 | Dec-23 | 231,263 | 211,477 |
| RAI3E VMWs | 370,370 | USD | Jan-21 | Mar-23 | 99,131 | (493) |
| UNOPS- SMRU Malaria_RAI3E_Country Component | 2,383,784 | USD | Jan-21 | Dec-23 | 1,753,190 | 803,865 |
| RAI4E Regional Artemisinin Initiative | 792,632 | USD | Jan-24 | Dec-26 | - | 480,165 |
| | | | | | **2,083,584** | **1,495,014** |
| **The Food and Agricultural Organisation of the United Nations (FAO)** | | | | | | |
| Technical Assistance Programme for Laboratory Assessments, Quality Assurance and Enhancing Biosafety and Biosecurity in laboratories in Asia | 139,148 | THB | May-21 | Sep-22 | 120,266 | - |
| Development of a framework to assess community animal health workers (CAHW) gaps and uses in Asia | 39,758 | THB | Mar-24 | May-24 | - | 10,317 |
| | | | | | **120,266** | **10,317** |
| **Malaria Consortium** | | | | | | |
| Effectiveness of seasonal malaria chemoprevention in Nanoro health district, Plateau Central region, Burkina Faso: an observational study | 279,706 | USD | Mar-24 | Oct-24 | - | 27,357 |
| Effectiveness of seasonal malaria chemoprevention in Aweil South and Aweil West, Northern Bar El Ghazal South Sudan: an observational study | 140,299 | USD | Apr-24 | Jun-24 | - | 10,710 |
| | | | | | **-** | **38,067** |

| | Awarded | Currency | Start | End | Spend 2023 (GBP) | Spend 2024 (GBP) |
|---|---|---|---|---|---|---|
| **European Commission Funding** | | | | | | |
| BIOSEC Enhanced Biosecurity in South-East Asia | 70,529 | EUR | Mar-20 | Nov-24 | 19 | 74 |
| EDCTP Developing paediatric primaquine-DPP | 1,314,643 | EUR | Sep-20 | Apr-25 | 133,573 | 329,706 |
| Implementing Primaquine Single Low Dose in Africa | 342,098 | EUR | Apr-23 | Mar-27 | 29,042 | 50,004 |
| Integrated Services for Infectious Diseases Outbreak Research | 3,678 | EUR | Feb-22 | Jan-25 | - | 3,356 |
| | | | | | **162,634** | **383,140** |
| **Médecins Sans Frontières - Belgium (MSF)** | | | | | | |
| Evaluation of Antibiogo in Lao PDR: A Mobile Offline Application for Antimicrobial Susceptibility Testing Reading and Interpretation | 22,997 | EUR | May-23 | Jun-24 | 9,044 | 11,660 |
| | | | | | **9,044** | **11,660** |
| **World Vision Foundation of Thailand** | | | | | | |
| Stop TB and AIDS through RRTTPR 2024-2026 | 984,005 | USD | Jan-24 | Dec-26 | - | 229,374 |
| | | | | | **-** | **229,374** |
| **Singapore Immunology Network, Biomedical Sciences Institutes** | | | | | | |
| SigN - Studies on Biology, Immunity and Pathogenesis | 34,188 | SGD | Aug-14 | Oct-26 | 8,777 | 4,622 |
| | | | | | **8,777** | **4,622** |
| **National Health Foundation** | | | | | | |
| An economic evaluation of rental replacement therapy (RRT) in Lao PDR | 6,690 | THB | Apr-24 | Dec-24 | - | 667 |
| | | | | | **-** | **667** |
| **Direct Relief** | | | | | | |
| Assessing mobility data for guiding disaster response in the Greater Mekong Subregion and Bangladesh | 33,333 | USD | Nov-21 | Feb-23 | 30,830 | - |
| | | | | | **30,830** | **-** |
| **International Office of Migration (IOM)** | | | | | | |
| Reg.TBTEAM2_MYR | 783,477 | USD | Jan-22 | Dec-24 | 223,232 | 279,590 |
| Reg.TBTEAM2_THA | 477,076 | USD | Jan-22 | Dec-24 | 124,389 | 162,815 |
| | | | | | **347,621** | **442,405** |
| **CRDF Global** | | | | | | |
| US-Japan Scrub Typhus Infection in Kathmandu, Nepal and Chiang Rai, Thailand | 26,666 | USD | Oct-23 | Oct-25 | - | 4,714 |
| | | | | | **-** | **4,714** |

