



Mekong Malaria Programme Core Partners Meeting

Towards the Implementation of a 5-year Strategic Plan for Malaria Control and Elimination in the Greater Mekong Subregion

Royal Orchid Sheraton Hotel & Towers
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Final Draft

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ABBREVIATIONS

ACT	Artemisinin-based Combination Therapy
ACT Malaria	Asian Collaborative Training Network for Malaria
ANEQAM	Asian Network of Excellence in Quality Assurance of Medicines
ART	Artemisinin
CAM	Cambodia
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
MMFO	Management of Malaria Field Operations
MMP	Mekong Malaria Programme
MSH	Management Sciences for Health
OD	Operational district
PMI	President's Malaria Initiative
PSI	Population Services International
RBM	Roll Back Malaria
RDT	Rapid Diagnostic Test
RPM Plus	Rational Pharmaceutical Management Plus
TA	Technical Assistance
TES	Therapeutic Efficacy Studies
THL	Thailand
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

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 build on the progress achieved to date the WHO Mekong Malaria Programme developed a Draft strategy document: *Towards the Implementation of a Strategic Plan for Malaria Control and Elimination in the Greater Mekong Subregion: 2010-2015* to guide the strategic direction of the programme for the next 5 years. The document was presented to all MMP partners at the recent bi-annual USAID core partners meeting which took place from 5-6 October 2009 in Bangkok, Thailand. During the course of the two-day meeting, partners together reviewed the document, participated in a series of discussions around specific technical areas and provided input and recommendations for finalization of the strategic framework. This feedback will be incorporated into the final strategic document which will be completed and made available to all partners and NMCPs to be endorsed at the next ACTMalaria meeting in March, 2010.

The Agenda, List of Participants and Poster narratives for this meeting are attached as Annexes 1, 2, and 3.

Executive Summary

Building on the significant progress achieved since 2000 by the diversity of Mekong Malaria Partners involved in the response to combating Malaria in the region, the MMP partners met on 5-6 October in Bangkok, Thailand. The purpose of this meeting was to review the progress made in the previous year and discuss work plans for the coming fiscal year. The Draft MMP Strategy for 2010 to 2015, the draft Mekong M&E framework, and the USAID Performance Management Plan were also discussed. NMCPs and partners worked together to provide input, identify strengths and weakness and the next steps forward for the strategy and the M&E framework.

In addition to refinement of the strategy document partners also worked together to identify core areas for strengthening programs across the region. A number of areas were recognized as requiring a greater focus of efforts and/or resources. These included: Laboratory systems strengthening; closer and more effective collaboration on cross-border initiatives; greater efforts to improve communication and information sharing across partners at country level as well as improvement of communication efforts at regional level. The documentation of best practices was also highlighted as an important area to ensure reduced duplication of efforts and better use of financial resources. It was also agreed that lessons learned from the regional responses of Africa and Latin America should be taken into account in the development of future strategies. Although the epidemiological settings differed there were still valuable lessons that could be applied.

A more integrated approach to health systems strengthening was another key area of discussion throughout the 2 days. Partners agreed that vertical programming was often a waste of resources, both financial and human. It was critical that the benefits of capacity building efforts served to improve disease response across a range of areas rather than being limited to single diseases.

Regarding financial resources, partners recognised that donors were increasingly looking for targeted programs with effective results and demonstrable deliverables. However, partners agreed that the new focus on integrated programs should not mean that programs diversify efforts too broadly. Rather, programs should focus on a small number of key interventions and ensure that these interventions are both sustainable and of high quality.

Finally, proposed changes to the format of the Mekong Malaria Partners meetings included broadening the agenda to include more technical discussions. There were no firm conclusions made on the exact format; however, it was suggested that an extra half day be added to the meetings and that the formation of technical working groups on relevant topics be considered. The next MMP partners meeting will be held in Chiang Mai, Thailand from April 27 to 28 with potential extra day on 29, 2010 to discuss technical issues like M&E and surveillance.

Day 1: Monday 5 October 2009

Overview of Day One

The first presentation by Dr. Charles Delacollette, provided partners with an overview of recommendations from previous MMP partners reports and set the context for the presentation that followed of the Draft MMP Strategy. Doctors Patrick Kachur and Jimmie Hwang from CDC provided partners with an outline of the proposed Strategic Plan for the next five years. MEASURE Evaluation representative, Dr. Ravi Goud then presented the MMP M&E Plan for Action along with RDMA's new M&E Data Reporting System. The afternoon session involved partners outlining their key FY09 activities and budgets. Throughout the course of the day there was plenty of time for discussion affording participants an excellent opportunity to work together to clarify unresolved issues and to agree on the basis for a common Mekong Malaria Framework.

Opening Remarks: John MacArthur, Infectious Diseases Team Leader USAID/RDMA

Dr. John MacArthur welcomed new partners and reminded all participants of the overarching goal of the MMP which was the Elimination of Malaria by 2020. He noted that Kenan Institute Asia would continue as key partners working on the new GMS RID project and welcomed the University of Maryland which would be working to build further understanding on molecular surveillance for drug resistance in the GMS Region. In addition University of Maryland would be providing technical assistance for laboratory systems strengthening to improve stability and capacity. Dr. MacArthur also noted the importance of continued work around Behaviour Change Communications and the key role that new partners AED would play in providing support to national malaria control programs in the GMS region. Dr. MacArthur congratulated all partners on the progress that had been achieved to date and acknowledged the mature partnership that had developed. However, he also noted that there were still a number of major challenges ahead particularly around ACT and artemisinin resistance. Dr. MacArthur was also pleased to note the increased opportunities to provide technical assistance to Myanmar in the coming fiscal year.

Presentation 1: Towards Implementation of a 5-year Mekong Malaria Strategic Plan, Dr. Charles Delacollette, Coordinator, WHO-Mekong Malaria Program

Dr. Charles Delacollette provided participants with an overview of the recommendations from previous MMP Partners reports and the key gaps and challenges that still remained. Although many issues had been addressed / resolved the following issues still needed further work:

- quality microscopy
- engaging more effectively with the Private Sector
- procurement and supply management
- Completion of Surveillance Guidelines
- Strengthening engagement of partners on Containment activities

Questions, Comments and Discussion:

Changes to the format of Core Partner meetings: Recent discussion in Washington had indicated a shift to a preference for Steering Committee's rather than Core Partners meetings and the appropriateness of this format for the GMS region warranted further discussion in the context of broader strategic planning and technical direction. Partners were encouraged to take the opportunity during the meeting to provide input on the direction of the GMS strategy, particularly in their areas of technical focus.

Regarding the issue of public/private partnerships and clinical assistance, it would be important to stay focused on the MMP main goal and ensure the effective and targeted use of resources over the next 5 years

Dr. Charles Delacollette reiterated the excellent work done by Dr. Jimmie Hwang at CDC in articulating the objectives and key strategies for the framework. He was pleased that between WHO Country staff and the Programme Managers from 3 countries in attendance that all GMS countries were represented in the meeting. He underlined the importance of getting input from Programme Managers to ensure that the technical assistance needs of all programmes were adequately met.

USAID provided clarification on the new plan and how it fit with the existing strategy documents. The dynamic nature of Malaria in the region necessitated that existing strategies and approaches be continually revised in order to ensure that they remained relevant and responsive to the changing nature of the situation in the GMS Region. Following the first meeting of core group of partners in 2006 a 5-year strategic plan had been developed which would serve as the basis for much of what would be discussed in the present meeting. The initial plan dealt with the key areas of focus on and how to get partner support. The broader strategic plan looked more at how this would be taken forward. The point was underlined that the creation of a new MMP strategy was not a duplication of USAID efforts, but an attempt to be more strategic and flexible in the GMS response.

Presentation 2: Towards the Implementation of a Strategic Plan for Malaria Control and Elimination in the Greater Mekong Subregion: 2010–2015, Dr. Jimmie Hwang and Dr. S. Patrick Kachur

The Strategic Plan was presented by Dr. Jimmie Hwang and was placed in the context of the existing SEARO, WPRO and USAID Plans. A brief description of each component of the strategy was provided. Great emphasis was placed on the importance of ensuring harmonization of M&E initiatives to reduce the burden at program implementation level; to reduce/eliminate the duplication of efforts and to better focus resource distribution. The provision of appropriate M&E technical assistance to national programs and their partners was also given priority.

As much of the information in the document had come from country work plans all participants were invited to provide feedback on the proposed strategic framework which would be revised where appropriate.

Questions and Discussion and Key Issues Identified

Access to AMFm: There was extensive discussion about access to AMFm. Some participants questioned why support was limited to Cambodia when other countries also needed assistance. It was pointed out that Cambodia was one of 11 countries initially invited to be a pilot country for this initiative. However, the AMFm initiative still had not been fully accepted by all. Concerns remained in many quarters about the potential for abuse of ACT if made available to the private sector. If access was not controlled, problems could inevitably arise without proper regimens of use and quality control. Targeted communications efforts and provision of reliable information would be critical as this was moved forward.

USAID RDM-A and AMFm: USAID would not be engaging on this issue in any significant way at the present time but would possibly be involved in an evaluation of AMFm. Funding constraints remained a barrier; however, it was also reiterated that the Mekong strategic plan did support AMFm. In addition, it was explained that AMFm was looking at high level subsidies of ACTs at a global level. There was widespread agreement of the need to reduce the price of and increase access to ACTs.

Support for AMFm: Although there were concerns around quality issues and the potential for abuse, the participant from the University of Maryland highlighted the fact that the notion of a subsidized AMFm approach came out of Institute of Medicine report. The pros and cons had been carefully weighed and the consensus in the Malaria community was that AMFm was very positive and that people should have access to high quality drugs with the correct regimen.

Program verticality and the need for a more integrated approach: giving higher priority to public / private sector collaboration ensuring effective engagement of civil society was highlighted as a key issue. In strategic planning it was also important to plan for the “unthinkable” (such as program collapse as had occurred in Zimbabwe, or closure of programmes by Health ministries in Nepal and Zanzibar once prevalence was reduced to very low levels). Such occurrences underlined the need for greater emphasis on engagement with civil society and building adaptive capacity so there would be other sources of ITNs, support other than the GF.

Community level capacity building: it would be important to focus on how to strengthen existing community structures such as community-based agents already providing support for malaria. They play an important role in surveillance and could also be trained to work on other integrated disease-control initiatives at community levels. A related issue was the importance of conducting more situational analyses of existing programmes to look at building on current strengths so that capacity building efforts were not continually starting over.

Ethnic minority populations in isolated areas: the current focus on highly mobile populations had sometimes resulted in the neglect of isolated ethnic minority populations and addressing this gap/oversight should be given high priority as a key point of the new GMS strategy.

Regional QA/QC and Lab capacity: All planning for malaria strategies should factor in quality control issues and the related problems that may arise in different country

contexts. USP indicated that they had a lab in the region with capacity to analyze the quality of ACTs. In addition the national Institute for drug quality control in VN met the WHO criteria to analyze all the products that come from GF. Chulalongkorn University was also a centre of excellence in QA/QC of anti-malarial drugs including ACTs. USP provided TA to this centre and had already trained national labs staff of Laos, Thailand, Cambodia and Vietnam. But other quality issues remained. For example, not all ACTs had compendium method for testing monographs. USP could assist with developing the monographs but required a year's lead time in advance of the product coming to the country.

Implementation and coordination of the Strategic Framework: A number of questions were raised about the implementation of programmes at country and regional level and what synergies were occurring. CDC confirmed that at the regional level, there was agreement in principle on division of tasks, however, at the country level there was still insufficient interaction between the country programme managers and other partners.

Political Advocacy: Different countries faced different challenges in implementing their activities. However, where there was a changing focus from malaria control to elimination there would likely be a need for political advocacy either for sufficient TA or adequate financial support (as is the case in Thailand).

Need for a Mekong approach and strategy: WHO reiterated that the Mekong Strategic Framework should not be seen as a contradictory effort to National Plans but rather as a support to such plans. Much of what was in the draft was based on what had been extracted from existing country program frameworks. It was understood that different countries had different priorities for implementation, particularly as some countries were focusing efforts on elimination and others on control. However, the need for one overall subregional plan remained critical for an effective and targeted response with a minimum set of deliverable products. In addition, the harmonization of the related M&E approach was intended to serve the programmes, not to direct them, and programmes and partners were encouraged to provide feedback to help with this. WHO could play an instrumental role in connecting the national plans with the MMP/ regional control programmes. It will remain important to focus on a few key targets and products to really achieve results.

Presentation 3: Mekong Malaria program Measure Evaluation Report FY 09, Dr Ravi Goud, MEASURE Evaluation

Dr. Ravi Goud presented an overview of the work leading to the harmonization of the Mekong and WPRO Malaria M&E indicators. Indicators had been harmonized at the July meeting in Manila attend by WPRO countries although the global indicators on elimination were still being developed. The Manila meeting had involved collaboration and key input from NMCPs to ensure that the framework was relevant, useful and able to be implemented. An Indicator Guide would be developed at a later stage and training rolled out at national level. Many countries did not have National Malaria M&E plans so this had become a priority. In addition, countries also needed adequate IT systems to collect and analyze the data so will need to work with countries to assess their IT needs and develop this.

Presentation 4: RDM-A ID PMP and Mekong Malaria M&E Framework, Dr. Ravi Goud, Measure Evaluation

The presentation provided partners with explanation and clarification of changes on the datasheets that all partners were required to complete for RDM-A. It was reiterated that data needed to be reported against the correct indicator and that if partners were not reporting against an indicator for a particular reason, an explanation of this should be provided in the Comments section on the data sheet. With regard to reporting requirements, if necessary, partners could have further discussion with Dr. Chansuda at RDM-A to ensure that the indicators reported against reflected the appropriate scope of work for their program. Deadline for reporting Monday 19 October to RDMA so they can incorporate all data for activities 1 October 2008 – 30 September 2009 for Fiscal Year 2009 Activities and Budget

Questions and Discussion

Diagnostics and treatment indicators: there was extensive discussion on the relationship between RDTs and prescribing practices. The need to develop an indicator that could measure the number of cases with negative RDT results that were still treated would be useful – particularly in order to provide rational treatment. This was a long-standing problem in many African countries where very often a negative result did not change treatment. It was important to address this issue in order to ensure a reduction in the number of clinicians treating patients regardless of negative RDT results. This was important from both a medical ethics perspective and also to ensure a more efficient use of resources. Currently, millions of dollars were being spent on treating suspected cases. However, it would be equally important to ensure that physicians at local health facilities also had options for identifying alternative diagnoses. Improving diagnostic decisions at local level would require more work to systematically identify other prevalent conditions in different geographical areas that might be mistaken for malaria.

The situation varied both across and within countries. For example, in Cambodia there was knowledge of the number of cases confirmed by microscopy and by RDT. But if cases were suspected, they were usually still treated. Treatment practices also varied between provinces. However, in general, the trend in Cambodia was improving in terms of linking correct diagnosis and treatment.

In Vietnam in 2008, for example, of a total of 60,000 cases only 11,500 of treated cases were confirmed by microscopy.

From a donor's perspective, a key issue is harmonization of the indicators. At the Mekong level, if national programmes wanted to add subregional indicators in addition to the Global Malaria Programme indicators, they could have that added. The issue of how many Indicators should be included was an on-going debate but the key focus should be on ensuring that the *right things were being measured* rather than the absolute numbers of indicators.

This issue further emphasized the *importance of non-vertical programming* to ensure that training provided to village volunteers, for example, would enable them to work not just as malaria volunteers but as general health volunteers.

Clarification of definitions: clarification was sought on the following Indicators:

- IR4: “Admitted cases” versus “severe cases”. “Severe” was viewed by participants at the Manila conference as too complex and open to interpretation whereas any “admitted case” was clearer. However, as not all agreed there would be follow-up on this.
- IR 1: Vulnerable Groups: Clarification was sought on how “vulnerable populations at high risk” were determined. The response was that there were standard definitions the GMP endorsed and used although it was recognized that this wasn’t necessarily what programmes were using or reporting on. Therefore, MEASURE had asked programmes to develop a stratification list to determine the key populations at risk for their programmes in order to ensure most effective distribution of resources.
- As a follow on, “populations at risk” was also queried. Did it refer to population living in malaria transmission area or does it include mobile populations? The response was that the current M&E System could not capture all the information about migratory populations moving in and out of zones or individuals moving in and out due to seasonal work etc (e.g. rubber plant workers).
- IRs 2 & 4: Case Management: clarification was sought on what determined *“functional”* in regards to quality assurance systems for microscopy, RDTs and antimalarial medicines. The response was that following in-depth discussions certain criteria had been determined. e.g. for quality management systems 4 criteria were identified that drugs were procured from quality manufacturers and that they were routinely tested at storage areas.

Afternoon Session

Presentation 5: ACTMalaria Work plan Fiscal Year 2009 Cecilia Hugo, Executive Coordinator

The presentation gave an overview of ACT Malaria’s work plan for the 2009 fiscal year. International trainings would include a Broadening Involvement Team Training workshop in Indonesia and an Integrated Vector Management training in Malaysia as well as Management of Malaria Field Operations in Thailand. Work towards strengthening the Enabling Environment would include strengthening inter-country networks and continuing work on the ACTMalaria website as well as coordination of TA for trainings and Workshops In addition a Best Practice workshop would be conducted with USAID support in Cambodia.

Questions and Discussion

Partners were encouraged by USAID RDM-A to give thought to how they could enhance the partnership with ACTMalaria in a more integrated manner. ACTMalaria was very successful in achieving great results with minimal financial resources and in-kind support.

The ACTMalaria website was viewed by partners as very successful, although ACTMalaria reported a decline in the number of resource contributions. This was most likely because most of the English articles had already been posted and translation of

non-English publications to English remained a key barrier to many countries sending contributions. ACTMalaria did not have sufficient financial resources for translation. Various options for reducing the cost/burden of translation were discussed. ACT Malaria provided links to other USAID partner websites/resources and continued to monitor the origin of requests for particular publications.

External assessment on microscopy: in response to a question on plans for an external assessment, ACT Malaria indicated that this was planned and regarded as important; however, the logistics of organizing this across a range of countries was complex and costly. It was believed that most countries were inclined to go for an assessment as recommended.

Presentation 6: CDC/ Malaria Consortium Dr. David M. Sintasath, Malaria Consortium/ CDC FY 09 Work plan

The presentation provided participants with an overview of CDC's support to Thailand and the region with a particular focus on the TA provided to countries for disease surveillance. The TA provided to Thailand on data management was presented as a potentially useful model for other countries in the region as it was successful in helping Thailand to streamline information and support systems. Future plans included contributing to the development of a comprehensive updated base of evidence on malaria burden (epidemiological, economic and social) and drug use to improve access and rational use; the development of efficient systems for ongoing information management and the development of regional capacity for long-term evidence collection and use for policy development and programme implementation.

Questions and Discussion

General Comments, RDM-A: RDM-A regarded the programme as very challenging and reminded all partners of the need to give high priority to approaching M&E in a very harmonized way, particularly when going into new countries. In addition he stressed the need for improved coordination and integration of activities to avoid duplication of efforts. He further stressed the importance of strategic programming with a focus on fewer quality interventions rather than diversifying activities too much and jeopardizing quality. The ability to be able to demonstrate quality results/products should be a key guiding factor.

Other Issues Raised

Mass screening and Treatment (MSAT): regarding a question on the direction of MSAT, MC's response indicated that the original conception of the plan was still being refined, but the idea of having a *Focused Screening and Treatment (FSAT)* was still an option.

Entomology: the focus of this initiative was to ensure that data collected – whether it be epidemiological, entomological or clinical – was effectively used to inform and guide decision making. Emphasis was on entomology because there was still a lot of important information to come out from GMS countries and several countries had indicated they needed more entomological information.

USAID RDM-A RESONSE: Improved entomologic surveillance wasn't a part of USAID's strategic plan. Further discussion was needed to determine if there would be a role for USAID in this area. A lot of work had already been done in disease-mapping but further discussion was needed.

Burden of Data Collection: The MEASURE representative sought clarification on whether CDC was using existing databases and IT systems because there was a need to ensure collaboration and reduce the burden for implementing partners of data collection. A needs assessment on countries IT capabilities was proposed. *Activity 3.6: Country Consultations:* CDC confirmed that there was good communication and collaboration with MEASURE on the country consultations. CDC reiterated that activities were not being conducted in isolation but rather in an integrated manner. They also confirmed that a draft framework of the Questionnaires for Country Consultations was drafted by MEASURE and shared with relevant partners.

Ethical issues around the Provision of TA to countries for translation of Publications: there was concern that providing TA in the present format could elicit criticism particularly regarding who would maintain ownership of the publication etc. This point was acknowledged by MC. The main goal was to assist countries to express their research in a way that they could get it published and not co-authorship. A suggestion was made to link in with India since they had a huge capacity building component on this and also link in closely with Thailand.

Presentation 7: MEASURE in The Region, Dr. Ravi Goud

Country level indicators and regional indicators: where was the fit?: The regional M&E Indicators were important because many of the national M&E indicators being used at country level were based on global indicators and were more appropriate for Africa than the GMS context. The focus had been on reporting to satisfy GF requirements only rather than expanding this to look at indicators more relevant to this region.

Global Fund buy-in: It was reported that initial conversations with GF had been very positive and that GF was receptive to countries even adopting the Mekong malaria indicators. USAID RDM-A agreed that the GF appeared to be supportive and that the 3D Fund in Myanmar was also very supportive. To this end it was important to ensure that the appropriate people were included in all the meetings.

Presentation 8: MSH/SPS WORK PLAN FY 2009, Melissa Thumm, Senior Program Associate

The presentation outlined MSH/SPS activities that supported both Laos and Thailand in the implementation of their Global Fund objectives and goals. In addition money had been earmarked by SPS to provide assistance to Myanmar if the need materialized. SPS would conduct a review of current technical assistance needs and develop an action plan with partners in CMPE and GF PR Office. They would continue to provide technical leadership in pharmaceutical management for Malaria to key USG partners and regional organizations and to prioritize improvement of Pharmacovigilance systems to ensure medicine safety.

Questions and Discussion

Pharmacovigilance: USAID RDM-A raised the issue of the rational use of medicines and the need to improve health facility surveys and supply chain management. As both URC and SPS were engaging on these issues, they were encouraged to ensure that there was coordination occurring to avoid duplication of efforts.

Drug quality and Pharmacovigilance: there was some discussion around the inclusion of DQ under Pharmacovigilance because DQ went beyond trying to describe an adverse reaction to a drug. SPS acknowledged the point and explained that the focus was more on setting up a system to recognize the role that DQ played regarding safety issues with patients.

Provision of TA on containment: Regarding the question of providing additional TA to partners, SPS explained that the budget had not yet been defined and further discussion and prioritization would take place in Laos. The discussions were on-going regarding prioritization and limited funds required that SPS be very strategic in meeting the TA needs in the region particularly given the different considerations regarding low versus high transmission and containment versus elimination.

Presentation 9: Beyond monitoring drug resistance in Cambodia: An innovative strategy to actively control the spread of existing drug resistant/tolerant strains, URC/PFD, CNM/PMU, Pasteur/WHO

The presentation outlined the aims and preliminary results of the research carried out to better define the geographical distribution of potential drug resistant/tolerant carriers. The research was undertaken in order to better target the containment interventions regarding the spread of MDR parasites. The presentation also outlined the key questions that had emerged from the research and looked at next steps identified such as the need for expansion to other areas, including outside containment zones.

Questions and Discussion

Accounting for High-levels of stock-outs: there were a number of questions related to the 75% stock outs reported from Cambodia over the past 3 months. URC reported that in some cases there was insufficient supply of Chloroquine, but there was also a problem with distribution. The Cambodian government had also faced problems at the public health facilities and the national program had requested emergency support which had arrived and a distribution plan was being developed.

Data Quality Control Guidelines: there was discussion around data quality and the merits of different approaches and methodologies being used for data collection and analysis. There was a need for a more standardized approach by all partners and a recognition that DQI Guidelines needed to be developed. However, there was a lack of funds available to support this activity. In the interim an updated form would be distributed to assist with control of data quality collection.

PFD data from Battambang: presentation of data from 35 patients admitted to the intensive care unit from May to September, 2009 in Battambang province, Cambodia. 11/20 patients treated with IM artemether were positive on day 3. IC50 was documented very high in the patient who died.

***Presentation 10: WHO-MMP, Dr. Charles Delacollette, Work plan
FY 09***

Dr Delacollette summarized planned products, deliverables and activities to be achieved at subregional and Mekong country level during FY09. WHO-MMP will continue to play a facilitating role in strategic partnership coordination and provision of TA related to 6 domains: (1) monitoring drug efficacy in the GMS, geomagnitude of artemisinin resistance, update of national drug policies and production of quality results / reports, (2) monitoring drug quality and facilitating country and regional responses to counterfeits and substandard drugs, (3) QC/QA procedures and systems to improve malaria diagnosis and treatment, (4) Technical collaboration with Member States to develop, implement and monitor GF proposals, (5) M&E and surveillance framework in articulation with partners on global and regional M&E and surveillance indicators with increasing emphasis on malaria elimination goals, (6) supporting and monitoring with partners the 2-year project to contain artemisinin resistant strains on the Cambodia-Thailand border and beyond. Substantial effort has been made with WP and interested partners to agree on a set of WP indicators to be used in WP and Mekong countries yet to be piloted, fine tuned and routinely used. WHO-MMP will continue to organize 2 partners' meetings per year and work with ACTMal on training courses and curriculum to be produced or revised. Important task is also to finalize with CDC and partners (actually #9) the draft 2010-2014 Mekong Malaria Programme framework released during this MMP partners' meeting.

Questions and Comments

Documentation of key actions: this was raised as an important activity that all partners should be doing. Documenting lessons learned and identifying gaps was a significant part of programme development and improvement. The documentation of success stories/best practices was also an important tool for mobilizing additional resources for programmes.

***Presentation 11: USP DQI/PQM Work Plan, USP DQI/PQM Work plan
FY 09 –Funding, October 1, 2009 – September 30, 2010***

Intensification and expansion of medicine quality monitoring: USP PQM will continue efforts to increase medicine quality monitoring (MQM) throughout RDM-A supported sites in the GMS. MQM data will be collated into a global database which is currently under development at USP PQM headquarters in Rockville, MD. Expansion of MQM to Burma will include engaging and training staff from the FDA lab, the NMCP and township health officials. Initial data generated will be made available to partners, and Burma will be integrated into GMS activities. In addition, partners were reminded that all activities in Burma need to be coordinated through the WHO Country office. A pilot study similar to the Thai-Cambodia border antimalarial medicine quality study will be launched on the Thai-Burma border for initial assessment and recommendations for next steps.

Building capacity at national laboratories: PQM will assist the national drug quality control labs in Burma and Lao PDR towards compliance with relevant standards relative to their current capacity. Capacity building exercises will include procurement of equipment, reagents, and training for the central and peripheral labs related to MQM activities.

ANEQAM regional training exercises: PQM will re-engage ANEQAM partner UST CeDRES to carry out a BA/BE training with Vietnam and one other country, to be determined. In addition, Mahidol University Faculty of Pharmacy staff will visit Lao PDR and Cambodia to perform on-site TA of selected pharmaceutical manufacturers. Chulalongkorn University staff will visit Lao PDR, Cambodia and Vietnam national QC labs to follow up countries' application of skills and knowledge on TB and AMLs analyses from last trainings and provide technical guidance as needed. Finally, Chulalongkorn University will conduct a training on compendial analysis on a particular high priority medicines that GMS countries are having difficulties in testing, such as oseltamivir phosphate.

Day Two: Tuesday 6 October 2009

Presentation 12: Greater Mekong Subregion Responses to Infectious Diseases Project (GMS-RID), Jim Hopkins, Kenan Institute Asia

Drug resistance and drug quality: Since some countries in the region were moving towards elimination, containment is a major focus and consequently drug resistance and drug quality remained key issues.

Integrated approach: the program was praised for its integrated approach which was in line with USAID RDM-A's increased focus on the integration of activities in the broader context of ID. Participants were reminded that, although discussion with the Government of Myanmar on cross border work were positive the Government was still more comfortable with WHO taking the lead on all cross-border initiatives.

Health systems strengthening: MEASURE Evaluation indicated that the GF would begin looking into community systems strengthening and M&E Systems and would be consolidating data from different countries. Work was planned in the Philippines and Thailand and relevant input was welcomed from participants. RDM-A confirmed that the new US Administration was increasingly focused on integration and HSS.

Strengthening work with provincial authorities: Kenan indicated that funding for cross-border activities would continue to be provided. Funding was currently provided to the MOH and distributed to the provinces. Surveillance exercises with provincial governments had been carried out and demonstrated a very positive example of cross border rapid response. In addition SOPs would be developed on quarantine strategies.

Integration: A good example of the integrated nature of the program was the work in Southern Thailand around Vector Borne diseases. Kenan had discovered that the same populations were at risk of all the IDs so the malaria elimination activities would have

impact on other diseases beyond malaria. It was hoped that this would be a factor in successfully leveraging more funds. For example, dengue and chikungunya were included in the response. In 2008, Kenan conducted 7 cross-border dengue rapid response activities on the Thailand/Cambodia border.

RDMA reminded partners that funding partners were legally obliged to spend money allocated for specific diseases on the particular disease. While it was possible that there may be increases in the public health threat fund this was not guaranteed.

Presentation 13: Making the Magic, Robert Kelley, AED

The presentation was received very well by all participants. RDMA suggested 2 potential areas for follow-up: 1) working with URC in Cambodia and 2) pursuing connections in Thailand. There is a need for strong advocacy documents for containment projects and AED is in a good position to provide direction in this area. The IEC/BCC and innovative responses seen in both Thailand and Cambodia needed to be built upon and AED was encouraged to work more closely with partners on this project. In addition to valuing the integrated approach AED was adopting, the fact that the BCC messages and communications techniques were data driven was also applauded.

