Workshop to Consolidate Lessons Learned on BCC and Mobile/Migrant Populations in the Strategy to Contain Artemisinin Resistant Malaria

Meeting Report

Santi Resort & Spa
Luang Prabang, Lao PDR

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Acronyms, Abbreviations, and Technical Terms

ACD	Active case detection
ACT	Artemisinin-Based Combination Therapy
ASEAN	Association of Southeast Asian Nations
BCC	Behaviour Change Communication
BMGF	Bill and Melinda Gates Foundation
BVBD	Bureau of Vector-borne Diseases
CMPE	Centre for Malariology, Parasitology and Entomology
CNM	National Centre for Parasitology, Entomology and Malaria Control
D3+	Day Three Positive
DOT	Directly-observed Treatment
EDPT	Early Diagnosis and prompt treatment
FHI	Family Health International
FSMC	Fixed schedule malaria clinics
GFATM	Global Fund to Fight AIDS, Tuberculosis, and Malaria
GFR9/10	Global Fund Round 9/10
GMS	Greater Mekong Sub-region
HC	Health clinic
IEC	Information, Education, and Communication
IRS	Indoor Residual Spraying
ITN	Insecticide-Treated Nets
LLIHN	Long-Lasting Insecticidal Hammock Nets
LLIN	Long-Lasting Insecticidal Net

KAP	Knowledge, Attitude, and Practice
MC	Malaria Consortium
M&E	Monitoring and Evaluation
MMW	Mobile Malaria Worker
NGO	Non-Governmental Organization
OD	Operational District
Pf	*Plasmodium falciparum*
Pv	*Plasmodium vivax*
PD	Positive deviance
PFD	Partners for Development
PSI	Population Services International
RDS	Respondent-driven sampling
RDT	Rapid Diagnostic Test
SMS	Short Message Service
URC	University Research Co. LLD
USAID	United States Agency for International Development
VBDC	Vector-Borne Disease Control Centre
VBDU	Vector-Borne Disease Control Unit
VHV	Village Health Volunteer
VMW	Village Malaria Worker
WHO	World Health Organization

Executive Summary

The Strategy to Contain Artemisinin Resistant Malaria along the Cambodia-Thailand border has required intensive behaviour change efforts from a range of partners working with communities on both sides of the border. One of the key challenges in reaching the target populations has been implementing effective behaviour change communication (BCC) and information, education, and communication (IEC) interventions that meet the diverse needs of the target populations in the containment zones. In addition to the challenges associated with varied education levels and the socio-economic status of long-term residents, mobile and migrant workers frequently travel to and from the Containment zones facilitating the spread of the disease and artemisinin resistant parasites. Such high levels of mobility have required partners to develop innovative approaches to programming for mobile populations using a range of techniques and tools to reach these audiences.

In order to access this very mobile population the Mobile Malaria Workers (MMWs) pilot project was launched in Containment Zones one and two in nine provinces in Cambodia. The MMWs are community volunteers recruited from the target communities who provide a range of services from basic health education to diagnosis, treatment and referral of cases. The MMWs have played a pivotal role in contributing to the reduction of Malaria cases in the target provinces. In addition, Village Malaria Workers (VMWs) have also been providing free diagnosis and treatment for malaria in Cambodia's least accessible and most at-risk communities since 2001. In 2009, under the containment project, the VMW scheme was expanded to include lower transmission villages in Western Cambodia. Over the past ten years, the VMW project has been scaled up to 1,528 villages (2011) in seventeen malaria endemic provinces and is a key component of the community-based response contributing to the reduction of malaria mortality.

BCC and IEC interventions play a key role in reducing the incidence of malaria. In both Thailand and Cambodia, a number of innovative approaches have been developed targeting mobile and migrant populations. Strong collaboration between Cambodia and Thailand has resulted in coordinated and harmonized BCC and IEC materials, developed in Khmer and Thai. Both national programmes make use of a diversity of media including television, radio and SMS (short messaging services) messages via phones, as well as more traditional tools such as billboards, posters and stickers. In Cambodia, an innovative pilot scheme using taxi drivers as health educators and messengers of BCC has been piloted in Battambang province with positive results. Taxi drivers receive basic training in health education and are provided with a range of BBC/IEC materials to distribute to passengers. Further to these innovative approaches to programming, the Response Driven Sampling method (RDS) was also piloted in Cambodia and Thailand as a methodological tool to provide situational assessments of migrant communities. The RDS method has been instrumental in helping to characterize the movements, care seeking and personal protection practices of migrant and mobile populations, as well as identifying potential points of access. The results of the RDS studies can be used to develop action plans to better target and access migrant populations with malaria prevention and treatment interventions and increased surveillance to limit the spread of artemisinin-resistant malaria parasites.

Another key tool piloted in the response to malaria has been the *Positive Deviance (PD)* approach. The *Positive Deviance* approach has been used in nutrition, family planning, maternal and newborn health, antenatal care, anti-trafficking and promoting breastfeeding. It has been piloted as a behaviour change tool on malaria prevention and control in Sampov Loun, Cambodia. PD helps to identify individuals whose uncommon positive practices/behaviours enable them to find better solutions to problems than their neighbours who have access to the same resources. A full evaluation of this pilot project will be conducted in August 2011; however results of a mid-term informal review indicate that the project is well received by community members and effective in engendering positive behaviour change.

The need to engage with the private sector is a significant factor in achieving the goal of containing artemisinin resistance and ultimately eliminating malaria. Although there is a still a lot of work to be completed in this area, innovative schemes have been piloted as part of the Containment Project. Two such examples are the *Landowner-Supervised LLIN Distribution for Mobile and Migrant Population* in Pailin and Sampov Loun Operational Districts and the *Malaria Corners* in factories, workplaces and meeting points for mobile and migrant workers in seven provinces of Thailand. The malaria corners provide information on malaria, personal protection, diagnosis and treatment to employees of private factories, plantations and farms. They primarily target migrant workers with secondary targets including local populations, military personnel, tourists and police.

The present meeting was called to review progress and evaluate which interventions have proved successful so they can be scaled up in future containment efforts and eventually facilitate the elimination of malaria from the region. Although a great deal of progress has been made and major milestones have been achieved, there are a number of areas that still need to be addressed and new strategies developed for the future.

Key recommendations emerging from the workshop include the following:

Extending private sector engagement

- Engage farm and business owners more effectively by clearly explaining the cost-benefits of providing health education for their workers. Beyond providing nets to migrants, farm owners could themselves be trained as health educators and even diagnose and treat malaria;
- Use the positive deviance approach to identify relevant role models (e.g., farm owners, private providers);
- Increase advocacy efforts beyond the malaria world to engage relevant institutions and key decision makers in the Greater Mekong Sub Region (GMS) related to infrastructure and development projects (roads, railways, plantations) to forecast migration patterns in the future; collaborate on appropriate interventions, and ideally to forecast potential "hotspots". Examples of institutions to engage in the GMS at the Regional level include the ADB, WB, ASEAN etc and at the national level – relevant ministries, associations and research institutes.
- Address the challenges of coordination such as language barriers, time-constraints and budget limitations in order to improve engagement with the private sector;

- Scale up the *Taxi drivers as Health Educators Scheme* to expand reach to the general population (including mobile and migrant populations), ensuring that proper routine *monitoring and evaluation (M&E) of taxi drivers* and customer feedback occurs;
- Evaluate the impact on behaviour change in the community as a result of the taxi driver scheme;
- Scale up the *LLIN loan Scheme to cover all mobile and migrant workers in containment zones.*

Predicting migration patterns

- Increase advocacy efforts in migrants' countries or locations of origin. Lessons could be learnt from anti-trafficking projects that target migrants *before* they leave their countries of origin;
- Access Social, Economic and Health Impact Assessment Reports of planned infrastructure projects to assess potential changes in migration patterns;
- Advocate for inclusion of malaria prevention and treatment in these reports.

Research Methodologies

- Employ a mix of existing methodologies and develop more creative approaches to capture behaviour change over time particularly through routine monitoring, with less reliance on surveys;
- Ensure further analysis of data collected using the RDS methodology. For example, the RDS allows the identification of "super seeds" (those who are well connected and influential), but further analysis of this data may facilitate the use of these "seeds" for *delivery of BCC and also potentially integrate other malaria prevention and diagnosis activities.*

BCC/IEC

- BCC is a cross cutting issue in malaria programming and should be included in *all* interventions;
- BCC/IEC materials must be *high quality, and include targeted messaging (with consideration of language and interpretation). Proper M&E* of these materials, approaches, and strategies is necessary;
- BCC/IEC activities and strategies should emphasise a sense *of individual responsibility and duty for one's own health;*
- Consider using new technologies: voice messaging, SMS and email and also continue using surveys to capture Knowledge, Attitude, and Practices (KAP) for improved targeting of IEC and BCC.

Volunteer Health Workers

- Maintaining motivation of health staff and community workers will be critical as the malaria burden decreases and countries move towards elimination. There is a need to look at other sustainable non-monetary incentive schemes and ensure regular recognition of the work of volunteers through award schemes;
- There is a need to ensure and maintain quality of delivery of services from MMWs, by having clear terms of reference, more training of at least 5 days (with emphasis on communication skills), development and use of standards of practice and more frequent monitoring. Improving the quality of services MMWs render will help to promote the MMW network and improve the likelihood of acceptance and trust by the communities.

Background: The Containment Project

The World Health Organisation (WHO) received a two-year grant from the Bill and Melinda Gates Foundation (BMGF) for the containment of artemisinin-resistant malaria parasites in Southeast Asia. The national malaria programmes of Thailand and Cambodia, along with partners, collaborated in this emergency project as implementing partners to avoid the emergence and spread of drug resistance in the region.

The goal of the project is to contain the spread of artemisinin-resistant parasites through the detection of all malaria cases in the target areas and prevent transmission by ensuring effective prevention and treatment. Preventive methods such as the distribution and use of long lasting insecticide-treated nets (LLINs), including long lasting insecticide-treated hammock nets (LLIHNs) for mobile and migrant populations were scaled up with the aim of reaching every individual in the target areas. The use of treatment to prevent transmission includes finding and treating confirmed cases early with effective drugs before development of the later, sexual stages of the parasite (gametocytes), which are responsible for transmission.

There is a strong emphasis on improving surveillance systems and active case finding, particularly among mobile and migrant populations who are likely to be key agents in the spread of artemisinin-resistant malaria. The ban on the sale of monotherapies, removing counterfeit drugs and preventing inappropriate treatment in the private sector together aim to curb the emergence and spread of artemisinin resistance. Other strategies such as comprehensive BCC, community mobilisation and advocacy are also supporting the containment/elimination of artemisinin-resistant parasites.

The project is undertaking basic and operational research to fill knowledge gaps and ensure that strategies applied are evidence-based. Malaria Consortium has the principal roles of monitoring and evaluation and providing technical support for surveillance, BCC and cross-border workshops to ensure rapid and high quality implementation of the strategy. As such, Malaria Consortium has organised this review of the achievements and lessons learned from the project in the areas of BCC and outreach to mobile and migrant populations. Since elimination of resistant parasites will not be accomplished in two years, it is very important that longer-term funding is secured for the momentum to be sustained.

Welcome and Opening Remarks

Dr. David Sintasath, Malaria Consortium

Dr. Sintasath welcomed all participants to the meeting and extended special thanks to Dr. Bounlay Phornmasack from the Ministry of Public Health (MoH) Lao PDR, and Dr. Bouasy Hongvanthong, from the Centre of Malariology, Parasitology and Entomology (CMPE), Lao and Dr. Vilasack Banouvong, Director of Division of Malariology, Parasitology and Entomology, Luang Prabang Province for hosting the meeting in Luang Prabang. He also extended a special welcome to Dr. Chea Nguon, Vice Director of the National Centre for Parasitology, Entomology and Malaria Control (CNM) in Cambodia and Dr. Wichai Satimai, Director of the Bureau of Vector Borne Diseases (BVBD) Thailand. Dr. Sintasath acknowledged that the meeting was an excellent opportunity to review and reflect upon the activities that all partners have been actively implementing, to identify successful strategies and to assess whether and how these strategies could be scaled up. He noted that although the Containment Project

was nearing conclusion of its current phase, the project activities would continue with additional funding that has been secured from the Global Fund Round 9 (GFR9) for Cambodia and Round 10 (GFR10) for Thailand .

Dr. Bounlay Phornmasack, Deputy Director of Hygiene and Prevention, Ministry of Health, Lao PDR

Dr. Bounlay welcomed all participants to the Lao People's Democratic Republic (Lao PDR) to consolidate the lessons learned from behaviour change communication and mobile and migrant population strategies in the context of containing artemisinin resistance. He explained that the purpose of the meeting was not only to support the fight against malaria, but also to address the particular problems of artemisinin resistance which could have devastating consequences for the GMS and beyond. Dr. Bounlay informed participants that the recent discovery of artemisinin resistance in Myanmar makes the search for solutions to this problem even more urgent and this technical cross-border meeting, in collaboration with WHO and its partners, of vital importance for information sharing, discussion and planning.

Dr. Bounlay recognized that malaria has long been one of the most serious problems facing the people of the GMS and that although excellent tools to fight malaria are now available and funding has increased with the advent of the Global Fund to Fight AIDS, Tuberculosis and Malaria (GFATM) and other funders, such as the BMGF and USAID, many challenges remain. These challenges include the need to have an informed population including both health workers and the communities they serve. Many people remain ignorant of the causes and symptoms of malaria and of how to protect themselves and their communities from disease. At the same time, utilisation of effective diagnosis and treatment remains suboptimal in some areas. In general, people do not readily change their behaviour so behaviour change communication strategies are an important part of the effort to control and ultimately eliminate malaria.

Dr. Bounlay reminded participants that the Containment Project has highlighted the need to focus on migrant and mobile populations in the strategy to contain artemisinin resistance and that special approaches have been piloted to access these populations, such as the respondent driven sampling methodology and positive deviance approaches. The outcomes of the workshop would help national malaria programmes confronted with artemisinin resistance in the region to strengthen their efforts in preventing the spread of artemisinin resistant malaria parasites and eventually enable the GMS to become free of malaria.

Dr. Wichai Satimai, Director, Bureau of Vector Borne Diseases, Thailand

Dr. Wichai extended his thanks to the organisers, Malaria Consortium for providing the opportunity to hold this important meeting. He informed participants that the lessons learned would be valuable for Thailand, especially for GFR10, and also for Myanmar and other countries in the region and globally. Dr. Wichai noted the effective cooperation between Thailand and Cambodia to date on cross-border health issues and was hopeful that this meeting would further improve collaboration in the future. Dr. Wichai thanked Dr. Bounlay for hosting the meeting in Luang Prabang.

Dr. Chea Nguon, Deputy Director, National Centre for Parasitology, Entomology and Malaria Control (CNM), Cambodia

Dr. Nguon noted his pleasure in attending the meeting on behalf of the national malaria programme in Cambodia. He informed participants that the meeting was a very important opportunity to share the lessons learned from the containment project. Dr. Nguon noted that many other countries were very impressed by the Containment Project and that every time his team attended meetings abroad, they were asked about the project. Therefore, he believed it was very important to take the opportunity to really look at the lessons learned. Dr. Nguon thanked the Malaria Consortium and the BMGF for enabling the meeting to happen and noted that the containment project would not have been possible without this support.

Day One: Behaviour Change Communications

Morning session Chair: Dr. Bounlay Phornmasack, Deputy Director of Hygiene and Prevention, MoH Lao PDR

Review of Recommendations / Action points and Objectives of the meeting
Dr. David Sintasath, Malaria Consortium

Dr. Sintasath reviewed the current strategies used in the Containment Project: Zone 1, Elimination; Zone 2, intensified efforts; Zone 3, to be scaled up to the rest of the country under GFR9 (Cambodia) and GFR10 (Thailand). A key component of the containment project was the strategy to support containment/elimination of resistant parasites through behaviour change communication, community, mobilization and advocacy through Malaria Corners (in Thailand), Taxi drivers scheme (in Cambodia) and the Positive Deviance pilot project. Dr. Sintasath presented the key objectives of the project and highlighted Objective 4 as the key objective to focus on for the meeting: **To limit the spread of resistant parasites by mobile/migrant populations**. He then reviewed the key objectives and expected outcomes for the meeting which were as follows:

Workshop Objectives

- To review and assess achievements of activities for BCC/IEC and the implementation of other containment interventions among migrant populations;
- To identify lessons learned from implementation of BCC/IEC and innovative approaches among mobile and migrant populations, and to identify what works and what else is needed;
- To plan next steps for BCC/IEC strategy and improving uptake of interventions by mobile and migrant populations, identification of gaps for scaling up beyond Containment;
- To prepare and document for upcoming International Task Force meeting (Sept 2011) and external programme reviews and assessments.

Expected Outcomes

- Achievements and bottlenecks for implementation of BCC and mobile/migrant interventions reviewed and addressed;
- Key practical and operational recommendations and action points for next steps agreed;

- Consolidation of "toolbox" of strategies, methodologies, and evaluation for BCC and mobile/migrant interventions identified.

Dr. Sintasath reiterated that the outcomes and recommendations from this meeting would potentially be incorporated into the strategies of other countries that were addressing artemisinin resistance.

The Chair added that Dr. Sintasath's presentation highlighted the importance of the containment strategies. It emphasises the need for rapid response. Containment activities need to be reviewed to know which activities have proven to be effective. If the response comes too late, resistant clusters may disseminate their parasites. The provinces will have an opportunity to present and verify where the activities that were implemented were effective in order to make suitable recommendations.

Overview of National Programme Strategy for BCC/IEC

Dr. Rungrawee Tipmontree, Public Health Technical Officer, BVBD, Thailand

- In Thailand, four **positive behaviours** were promoted for elimination of malaria and containment of artemisinin resistance:
  - Regular use of LLINs (ITNs);
  - Use of Long lasting insecticide treated hammock nets (LLIHNs) during overnight stays outdoors;
  - Seeking of early malaria diagnosis and treatment;
  - Compliance with anti malarial drug regimen.
- Key achievements
  - Development of harmonized bilingual IEC materials;
  - Evaluation of IEC materials;
  - Excellent coordination with CNM Cambodia.
- Challenges and Key Lessons learned:
  - BCC tools and interventions need to be frequently reviewed and updated;
  - Evaluation of BCC related activities to determine suitable strategies for different target groups;
  - Materials must be appropriate for the migrant population;
  - BCC programmes needs a supportive environment (coverage of services, provision of LLINs, LLINHs);
  - Improved collaboration with employers to reach migrant population is needed;
  - Communication skills training needed to strengthen capacity of health staff and volunteers.

Overview of National Programme Strategy for BCC/IEC

Dr. Boukheng Thavrin, Head of Health Education, CNM, Cambodia

- The four components of the national strategy: include health education, community mobilisation, capacity building and monitoring and evaluation
- Key achievements:
  - Formation of BCC working group;
  - Development of key BCC prevention and early diagnosis and treatment (EDAT) messages including; harmonised bilingual messages;
  - Positive deviance (PD) approach: implementation of pilot project including PD Orientation training for health facility staff and partners (CNM, BVBD, NGOs); PD community seminar & baseline survey.
- Challenges
  - Language barriers;
  - Locating mobile and migrant populations;
  - Communication between two country teams;

- Reaching out to the mobile and migrant populations;
- Persuading unwilling traders to change their practice;
- Budget instalments.

Questions and Comments

Discussion focused on the need to ensure that BCC/IEC materials and messages were effectively targeted and appropriate for the mobile and migrant populations, where literacy rates are often low. Minimal wording would be best in that situation and pre-testing should be used to evaluate whether materials are well understood. Furthermore, