



In this Issue

Vivax Working Group
Annual Meeting

Genotyping Workshop

Comments from VxWG Meeting
and Genotyping Workshop

Vivax Working Group workshop:
September 2011

2010 Research Grant Updates



Participants in the APMEN VxWG
Genotyping workshop

Asia Pacific Malaria Elimination
Network (APMEN)

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www.apmen.org

Welcome to issue three, the special vivax edition of the APMEN newsletter. In these pages, you will receive news about the APMEN Vivax Working Group and *P. vivax* malaria elimination efforts in the Asia Pacific region. We encourage you to circulate this publication to colleagues.

Vivax Working Group Annual Meeting

The annual Vivax Working Group (VxWG) meeting was held on May 9, preceding the annual APMEN meeting (APMEN III), in Kota Kinabalu, Malaysia. This session provided an opportunity to review the VxWG activities in year one (2010-11) and discuss options for year two (2011-12). The meeting presentations and minutes can be downloaded at <http://apmen.org/vxwg-2011/>.

The progress of the 2010 APMEN vivax Research Grants was presented. 15 full proposals were submitted in mid-2010 and assessed by 2 reviewers (one country and research partner), of which 11 were approved for funding and 4 deferred. The granting process was discussed, and a few minor revisions suggested.

In the first quarter of 2011, the VxWG coordinating team conducted three site visits (Malaysia, Indonesia, and China) to review the research projects funded by APMEN and to discuss future work with the working group (described in more detail below). Further site visits are planned for 2011-2012. In July there will be a visit to the Philippines and in September to Vanuatu and Solomon Islands. Collaborations with other networks including the Malaria Atlas Project (MAP) and the WorldWide Antimalarial Resistance Network (WWARN) were discussed.

An achievement of the VxWG was noted in the publication of a comprehensive literature review which had been conducted of all publications arising from the 11 APMEN countries in the last 20 years. "*Trends in malaria research in 11 Asian Pacific countries: an analysis of 2700 peer-reviewed publications over two decades*", was published in the Malaria Journal in May 2011 and can be view via the following link: <http://www.malariajournal.com/content/10/1/131>.

There were three hour-long discussions on high priority research agendas for vivax elimination, each starting with a short overview of the subject:

- The management *P. vivax*: diagnostics for *P. vivax* and G6PD, an overview provided by Dr. Qin Cheng, Australian Army Malaria Institute.
- The surveillance and community based public health interventions, an overview provided by Prof. Gao Qi, Jiangsu Institute of Parasitic Diseases and Dr. Michelle Hsiang, UCSF Global Health Group.
- The treatment of vivax malaria, an overview provided by Prof. Ric Price, Menzies School of Health Research.



Dr Miotto and Dr Cheng

Present their findings at the AP MEN VxWG Genotyping workshop

Comments from VxWG Meeting and Genotyping Workshop

"It is not very often that one has assembled in one room, the main players in malaria control for a large and diverse region as is the Asia Pacific one. The format for the Pv genotyping meeting was excellent, with good interaction between all participants and what I feel was a good talk-to-discussion ratio".

Dr Georges Snounou, Senior Researcher at the Université Pierre et Marie Curie in Paris, currently based in Singapore.

"This highly informative meeting has helped regional scientists to exchange views and initiate novel research initiatives".

Dr Jetsumon Prachumsri, Director of the Mahidol Vivax Research Centre at the Faculty of Tropical Medicine, Mahidol University, Bangkok, Thailand.

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These presentations were followed by a discussion on the research priorities for the second year of activities. This concluded that there should be two priority themes for the coming year: "Diagnostics & Surveillance" and "Treatment Trials". A change to the funding distribution of the AP MEN Vivax Research Grant Program was proposed to include allocating approximately half of available funds for another round of small project grants and the rest of available funds to be allocated to a multicentre trial. The group ranked a variety of options for multicentre studies and concluded that a primaquine efficacy study for the radical cure of *P. vivax* was of greatest priority.

