

*e-ASIA Joint Research Program  
Progress Report*

1. Project Title: Collaborative fever etiology research in South East Asia

2. Joint Research Period: 1 Nov 2016 – 31 Oct 2018

3. Principal Investigators:

New Zealand: Prof. John A. Crump, McKinlay Professor of Global Health,  
University of Otago  
Planned Funding Period: 1 Nov 2016 – 31 Oct 2018

Myanmar: Prof. Wah Win Htike, Professor, Department of Microbiology  
University of Medicine 1  
Planned Funding Period: 1 Nov 2016 – 31 Oct 2018

Lao PDR: Prof. Paul N. Newton, Director,  
Lao-Oxford-Mahosot Hospital-Wellcome Trust Research Unit  
Planned Funding Period: 1 Nov 2016 – 31 Oct 2018

4. Summary of the Progress of the Joint Research:

Our project continues to run ahead of schedule. Confirmation of antimicrobial susceptibility of bloodstream isolates by conventional methods was completed at the University of Otago Dunedin and South Community Laboratories by January 2017. Molecular mechanisms of antimicrobial resistance have been characterised at the University of Otago by Dr. Tin Ohn Myat and Dr. Khine Mar Oo under the mentorship of Dr. James Ussher. This work was completed in July 2017. The main remaining year 2 activities are the healthcare utilisation survey, completion of remaining reference laboratory testing, and analysis and dissemination of findings, including through scientific publication. This project has been highly successful so far, synergising research strengths of partners, developing early career scientists, addressing health needs in Lao PDR and Myanmar, and providing New Zealander researchers with unprecedented access to drug resistant bacteria from South East Asia. The expertise gained from the latter is invaluable for New Zealand's health security and preparedness for importation and spread of drug resistant organisms. The healthcare utilisation survey protocol is now under review at research ethics committees in Lao PDR and Myanmar. Surveys are expected to get underway early in 2018.

5. Outstanding Results and Achievements (Training, Workshop, Publication, etc, if any):

5-1. Training

- Training early career faculty members Dr Tin Ohn Myat and Dr Win Thandar Oo on reference laboratory techniques for rickettsial infections and leptospirosis in Lao PDR.
- Training early career faculty members Dr Tin Ohn Myat and Dr Khine Mar Oo in characterisation of mechanisms of antimicrobial resistance and bioinformatics in New Zealand

## 5-2. Workshop

Planning of the healthcare utilisation survey was undertaken with Myanmar and Lao PDR partners during the 'kick-off' meeting held in Dunedin, New Zealand, 1 November 2016. Healthcare utilisation survey design and protocol development was completed at meeting held in Yangon, Myanmar, 1-2 August 2017.

## 5-3. Publication

Myat TO, Prasad N, Thinn KK, Win KK, Htike WW, Zin KN, Murdoch DR, Crump JA. Bloodstream infections at a tertiary referral hospital in Yangon, Myanmar. *Trans R Soc Trop Med Hyg.* 2014 Nov;108(11):692-8. doi: 10.1093/trstmh/tru151.

Myat TO, Hannaway RF, Zin KN, Htike WW, Win KK, Crump JA, Murdoch DR, Ussher JE. ESBL- and carbapenemase-producing Enterobacteriaceae in patients with bacteremia, Yangon, Myanmar, 2014. *Emerg Infect Dis.* 2017 May;23(5):857-859. doi: 10.3201/eid2305.161100.

## 5-4. Oral Presentation

Molecular mechanisms of antimicrobial drug resistance among *Escherichia coli*, *Klebsiella pneumoniae*, and *Salmonella enterica* bloodstream isolates from febrile inpatients in Yangon, Myanmar. QMB Satellite National Symposium of Infectious Diseases and Antimicrobial Resistance, Queenstown, New Zealand, 7-8 September 2017.

## 5-5. Patent

Not applicable.

## 5-6. Award

Not applicable.

## 6. Future Goals and Plan of Activities within and after the project period:

Completion of healthcare utilization surveys in Lao PDR and Myanmar during

the first half of 2018. Data analysis and publication of main research outputs from the project during 2018 and 2019.

7. Recommendations and Comments to the Program (if any):  
(ex. Any support to request from the Program in order to achieve item 6.)

None.