Vivax Working Group
Annual Meeting
Overview

Bangkok, Thailand

7th - 8th September, 2018
Annual Meetings

- **VxWG 1** - Columbo, February 2010
- **VxWG 2** - Kota Kinabalu, May 2011
- **VxWG 3** – Incheon, May 2012
- **VxWG 4** – Jimbaran, March 2013
- **VxWG 5** – Manilla, Mar 2014
- **VxWG 6** – Hoi An, March 2015
- **VxWG 7** – Bangkok, April 2016
- **VxWG 8** – Jimbaran, Oct 2016
- **VxWG 9** – Kuta, Oct 2017
- **VxWG 10** – Bangkok, Sept 2018
East Asia leaders commit to eliminate malaria from Asia Pacific by 2030

13th November 2014

2030:
MALARIA FREE ASIA PACIFIC

APMEN Vivax Working Group in Bangkok, September 2018
Vivax Working Group

Translational research to influence policy and practice:

• Capacity Building
• Data Sharing
• Workshops
• Forum for collaboration
• Leveraging Funding

Targeting Vivax Malaria in the Asia Pacific 2009-2014, www.apmen.org
Research Themes

• **Surveillance**
  - Host: G6PD (Prevalence and variants), CYP2d6
  - Parasite: Drug resistance and pop genetics

• **Diagnostics**
  - Host: G6PD PoC, biosensors
  - Parasite: Ultrasensitive

• **Case Management**
  - Schizontocidal: CQR
  - Radical Cure: Pq / Tfq
Benefits of Radical Cure

Addition of PQ reduces recurrence by 90%

37 Studies:
Treatment arms
- Chloroquine, n=2990
- Chloroquine + Primaquine, n=1790
- ACT, n=4665

Commons Lancet ID 2018
Reducing Incidence

Ethiopia

Abreha et al Plos Med 2017
The long and the short....

Adherence

Tafenoquine
- Single Dose
  - High Dose
    - 60mg x 7d

Primaquine...
- High Dose
  - 30mg x 14d
- Low Dose
  - 30mg x 7d
- Low Dose
  - 15mg x 14d
- Weekly
  - 45mg x 8

Need for G6PD Testing

Issues

Need for G6PD Testing
Patients Don’t Complete a 14 Day Regimen for an Acute Febrile Illness – Clinical Trial

Primaquine efficacy is related to total mg/kg dose ingested

**Ethiopia**

- Complete Course: 92.0%
- Incomplete Course: 73.7%
- Unsupervised Course: 63.2%

**Papua Indonesia**

Pharmacy Records 2004-2013:
46,221 Patients treated with 14 days unsupervised primaquine

- No PQ
- High Dose
- Low Dose

Overall Effectiveness: 10.0% [95%CI 0.05-0.14]*

*Abreha et al Plos Med 2017*  
*Douglas et al Plos Med 2017*
### Adherence and Effectiveness

**Interventions**

<table>
<thead>
<tr>
<th>Patient</th>
<th>Provider</th>
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<tbody>
<tr>
<td>● Increase awareness of benefits</td>
<td>● Staff training</td>
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<td>● Education and health promotion programs</td>
<td>● how to discuss these with patients</td>
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<td>● Individual patients counselling.</td>
<td>● Involvement of private sector in adherence monitoring. Improved access to quality drugs</td>
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<tr>
<td>● Increased patient monitoring</td>
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<td>● Home visits, incentives, pill boxes or reminders</td>
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<td>● Packaging aids including pictorial inserts.</td>
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<td>● Better PQ paediatric formulations</td>
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- Qualitative studies
- Trialling Interventions
The long and the short....

**Adherence**

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**Need for G6PD Testing**
Single Dose Radical Cure - Tafenoquine

FDA Approval – Orphan Drug Status in July 2018!

Study 582 (Part 2)

Recurrence-Free Probability

Time (days)

TQ 300 mg + CQ

PQ + CQ

CQ

Trialled against LD Pq
- Plus Chloroquine
- Pts >16 yrs
- G6PD >70%

GlaxoSmithKline

MMV

Medicines for Malaria Venture
Host Diagnostics

- New Quantitative and Qualitative diagnostics
  - Field testing in the ACROSS surveys

- APMEN G6PD Workshop – Jakarta, 3-4 Sept 2018
  - Novel devices, methodological and deployment issues

Plus…
IVDS
axxin
Parasite Diagnostics

- Better diagnostics for *P. vivax*
- Evidence for the importance of low level parasitaemia
  - Evidence of transmission potential
  - ? Risk of clinical disease and anemia
- Ultrasensitive Diagnostics...
Surveillance

ACROSS - APMEN health care facility & community assessment to determine populations at Risk Of malaria and primaquine-induced hemolysis - Surveys

• Sites: Bangladesh, China, India, Laos, Nepal, Indonesia, Vietnam

Cross sectional and health care facility based surveys

- Standardised design
- Testing novel diagnostics: quantitative and qualitative studies
- Parasite and G6PD prevalence and mapping
• Can we meet these milestones?
• If not, what needs to be done?
• How can we make that happen?
Day 1

Session 1  Country Partner Perspective
• Pre-elimination
• Enhanced Control
• Setting Priorities

Session 2  Update on Diagnostics
• G6PD Workshop
• Update on *P. vivax* RDTs
• Update on *P. vivax* MAPs

Session 3  Update on Tafenoquine
• Tafenoquine implementation strategy
• *Round Table*: Changing Practice
Day 3

Session 1  Workplan
• The future of APMEN and APLMA
• 2019 Workplan - VxWG and SRWG

Session 2  Reviewing Priorities
• Round Table
• Synergies between working groups
<table>
<thead>
<tr>
<th>Country</th>
<th>Members</th>
</tr>
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<tbody>
<tr>
<td>Indonesia</td>
<td>Minerva Simatupang (MCP), Rita Kusriastuti (CDC), Rintis Noviyanti (Eijkman), Ari Satyagraha (Eijkman), Rini Poespoprodjo (YPKMP), Lenny Burdam (YPKMP), Annisa Rahmalia (YPKMP), Inke Nadia Lubis (UNSU)</td>
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<td>Bangladesh</td>
<td>Md. Mosique Rahaman (NMCP), Shafiul Alam (ICDDR), Wasif Khan (ICDDR)</td>
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<td>Bhutan</td>
<td>Nepali Tej Nath (VBDCP)</td>
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<td>Cambodia</td>
<td>Leang Rithea (CNM), Nguon Sokomar (URC)</td>
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<td>China</td>
<td>Ning Xiao (CDC), Gao Qi (SU)</td>
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<td>Democratic People’s Republic of Korea</td>
<td>Naresh Kumar Gill (MOH)</td>
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<td>India</td>
<td>Mohd Hafizi Abd Hamid (VBDCP)</td>
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<td>Lao PDR</td>
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<td>Malaysia</td>
<td>Ramesh Kumar Kharel (MOH), Prakash Ghimire (TU)</td>
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<td>Raffy Deray (NCDCP), Charmaine Berte (RITM), Paolo Allison (RITM)</td>
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<td>Vanuatu</td>
<td>Esau Naket (NMCP)</td>
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<td>Vietnam</td>
<td>Ngo Duc Thang (NIMPE), Nghia Ho Dang Trung (OUCR), Thuan Nguyen Thi-NIMPE, Huyen Nguyen-PATH</td>
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<td>India</td>
<td>Sang Eun Lee (KCDCP), Joen Byoung-Hak (KCDCP)-SRWG</td>
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Other Countries

Australia
Ric Price (Menzies)
Kamala Thriemer (Menzies)
Jutta Marfurt (Menzies)
(Benedict Ley –Menzies)
Nick Anstey (Menzies)
Wulan Morling (Menzies)
Jack Richards (Burnet)

Belgium
Koen Peeters (ITMA)

Brazil
Andre Siquera (FIOCRUZ)

Ethiopia
Mebrahtom Haile Zeweli (FMH)

Myanmar
Nu Nu Khin (USAID)
Feliciano Monti (USAID)
Than Naing Soe (MOHS)

Switzerland
Stephan Duparc (MMV)
Elodie Jambert (MMV)
Seda Yerlikaya (FIND)

United Kingdom
Rosalind Howes (MAP)
Daniel Pfeffer (BDI)
Andy Walker (GSK)

United States
Janice Culpepper (GF)
David Bell (IVGGF)
Mutsumi Metzler (PATH)
Spike Nowak (PATH)
Carol Sibley (WWARN)
Rise of Non Falciparum Malarias

Thailand: 1965-2001

Papua: 2004-2013

Sattabongkot et al. Trends in Parasite 2004;
Radical Cure of P. vivax

Blood Stage + Liver Stage

- Chloroquine Resistance
- ACT Alternative

- Novel regimens
- Novel drugs
- Tackling adherence
- Encouraging uptake
A Dynamic Forum

National Malaria Control Programs

Public Private Partnerships

Researchers

Industry

World Health Organisation

Funders

Networks