Genotyping Workshop

The development of *P. vivax* genotyping methods was identified as a major research priority at AP MEN II. To facilitate this agenda a Vivax genotyping workshop was held on the 8th May. More than 36 participants including six AP MEN research grant awardees attended the workshop. Invited international speakers included Prof. Georges Snounou¹, Dr. Olivo Miotto², Dr. Qin Cheng³ and Prof. John Reeder⁴.

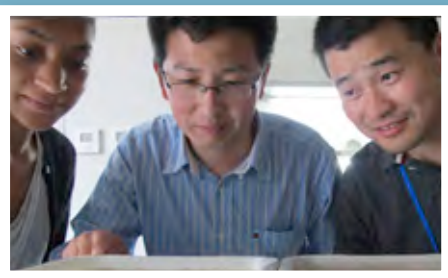
The genetic diversity in *P. vivax* populations is a major obstacle to the control and elimination of the parasite. This diversity influences the stability of transmission, the development of immunity and has consequences for the emergence and spread of virulent or drug-resistant mutations. The Vivax genotyping workshop in Kota Kinabalu provided an important opportunity to discuss the standardisation of genotyping methodologies and how the VxWG can foster complementary *P. vivax* genetic studies across the Asia-Pacific region. The participants discussed the role of genetic studies in improving our understanding of the basic biology of *P. vivax*, the parasite population structure, the origin of parasite outbreaks, the interpretation of clinical trials and the investigation of potential drug resistance mechanisms.

Vivax Working Group coordinator, Dr. Lorenz von Seidlein, said that "a multicentre approach to address the genetic diversity of *P. vivax* parasites in the Asia-Pacific region would add substantial value to the individual studies". Comparative studies across populations would provide a critical opportunity to inform on the impact of different control and intervention strategies as well as epidemiological factors such as transmission intensity and relapse patterns on parasite diversity and structure". The workshop presentations and minutes can be downloaded at <http://apmen.org/vxwg-2011/>.

1. Université Pierre et Marie Curie, Paris, currently based in Singapore
2. Centre for Genomics and Global Health, Oxford currently based at the Mahidol-Oxford Research Unit, Bangkok, Thailand
3. Australian Army Malaria Institute, Brisbane, Australia
4. Burnet Institute, Melbourne, Australia.

Vivax Working Group Workshop September, 2011

The Vivax Working Group will be conducting a workshop from September 26-28, at the Jiangsu Institute of Parasitic Diseases in Wuxi, Jiangsu, China to plan a multi-centre efficacy and effectiveness study of primaquine in Asia and the Pacific Islands. Representatives from APMEN's 11 Country Partners as well as international experts on vivax malaria and the conduct of multicentre clinical trials will be invited.



Sara Auburn, Yaobao Liu and Jun Cao
At a parasitology laboratory in Wuxi, China



Endang Sumiwi Maria, Kevin Baird, Farrah, Ari Satyagraha, Lorenz von Seidlein and Rintis Noviyantie
Eijkman Institute, Jakarta, Indonesia



Front row: Lorenz von Seidlein, Qi Gao, Qin Cheng, Back row: Chao Zhang, Yaobao Liu, Jianxia Tang, Jun Cao. *Jiangsu Institute of Parasitology in Wuxi, China.*

Vivax Working Group Research Grants Update

An objective of the APMEN Vivax Working Group (VxWG) is to provide an evidence base to inform decision making about optimal vivax surveillance, prevention, and case management. Research to inform better use of existing tools will result in considerable progress on the road to ultimate elimination of malaria. During APMEN II in Sri Lanka, APMEN Country Partners and the VxWG identified the need for a mechanism to be set up to respond to operational research priorities identified for *P.vivax* in the Asia Pacific Region. Therefore a primary VxWG aim has been to develop and coordinate operational research that will provide the evidence base for the successful control and ultimate elimination of *P. vivax* in APMEN countries and the greater Asia-Pacific.

In mid-2010, the VxWG, in close collaboration with the VxWG Coordinating team based at Menzies School of Health Research, facilitated the inaugural round of the APMEN Research Grant Program. Fifteen pre-proposals were received and eleven were awarded (pending ethical clearances, amendments and clarifications). Updates on some of the awarded research grants from this round are profiled below.

