Meeting Report

SECOND BIREGIONAL MEETING OF ASIA-PACIFIC MALARIA DRUG RESISTANCE MONITORING NETWORKS

24–26 October 2016

Bangkok, Thailand

World Health Organization
Western Pacific Region

Second Biregional Meeting of Asia-Pacific Malaria Drug Resistance Monitoring Networks
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WORLD HEALTH ORGANIZATION

REGIONAL OFFICES FOR SOUTH-EAST ASIA AND THE WESTERN PACIFIC

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Convened by:

WORLD HEALTH ORGANIZATION
REGIONAL OFFICES FOR SOUTH-EAST ASIA AND THE WESTERN PACIFIC

Bangkok, Thailand
24–26 October 2016

Prepared by:

World Health Organization
Regional Offices for South-East Asia and the Western Pacific

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NOTE

The views expressed in this report are those of the participants of the Second Biregional Meeting of Asia-Pacific Malaria Drug Resistance Monitoring Networks and do not necessarily reflect the policies of the World Health Organization.

This report has been prepared by the World Health Organization regional offices for South-East Asia and the Western Pacific for those who participated in the Second Biregional Meeting of Malaria Drug Resistance Monitoring Networks held in Bangkok, Thailand, 24–26 October 2016.

CONTENTS

Asia, Southeastern / Drug resistance / Malaria / Regional health planning

ABBREVIATIONS

ACPR	adequate clinical and parasitological response
ACT	artemisinin-based combination treatment
AL	artemether+lumefantrine (Coartem ™)
AM	artemether
API	annual parasite incidence
AS+AQ	artesunate+amodiaquine
AS+SP	artesunate + sulfadoxine-pyrimethamine
AS+MQ	artesunate + mefloquine
AS+PYR	artesunate+pyronaridine (Pyramax™)
BBINS	Bangladesh, Bhutan, India, Nepal, Sri Lanka
BVBD	Bureau of Vector Borne Diseases
CNM	Cambodia National Centre for Parasitology, Entomology and Malaria
CQ	chloroquine
DHA+PIP	dihydroartemisinin+piperaquine
DRS	drug resistance surveillance
ERAR	Emergency Response to Artemisinin Resistance
G6PD	Glucose-6-phosphate dehydrogenase
GFATM	Global Fund to Fight AIDS, Tuberculosis and Malaria
IMR	Institute of Medical Research
K13	Kelch 13
MEF	mefloquine
NIMR	National Institute for Malaria Research
NIRTH	National Institute for Research in Tribal Health
NMPE	National Institute of Malariology, Parasitology and Entomology
NMCP	National Malaria Control Programme
NVBDCP	National Vector Borne Disease Control Programme
ODPC	Office of Disease Prevention and Control
Pf	*Plasmodium falciparum*
Pm	*Plasmodium malariae*
Po	*Plasmodium ovale*
Pv	*Plasmodium vivax*
PMI	President's Malaria Initiative
PQ	primaquine
PSA	piperaquine survival assay
RAI	Regional Artemisinin Initiative
RDT	rapid diagnostic test
TES	therapeutic efficacy studies
UNOPS	United Nations Office for Project Services
USAID	United States Agency for International Development
WHO	World Health Organization

SUMMARY

The Second Biregional Meeting of Asia-Pacific Malaria Drug Resistance Monitoring Networks was convened in Bangkok, Thailand on 24–26 October 2016. This was the second such meeting organized to bring together participants from three drug-resistance monitoring networks: the Greater Mekong Subregion (GMS) network, the Bangladesh, Bhutan, India, Nepal and Sri Lanka (BBINS) network and the Pacific network. It followed the success of the first meeting held in Siem Reap, Cambodia in November 2015. The meeting provided an opportunity for participants to build upon discussions from the 2015 meeting and to review the results and experiences of implementing therapeutic efficacy studies (TES) over the past 12 months. In addition, participants were able to further explore common challenges arising during the implementation of TES, particularly in complex country settings. Despite the fact that some countries are facing situations of malaria endemicity in the pre-elimination and elimination phases at national or subnational level, the increasing risk of artemisinin and multidrug resistance remains a serious challenge. Countries were able to engage in fruitful discussions on cross-border collaboration and share experiences and approaches to defeating malaria. The meeting was organized by the WHO South-East Asia and Western Pacific regional offices in coordination with WHO headquarters and the Emergency Response to Artemisinin Resistance (ERAR) hub in Phnom Penh, Cambodia.

At the end of the meeting participants were expected to have:

- received an update on the recommendations of the 2015 meeting;
- reviewed and discussed implementation and results of the recent TES;
- discussed the role and results of Kelch 13, the molecular marker for tracking artemisinin resistance, and of other molecular markers for monitoring malaria drug resistance; and
- developed work plans and budgets for each country and the networks for TES monitoring in 2017–2018.

Conclusions

- Most countries have continued to strengthen implementation of high-quality TES. Nearly all countries implemented TES for 2016 with the exception of Papua New Guinea and Bangladesh where ethical approvals were still being finalized. Technical assistance will continue to be provided by WHO staff as relevant.

- Countries that would like to seek training and certification for microscopists can make a request through their WHO country office. WHO recognizes the need to increase the numbers of expert microscopists within countries, particularly as countries move to pre-elimination and elimination. This is part of strengthening their national malaria microscopy quality assurance system.

- Effective surveillance systems are the backbone of ensuring malaria elimination in both the Pacific and GMS regions, and specifically case-based surveillance systems. This becomes more important as countries with very low numbers of cases can integrate drug efficacy monitoring into the national surveillance (or vice versa).
- Drug resistance is more challenging in the Greater Mekong Subregion. There are four artemisinin-based combination treatments (ACT) failing in Cambodia and also partner drug failures in Viet Nam. The Lao People's Democratic Republic is

borderline (10%), with artemether+lumefantrine (AL) still working. In Thailand the situation is patchy, and in Myanmar the situation is good regarding partner drugs, though artemisinin resistance is a challenge. The threat does not appear to have spread beyond the Mekong, but it is important to remain vigilant.

- Countries need to test alternative ACTs: artesunate+pyronaridine (Pyramax™) for Cambodia, Myanmar, Thailand and Viet Nam.

- The Pacific and BBINS countries do not have a problem with ACTs or K13. India's changing drug regimen shows how useful monitoring drug efficacy is.

- For GMS countries, information on artemisinin (K13) and also piperaquine (P14) and mefloquine markers (pfmdr1 copy no.) for resistance are equally important. Molecular genotyping results from D0 filter paper would provide a good mapping of the situation. Continued monitoring will lead to action – that is, to the timely review and change of drug regimens. There are currently no replacements for artemisinin-derivative drugs, so we must continue to use ACTs. WHO is working with partners like Medicines for Malaria Venture (MMV) in the development of a non-artemisinin-based drug.

Recommendations for Member States:

1) Countries may continue to strengthen implementation of high-quality therapeutic efficacy studies (TES) using the standard WHO protocol.

2) Countries may continue to strengthen and support laboratory capacities: strengthen overall malaria microscopy quality assurance systems including refresher training for TES microscopists; and implement quality control for molecular assays with reference laboratory (Institute Pasteur Cambodia), technical training and exchange of samples.

3) Alternative ACT regimens need to be tested before deciding on a drug policy review as soon as signs of declining efficacy manifest.

4) Countries are encouraged to maintain regular monitoring visits to TES sites, using quality control monitoring forms.

5) Countries are encouraged facilitate integration of monitoring of drug efficacy into routine surveillance systems in pre-elimination settings.

Recommendations for WHO: