



USAID Mekong Malaria Programme Core Partners' Meeting

Meeting report

**28-29 April, 2008
Bangkok, Thailand**

ABBREVIATIONS

ACT	Artemisinin-based Combination Therapy
ACT Malaria	Asian Collaborative Training Network for Malaria
AL	Artemether–lumefantrine
ANC	Ante-Natal Care
ANEQAM	Asian Network of Excellence in Quality Assurance of Medicines
ASEAN	Association of Southeast Asian Nations
ART	Artemisinin
CNM	Cambodia National Centre for Parasitology, Entomology and Malaria Control
DRA	Drug Regulatory Authority
FY	Fiscal Year
GFATM	Global Fund to fight AIDS, Tuberculosis and Malaria
GMP	WHO Global Malaria Programme
GMS	Greater Mekong Sub-region
IR	Intermediate Results
ITN	Insecticide-Treated Net
Lao PDR	Lao People’s Democratic Republic
LLIN	Long-Lasting Insecticide Net
M&E	Monitoring and Evaluation
MMP	Mekong Malaria Programme
MSH	Management Sciences for Health
PMI	President’s Malaria Initiative
PSI	Population Services International
RACHA	Reproductive and Child Health Alliance, Cambodia
RBM	Roll Back Malaria
RDT	Rapid Diagnostic Test
RPM Plus	Rational Pharmaceutical Management Plus
TB	Tuberculosis
SEARO	WHO South-East Asia Regional Office
USAID RDM-A	United States Agency for International Development Regional Development Mission - Asia
USP	United States Pharmacopeia
URC	University Research Co., LLC
VHW	Village Health Worker
WHO	World Health Organization
WPRO	WHO Western Pacific Regional Office

1. BACKGROUND

Since 2000, USAID Regional Development Mission in Asia (RDM-A) has contributed to malaria control in the GMS, particularly through its support of the RBM Mekong partnership initiative involving six countries in the GMS – Cambodia, China (Yunnan province), Lao PDR, Myanmar, Thailand and Viet Nam – and other relevant partner agencies to initiate strategic projects and programs for malaria control in the Mekong region. The RBM Mekong initiative has since been re-named as the Mekong Malaria Programme (MMP). The WHO Mekong Malaria Programme (WHO-MMP) office, based in Bangkok, has the role of coordinating the activities of the MMP network, linking with all MMP partners including USAID-funded agencies.

To take stock of the progress of USAID-funded activities and reorient activities in light of current challenges facing malaria control in the Mekong region, USAID RDM-A brings together its core partners for bi-annual meetings. The first meeting was held in Chiang Mai from 7-8th November 2006. Partners at this meeting highlighted the contributions of USAID-funded malaria activities since 2001, examined existing gaps in malaria control, and developed a strategy for future USAID-funded activities in the GMS. This strategy comprises the following areas, which guide USAID support to the Mekong Malaria Programme: 1) strategic information, 2) drug quality, 3) diagnostic quality, 4) drug procurement and distribution and 5) enabling environment.

The 2nd USAID partners meeting took place 29-31 October 2007 in Bangkok.

2. ACTIVITIES AND FINDINGS

The agenda, list of participants for this meeting is attached in Annex 1.

On Day 1, presentations from implementing partners consisted of progress reports and reports on status of activities, identification of obstacles & constraints and corrective measures. These were reported against the Intended Results (IR) of the MMP objectives as below:

- IR 1: Access Increased to Prevention Interventions
- IR 2: Access Increased to Care, Support, and Treatment
- IR 3: Access Increased to Strategic Information
- IR 4: Enabling Environment Strengthened
- IR 5: Model Programs Expanded and Use of Best Practices Strengthened.

Day 2 focused on the containment of artemisinin tolerant malaria parasites on the Cambodia-0-Thailand border.

CDC Malaria Branch Report, Progress to Date FY 07 (2007-08)

- Subsequent funding will be more streamlined
- Working with M&E team and elimination partnership
- Research social scientist hired
- Secured support for Atlanta-based staff to travel
- Active operational research (OR) and M&E program will enhance advocacy across USAID, State and CDC
- Eradication / elimination agenda.