Data use and sharing of information: All partners needed to work closely together to coordinate research activities/surveys to ensure that populations were not overloaded with research questions and requests. Further to this Dr. Wichai underlined the importance of building on existing efforts of government and others partners. Sustainability of interventions relied very much on collaborating with government partners, their plans and protocols. In addition Dr. Wichai was pleased to note that AED would be working with Mahidol University who had also been asked to develop relevant materials and this would reduce duplication of efforts.

Measuring success of BCC interventions: A question was raised regarding the development of guidelines for effective BCC interventions. MEASURE reported that when they measured some BCC activities they were not effective. The response by AED was that it was important not to silo BCC/IEC because behaviour change occurs over time. There may be a need to re-conceptualize the indicators being used to ensure they are measuring the right things.

As partners moved towards piloting elimination it would be important to ensure that a different set of relevant messages were developed to reflect the shift in focus.

Presentation 14: WWARN (Worldwide Anti-Resistance Network) Molecular Module, University of Maryland, Dr. Christopher V. Plowe

Increasing capacity of in-country laboratory staff: there was widespread support for the initiative to increase the capacity of laboratory staff in the GMS region, particularly in countries with regulations around Material Transfer (as in Thailand with the new Material Transfer Agreement) which made it more difficult to send blood serum outside the country. Therefore, the more that laboratory staff could do in-country the better, even if some processes still had to be completed outside the country. Dr. Plowe reiterated that capacity development was very achievable and gave the example of Mali, which is one of the poorest countries in the world yet capable of very sophisticated genotyping. For

the GMS region, needs assessments will be carried out in each country to gauge what is needed and what was feasible within each context, and technical support will be provided to laboratories through a new project supported by USAID.

Containment. Emerging evidence indicated that artemisinin resistance may not be restricted to the Thai/Cambodia border but may also present on the Thai/Myanmar border and elsewhere in the region. These preliminary indications of possible spreading resistance are based on therapeutic efficacy studies of first line ACTs and therefore will need to be confirmed with curative artesunate studies to rule out partner drug resistance as the cause of prolonged parasite clearance times to ACTs. Despite prolonged parasite clearance times at some GMS monitoring sites, ACT cure rates generally remain high. There was some discussion on proposed containment strategies. Dr. Plowe indicated that current protocols following treatment failure involved screening other community members in an effort to contain the transmission. Blood samples had to be collected and sent to labs to see where/if parasites could have already been passed. This was not yet able to be done in Cambodia and would require enhanced local capacity for rapid diagnosis and treatment.

Tolerance to resistance? There was discussion around the shift from tolerance to resistance and it was clear that the ARC3 data had informed a shift in that direction in western Cambodia. There was also discussion around whether the cases of prolonged parasite clearance time on the Thai-Myanmar border were an indication of the resistance spreading or whether it should be treated as a *de-novo* event. The issue should be raised (by USG) with the GF Board to advocate for increased funding for Thailand, Cambodia and Myanmar. Some sites in Vietnam and China also had worryingly prolonged parasite clearance times, supporting the need for a comprehensive regional approach to control and containment.

Identification of molecular markers. Preliminary data suggest that the prolonged parasite clearance phenomenon seen in western Cambodia and characterized as artemisinin resistance is caused by genetic changes in the malaria parasites. This means that it should be possible to develop and use rapid molecular tests to track the extent of spread of resistance and guide control, containment and elimination efforts. Such rapid tests have been available for chloroquine and sulfadoxine-pyrimethamine for many years and have been used to guide treatment and control policies in Africa, demonstrating the utility of this approach. ARC3 and WWARN and others in the region are working actively to identify artemisinin resistance markers and develop robust surveillance tools.

Identification of molecular markers on mosquitoes: In response to a question, it was possible to detect malaria parasite DNA within mosquitoes but studies showed that frequency varied and if mosquito infection rates were very low it might be an inefficient way versus screening patients but may have potential as a research topic. The proposed TA for molecular identification was seen as important because using the molecular techniques for diagnosis could help with information gaps. For example asymptomatic low levels that were not picked up with RDTs. There was a real need for this type of TA in the region as well as lab strengthening. The TA could be especially useful for cross-laboratory Quality Control.

Quality of ACTs: USP shared data that 12.3% of antimalarials samples from Cambodia failed the dissolution assay. This can result in suboptimal dosing in the patient and treatment failures.

Understanding migration patterns within the region: This issue was identified by some participants as requiring more attention in the GMS region. It was recognised that migration patterns did not necessarily transfer across regions. For example, in Malawi, approximately 12 years after chloroquine was withdrawn chloroquine resistance has been reversed. However, it could not be assumed that this would carry over to other epidemiological settings and the fitness cost of artemisinin resistance is unknown.

Presentation 15: Global Malaria Strategy 2010-2015, Dr. Michael Bracken MacDonald, USAID Washington

An overview of PMI and its successes was presented. It was noted that PMI had generally been regarded by observers as a very successful program particularly in regard to the dramatic reductions in malaria prevalence and under 5 deaths. PMI would conclude in 2010 however a 5-year reauthorization totalling 5 billion for next 5 yrs had been approved by Congress. The Global Health Initiative will place greater emphasis on integration (e.g. PEPFAR, MCH, NTD), women-centered approaches, health systems strengthening, and encouraging country ownership. Africa remained the central focus of funding with continued support for the original 15 countries. *Lessons Learned:* The GMS countries could benefit from a number of lessons learned from programs in Africa. For example, regarding *Diagnostics and Treatment* – there were important lessons to be learned from Africa particularly regarding RDTs and CHWs. For example, in Zambia even with a negative RDT result, 27% of patients were given drugs regardless. This underlined the importance of assessing the links between RDT and prescribing practices.

It was acknowledged that greater collaboration between the Mekong region and other global bodies was occurring. In Washington, greater emphasis was being given to looking at problems common to both the Amazon and Mekong regions e.g. rubber tappers, forest products extractors, military. The “*Where there is no house*” initiative for non-immune transient workers was a good example of this.

Corporate Partnerships: a lot of good examples from Africa could be used to engage the corporate sector in the GMS region to demonstrate that malaria control made good business sense.

Questions and Discussion

Planning for the unthinkable: Political and economic stability were identified as key factors that had contributed to the success of PMI and particularly the decline in under-5 mortality. This underlined the importance of “planning for the unthinkable”. For example, the positive results could easily be undone when political instability/civil strife occurred or

unexpected natural disasters. It was critical then to ensure that community structures were supported so that if countries faced collapse these structures could still continue.

Issue of IRS and drug resistance: There was some discussion around the appropriateness of using IRS in Asia. Although it had been a highly successful approach in Africa the context in Southeast Asia was quite different with the challenge of highly mobile populations. There was agreement that it could still play an important role in Southeast Asia but that it would have limited efficacy in certain environments.

Confirmation of diagnosis: there was considerable discussion around the importance of better understanding diagnosis and treatment behaviours. Diagnosis and treatment practices have been accumulated over years of experiences. Treating without a diagnosis is the long term consequences of medical malpractice and work towards building capacity of health workers in diagnosis is urgently needed.

Regional approach: lessons could be learned from other regional contexts/success stories of cross border initiatives. For example success stories from both the Amazon and Africa underlined the importance of regional linkages. This discussion also underlined the need to document results of what was achieved in the region as this would clearly help to leverage more funding.

Funding for the Mekong Region: It was possible that there would be an increase in the 2010 budget. A key factor in determining the choice of partners was strategic relationships and partners were encouraged to keep this in mind. RDM-A would continue to lobby USG in Washington because although the GMS numbers were lower the expanding problem of artemisinin resistance made it the most dangerous region in the world.

Presentation 16: SUMMARY RESULTS OF THE THERAPEUTIC EFFICACY STUDIES (TES) PERFORMED IN THE GREATER MEKONG SUBREGION IN 2008-2009.

Dr. Charles Delacollette briefly highlighted preliminary results yet to be confirmed from TES in the GMS presented last week in Mandalay, Myanmar. Worrying results are noted in several locations especially on the Thai-Myanmar, Chinese-Myanmar and Viet Nam – Cambodia border. Such results have still to be confirmed e.g. cross checking microscopic results on day3 and day of failure. Those results might indicate the further extension of Pf resistance to artemisinins / current ACTs beyond the Cambodia-Thailand border.

Questions and Discussion

RDM-A believed the next International Taskforce meeting would be very interesting with new data coming out. But the data from hotspots remained a key concern.

Need for Improved country-level and regional communication and coordination: the point was made by Dr. Philippe Guyant that during the last 2 years there had been a lot of workshops on containment as well as increases in funding. However, communication had actually deteriorated and there was a need for more meetings focused on coordination around containment and outlining what each organization was doing. Alternatively this information could be updated on websites. There appeared to be better coordination and information sharing occurring at the international level than at the country level. The point was agreed with by a number of partners.

Malarone: As there was no public monograph on either Malarone or DHA-piperaquine available and many countries were trying to work out the mechanism that they should use WHO was encouraged to reach out to Pascal Ringwald and ask him to see if he can help facilitate a public release of that monograph.

Counterfeit drugs and product security: Although counterfeit drugs were a serious problem in Cambodia this was also a problem for the entire Subregion. As a transnational crime it required a regional approach to combat and USAID was partnering with Interpol (as well as WHO and USP) to drive the response. Existing data was being mapped out and national police forces were being also engaged in the response. The onus was very much on national governments to protect their populations but the level of commitment varied significantly across countries. Governments needed to make use of this data and use it to effect appropriate policy change.

Another critical factor in combating counterfeit drugs was ensuring product security and reliability and getting buy-in from drug companies on this issue. It was often difficult to locate the origin of drugs and this required cooperation from both governments and private sector companies. Regarding specific cases, it was appropriate to approach the regulatory authority within the country where the company was registered. An example was given from Cambodia where 79% of quinine drugs from a manufacturer were found to have no active ingredient and the regulatory authorities were notified for action. Partners were also encouraged to liaise with the intellectual property rights designate within the embassies who worked with companies on these issues. It was a very difficult issue to tackle as even with additional sentinel sites there was not always improvement since the drug counterfeiters are highly mobile.