| | Awarded | Currency | Start | End | Spend 2023 (GBP) | Spend 2024 (GBP) |
|---|---|---|---|---|---|---|
| **Global Health Innovative Technology (GHIT) Fund** | | | | | | |
| Evaluation and preparation for deployment of an Artemether-Lumefantrine-Amodiaquine Fixed-Dose Combination to counter antimalarial drug resistance in *Plasmodium falciparum* malaria. | 2,688,670 | JPY | Nov-23 | Nov-25 | - | 157,707 |
| | | | | | - | **157,707** |
| **Programme for Research in Epidemic Preparedness And REsponse (PREPARE)** | | | | | | |
| A pilot surveillance system for RSV in children presenting to hospitals in Lao PDR (PREPARE-SF-2023-004) | 295,537 | USD | Oct-23 | Oct-25 | - | 62,076 |
| | | | | | - | **62,076** |
| **Corporations** | | | | | 399,223 | **457,442** |
| **Fosun Pharmaceutical** | | | | | | |
| The feasibility and cost-savings of 1-step reconstitution injectable artesunate vs conventional injectable artesunate for severe falciparum malaria: a multi-centre study | 513,901 | USD | Jul-21 | Nov-23 | 327,513 | 47,898 |
| | | | | | **327,513** | **47,898** |
| **ExxonMobil Foundation (EXXON)** | | | | | | |
| WWARN – PK EQA | 40,703 | GBP | Jan-15 | Dec-25 | 3,298 | 224,853 |
| | | | | | **3,298** | **224,853** |
| **Procter & Gamble Singapore** | | | | | | |
| Iron supplementation and immune responses to maternal vaccination in pregnant women (IRONMUM) | 329,562 | GBP | Dec-21 | Jun-24 | 59,561 | 119,116 |
| | | | | | **59,561** | **119,116** |
| **Communicable Disease Threats Initiative, Incorporating Asia Pacific Leaders Malaria Alliance (APLMA)** | | | | | | |
| Hosting the APMEN | 118,519 | USD | Jul-23 | Dec-24 | 8,851 | 38,595 |
| | | | | | **8,851** | **38,595** |
| **SD Biosensor Inc.** | | | | | | |
| Diagnostic performance of "Standard G6PD" POC test for detection of G6PD deficiency in neonates and infants | 69,699 | USD | Apr-24 | Jan-25 | - | 26,980 |
| | | | | | - | **26,980** |

| | Awarded | Currency | Start | End | Spend 2023 (GBP) | Spend 2024 (GBP) |
|---|---|---|---|---|---|---|
| **Oxford and other Education** | | | | | 1,476,598 | **951,076** |
| **Ethox** | | | | | | |
| Ethox - Global Health Bioethics Network Enhancement | 364,222 | GBP | Apr-12 | Sep-23 | 33,880 | - |
| | | | | | **33,880** | **-** |
| **University of Oslo** | | | | | | |
| *Haemophilus influenzae* sequencing | 8,920 | THB | Nov-22 | Nov-22 | 12 | - |
| | | | | | **12** | **-** |
| **Swedish Research Council** | | | | | | |
| Mapping the virus-host transcriptional landscape for a better understanding of dengue disease | 35,600 | USD | May-22 | Dec-25 | 28,381 | - |
| | | | | | **28,381** | **-** |
| **National University of Singapore** | | | | | | |
| EaRly impAct theraPy with ceftazidime-avibactam via rapID diagnostics versus standard of care antibiotics and diagnostics in patients with bloodstream infection, hospital-acquired pneumonia or ventila | 68,983 | SGD | Jun-24 | Dec-25 | - | 6,239 |
| A Clinically-Oriented Antimicrobial Resistance Surveillance Network for Healthcare-associated infections (ACORN-HAI) | 111,849 | SGD | Sep-22 | Aug-24 | - | 94,829 |
| | | | | | - | **101,068** |
| **University of Oxford** | | | | | | |
| NDM/MRC - Xin Hui Studentship | 60,268 | GBP | Oct-16 | Sep-24 | - | 3,358 |
| MSD Covid-19 Donations | 86,057 | GBP | May-20 | Jul-24 | 40,418 | - |
| MSDTC Students - Arjen Costs | 337,552 | GBP | Aug-19 | Jun-23 | 43,253 | - |
| Quick and Easy Scrub Typhus Diagnostics (QuEST) | 22,344 | GBP | May-24 | Dec-24 | - | 1,633 |
| WT TRO Fund 2023-2024 | 215,099 | GBP | Nov-23 | Oct-24 | - | 31,535 |
| Co-creating Thailand's integrated community-based malaria network and database for sustaining malaria services in an elimination setting | 4,500 | GBP | Dec-23 | Jul-24 | - | 4,252 |
| Africa Oxford Catalyst Grant | 5,000 | GBP | Apr-24 | Apr-25 | - | 1,474 |
| NDM - Tropical Network Fund (Overheads and project costs) | - | - | | | 1,330,654 | 807,756 |
| | | | | | **1,414,325** | **850,008** |

# Annex E

## Postgraduate Students, Active or Graduated in 2024

In 2024, we had 71 PhD/DPhil students of which 6 graduated during the year. The relatively large number of active compared with graduated students is due to a high number of recently enrolled Oxford DPhil students, and the fact that we have several students who are part-time or who are on extensions because of maternity leave, ill-health and COVID-related reasons.

We had 34 Master's students and 1 Diploma student, on a mix of one and two year courses. Of these, 14 graduated during 2024.

### MORU Bangkok-based Departments

**Ethan Booth, Thailand**, University of Oxford, Identification and tracking of *Plasmodium falciparum* strains through ancestry reconstruction, 2024, DPhil, Active, Malaria & Critical Illness

**James Callery, UK,** University of Oxford, The safety and tolerability of Triple Artemisinin-based Combination Therapies (TACTs), 2021, DPhil, Active, Malaria & Critical Illness and Clinical Pharmacology

**Sophathory Chea, Thailand,** Mahidol University, 2023, MSc, Active, Malaria & Critical Illness and Faculty of Tropical Medicine

**Sarah Cassidy-Seyoum, USA,** Charles Darwin University, Implementing approaches to prevent *Plasmodium vivax* in pre-elimination endemic settings: A case study of Cambodia, 2021, PhD, Active, Malaria & Critical Illness

**Pornpawee Chiewpoo, Thailand,** Mahidol University, Primaquine and its metabolites and artemisinin resistance *P. falciparum*, MSc, 2022, Active, Malaria & Critical Illness and Faculty of Tropical Medicine

**Forhad Chowdhury, Bangladesh,** University of Oxford, Use of Procalcitonin to guide de-escalation of empirical antibiotic therapy and characterisation of antibiotic resistance from clinical isolates in Bangladesh (PROCALBAN): a randomized, controlled, open-label trial, 2022, DPhil, Active, Malaria & Critical Illness

**Cintia Cruz, Argentina,** University of Oxford, Pharmacometric determinants of efficacy in the treatment of Chagas disease, 2021, DPhil, Active, Malaria & Critical Illness and Clinical Pharmacology

**Ashata Dahal, Nepal,** University of Oxford, Exploring knowledge, perceptions and experiences regarding typhoid conjugate vaccine trial in Lalitpur, Nepal, 2023, DPhil, Active, Malaria & Critical Illness

**Janak Raj Dhungana, Nepal,** Tribhuvan University, Over the counter sale of antibiotics and its impacts on effective treatment and antibiotic resistance, 2023, PhD, Active, Malaria & Critical Illness

**Jureeporn Duanguppama, Thailand,** Mahidol University, Development and validation of genome-wide microsatellite markers for genotyping P. falciparum, 2019, PhD, Active, Faculty of Tropical Medicine and Malaria & Critical Illness

**Narayan Gautam, Nepal,** Kathmandu University, Biochemical, molecular, and quality of life characterization in β -Thalassemia patients and its association with chronic liver disease among Tharu population in Lumbini Province, Nepal, 2023, PhD, Active, Malaria & Critical Illness

**Rebecca Inglis, UK,** University of Oxford, A mixed methods study to develop and evaluate a training course for doctors and nurses caring for critically ill patients in a low resource environment, 2016, PhD, Active, Malaria & Critical Illness, LOMWRU and University of Oxford

**Worawaran Kallayanasit, Thailand,** Mahidol University, Clinical manifestations of primary delusional infestation and cutaneous gnathostomiasis at The Hospital for Tropical Diseases, FTM, Mahidol University, 2024, MSc, Active, Malaria & Critical Illness and Faculty of Tropical Medicine

**Kriangkrai Karnchaisri, Thailand,** Mahidol University, The prevalence and genetic diversity of simian malaria in wild macaques of Thailand, 2019, PhD, Active, Faculty of Tropical Medicine and Malaria & Critical Illness

**Salum Ahmed Mshamu, Tanzania,** University of Oxford, Evaluation of the impact of novel house design on prevention of diseases, 2020, DPhil, Active, Malaria & Critical Illness

**Porncharnok Sabookaew, Thailand,** Mahidol University, Prevalence of parasitic infections in patients visiting parasite clinic in The Hospital for Tropical Diseases, Bangkok: a 12-year retrospective study, 2023, MSc, Active, Malaria & Critical Illness and Faculty of Tropical Medicine

**Samiullah Sajjad, Afghanistan,** Mahidol University, The usefulness of ultrasound for case management in liver hydatid cyst: a cross-sectional study in Jalalabad city, Afghanistan, 2021, PhD, Active, Faculty of Tropical Medicine and Malaria & Critical Illness

**Puritat Sinjanakhom, Thailand,** Mahidol University, Comparing different platforms for assessing molecular marker for antimalarial drug resistance, 2019, PhD, Active, Faculty of Tropical Medicine and Malaria & Critical Illness

**Piyathida Thapradit, Thailand,** Mahidol University, 2022, MSc, Active, Malaria & Critical Illness and Faculty of Tropical Medicine

**Apichaya Thonggrat, Thailand,** Mahidol University, Molecular characterization of *Plasmodium falciparum* in Tanzania, 2024, MSc, Active, Malaria & Critical Illness and Faculty of Tropical Medicine

### Microbiology

**Priyanka Abraham*, Malaysia,** University of Oxford, Characterising immunity to melioidosis in a Phase 1 clinical trial of a novel candidate vaccine, 2023, DPhil student, Active, Microbiology and University of Oxford

**Sandra Adele*, Nigeria,** University of Oxford, Characterising the T cell responses to SARS-CoV-2 including variants of concern induced by natural infection and vaccines, 2021, DPhil student, Graduated, Microbiology and University of Oxford

**Nabaraj Adhikari, Nepal,** Mahidol University, Bacterial etiology of acute undifferentiated febrile illness among patients visiting three selected hospitals in Nepal, 2020, PhD, Active, Faculty of Tropical Medicine and Microbiology

**Mohammad Ali*, Bangladesh,** University of Oxford, The Impact of diabetes mellitus on immune responses to SARS-CoV-2 in acute and convalescent COVID-19 patients in Bangladesh, 2019, DPhil student, Active, Microbiology and University of Oxford

**Phumrapee Boonklang, Thailand,** University of Cambridge, Defining Gene Expression Signatures for fatal and non-fatal Melioidosis from Thailand, 2024, PhD, Microbiology-Bioinformatics

* **MORU**-linked DPhil student but whose governance is in Oxford.