Kenan Institute Asia (KI) Report Progress to Date FY 07 (2007-08)

- Building capacity for a school-based life skills education approach to mosquito-borne diseases. Writing of curriculum/teachers guides with a draft now completed
- Procure and distribute LLINs for migrant laborers in Phuket is to be completed
- Implementation of new 3 day ACT treatment regimen with the procurement of mefloquine for ACT is ongoing while awaiting final price quotations and USAID requirement to purchase offshore
- Print manuals for applying the new treatment regimen is in progress and training vector-borne disease and provincial public health officials on applying the new treatment regimen will follow
- Although facing low number of cases, the *Plasmodium falciparum* therapeutic efficacy *in vivo* studies in 8 sites are on-going. Implementation so far has been in 5 sites (Mae Hong Son, Tak, Ratchaburi, Chantaburi, Yala). Therapeutic efficacy *Plasmodium vivax in vivo* studies in 2 sites has been completed (implemented in 2 sites: Sa Kaew, Yala). Molecular epidemiology study of *P.f.* MDR 1 gene amplification in Thailand is also planned for Phase 1 in 8 provinces
- Procured minilabs for drug quality monitoring sites (6)
- KI also submitted a protocol for a study on migration patterns related to malaria and dengue in Trat, Chantaburi and Sa Kaeo Provinces in Thailand
- An annual workshop is also planned to review results of drug resistance, drug quality monitoring and policy implications for 2008 (Thailand), co-sponsored with US Pharmacopeia (USP)
- Under its Phuket malaria elimination project, a planning workshop has been completed and is now into its phase 1 of implementation
- Technical assistance for improving systems for management and quality assurance of anti-malarial drugs
- KI is also coordinating with Bureau of Vector-borne Diseases (BVBD) for expert from Management Sciences for Health (MSH) and Thailand Ministry of Public Health (MOPH) technical staff to conduct a field survey in provincial sites and subsequent workshop on drug management /quality improvement planning in Thailand
- KI is reconsidering the feasibility of organizing, in coordination with MMP, a GMS informal consultation on exchange of effective practices and lessons learned from Global Fund (GF) malaria projects: challenges on the way forward to sustainability
- KI is also planning to coordinate with SEARO CSR/MMP to organize a workshop for stakeholders (public health officials, donors, NGOs, international organizations) working along the Thailand-Burma border to strengthen coordination in prevention and control of malaria, dengue/hemorrhagic fever, tuberculosis, HIV/AIDS, avian and pandemic influenza, cholera, and emerging/re-emerging diseases. This is planned in July (Chiang Rai).

ACTMalaria-MMP Workplan

- A Pharmaceutical Management & Quantification for Malaria workshop was organized in collaboration with MSH and National Institute for Malariology, Parasitology and Entomology (NIMPE) in Hanoi, Viet Nam, from the 27 November – 1 December 2007. 33 participants from 10 member countries funded by the USAID grant and GF malaria grant of China, Lao PDR, Philippines & Viet Nam along with 3 Pacific island countries, funded by AusAID in Solomon Islands and Vanuatu, and WHO in Papua New Guinea
- Organized Executive Board & Partners meeting in Siem Reap, Cambodia Mar 17-19 2007, where the network welcomed East Timor as a new member and also saw the consensus to expand ACTMalaria's scope by gradual integration of other mosquito borne diseases – starting with dengue.

Containment strategy for artemisinin tolerant malaria on Cambodia-Thailand border

- A consensus statement from the Gates-funded Artemisinin Resistance Confirmation, Characterization and Containment (ARCIIC) project investigators meeting, 9/10 Feb. 2008, Bangkok, was recorded: (1) While ACT treatment efficacy remains high in most studies, prolonged parasite clearance times following treatment with some ACTs and artemisinin monotherapy have been observed along the Thai/Cambodian border. This clinical and parasitological observation might reflect the emergence of *Plasmodium falciparum* tolerance to artemisinins, but other factors have not been ruled out. (2) At present there is no clear evidence that bona fide artemisinin resistance has emerged and disseminated, but the evidence is worrying enough to justify intense investigation. WHO and partners are conducting collaborative public health and scientific investigations to confirm and characterize tolerance and/or resistance and measure its extent. (3) Because of the potentially catastrophic consequences of failing to contain emerging tolerance and/or resistance, it is recommended that malaria elimination efforts in the Southeast Asian region initially focus on this area
- The containment strategy plan was presented. Main strategies are: case detection and effective treatment, engagement of private health care providers, vector control, mobile and migrant populations and health systems/services strengthening. The proposed budget amounts to at least 14.7 million USD for 2008-2009.
- Alongside the containment strategy, an action plan 2008-2009 has been developed. Cambodia has 2 implementation zones: Zone 1 (4 provinces, 5 Health Operational Districts and 8 Administrative Districts) and Zone 2 (9 provinces). Each of the 2 zones has its own action plan.
- A proposed containment strategy management structure as well as ad-hoc committees have also been drafted.