Afternoon Session Day Two

Feedback from Partners on Strategic Framework

The afternoon session provided partners with an opportunity to give detailed feedback on the strategic plan. The key comments are reflected below:

- **Greater emphasis on the importance of driving country ownership of key issues such as capacity building.** Although this emphasis was implicit in the framework it was suggested that that this be articulated more clearly. For example, for countries to “take over or institutionalize these practices/lessons learned as a result of the funding provided by donors in the region for the GMS”.
- **Delineate more clearly the specific areas of focus for capacity building efforts.** While capacity building and capacity strengthening had been highlighted by all partners as areas of focus, a clearer breakdown of the specific types of capacity building required for the different programs should be included within the strategy document. For example, increased capacity development is required to help countries decentralize national programs and still be able to provide an effective and targeted response if a small number of cases were to appear.
- **Include a list of Expected Results in addition to Planned Activities**
- **Early diagnosis on treatment of cases.** Include more activities to address strengthening the rational use of first line drugs. Pharmacovigilance could be incorporated here because a lot of work was already being carried out in this area (USP at sentinel sites how patients are responding to treatment etc) and could be drawn together. Vivax is an important issue and should be addressed.
- **Greater emphasis on coordination as an activity** For example, consider holding an annual Mekong conference as well as semi-annual meetings at country level to increase awareness and knowledge of amongst all Implementing partners about all the USAID-funded activities. This would improve coordination and reduce duplication of efforts and resources. This would improve coordination between GF partners, USAID-funded partners, and others who were not always aware of what each other were doing at country level. Dr. Delacollette had also suggested holding a forum where USAID partners could actually present data and could benefit from other donor-funded programs and vice versa. Dr. Delacollette was in a good position to take this forward.
- **More research on preventive measures including appropriate vector control methods for the region.** This was seen as an important issue for the future because of the evidence of drug and treatment failures. More research was needed on vectors especially in western Cambodia. With the rapid change in ecological settings it could be that new species had emerged/changed and that these were still being treated in the same manner. GF were also heavily engaged on this issue and it would be important to ensure better coordination and information sharing around this issue. In addition, regarding the diagnosis of malaria, there was no mention of PCR and this was becoming more of an important tool and should be included.

- **Clearer articulation of vision and goal:** More emphasis could be placed on the importance of addressing drug resistance in the Mekong region. Accessing resources was a continual challenge and the Mekong program needs to state more clearly why it should continue to attract GF, for example, when there's not much malaria. It would be important to highlight the broader public health good of containment.
- **Identification of Milestones** Refine the timeline and how we can achieve these objectives. Proposed target of closing out malaria control by 2013 and move towards elimination. Other examples of specific milestones were provided. e.g. USP by 2014 all national quality control in the region for all countries to be able to do all the testing etc.
- **More emphasis on strategies for maintaining capacity for surveillance and community case management** –consider including more about sero-epidemiology (and building capacity in these areas in broader systems). In addition entomological issues should be looked at in relation to the migrant workers and shifting dynamics...changing ecology of vectors and people – it would be important to study both vectors and people simultaneously.
- **Health Systems Strengthening:** need to include more on HSS. Emphasize the importance of addressing broader issues in order to manage cases well. May need to look more strategically at this issue –and with a greater regional focus. There was a need to be more visionary when looking at future directions and to factor in changes in the vector, the dynamic private sector, changes in levels of donor support: is it being obligated strategically?
- **Consider a SWOT analysis:** it will be important to look at the diversity of factors that may impact upon the direction of and resources for the response. For example vector control; communications; progression from low – middle income; threats – civil strife, other diseases that may divert funding (H1N1 for example) and so on. It will also be important to consider the “threat of success” and the effect that reduced levels will have on political will for the continuation of the programs.
- **Include strengths as well as weaknesses** as a strategic document it should also cover strengths as well as weaknesses and identify gaps and how they should be addressed. This would help to narrow down the framework to address the key gaps.
- **Need for an Integrated Disease Surveillance System:** It was important to be strategic in the way success was handled. For example, when countries move to elimination it was often difficult to maintain the interests of Health Ministries in still seeing malaria as an important issue (e.g. China and Vietnam). Developing integrated disease surveillance systems would also ensure that malaria stayed in the map. An additional challenge was ensuring adequate technical support/staff and there were still big challenges regionally on the technical aspects. If the move to elimination was too rapid countries could be left with inadequate technical support e.g. microscopists.

Next Steps

- WHO would continue to take the lead on finalising the Implementation of a strategic plan for Malaria Control and Elimination in the Mekong Subregion
- A number of working groups would ideally be established where partners would provide specific input on identifying milestones and deliverables for their particular area of focus. This input could then be integrated into the strategic framework. Partners were encouraged to volunteer to take on selected sections and complete this before the next ACTMalaria Executive Board Meeting in March 2010. The GMS Program Managers comments should also be included
- National programmes should also see the document and be encouraged to give feedback (during the next ACTMal board meeting?)
- *Formation of Technical Working Groups:* it was suggested that partners move beyond the administrative aspects and develop specific TWGs within this group that would integrate some of the more technical aspects of response. It was suggested that for future meetings the schedule could include time for more technical input.
- *Cross-border programs* remained very important particularly if the aim was to move towards elimination in the GMS Region. Collaboration with Myanmar was highlighted as a key component
- *Changes to the format of the Core Partners Meetings:* Consideration would be given to holding a multi-donor forum in addition to the general core partners meeting and to including another day/half day for more technical level discussions. This would include a focus on the integration of malaria response into routine disease surveillance.
- *Finalization of work plans:* incorporating input from the meeting. RDMA would review these and give the go-ahead to move forward.
- *Success stories:* Partners were encouraged to develop half-page success stories

Closing Comments

Dr. Charles Delacollette:

- Additional money was positive for malaria programmes but also brought additional challenges;
- Coordination of partners remained an issue. More effective information-sharing needed to occur between partners. This needed to go beyond just the exchange of key documents.
- There was a need for more country ownership and linking more to national activities
- Management of resources: the way that programs managed resources was critical to success. For example, many countries still had big problems from GF R7 in terms of actually spending the money they had received. These issues needed to be addressed. GF R9 would bring multiple opportunities but also big challenges;

- Any technical collaboration and TA on surveillance amongst partners was welcomed particularly regarding GF proposals e.g. TA for supply chain management or M&E
- Regarding communications: new communications partners were encouraged to share approaches with existing partners and to assist them with TA, particularly developing consistent messaging around containment;
- On the molecular side: transfer of knowledge remained a very important factor and the need for rapid development of SOPs was highlighted.
- There was a need to focus on building and strengthening capacity across all areas.
- Partners could look to ACT Malaria as a great example of a non-partisan organization and a good model. However, countries were not investing enough in ACT Malaria and partners should ensure that more funding was available for them on training sessions...continue to mobilize GF funds. A lot more could be achieved promoting Peer Review journals and other products of common interest.
- The next Malaria Partners meeting would be held from 27 to 28 April in 2010 in Chiang Mai and the forum should be used to share success stories in addition to other information sharing
- Charles Delacollette provided with special thanks to John MacArthur for his continuous dedicated time and technical advise to re-dynamize the Mekong Malaria Programme and wished him good luck for his next global assignment as PMI adviser in CDC Atlanta

Dr. John MacArthur, USAID RDM-A

- WHO and GMS staff were thanked for their organization of the meeting as were the national representatives who were able to attend from three of the six partner countries. It was hoped that for the next meeting national representatives from all of the six GMS countries would be able to attend. This would ensure participation, ownership and familiarity with programs and plans
- The GMS program was definitely maturing. Much had been achieved although there was still plenty to be done.
- The TA available from partners to each other and to National Programmes was very positive and reiterated the need for strategies to focus on serving the National programmes.
- Exciting to see the progress and huge amounts of funds available
- With the new challenges of resistance (artemisinin resistance) came the opportunity to show the world leadership in the response.
- Elimination was becoming possibly a plausible idea in some parts of the region.
- Very positive to see development of an MMP Strategic vision and also to be able to bring Myanmar into the partnership. The 3D Fund in Myanmar had demonstrated that a lot could be achieved in the reduction of cases in Myanmar and it was hoped that Myanmar's national malaria control would be aligned with other countries in the region in the near future;
- Partners were reminded to keep political sensitivities in mind when working in the region –particularly Myanmar and Cambodia
- There still remained questions within the USG of whether money could be effectively spent in Cambodia and as such this was still being scrutinized at high levels;

- Dr. MacArthur would be taking up the leadership of PMI at CDC in January 2010 and would continue to advocate for programs in the GMS
- Admiral Ziemer USAID Washington: still very focused on the Mekong Sub Region

Conclusions and Recommendations

The development of a *Strategic Plan for Malaria Control and Elimination in the Greater Mekong Subregion* was welcomed by all partners attending the MMP Meeting in Bangkok as a positive and important step. The new strategic plan would play a key role in ensuring that all partners involved in malaria control and elimination activities had adequate resources to carry out their programs. The strategy would help to bring about improved coordination and communications; standardization of data and utilization of data at regional level; improved access to appropriate TA for all partners and a more effective and targeted use of resources.

Following input from the MMP Partners the strategy would be revised and finalized incorporating the relevant comments and proposals from participants. Recommendation for amendments to the document were outlined in the section above: *Feedback From Partners On Strategic Framework*.