**Chalita Chomkatekaew, Thailand,** University of Cambridge, Evolution of *Burkholderia pseudomallei* antibiotic synthesis and resistance genes, 2023, PhD, Active, University of Cambridge and Microbiology (Prince Mahidol – Trinity College PhD Studentship)

**Piyaorn Chornchoem, Thailand,** Mahidol University, Isolation and characterization of probiotic bacteria with antibacterial and immunomodulatory activities, 2018, PhD, Active, Faculty of Tropical Medicine and Microbiology

**Suthida Chuenklin, Thailand,** University of Oxford, Virulent plasmid and host-pathogen interactions for enteric bacteria, 2021, DPhil, Active, Microbiology and University of Oxford

**Sandhya Dhawan, India,** Open University, Modelling the risk of inadvertent laboratory-origin outbreaks, 2021, PhD, Active, Microbiology

**Witchayoot Huangsuranun, Thailand,** University of Oxford, Developing multiplex molecular diagnostics for tropical pathogens, 2021, DPhil, Active, Microbiology

**Thomas Hughes, UK,** Open University, Studying the impact of zoonotic disease surveillance in the Orang Asli (indigenous population) communities of Peninsular Malaysia on reducing the risk of zoonotic disease emergence, 2016, PhD, Active, Microbiology

**Francis Yesurajan Inbanathan, India,** University of Oxford, Contributing factors from global and national efforts towards building resilient laboratory systems for public health in developing countries, 2022, DPhil, Active, Microbiology

**Suh Young Kang (Sophie), Korea,** University of Oxford, Determining infectious causes of acute febrile illness in rural South and Southeast Asian community and hospital settings, 2024, DPhil, Active, Microbiology and MAEMOD

**Kim Khanh Le, Vietnam,** Open University, Investigating the Diagnostic Properties of Diagnostic Tests for Scrub Typhus Group, Typhus Group, and Spotted Fever Group Rickettsial Pathogens, 2024, PhD, Active, Microbiology and OUCRU

**Aticha Lhokaew, Thailand,** Open University, Development of Rickettsia Recombinant Proteins ELISA for Rickettsia Diagnosis, 2023, MPhil, Active, Microbiology

**Isabel Neale*, UK,** University of Oxford, Defining immune correlates of protection against SARS-CoV-2 from a prospective study of vaccine breakthrough infections, 2021, DPhil student, Active, Microbiology and University of Oxford

**Supichaya Nimnuan-ngam, Thailand,** Mahidol University, A Survey of drug resistance in *Burkholderia pseudomallei* environmental isolates and the identification of novel drug resistant mechanisms, 2020, MSc, Graduated in 2024, Microbiology and Faculty of Tropical Medicine

**Mathupanee Oonsivilai, Thailand,** University of Oxford, Using mechanistic models to understand the impact of spatiotemporal heterogeneity in patterns of antimicrobial use in Southeast Asia on antimicrobial resistance, 2019, DPhil, Active, MAEMOD, Microbiology and University of Oxford

**Carlo Perrone, Italy,** Faculty of Tropical Medicine, Open University, Scrub typhus in northern Thailand: exploring preventive, diagnostic and therapeutic challenges in the field, 2021, PhD, Active, CCRU (Microbiology) and Bioethics & Engagement

**Isanawidya Paramita*, Indonesia,** University of Oxford, Investigating the role of gamma delta T cells in the susceptibility to infection and disease outcome in Individuals with Type 2 diabetes mellitus, 2022, DPhil, Active, Microbiology and OUCRU-ID

**Atthasit Rabiablok, Thailand,** Mahidol University, Thesis title: Pending, 2017, PhD, Active, Faculty of Tropical Medicine and Microbiology



**Artharee Rungrojn, Thailand,** Mahidol University, Metagomics profiling of bacterial pathogens and potential symbionts from ticks collected on domestic animals in Thailand, 2023, PhD, Active, Microbiology

**Rathanin Seng, Thailand,** Mahidol University, Molecular epidemiology and genetic mutation of *Burkholderia pseudomallei* in clinical melioidosis in Thailand, 2018, PhD, Graduated, Faculty of Tropical Medicine and Microbiology

**Abdullah Jan Shinwari, Afghanistan,** Mahidol University, Prevalence, associated factors and treatment outcome of H. pylori infection at Jalalabad city, Afghanistan, 2020, PhD, Active, Faculty of Tropical Medicine and Microbiology

**Robert Sinto, Indonesia,** University of Oxford, Associations between blood culture utilization, antimicrobial use and antimicrobial-resistant infections in inpatients in Indonesia, 2021, DPhil, Graduated, Microbiology and OUCRU-ID

**Didtawa Suttisak, Thailand,** Mahidol University, Analysis of molecular and culture methods for detecting of *Burkholderia pseudomallei* in soil samples and the correlation with antibody levels in Thai healthy population, 2022, MSc, Active, Faculty of Tropical Medicine and Microbiology

**Dipesh Tamrakar, Nepal,** Mahidol University, Vaccine Effectiveness of typhoid conjugate vaccine against culture-confirmed *Salmonella* enterica serotype typhi in Nepal: a test negative design, 2021, PhD, Active, Faculty of Tropical Medicine and Microbiology

**Yanie Tayipto*, Indonesia,** University of Oxford, Advanced evaluation of antibody and adaptive immunity following inactivated whole-virus vaccination in Indonesian population, 2022, DPhil, Active, Microbiology, University of Oxford and OUCRU-ID

**Upendra Thapa, Nepal,** Mahidol University, The aetiology of viral infections in acute febrile illness at three tertiary care hospitals in Nepal, 2020, PhD, Active, Faculty of Tropical Medicine and Microbiology

## Chiangrai Clinical Research Unit (CCRU)

**Nipaphan Kanthawang, Thailand,** Major Border Health Management, Mae Fah Luang University, Thailand, 2019, MPH, Graduated, Bioethics & Engagement and CCRU (Microbiology)

**Carlo Perrone, Italy,** Faculty of Tropical Medicine, Open University, Scrub typhus in northern Thailand: exploring preventive, diagnostic and therapeutic challenges in the field, 2021, PhD, Active, CCRU (Microbiology) and Bioethics & Engagement

## Epidemiology

**Afrida Asad, Bangladesh,** University of Oxford, High-resolution mapping and analysis of dengue to guide control intervention, 2024, DPhil, Active, Epidemiology

**Luzia Tomas Freitas, Timor Leste,** University of Oxford, Characterising the burden and epidemiology of Arbovirus infections of public health importance in Timor-Leste, 2024, DPhil, Active, Epidemiology

**Thomas Hughes, UK,** Open University, Studying the impact of zoonotic disease surveillance in the Orang Asli (indigenous population) communities of Peninsular Malaysia on reducing the risk of zoonotic disease emergence, 2016, PhD, Active, Epidemiology and Microbiology

**Yalda Jafari, Canada,** University of Oxford, Understanding transmission dynamics of dengue in Thailand to support real-time decisions on intervention targeting, 2021, DPhil, Active, Epidemiology

**Monnaphat Jongdeepaisal, Thailand,** University of Oxford, Sustaining village malaria volunteer programmes with expanded roles in the Greater Mekong Subregion: Qualitative and quantitative studies in Cambodia, Thailand, and Vietnam, 2021, DPhil, Active, Epidemiology

**Frank Kagoro, Tanzania,** University of Cape Town, Impactful maps and associated visualisations on antimalarial drug resistance for malaria programmes and policymakers in Southern Africa and Southeast Asia, 2017, PhD, Graduated 2024, Epidemiology

**Panpradab Muenprom, Thailand-UK,** University of London, internship working on secondary data analysis of dengue incidence at district-level in Thailand, using GIS and R, 2023, MSc, Graduated 2024, Epidemiology

**Pengby Ngor, Cambodia,** Open University, Informatics for integrated malaria elimination strategy in Cambodia, 2014, PhD, Active, Epidemiology and MAEMOD

**An Yi Rodriques, USA,** Imperial College London, 2024, MSc, Active, Epidemiology

A**mandip Sahota, UK,** University of Oxford, Mapping the spatial distribution of acute febrile illness in South and South East Asia, 2024, DPhil, Active, Epidemiology and MAEMOD

**Ipsita Sinha, UK,** University of Oxford, Mapping and predicting the potential spread of malaria in Southeast Asia and Bangladesh to better inform targeting of malaria control and elimination interventions, 2017, DPhil, Graduated 2024, Epidemiology

**Ratchaneewan Sinitkul, Thailand,** University of Oxford, Does urban chemical exposure influence biomarkers of immune development in infants born in Thailand?, 2017, DPhil, Active, Epidemiology

**Malia Skjefte, USA,** University of Oxford, Measuring the impact of control and elimination interventions for tropical infectious diseases, 2024, DPhil, Active, Epidemiology

**Tara Wagner-Gamble, German,** University of Oxford, Mapping the spatial distribution of acute febrile illness in South and Southeast Asia, 2024, DPhil, Active, Epidemiology and MAEMOD

**Qian Wang, China,** University of Oxford, Spatiotemporal dynamics of scrub typhus in China and estimating the global burden, 2021, DPhil, Active, Epidemiology

**Meiwen Zhang, China,** University of Oxford, Defining the hidden burden of disease in rural communities in South and Southeast Asia, 2021, DPhil, Active, Epidemiology, Malaria and MAEMOD

**Zhongsong Zhang, PR China,** Karolinska Institutet, 2023, MSc, Active, Epidemiology

## Clinical Pharmacology

**Clifford Banda, South Africa,** University of Cape Town, Optimising dosing of dihydroartemisinin- piperaquine for malaria preventive treatment in Malawian infants, 2022, PhD, Active, Clinical Pharmacology

**James Callery, UK,** University of Oxford, The safety and tolerability of triple artemisinin-based combination therapies (TACTs), 2021, DPhil, Active, Malaria & Critical Illness and Clinical Pharmacology

**Benjamin Clark, UK,** University of Oxford, 2024, MSc in Modelling for Global Health, Active, Clinical Pharmacology

**Cintia Cruz, Argentina,** University of Oxford, Pharmacometric determinants of efficacy in the treatment of Chagas disease, 2021, DPhil, Active, Malaria & Critical Illness and Clinical Pharmacology

**Emily Hatchwell, UK,** University of Oxford, 2024, MSc in Modelling for Global Health, Active, Clinical Pharmacology



**Nicharee Jiracheep, Thailand,** Open University, Pharmacokinetic and Pharmacodynamic Properties of the Antimalarial Drug Arterolane, 2023, PhD, Active, Clinical Pharmacology

**Ersi Lohaj, UK,** University of Oxford, 2024-2025, MSc in Modelling for Global Health, Active, Clinical Pharmacology

**Maria Oke, UK,** University of Oxford, 2023-2024, MSc in Modelling for Global Health, Active, Clinical Pharmacology

**Maria Schubring, UK,** University of Oxford, Mathematical and statistical modelling of infectious diseases, 2022, MSc in Modelling for Global Health, Active, Clinical Pharmacology