Wuxi, China

APMEN Vivax Research Grants have been awarded to Prof. Gao Qi and Dr. Jun Cao at the Jiangsu Institute of Parasitology in Wuxi, China. The studies include the efficacy and use of loop mediated isothermal amplification (LAMP), Rapid Diagnostic Tests (RDTs), and PCR-based methods.

In May 2011, the Vivax Coordinating Team (Dr Lorenz von Seidlein and Dr Sarah Auburn) with collaborating partner Dr Qin Cheng, visited the Jiangsu Institute of Parasitology and went on a site visit to the township of Sihong, where there is a higher incidence of malaria. Staff from the Sihong Centre for Disease Control discussed the region's malaria case detection, reporting and management systems and the new system for web-based reporting for all reportable diseases. This system allows for tracking of malaria cases and implementation of interventions such as the testing and treatment of potentially infected family members before the onset of the next malaria season. The management of malaria cases was also reviewed. Noteworthy is that malaria control in China includes a spring treatment of vivax cases from the preceding malaria season. The purpose of this mass treatment is to prevent relapse and hence potential transmission of vivax malaria. Dr. Auburn discussed with the staff, approaches for sample collection, preparation and transport for molecular studies.

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Joanne Bibit, Majhalia Torno, Effie Espino
Research Institute for Tropical Medicine,
Manila, Philippines



Participants in the APMEN VxWG meeting



Dr Ric Price, VxWG Chair
APMEN VxWG meeting

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Research Institute for Tropical Medicine and hospital staff at the Palawan study site, General Hospital, Puerto Princesa, Philippines

Malaysia

An APMEN Research Grant was awarded to Dr. Noor Rain Abdullah from the Institute of Medical Research (IMR), Ministry of Health, Kuala Lumpur, Malaysia, for developing a research capacity for *P. vivax* genotyping.

In March 2011, the Vivax Coordinating Team visited Dr. Noor and reviewed proposed field studies in Sabah and Sarawak. *P. vivax* in vitro drug assay protocol was discussed along with potential support activities. Dr. Auburn reviewed the laboratory facilities and discussed laboratory protocols for genotyping of vivax isolates. Furthermore Dr. Noor has been successful in leveraging support from the Ministry of Health, Malaysia, for a study visit to Menzies school of health research in Darwin, Australia, to further extend her work in this area. Dr. Noor and Dr. Auburn discussed how to make use of the sabbatical most efficiently.

Indonesia

In Indonesia, APMEN Research Grants have been awarded to two Eijkman Institute staff, Dr. Ari Winasti Satyagraha (G6PD Variants on Sumba Island) and Dr. Rintis Noviyanti (Genetic diversity of *P.vivax* in various malaria endemic settings). These are in the process of obtaining IRB approval and it is anticipated that sample collection will begin in September 2011 in Sumba for both grants. VxWG coordinator Lorenz von Seidlein visited the Eijkman Institute in April 2011. The collaborators described the regional challenges for fieldwork and the potential for future collaborations was discussed. There is a strong interest within the Eijkman Institute to develop facilities to act as a regional reference laboratory for G6PD deficiency. There is a strong interest within the Eijkman Institute to develop facilities to act as a regional reference laboratory for G6PD deficiency. There is also interest amongst staff at the Institute to design and to participate in large international multicentre trials.

Philippines

Dr. Effie Espino from the Research Institute for Tropical Medicine (RITM) was awarded an APMEN Research Grant to explore G6PD deficiency in the Philippines. The fieldwork for the study will be conducted in two sites Palawan and Zambales. The proposed study has two components, one of which is to describe the prevalence of G6PD deficiency in two regions with differing malaria transmission. There is a strong interest to collaborate with Simon Hay from the Malaria Atlas Project (MAP) on a map of G6PD deficiency in the Philippines. A second component of the study is to explore the operational challenges of G6PD testing. The APMEN VxWG coordinator visited RITM and one of the study sites, Palawan in July 2011. In addition to reviewing the approved studies, the potential for future collaborations including malaria drug trials and fever surveillance was discussed.