MSH Rational Pharmaceutical Management (RPM) Plus Report FY 07 /Strengthening Pharmaceutical Systems (SPS)

- MSH RPM Plus has provided TA to conduct a regional course on pharmaceutical management and quantification for antimalarials workshop, Vietnam, November 2007, organized by ACTMalaria; the need to follow up with the participating 13 countries on their improvement plans was identified as well as to foster networking capacity among participating countries through the ACTMalaria network and electronic forum
- MSH-RPM Plus is providing follow-up technical assistance (TA) for the improvement plans developed during that workshop and assists in the implementation of revisions of GF procurement and supply management (PSM) plans
- Developed a monitoring and evaluation framework for the region, including the development and incorporation of pharmaceutical management indicators for malaria which also provides inputs into the selection of indicators useful for determining progress on availability of antimalarials (RDMA Performance Monitoring Plan, PMP)
- In Thailand, Currently provides TA to plan and implement activities to increase availability and distribution of antimalarials and RDTs through the Thailand MOPH and is collaborating with Thai MOPH and KIA/BAAM to finalize plans to: (1) evaluate antimalarial and RDT procurement and distribution issues at local level, (2) review changes in regulations on procurement and distribution
- In Lao PDR, did a preliminary visit to review available data on management of antimalarials and RDTs and identify priority needs in Laos, then obtained agreement with CMPE, GF Laos and WHO Laos on needs for technical assistance to address weaknesses in management of antimalarials and RDTs. Immediate steps include review of current quantification method and preparation for a rapid assessment of local level availability of ACTs and RDTs
- In Cambodia, developed matrix for pharmaceutical management strengthening and, in collaboration with partners, addresses PSM issues (URC, USP, BAAM, WHO, etc.).

URC Malaria Prevention and Control Activities Report Progress, FY 07

- URC is a partnership between University Research Co. LLC (URC) and Partners For Development (PFD) as well as RHAC, RACHA, PSI, other NGOs and is managed and implemented in full collaboration with the National Malaria Control Program Cambodia (CNM)
- As part of their contribution to the Cambodia containment effort, the recruitment of an IEC/BCC specialist was completed in April 2008 and a review of current IEC/BCC strategies are planned for May 2008, while development of drug logistic and treatment guidelines for the containment is on-going
- URC reviewed and modified drug logistic system for ACT and training of health workers by the Department of Drugs and Food and RACHA.
- URC successfully organized malaria week days in selected areas
- URC planned for training & refresher trainings for village volunteers (VMW, VHV).

United States Pharmacopeia Drug Quality and Information (USP DQI) Program Progress Report

- Continued implementation and expansion of sentinel site drug quality testing in Laos, Cambodia and Viet Nam
- Number of sentinel sites with minilabs:
 - Laos: 6 sites, but samples are from 12 provinces
 - Cambodia: 10 sites
 - Vietnam: 9 sites
 - Currently resuming in Thailand (training): 12 regional sites (Offices of Disease Prevention and Control)
- Obstacles and constraints faced include: delayed verification testing and limited action taken by medicines regulatory authorities, delay in receiving formal clearance for drug quality monitoring and sole-source procurement waiver delay preventing procurement of minilabs, etc.
- Mekong drug quality monitoring: testing results from July 2003 - Sept 2007 showed that in 5 countries 1380 samples of antimalarial medicines were tested and fake artesunate was found to be 20% in Cambodia and 29% in Lao PDR.
- As a consequence of these findings, action taken by the respective countries were as following:
 1. Seized fake/counterfeit products (Cambodia, Laos, Viet Nam)
 2. Issued regulatory warnings/notices to alarm health professionals and the public (Viet Nam, Laos, Cambodia)
 3. Raised public awareness (Cambodia, Laos)
 4. Fined and closed down outlets (Laos, Cambodia)
 5. Reported to WHO Rapid Alert System (Cambodia).
- Regional and sub-regional “impact” was seen in enhanced participation in the international and regional effort in the fight against counterfeit and substandard medicines, e.g. inter-agency collaboration (WHO, Interpol, USP DQI, KI Asia, etc.), substantially increased countries’ capacity to perform routine drug quality monitoring and Mekong countries can now independently conduct compendial testing on artesunate tablets
- USP DQI has also created, with the Pharmaceutical System Research and Intelligence Center (PSyRIC) in Thailand, an antimalarial drug quality database under the Asian Network of

Excellence in Quality Assurance of Medicines (ANEQAM) and is expanding to cover anti-TB, antiretrovirals, antibiotics, and oseltamivir.

- As part of its information dissemination (awareness-raising) activities, USP DQI: published an article in the Cambodian magazine *Health Messenger* accompanied with copies of the VCD "Dealers in Death"; helped produce local drug bulletins (Laos, Viet Nam) and co-authored in Feb '08 a peer reviewed paper in PLoSMed "A Collaborative Epidemiological Investigation into the Criminal Fake Artesunate Trade in South East Asia" under the auspices of the International Criminal Police Organization (INTERPOL) and the WHO Western Pacific Regional Office. Production of a video public service announcement about counterfeit medicines to be broadcast throughout SE Asia is currently on-going.
- A protocol is currently being tested in the field for a randomized antimalarial medicines quality survey in twelve selected Cambodian/Thai border provinces, as part of the ARCIII project.
- USP DQI has also provided pharmaceutical reference materials/standards and testing chemicals, reagents and supplies for all participating countries including recently procured minilabs for Cambodia and Thailand.

Update on *Plasmodium falciparum* resistance to antimalarials in the Mekong Region, with special reference to artemisinin-tolerant parasites

- Malaria treatment policies:
 - Viet Nam announced to stop artemisinin monotherapy
 - Myanmar did national malaria treatment guideline review in January 2008 and changed to AL (or A+M or DHA-PIP, depending on availability)
 - (- PNG changed to ACT: AL)
- Antimalarial drug efficacy monitoring:
 - 2007 results available from Cambodia: Pailin, Pursat, Battembang
 - 2008 proposals in, under review, training scheduled in China
 - Laboratory mission on molecular markers completed except China (May)
- Funding:
 - Global Fund: Cambodia, China and PNG will go for Round 8 (RCC: Solomons + Vanuatu and Cambodia submitted, Philippines approved)
 - BMGF: "ARC3" approved Nov 2007; expressed interest to exceptionally fund containment
 - USAID: FY2008 proposals submitted, containment?

WHO Mekong Malaria Programme

- Ongoing activities in increasing access to diagnosis and treatment currently include support to studies on non-malaria febrile illnesses; support to quality microscopy including management of slide bank; support to quality RDTs including validation of cooler boxes and maintenance of RDT website; country support to implement Public-Private Mix (PPM) strategy (especially in Laos); a protocol and methodology developed for a Mekong study on malaria prevention in pregnancy which is currently ongoing in Cambodia; and re-impregnation of at least 90,000 nets in containment zone 1 of the Cambodia containment plan
- Progress towards antimalarial drug resistance monitoring in sentinel sites so far has been with finalized protocols and funds available at country level for monitoring Pf / Pv resistance to antimalarials; national therapeutic efficacy study (TES) training is ongoing in China and strengthening lab capacity for molecular markers (PCR) is also ongoing. The Mekong drug resistance database will be updated with 2008 data
- A lot of effort now has to be directed towards in country lab support for antimalarial drug quality monitoring, providing technical and operational support for the monitoring in sentinel sites

- Thailand containment/elimination of artemisinin tolerant Pf parasites – strategy and action plan 2008 – 2009: target areas for containment on the Thai side are concentrated in 2 provinces – Chantaburi province (Pong Nam Ron and Soi Dao districts) and in Trat province (Bo Rai district). Strategies are based on stratification of villages with perennial malaria transmission (A1 > 6 months), seasonal transmission (A2 < 6 months) with an estimated A1/A2 population of 112,000, high malaria receptivity risk (B1) and (B2) with no risk.

Artemisinin Resistance Confirmation, Characterization & Containment (ARC3)

- Since 2003 increasing evidence of reduced efficacy of ACTs on Thai-Cambodia border. A need for further research was identified at containment of drug resistance meeting in Phnom Penh, January 2007. Subsequently a proposal was written and submitted to Bill and Melinda Gates Foundation (BMGF) in September 2007 which was accepted in November 2007 (US\$3.2million). WHO HQ is the grant recipient and lead agency
- Current partners include WHO (HQ, MMP, WPRO, SEARO), National Malaria Control Programs of Cambodia and Thailand, Mahidol Oxford Research Unit (MORU), Shoklo Malaria Research Unit (SMRU), Armed Forces Research Institute of Medical Science (AFRIMS), University of Vienna, University of Maryland, University of Southern Florida, Pasteur Institute-Cambodia, and USP
- Objectives of ARC3 focus on:

(1) Confirming clinically relevant artemisinin resistance (conducting clinical studies and pharmacokinetic-pharmacodynamic assessments of artesunate at sites where i) artemisinin resistance has been reported and ii) artemisinin efficacy is preserved, and establish a reference repository of parasite isolates from clinically validated cases of treatment failure;

(2) If clinical resistance is confirmed, ARC3 would further characterize this resistance to define resistant *in-vitro* phenotypes and genotypes for use in global surveillance. This will be done through the development of standardized validated *in-vitro* assays, conducting genomic association studies, identifying specific genes and polymorphism associated with artemisinin resistance, development of rapid molecular assays and validation in field as predictors of clinical failure

- ARC 3 would also establish prevalence of sub-standard and counterfeit medicines of particular artemisinin derivatives on Thai-Cambodia border and assist in the development of strategies to contain the spread of artemisinin resistant malaria within Southeast Asia and internationally
- More specifically, ARC3's contribution towards the containment strategy would be to have a coordinator based in Phnom Penh who would be tasked to coordinate research (within and outside of ARC3), modeling (MORU) and research into private sector (URC, PSI, USAID), support CNM and other partners in the planning and implementation of containment, in development of initial strategic framework, proposal and budget and provide technical assistance in implementation.

Thailand Containment/Elimination of Artemisinin Tolerance Strategy & Action Plan 2008/2009

Target areas for containment on the Thai side are concentrated in 2 provinces – Chantaburi province – Pong Nam Ron district (5 Tambons, 45 villages, 38,652 population) and Soi Dao districts (4 Tambons, 52 villages, 62,634 population) and in Trat province – Bo Rai district (2 Tambons, 11 villages, 10,871 population). Village stratification and strategies are based on stratification into

villages with Perennial transmission (A1), Seasonal transmission (A2) and High risk with an estimated population of 112,000.

Broad objectives:

To detect and effectively manage all falciparum and vivax malaria cases and to detect and treat gametocytes carriers in target areas through malaria clinics and malaria post (PCD) and ACD and follow up.

To prevent transmission of artemisinin tolerant /resistant parasites by mosquito control and personal protection through 100% coverage with free LLIN and promoting use of repellents among mobile populations.

To support containment of tolerant/resistant parasites through comprehensive BCC, community mobilization and advocacy and through situational surveys targeting migrants and private enterprises.

To Strengthen the data management and surveillance system in general focusing on mapping cross border (Thai- Cambodia) data

To strengthen monitoring and evaluation especially at provincial and district level

To strengthen programmatic management including health systems needed to deliver effective containment strategy by ensuring VBDC human resources are trained and skilled, adequate materials and supplies and mechanisms for continued communication between Cambodia and Thailand.

Total budget to meet these needs are estimated at USD 1,321,340.

Cambodia Containment/Elimination of Artemisinin Tolerance Strategy & Action Plan 2008/2009

- An Action Plan 2008-2009 has been developed. Strategy is based on stratification into 2 zones. ZONE 1 (starting from now) - intensive activity where there is evidence of artemisinin tolerant *Pf*. Strategy would be focused on community based interventions in the 8 Administrative Districts (ADs) within 5 Operational Districts (ODs) in 4 provinces. Targeted population in 8 ADs: 267,748. There would be facility based interventions (eg change in first-line antimalarial drug regimen) in all facilities within the 5 ODs, total population: 782,569
- ZONE 2 (starting from Jan 2009)- increased activity and surveillance in high risk areas involving 9 provinces, 22 ODs, total population 3.2 million (of which CNM currently targets for vector control interventions a population of 878,000 only within 17 ODs).

Containment of artemisinin tolerant parasites in the GMS - *Perspectives from the WHO Mekong Malaria Programme*

The challenges currently faced in the following areas were highlighted:

- Magnitude / geographical extension / mapping of the problem in the Mekong region (and outside)
- Artemisinin monotherapies in official national drug policies
- Marketed monotherapies
- Substandard and counterfeit medicines

- Mobile populations / unrecorded migrants
- Exchange of data / consolidation of quality information
- Malaria control activities in Myanmar and cross-border Myanmar-Thai and Myanmar-Chinese interventions.