## Bioethics & Engagement

**Nipaphan Kanthawang, Thailand,** Mae Fah Luang University, 2022, MPH, Major Border Health Management, (Thailand), Graduated 2024, CCRU (Microbiology) and Bioethics & Engagement

**Carlo Perrone, Italy,** Faculty of Tropical Medicine, Open University, UK, Scrub typhus in Northern Thailand: exploring preventive, diagnostic and therapeutic challenges in the field, 2021, PhD, Active, CCRU (Microbiology) and Bioethics & Engagement

**Naomi Waithira, Kenya,** University of Oxford, Exploring the impact of data sharing, barriers and solutions to data re-use in clinical research, 2020, DPhil, Active, CTSG and Bioethics & Engagement

## Mathematical and Economic Modelling (MAEMOD)

**Kansiri Apinantanakul, Thailand,** Mahidol University, Data driven decisions on cross border restrictions for disease control strategies using COVID-19 as a case study, 2023, MSc, Graduated 2024, Faculty of Tropical Medicine and MAEMOD

**Toby Bonvoisin*, UK,** University of Oxford, Evaluating interventions to reduce transmission of respiratory pathogens in hospitals, 2021, DPhil, Active, MAEMOD

**Chris (Rusheng) Chew, Australia,** University of Oxford, Defining the epidemiology of acute febrile illness and evaluation of simple tools to aid its clinical management in the rural South and Southeast Asian primary care setting, 2021, DPhil, Active, MAEMOD

**Pavadee Chuaicharoen, Thailand,** Mahidol University, Optimised control strategies for soil transmitted helminths (STH) elimination in Thailand using a mathematical model, 2019, PhD, Active, Faculty of Tropical Medicine and MAEMOD

**Sri Budi Fajariyani, Thailand,** Mahidol University, Evaluation of the malaria surveillance information system during the transition period in Indonesia, 2021, MSc, Graduated 2024, Faculty of Tropical Medicine and MAEMOD

**Freddie Fell, UK,** University of Oxford, Global Research on Antimicrobial Resistance, 2024,_DPhil, Active, MAEMO

**Suh Young (Sophie) Kang, Korea,** University of Oxford, Determining infectious causes of acute febrile illness in rural South and Southeast Asian community and hospital settings, 2024, DPhil, Active, Microbiology and MAEMOD

**Zarni Lynn Kyaw, Thailand,** Mahidol University, Evaluating ethnic health information, Evaluating ethnic health information systems in conflict-affected southeast Myanmar: A mixed method study, 2022, MSc, Graduated 2024, Faculty of Tropical Medicine and MAEMOD

**Karina Dian Lestari, Thailand,** Mahidol University, Micro-epidemiology of malaria in pre-elimination and elimination settings in Sumatra region, Indonesia, 2023, Graduated 2024, Faculty of Tropical Medicine and MAEMOD

**Mathupanee Oonsivilai, Thailand,** University of Oxford, Using mechanistic models to understand the impact of spatiotemporal heterogeneity in patterns of antimicrobial use in Southeast Asia on antimicrobial resistance, 2019, DPhil, Active, MAEMOD, Microbiology and University of Oxford

**Rachel Otuko, Kenya,** University of Oxford, Global Research on Antimicrobial Resistance, 2024, DPhil, Active, MAEMOD

**Mark Pritchard*, UK,** University of Oxford, Modelling the role of hospitals and hospital referral networks in the transmission of emerging and re-emerging pathogens, 2021, DPhil, Graduated 2025, MAEMOD

**Anawat Ratchathorn, Thailand,** Mahidol University, General SNOMED CT concepts from physical examination information in free text medical records using a natural language model, 2021, MSc, Active, Faculty of Tropical Medicine and MAEMOD

**Amandip Sahota, UK,** University of Oxford, Mapping the spatial distribution of acute febrile illness in South and Southeast Asia, 2024, DPhil, Active, Epidemiology and MAEMOD

**Oraya Srimogkla, Thailand,** University of Oxford, Global Research on Antimicrobial Resistance, 2024, DPhil, Active, MAEMOD

**Lucien Swetschinski, US,** University of Oxford, Global Research on Antimicrobial Resistance, 2024, DPhil, Active, MAEMOD

**Weerakorn Thichumpa, Thailand,** Mahidol University, Modeling of rabies infection dynamics (pet dogs), 2019, PhD, Graduated 2024, Faculty of Tropical Medicine and MAEMOD

**Aung Myint Thu (Wayne), Myanmar,** Mahidol University, Shifting *Plasmodium vivax* epidemiology on the Eastern Myanmar border: optimising elimination strategies, 2023, PhD, Active, Faculty of Tropical Medicine, MAEMOD and SMRU

**Tara Wagner-Gamble, German,** University of Oxford, Mapping the spatial distribution of acute febrile illness in South and Southeast Asia, 2024, DPhil, Active, Epidemiology and MAEMOD

**Koonthida Wannayot, Thailand,** Mahidol University, Google trend analyses and its predictive power on Coronavirus disease of 2019 (COVID-19) outbreak detection across Thailand, 2019, MSc, Graduated 2024, Faculty of Tropical Medicine and MAEMOD

**Fazal Yamin, Afghanistan,** Mahidol University, Routine immunization: Challenges and proposed solutions, 2023, PhD, Active, Faculty of Tropical Medicine and MAEMOD