Recommendations for all existing and future MMP programs and activities included the following:

- Greater emphasis on strategies for maintaining capacity for surveillance and community case management
- Training in alternative diagnose at Health Facility Levels
- Addressing gaps in diagnosis and treatment protocols
- Increased focus on laboratory strengthening at both country and regional levels with an emphasis on quality assurance
- More research on vector control methods appropriate to the GMS region
- More integration and diversification of programs and less verticality
- Improved coordination amongst partners at country and regional levels
- Improved coordination across regions so that lessons learned from other regions could be applied in the GMS
- Possible change in the format of the MMP Meetings to include an extra day for more technical discussions, beyond the administrative content

Annex 1: Agenda

Mekong Malaria Programme Core Partners' Meeting

*Towards implementation of a 5-year Mekong Malaria Programme (MMP)
Strategic Plan*

5th- 6th October 2009

Royal Orchid Sheraton Hotel and Towers
Bangkok, Thailand

AGENDA

Monday, 5th October 2009 (DAY 1)

08:00	<i>Registration of participants Setting up posters on FY08 achievements</i>	<i>B Sae-Seai, K Laempoo C Vamarupa</i>
09:00	Opening remarks <ul style="list-style-type: none">▪ USAID▪ WHO	<i>C Delacollette J MacArthur</i>
09:10	Introduction of participants, nomination of chairperson and rapporteur	<i>C Delacollette</i>
09:30	Looking back at recommendations from previous MMP partners' reports	<i>C Delacollette</i>
10:00	<i>Group Photo and Coffee Break</i>	
10:45	<ul style="list-style-type: none">▪ Presentation of the draft MMP strategy as the basis for next 5-year action Clarification	<i>P Kachur, J Hwang</i>
11:30	MMP M&E Framework for action including Performance Management Plan (PPM) Clarification	<i>R Goud</i>
12:00	USAID RDMA's new M&E data reporting system	<i>C. Wongsrichanalai</i>
12:15	<i>Lunch / Review of posters</i>	
14:00	FY09 activities and budget (10-20 minutes presentation, 10 minutes Q&A) <ul style="list-style-type: none">▪ ACT Malaria (10')▪ CDC Atlanta / Malaria Consortium (15')▪ MEASURE/ Evaluation (15')	<i>Chairperson</i>

- MSH/SPS (10')
- URC (20')
- WHO (20')
- USP/DQI (15')

16:00 *Coffee Break*

- 16:20
- Kenan/GMS-Response to Infection Diseases (RID) (10')
 - AED/C-Change Communication (10')
- 17:30 Review of Posters

Tuesday, 6th October 2009 (DAY 2)

08:30 Feed back from USAID-funded partners and Malaria Programme Managers on 5-year MMP Strategic plan and partners' presentation *Chairperson*

09:45 Recommendations *Chairperson*

10:00 *Coffee Break*

10:30 US Government Global Malaria Strategy 2010-2014 *M. MacDonald*

11:00 ARC3 project outcomes *C. Plowe*

11:30 Containment of *P. falciparum* strains resistant to artemisinin *C Christophel and C Delacollette*

Clarification

12:15 *Lunch*

14:00 Plenary wrap-up discussion: what to do next? *Chairperson*

15:00 Closing remarks

- Mekong Malaria Programme *C Delacollette*
- USAID RDMA *J MacArthur*

15:30 *Coffee Break*

16:00 Closure of Meeting *chairperson*

Annex 2



Mekong Malaria Programme Core Partners' Meeting

*Towards implementation of a 5-year Mekong Malaria Programme (MMP) Strategic Plan
5th – 6th October 2009*

Royal Orchid Sheraton Hotel and Towers
Bangkok, Thailand

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Annex 3: Abstracts

1. Mekong Malaria Programme: Malaria Consortium and Centers for Disease Control and Prevention FY08 Activities and Achievements (2008 – 2009)

Malaria in the six countries around the Mekong River in Southeast Asia remains a serious problem in certain high risk pockets. Major strides have been made to reduce the burden of malaria in the region, and it is imperative that this progress is not lost. Drug resistance is a constant threat with the most resistant malaria in the world found here. A key necessity for tracking progress of control, responding rapidly to outbreaks and avoiding the consequences of spreading drug resistance is to have ready access to reliable information.

Malaria Consortium (MC), under a collaborative agreement and partnership with the Centers for Disease Control and Prevention (CDC) works with communities, health systems, government and non-government agencies, academic institutions, and local and international organizations to ensure good evidence supports delivery of effective services, particularly providing technical support for monitoring and evaluation of programs and activities for evidence-based decision-making and strategic planning.

The goal of this project is to support countries and partners in the Greater Mekong Subregion (GMS) to put in place a robust, reliable and recent evidence base, which is continuously updated and used by the countries to refine and improve their control strategies and to mobilize resources.

Key achievements in FY08 include:

- Regional epidemiologist in place late October 2008 (MC) and link with Malaria Elimination Group at UCSF(CDC).
- Intensive work on containment of resistance – ensuring M&E framework is in place in the short-term and contributing to the development of a longer-term strategy.
- Supported the development and submission of Cambodia's Global Fund R9 proposal.
- Completed and distributed bibliographical review on migrants and mobile populations.
- Actively contributed to the Roll Back Malaria Monitoring and Evaluation Reference Group (MERG) and others to harmonize regional M&E Frameworks, including WPRO's 5-year Regional Action Plan and Mekong M&E Framework.
- Supported development of MMP's 5-year Strategic Plan
- Conducted a fact-finding mission in Cambodia to gather preliminary information on migrant and mobile populations which will be followed up with a more in-depth qualitative survey on migrant behavioural risks and perceptions.
- Contributed to the development and facilitation of ACTMalaria's course on Management of Malaria Field Operations (MMFO).

Opened regional office in Bangkok, Thailand in July 2007, followed with country offices in Phnom Penh, Cambodia and a field office in Pailin, Cambodia.

2. WHO-MMP progress and achievements

Monitoring antimalarial drug efficacy through regular surveys according to WHO protocol in defined sentinel sites (#32 in the GSM) in all Mekong countries has remained a core activity of the WHO-Malaria Mekong Programme in 2009. Malaria drug efficacy monitoring of the national 1st and 2nd line drugs in the designated Mekong sentinel sites has been intensified throughout the GSM to assess the geo-magnitude of *P. falciparum* and *P. vivax* resistance to ACTs and Chloroquine respectively and to adjust national antimalarial drug policies if necessary. Therapeutic Efficacy Studies (TES) with DHAPIP and artemisinin monotherapies have been also carried out in countries that were still promoting their use until 2009. For example, China and Viet Nam.

WHO-MMP with support from the 2 WHO Regions (SEA-WP), GMP-HQ and external consultants has continued to technically collaborate with PIs and National programmes including training sessions and follow-up country visits in almost all Mekong countries and exchange of PIs between countries to ensure strict protocol implementation, data management and reporting follow-up. As the result, higher than before quality malaria drug efficacy data have become available (especially in Cambodia) despite some difficulties to properly implement the 28-day protocol, e.g. lower malaria endemic settings reducing sample size, difficulty to exchange data and blood materials (lab networking), etc.

Results of in vivo TES conducted during the 2-last year were presented by principal investigators and discussed in Mandalay end of September 2009 (Myanmar) during a wrap-up technical consultation with representatives from all Mekong countries and interested partners and scientific experts. From last 2-year experiences, recommendations have been formulated and clarifications provided as well on collaboration with new global and regional initiatives like WWARN and the Molecular Surveillance network. A scientific report will summarize key findings and conclusions by December 2009.

WHO in general and WHO-MMP in particular have pursued their effort to promote GMP ACTs rather than monotherapies all over the world with particular attention to antimalarial drug policies in China and Viet Nam and the non-regulated use of monotherapies on the Cambodia-Thailand border considered as the epicenter of multi-drug resistance. WHO and partners effort have contributed to influence the shift of antimalarial drug policies in China and Viet Nam where decision was made in 2009 that artemisinin monotherapies are no longer produced and recommended and to be replaced by GMP ACTs countrywide. It means that from 2010 onwards, all Mekong countries will promote WHO-recommended ACTs as first line-drug treatments against *P. falciparum* infections. Since *vivax* infections are becoming more prominent in the GSM, the number of TES with chloroquine is increasing with the aim of building evidence of chloroquine efficacy rate against *vivax* infections.

WHO-MMP with regions has also focused its attention to additional TES on the Cambodian-Thailand border as part of OR supported by the BMGF containment project. In Cambodia, additional TES have been conducted to assess DHAPIP efficacy and in Thailand and Cambodia to monitor the marker of Artemether-Lumefantrine –AL-resistance (Cytb).

Excellent quality of microscopy diagnosis including parasite counting and species recognition is a fundamental requirement for these trials to succeed. TES are increasingly conducted in a decentralized way by provincial staff or students in remote locations where malaria infections remain. Therefore the quality assurance of microscopy has continued to be strengthened by WHO which has already developed, with support from USAID, a microscopy quality assurance programme, including a slide bank attached to an external assessment of microscopists. Refreshing 1-week QC microscopy courses and accreditation assessment based on the model accepted in Geneva in 2006 and on the newly released WHO manual on malaria microscopy quality assurance have been conducted in Lao PDR, Myanmar and Viet Nam.

One of the key challenges in the GMS is the widespread prevalence of substandard and counterfeit medicines, weak public health systems and an out-of control private formal and informal health sector with widespread irrational use of drugs. Based on previous experiences and successes (Wellcome Trust, USP and WHO) through national studies (in close collaboration with Drug Regulation Authorities) to document the situation and mount international operations, WHO has consolidated in 2009 new cooperation between DRAs and law enforcement agencies at country and regional and international level through a new operation type "Operation Storm" which was discussed, agreed upon and implemented in 2009 between WPRO, INTERPOL, World Customs organizations and DRAs. At national level, almost all Mekong countries have already a mechanism for such a cooperation through the establishment of intersectoral committees at national and provincial levels in last years. In addition, technical support for antimalarial drug quality monitoring has been provided in Yunnan province/China. USP/DQI is collaborating with WHO into the GMS drug quality monitoring network and has reinitiated its involvement in Myanmar and further in China in addition to Cambodia, Lao PDR, Thailand and Viet Nam.

Additional Technical collaboration with DRAs in the GMS has come from the WPRO Regional Adviser for Pharmaceuticals. While information on ongoing police operations is classified, publishable information on the drug quality monitoring activities as well as the INTERPOL cooperation have been posted on the ACTMalaria Information Resource Centre (AIRC) website.