RDM/A Performance Management Plan Malaria Indicators

- RDM/A tasked MEASURE with producing a Performance Management Plan (PMP) for the Infectious Disease (ID) portfolio to cover 3 programmatic areas: Malaria, TB, Other Public Health Threats (OPHT)
- Consists of Contextual Indicators (CI), Strategic Objectives (SO), Intermediate Results (IR), programming area specific Sub-IRs, and the indicators. Sub-IRs and indicators were chosen to reflect RDM/A ID priorities
- MEASURE will contact each partner to collect feedback sheet and arrange time to meet
- In addition, MEASURE jointly with other partners, especially WHO, is developing a Mekong Malaria M & E Framework with 2 goals in mind: 1) to produce harmonized, high quality, pertinent indicators that reflect regional priorities, and 2) to determine M & E TA needs in the Region
- In this regard, they plan to start to collect regional M & E documents (existing indicators , proposed M & E indicators/initiatives, routine data being collected and reported in various countries, descriptions of country programs and M & E frameworks).

4. CONCLUSIONS AND RECOMMENDATIONS

Main follow up actions for WHO (e.g. MMP) with partners:

1) Finalize next steps to revise Mekong M&E framework, jointly with MEASURE

Proposed steps:

- Organize launch meeting
- Identify partners interested in participating: MSH, Oxford-Mahidol collaboration, Malaria Consortium, MEASURE, CDC Atlanta, USAID
- Need to identify 2 national participants from each country (national program)
- Need to determine time and location for meeting (after July)
- Meeting agenda: start conversation about regional indicators and M & E strengthening, create country level working groups to help formulate and review proposed regional indicators.

2) Containment strategy:

- Containment action plans for Thailand and Cambodia need to be accelerated, aligned and moved forward
- Urgent resource mobilization, including presentation of a financial gap analysis to USAID so that USAID can mobilize additional funding from the Government.

ANNEX 1



USAID Mekong Malaria Programme Core Partners' Meeting

Organized by the WHO-Mekong Malaria Programme jointly with USAID - Regional Development Mission Asia in Bangkok

Plaza Athenee Bangkok, A Royal Meridien Hotel

Bangkok, Thailand

28-29 April 2008

MEETING AGENDA

April 28, 2008 (DAY 1)

- 08:30 Registration of participants
- 09:00 Opening remarks
- USAID
 - WHO
- 09:15 Introduction of participants
- 09:30 Nomination of chairperson and rapporteur
- 09:35 Overview of falciparum resistance to antimalarials in the Mekong region with special reference to the documentation of artemisinin tolerant parasites *Dr. Eva Maria Christophel*
- 10:30 *Coffee Break*
- 11:00 Presentations from USAID-funded partners on past 6-month achievements against FY07 planning (20 minutes presentation, 10 minutes Q&A)
- ACT Malaria
 - CDC Atlanta
 - WHO
- 12:30 *Lunch (International Buffet, Ground Floor)*
- 14:00 Presentations (continued)
- MEASURE/ Evaluation
 - MSH/SPS
 - RACHA
 - URC

- 16:00 *Coffee Break*
- 16:30 Presentations (continued)
- USP
 - Kenan Institute Asia/BAAM
- 17:30 USAID/RDMA Performance Monitoring Plan (PMP) and related indicators *Dr Ravi Goud and Dr Chansuda Wongsrichanalai*
- 18:00 Closure of day 1

April 29, 2008 (DAY 2)

- 08:30 Wrap up of day 1 *Rapporteur*
- 9:00 USAID/RDMA Performance Monitoring Plan (PMP) and related indicators *Dr Ravi Goud and Dr Chansuda Wongsrichanalai*
- Interventions to contain artemisinin tolerant parasites
- 09:40 Overview of clinical trials to confirm and characterize artemisinin drug resistance (BMGF-funded ARC-3 project) *Dr. Shunmay Yeung*
- 10:00 *Group Photo and Coffee Break*
- 10:30 Containment of artemisinin tolerant parasites in Cambodia *HE Dr Duong Socheat*
- 11:00 Containment of artemisinin tolerant parasites in Thailand *Dr. Wichai Satimai*
- 11:30 Containment of artemisinin tolerant parasites in the GMS *Dr. Charles Delacollette*
- 12:00 Potential inputs from USAID-funded partners in containment operations *Chairperson*
- 12:30 *Lunch (International Buffet, Ground Floor)*
- 14:00 Plenary wrap-up discussion
- 14:30 Next steps including FY08 perspectives *Dr. Charles Delacollette Dr. John MacArthur*
- 15:30 *Coffee Break*
- 16:00 Closure of Meeting

ANNEX 2



USAID Mekong Malaria Programme Core Partners' Meeting
28 – 29 April 2008
Plaza Athenee Bangkok, A Royal Meridien Hotel
Bangkok, Thailand

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