**Meiwen Zhang, China,** University of Oxford, Defining the hidden burden of disease in rural communities in South and Southeast Asia, 2021, DPhil, Active, Malaria, Epidemiology and MAEMOD

### Medical Therapeutics Unit (MTU)

**Craig Bonnington, UK,** University of Oxford, Studies of antimalarial chemoprevention, 2022, DPhil, Withdrew 2024, MTU

**Cintia Cruz, Argentina,** University of Oxford, Pharmacometric determinants of efficacy in the treatment of Chagas disease, 2021, DPhil, Active, Malaria & Critical Illness, MTU and Clinical Pharmacology

**Somya Mehra, Australia,** University of Oxford, Modelling the within-host dynamics of Trypanosoma cruzi to improve the design of phase 2 anti-parasitic drug trials for Chagas disease, 2024, DPhil, Active, MTU

**William Schilling, UK,** University of Oxford, Treatment and Prevention of COVID-19, 2020, DPhil, Active, MTU

### Clinical Trials Support Group (CTSG)

**Naemi Araya, Eritrea,** University of Oxford, Comparative Analysis of Haemoglobin Measurement Techniques for Assessing Anaemia in Malaria Patients in the Democratic Republic of Congo, Uganda, and Cambodia. 2024, MSc, Graduated 2024, CTSG.

**Dr John Bok Chol, South Sudan,** University of Oxford, Modelling methaemoglobinaemia induced by primaquine in *Plasmodium viva*x infected glucose-6-phosphate dehydrogenase deficient (G6PDd) and G6PD normal (G6PDn) patients in Cambodia. 2023, MSc, Graduated 2024, CTSG.

**Dr Forhad Uddin Hasan Chowdhury, Bangladesh,** University of Oxford, Antimicrobial resistance and mitigating antimicrobial usage in Bangladesh, 2022, DPhil, Active, CTSG.

**Dr Kaajal Patel, UK,** Open University, Neonatal epidemiology and the evaluation of a mentorship programme to improve neonatal healthcare provision in rural Cambodia, 2020, PhD, Active, CTSG

**Dr Nyan Lynn Tun, Myanmar,** University of Oxford, Study of the effective use and operational feasibility of Truenat™ in very remote settings of Myanmar, 2023, DPhil, Active, CTSG and MOCRU

**Naomi Waithira, Kenya,** University of Oxford, Exploring the impact of data sharing, barriers and solutions to data re-use in clinical research, 2020, DPhil, Active, CTSG and Bioethics & Engagement

## MORU Units and Research Groups

### Shoklo Malaria Research Unit (SMRU)

**Mary Ellen Gilder, USA,** University of Oxford, Optimizing treatment of *Plasmodium vivax* malaria in pregnant and lactating women, 2022, DPhil, Active, SMRU

**Mary Gouws, UK,** University of Oxford, Gestational weight gain optimal outcomes, 2024, MSc, Graduated 2024, MORU and SMRU

**Xintong Li, PRC,** University of Oxford, Heat index and perinatal outcomes 2024, MSc, Graduated 2024, SMRU

**Anne Molenaar, the Netherlands**, AVAG, Induction of labour and associated factors, 2024, BSc, Graduated 2024, SMRU

**Taco Jan Prins, the Netherlands,** University of Amsterdam, Perinatal death in migrant women, 2023, PhD, Active, SMRU

**Noa Schut, the Netherlands,** AVAG, Induction of labour and associated factors, 2024, BSc, Graduated 2024, SMRU

**Aung Myint Thu (Wayne), Myanmar,** Mahidol University, Shifting *Plasmodium vivax* epidemiology on the Eastern Myanmar border: optimising elimination strategies, 2023, PhD, active, SMRU

**Naw Hai Ti Ti, Thailand,** Chiang Mai University, 2024, BSc, Graduated 2024, SMRU MCH, Vaccination barriers migrants, SMRU

**Gwen van der Schaaf, the Netherlands,** University of Groningen, Stillbirth and associated factors 2023, MSc, Graduated 2024, SMRU

## Lao-Oxford-Mahosot Hospital-Wellcome Trust Research Unit (LOMWRU)

**Meghna Anil, UK,** London School of Hygiene & Tropical Medicine, 2023, MSc in Tropical Medicine & International Health, Graduated 2024, LSHTM and LOMWRU

**Souksopha Banmanivong, Lao PDR,** Lao Tropical and Public Health Institute, 2023, MSc in Tropical Medicine & International Health, Graduated 2024, Lao TPHI and LOMWRU

**Konnie Bellingham, New Zealand,** Open University, Access to antimicrobials through rational selection and reimbursement in Lao PDR: A policy and economic analysis, 2023, PhD, Active, LOMWRU

**Laddaphone Bounvilay, Lao PDR,** University of Auckland, 2023, MSc in Public Health, Graduated 2024, LOMWRU (Manaaki New Zealand Scholarship)

**Vilada Chansamouth, Lao PDR,** University of Oxford, Evaluating the impact of a Lao language mobile phone antimicrobial use guideline application on antimicrobial prescribing in Laos, 2019, DPhil, Graduated 2024, LOMWRU

**Phillip Chigiya, Zimbabwe,** University of Oxford, 2023, MSc in International Health & Tropical Medicine, Graduated 2024, University of Oxford and LOMWRU

**Sana Hasan, UK,** London School of Hygiene & Tropical Medicine, 2023, MSc in Tropical Medicine & International Health, Graduated 2024, LSHTM and LOMWRU