Technical collaboration has been engaged with CNM, BVBD and partners to implement the BMGF-supported and WHO-led containment project of Artemisinin resistant malaria parasites. Containment effort goes far beyond existing programme activities, targets and budgets, so technical inputs have been provided by WHO-MMP to CNM and BVBD in the following domains: (a) specifications of Combo RDTs and new ACTs to be scaled up in containment zones, (b) protocol development for MSAT including procurement of drugs, (c) rapid field methodology to assess actual needs of LLINs and LLIHNs in target villages [macro and microplanning zone 1], (d) contribution to the design of baseline surveys as part of M&E to measure impact of interventions, (e) initiate a joint Cam-Thai surveillance system in zone 1 districts, etc. Substantial effort has been made through consultancies in Thailand (R9 GF with 6 partners) and Myanmar with 11 partners (e.g. finalization of the ITN / vector control strategy and national malaria control strategy as the basis for the R9 proposal) by WHO and by the Malaria consortium with WHO in Cambodia to develop R9 GF malaria proposals including scaling up of containment measures. If R9 proposals are accepted, containment effort will be scaled up and sustained till 2015.

Especially in Cambodia, WHO-MMP has pursued its effort to address low quality and inappropriate use of antimalarials drugs especially when delivered through the informal unregulated private sector. In collaboration with the MoH, USP and MSH, a strict monitoring system of drug quality and rational use of drugs (public sector, VMWs and private sector social marketing) has been strengthened. The revised malaria treatment guideline has been produced with subsequent training sessions conducted.

Procurement and delivery systems (e.g. supply chain management) remain recurrent issues in Cambodia. WHO-MMP has focused its attention to the procurement of GMP drugs (ASU-M, DHAPIP and AL), ITNs and COMBO RDTs with budget from R6 and containment project. Forecasted needs remain a challenge as well due e.g. to the inaccuracy of the surveillance systems and lack of private-public collaboration in a context where more than 70% patients seek care outside the public sector. WHO has been very active with GFTAM staff to address several bottlenecks linked e.g. to the calculation of commodity needs, identification of GMP commodities and selection of M&E indicators with partners. In 2009, CNM with WHO collaboration has significantly improved its capacity to document the emergence and spread of multi-drug resistant malaria. Cambodia as per previous 5-year efforts, has reached high quality TES data in the Region with increasing number of partners involved in several technical areas. Especially in Cambodia, WHO has been instrumental to facilitate exchange of information through meetings and informal technical sessions with partners looking at harmonizing interventions and documenting progress.

Malaria indicators based on the regional Kunming indicator framework are regularly collected through the HIS, and USAID funds are used through partners like URC and Malaria Consortium and WHO to improve its effectiveness. Substantial impact on malaria morbidity and mortality has been recorded over the last 10 years in the GSM with Myanmar showing half of the malaria burden. This has triggered some programmes like China, Viet Nam and Thailand to shift their control programmes toward elimination strengthening vivax control as well. WHO-MMP has been instrumental to directly provide or coordinate TA to finalize national strategic applications in China and Viet Nam including revision of treatment guidelines. The use of primaquine during 2 weeks for radical cure of vivax malaria is recommended but actually not implemented in most GMS countries because of the high prevalence of G6PD deficiency (ranging from 10 to 20%). In the absence of proper G6PD deficiency testing, primaquine cannot be delivered and used routinely. WHO is stimulating the validation of existing rapid G6PD deficiency tests in Cambodia and Lao.

In 2009, WHO-MMP and Measure evaluation have continued to work on the development of the M&E and surveillance Mekong framework. Three country visits have contributed to fine-tune the Mekong framework and indicators have been further finalised in Manila in July 2009. During the M&E meeting in Manila, Global GMP indicators have been endorsed with slight changes to take into account WP and Mekong malaria characteristics and challenges and additional indicators have been formulated to reflect measurement of progress made in specific technical areas such as programme management, vector control, case management, surveillance, OR and cross border activities insisting on vulnerable groups, capacity building and malaria elimination objectives. The Mekong framework is aligned with WP objectives and indicators to be finalised during the partner meeting in October 2009.

WHO-MMP with CDC has also made progress in the finalization of the Mekong strategic plan expected to articulate partners' involvement in malaria control and elimination in the GMS till 2015 alongside with national and regional malaria programme objectives and targets. USAID funds to WHO-MMP and MMP partners will focus on products and deliverables linked to strategic interventions highlighted in the 2010-2015 Mekong strategic plan e.g. to address MDR and counterfeits, improve malaria diagnosis (including management of non-malaria fevers) and passive / active surveillance towards malaria elimination and support to GF / other malaria projects implementation and monitoring.

3. Measure Evaluation

In FY08, MEASURE Evaluation completed and revised the RDMA Infectious Disease (ID) Performance Management Plan (PMP), and created an initial version of the database and data sheets to facilitate data collection. In addition, in collaboration with NMCPs, WHO, CDC, and Malaria Consortium, MEASURE Evaluation convened two meetings to create a framework for malaria control and then populate this with indicators; created reference sheets for the indicators; and gathered information on existing malaria M & E systems in four out of six Mekong countries.

4. US Pharmacopeia Drug Quality and Information Program (USP DQI)

[To be changed in FY09 funding to: Promoting the Quality of Medicines Program] FY 08 –Funding From October 1, 2008 – September 30, 2009

IR 3 Access Increased to Strategic Information

USP DQI continued to support the National Institute for Malariology, Parasitology, and Entomology (NIMPE) in Viet Nam, the Food and Drugs Department (FDD) of the Lao PDR, and the Bureau of Vector-borne Diseases (BVBD) in Thailand as well as the respective national laboratories for drug quality control (NIDQC, FDQCC, BDN) for post-marketing medicine quality monitoring (MQM). Through close collaboration between provincial/regional sites equipped with the GPHF Minilabs, the central-level focal points, and the national laboratories for medicine quality control, USP DQI effectively discovered a number of substandard and counterfeit medicines (anti-TB, anti-HIV, ATB, etc). With respect to antimalarials, the medicine quality monitoring provided evidence of poor quality artesunate, quinine, Chloroquine, primaquine, DHA-PIP, and A + M co-blistered products. Information has been consistently passed on to the regulatory authorities in each country in order that specific enforcement actions may be taken. Thailand is following up on a case of fake primaquine, and Lao PDR has issued a number of press releases and official product warnings for medicines which failed quality testing. Challenges still exist regarding timeliness of reporting from the point of data generation to concrete actions taken by national authorities in most countries which are implementing the USP DQI program.

In addition, the cross border study on antimalarial medicines quality was completed in 12 provinces on the Thai-Cambodia border, using randomized sampling protocol. Initial data reveals that approximately 13% of anti-malarial products from the Cambodian border area and 1% of products from Thailand failed quality testing as being either substandard or counterfeit. Results from a household and health facility study which was also conducted. This study was part of the ARCIII research consortium and was co-financed by USAID RDM-A and the Bill and Melinda Gates Foundation through WHO.

A series of short public service announcements (PSAs) which were produced for regional broadcast were finalized and subtitled/voiced-over for use in the Lao PDR, Viet Nam, Cambodia, and Thailand. These PSAs are designed to address the lack of public education regarding the proliferation of counterfeit and/or substandard medicines, especially in unlicensed drug shops or outlets in the region. Beginning with Cambodia, the PSAs will be broadcast in each country after formal clearance from relevant authorities in respective countries, as part of a media initiative which will also include poster campaigns and other BCC materials which educate the public on the dangers of counterfeit medicines.

Additionally, a 20 minute documentary film which illustrates the fieldwork conducted by USP DQI and country partners was produced. This film specifically shows a dramatization of how counterfeit medicines are detected in the field using reporting, sampling, and testing in the laboratories, and finally actions taken at the national level to address failed products. Produced in cooperation with the Lewis Charitable Trust, the "Minilab film" will be used for training health staff who will be performing

minilab screening tests in all areas where DQI works (Africa, Latin America, Asia), as well as a tool to show/demonstrate DQI's work in the field to concerned stakeholders, policymakers, partners, etc. The Minilab film can be used to generate new partnerships and collaboration by showing concrete examples from the work PQM carries out in the field. It is hoped that, using extremely effective and concise media such as video, PQM can garner interest and communicate the realities of medicine quality monitoring in the field much more than other commonly used communication strategies.

IR 4 Enabling Environment Strengthened & IR 5 Model Programs Expanded and Use of Best Practices Strengthened

USP DQI continued providing reference standards (to the Vietnamese NIDQC, the Lao FDQCC, the Cambodian NHPQCC, and the Thai BDN as well as for Minilabs), consumable reagents for testing, and advanced instrumentation, including a dissolution apparatus for the National Health Products Quality Control Center in Cambodia, in all GMS countries. Support includes both the peripheral (regional/provincial) and central levels at the Ministries of Health, from the Minilab sites to the national laboratories.

As part of the Asian Network for Quality Assurance of Medicines (ANEQAM), DQI conducted two advanced, week-long training courses for regional scientists. The first was a lab-based training on Good Laboratory Practices (GLP) and compendial analysis of tuberculosis medicines, hosted and conducted by experts from the Chulalongkorn Faculty of Pharmaceutical Sciences. This event trained 13 national laboratory and private sector analysts from Thailand, Cambodia, Viet Nam, and the Lao PDR and was the second of its kind offered by ANEQAM (the first being a training on analytical methods for analysis of artesunate conducted in December 2007). Additionally, a week-long training for drug inspectors and private sector quality assurance officers from the Lao PDR and Cambodia was hosted and carried out by faculty from the Mahidol University's Faculty of Pharmacy. This training provided in-depth information for Good Manufacturing Practices (GMP), including off-site field visits to a local manufacturer. This training will be followed-up with additional, in-country training by Mahidol experts who will visit Cambodia and Lao PDR and assist with mock audits and other relevant training needs. As key institutions in the ANEQAM network, Mahidol and Chulalongkorn Universities have been excellent collaborators for building capacity among neighboring ministries and private sectors.

IR 1-5 Cross Cutting Intermediate Results

At the USP DQI headquarters in Rockville, MD, a global medicine quality database is being designed to accommodate data being generated from sentinel sites in Latin America, South East Asia and Africa by the DQI/PQM program. This database will be a useful tool for data harmonization and increased access to medicine quality information for policymakers, USAID, MOHs, pharmaceutical manufacturers, procurement agencies and PQM staff (estimated completion date by Q3 of FY09).

5. MCC project summary

The USAID | Malaria Prevention and Control in Cambodia (MCC) works in 4 provinces along the Cambodian-Thai border where parasite resistance to artemisinin based drugs has been documented. The project is being implemented by University Research Co., LLC in collaboration with Partners for Development (PfD) along with other collaborating agencies. The project objectives are (1) General objective: to contribute to the reduction of malaria morbidity and mortality in the project areas and (2) Specific objectives: (1) To support the National Malaria Program in the project areas to increase access to and use of ITNs, either using LLIN or conventional treated bednets, in target the population, including mobile and migrant populations; (2) To support the National Malaria Program in the project area to improve and expand malaria case management among different types of providers (public, private, and community providers); (3) To strengthen the managerial capacity at health operational district (OD) and provincial health department (PHD) levels; (4) To collaborate at the national level in developing policy and strategic interventions.

1. Malaria Prevention

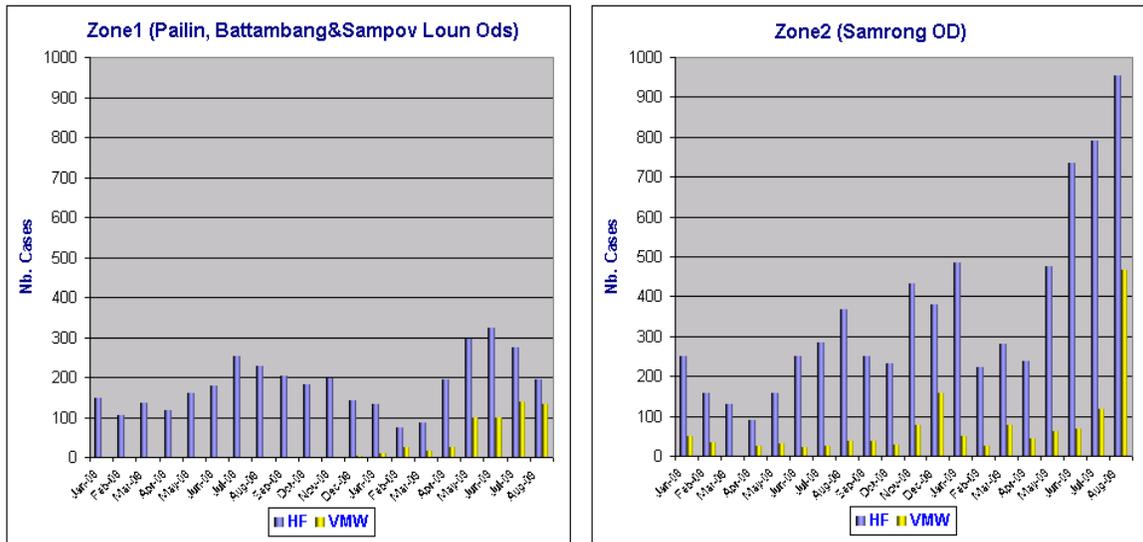
The MCC project through community workers and other mass media strategies is increasing awareness about how best to prevent getting malaria. MCC developed educational flipcharts and posters have been distributed to health center staff, Village Malaria Workers (VMW) and Village Health Volunteers (VHV) in the project target areas. These materials are being used to educate community members about malaria prevention, diagnosis and treatment. In addition, the project is funding Equal Access Radio-Call-In Show Program in Battambang province and re-broadcast in other three provinces. The main aims of the radio program are: (1) to promote effective malaria prevention techniques & behavior change; and (2) to encourage those infected with malaria to seek proper diagnosis and treatment. The call-in shows are broadcasted twice monthly in the project target areas. The evaluation of call in show program was conducted. The results of the evaluation indicated that many target audiences are able to access the call in show program even though it has been on the air for a short period of time. The project has also installed billboards (17) along major routes of travel to promote malaria prevention messages among general audience including mobile & migrant populations. The malaria week activities were supported from March to May, 2009 by provincial & district and MCC teams. The rationale behind the “Malaria Week” activities was to cover, in a limited period of time before the rainy season, at-risk populations with the following interventions: 1) community-based health education and behavior change communication, 2) bed net distribution and re-impregnation, and 3) Early Diagnosis and Treatment (EDAT) of malaria cases in the villages. The objective was to reduce parasite population before the high transmission season. The project was also participated in World Malaria Day campaign on 25 April.

2. Training & capacity building

Clinical malaria case management, basic laboratory and logistic management training were organized for health staff in the project areas. MCC supported project management cycle training for provincial, district and health facilities team leaders. In addition, trainings on health education and case management have been organized for VMW and VHV.

3. Malaria cases management in public health facilities and VMW

**Malaria Cases Treated by Public Health Facilities and Village Malaria Workers in the MCC-Supported Areas
Containment Zone1&2 , Jan-08 to Aug-09**



Malaria seasonal pick

Increased in military deployment...

4. Mobile & Migrant Population

A rapid assessment among mobile and migrant population has revealed the following profile: (1) young adults mainly male, usually traveling in small groups from same village, (2) coming mainly from southern provinces, (3) seasonal workers with length of stay from 2 to 8 weeks and (4) travel mainly by taxi or motorbike. The mobile and migrant population comes for planting at the beginning of the rainy season and for harvesting season which is at the end of the rainy season.

The MCC team is working with PHD, OD, health facilities and community volunteers to map the mobile & migrant population in Chak Krey HC of Sampov Loun OD. The MCC project is also preparing to conduct a rapid study of the mobile and migrant population including prevention & care and treatment practices among these groups. The mapping of the mobile and migrant population in the Chak Krey HC has been completed and it is currently being put in the project database. The data analysis indicates that the farm owners need extra workers to work on their farms. The number of workers needed is 18,154 & 6,187 for the 1st & 2nd agricultural seasons respectively. MCC will distribute the bednets to these groups at the beginning of October 2009. Based on the lessons learned from the earlier bednet distribution, MCC will develop a strategy for the upcoming planting & harvesting seasons. MCC has procured WHO-recommended long lasting insecticidal mosquito nets (LLIN) for this purpose.

5. Operational research on Mapping of hospitalized & MDR malaria cases

The MCC Operations Research on mapping of hospitalized & drug resistant malaria cases in Battambang province started in May-09 with the aim at better defining the geographical distribution of potential drug resistant carriers in order to better target the containment interventions to prevent the spread of MDR parasites. It is expected that this research will help our understanding of the dynamics of spread of drug resistant parasite strains at local levels to enable us prevent and contain these strains better. Malaria patients admitted to the hospital are seen in the first five days of hospitalization and then followed up until day 28 to assess parasite presence and density by

microscopy to comply with WHO in vivo protocol. Preliminary results from the study are: (1) 35 Malaria patients admitted in ICU and Pediatric wards in BTB RH between May 09 and 22-Sept, 2009, (2) 27 Pf patients included (excluded Pv) and (3) D3 positive: 7 missing (results not yet available or discharged), 9/20 negative (45%) and 11/20 positive (55%)

6. Public & private partnership (PPM)

As part of containment strategy, the clear MOH policy to manage private sector involvement in managing malaria is needed. Recently, MOH issued an administrative order banning the sale of Artemisinin monotherapy in the country. Moreover, anti-malarial medicines will be removed from the private sector in containment zone I but the ACT is still available on the private market in the containment zone II. CNM & WHO organized a meeting with the private drug venders, police officials, public health facilities, local authorities from containment zone I, DDF and other partners (97 participants) in BTB province, to launch the new MOH policy regarding private sector participation in malaria program, with technical & financial support from MCC.

MCC team conducted a private drug outlet survey to assess the availability of anti-malarial drugs in Pailin, BTB and OMC provinces. The field work was completed in July 2009. Based on the drug audit study, MCC has developed a comprehensive strategy for improving private sector participation in malaria prevention and control. This strategy will be based on the recent MOH policies and guidelines and will be piloted in one to two ODs along the Thai-Cambodia border.

7. RDT Cooler box for VMW in the community

300 cooler boxes have been supplied to VMW in the project target areas. CNM has monitored the temperature in & outside of the cooler boxes. CNM/MCC plans to do an investigation of cooler box used by VMW.

6. ACTMalaria

In accordance with the mandate and objectives of the network, there were three training activities planned in 2008. MMFO was organized from January 19 to March 13, 2009 by the Ministry of Public Health's Bureau of Vector Borne-Diseases, with 23 participants from 7 member countries and 2 countries in the Pacific Islands. Through the grant, local technical support was also provided to the course, in addition to the technical assistance from the other USAID-supported partners. This activity was carried over from 2007.

Curriculum refinement for the two training activities planned for 2008 was conducted by the host member countries, MOH-Indonesia and Malaysia. This is in preparation for the course which was postponed for November 2009 and March-April, 2010

The Annual Executive Board and Partners meeting was conducted in March 16-18, 2009. The meeting is held annually with the aim of reviewing the accomplishment of the network, follow-up on the participants to different training activities and regularly assess the common training needs of the country and plan for the coming year. This year's meeting marked the official turnover of the Co-ordinating Country Directorship from Cambodia to Lao PDR and the election of the Vice-CCD (Myanmar). During the meeting, the celebration of the World Malaria Day was also promoted and again agreed and celebrated last April 25, 2009. .

The continuing support to the operations enabled the ACTMalaria Secretariat (ACTMalaria Foundation, Inc.) to coordinate technical support to nationally conducted activities such as the External Competency Assessment conducted in Cambodia, Lao PDR, Vietnam and the countries in the Pacific Island countries, the Refresher course for the TES Malaria Microscopists as well as the establishment of the slide bank. The Secretariat was also able to join in other activities relevant to capacity building and malaria control in the region and at the global level, ie. Participation in the Finalization of the WHO Training Manuals on Malaria Control and Elimination, First Meeting of the Asia-Pacific Malaria Elimination Network, Partnership for Social Sciences and the Network Advisory Group. Participation in all these meetings are through sponsorship provided by the organizers. These meetings are in addition to the USAID core partners' meeting and the development of the regional MCP, NTD strategic plans.

The AIRC (ACTMalaria Information Center) support to information exchange has been enhanced with the support provided to the 5 satellite libraries in 4 member countries, thereby increasing the number of collections to 2,468; both the website and the AIRC has been regularly updated to keep the interest of the online users from member and non-member countries (number of hits now 971,686 with 32,881 unique IP Address accessing the online services).