**Jill Hopkins, Canada**, Open University, A Patient Focused Hospital Antimicrobial Resistance Surveillance Network in Low Resource Settings in Southeast Asia and Africa, 2022, PhD, Active, COMRU, OUCRU, MORU and LOMWRU

**Francis Inbanathan, India,** University of Oxford, Contributing factors from global and national efforts towards building resilient laboratory systems for public health in developing countries, 2022, DPhil, Active (part-time), MORU and LOMWRU

**Rebecca Inglis, UK**, University of Oxford, ICU performance in Lao PDR, 2016, DPhil, Graduated 2025, Malaria & Critical Illness, LOMWRU and University of Oxford

**Inthaphavanh Kitignavong, Lao PDR,** University of Auckland, 2023, MSc in Public Health, Graduated 2024, LOMWRU (Manaaki New Zealand Scholarship)

**Thomas Lamb, UK,** University of Oxford, Snakebite, 2023, MRes, Active, LOMWRU and MOCRU

**Manilung Nalongsack, Lao PDR,** London School of Hygiene and Tropical Medicine, 2023, MSc in Health Policy, Planning, and Financing, Graduated 2024, LOMWRU (Chevening Scholarship)

**Vanheuang Phommadeechack, Lao PDR,** Mahidol University, 2019, MSc in Tropical Medicine, Medical Entomology, Graduated 2024, Faculty of Tropical Medicine and LOMWRU

**Vilaiphone Phomsisavath, Lao PDR,** University of Antwerp and University of Pretoria, 2023, MSc in Global One Health: diseases at the human-animal interface, Active, LOMWRU (Belgian Development Cooperation scholarship)

**Thadsana Sayasone, Lao PDR,** Lao Tropical and Public Health Institute, 2023, MSc in Tropical Medicine & International Health, Graduated 2024, Lao TPHI and LOMWRU

**Amphone Sengduangphachanh, Lao PDR,** Mahidol University, 2023, MSc in Clinical Microbiology and Laboratory Management; hybrid course organized by Siriraj Hospital in Bangkok, Thailand, Active, LOMWRU

**Chanthalavady Soukpangna, Lao PDR,** Lao Tropical and Public Health Institue (LTPHI), Urine antimicrobial activity in patients presenting to Mahosot Hospital, Lao People's Democratic Republic, 2024, MSc, Active, LOMWRU

**Phonepaphay Thammavongsa, Lao PDR,** Lao Tropical and Public Health Institue (LTPHI), Environmental drivers of antimicrobial resistance-sources of contamination in the community in Vientiane Capital, Lao People's Democratic Republic, 2024, MSc, Active, LOMWRU

## Cambodia-Oxford Medical Research Unit (COMRU)

**Jill Hopkins, Canada,** A patient-focused hospital antimicrobial resistance surveillance network in low resource settings in Southeast Asia and Africa, Open University, 2022, PhD, Active, COMRU, OUCRU, MORU and LOMWRU

**Kaajal Patel, UK,** Open University, The evaluation of a mentorship programme to improve healthcare provision in rural Cambodia, 2020, PhD, Active, COMRU

**Keang Suy, UK,** University of Oxford, Postgraduate Diploma in Global Health Research, 2023, PGDip, Active, COMRU

## Myanmar-Oxford Clinical Research Unit (MOCRU)

**Hein Aung, Myanmar,** University of Amsterdam, Aetiological factors and options for prevention and treatment for children with rickets in Nagaland, North-West Myanmar, 2023, PhD, Active, MOCRU

**Thomas Lamb, UK,** University of Oxford, Snakebite, 2023, MRes, Active, MOCRU and LOMWRU

**Ni Ni Tun, Myanmar,** University of Antwerp, Relevant interventions to tackle the gaps in HIV prevention and treatment in key affected populations, Myanmar, 2020, PhD, Active, MOCRU

**Nyan Lynn Tun, Myanmar,** University of Oxford, Study of the effective use and operational feasibility of TruenatTM in very remote settings of Myanmar, 2022, DPhil, Active, MOCRU

## Medicine Quality Research Group (MQRG)

**Stella Nanyonga*, Uganda,** University of Oxford, An analysis of prioritization of interventions countering substandard and falsified antimicrobials in National Action Plans against antimicrobial resistance in Sub-Saharan Africa, 2022, DPhil, Active, MQRG, CTMGH, University of Oxford

**Alberto Olliaro*, Switzerland / Italy,** University of Oxford, Public health intelligence to counter falsified medical products, 2022, DPhil, Active, MQRG, CTMGH, Dept of Sociology, University of Oxford

**Kerlijn van Assche*, Belgium,** University of Oxford, Analysis of the epidemiology of substandard and falsified medical products: lessons from the COVID-19 pandemic, 2022, DPhil, Active, MQRG, CTMGH, University of Oxford

## Kinshasa-Oxford Medical Research Unit (KIMORU), DR Congo

**Dr Sarah Bakombe, DR Congo,** Kinshasa School of Public Health, Surveillance of Pregnant Women attending ANC in Kinshasa (MIRANDA Study, 2023, Master in Public Health, active, KIMORU, Malaria & Critical Illness, and CTSG

**Dr Daddy Kayembe, DR Congo,** Kinshasa School of Public Health, AMR Surveillance (SARKIN Study), 2024, Master in Public Health, active, KIMORU and CTSG

* **MORU**-linked DPhil student but whose governance is in Oxford.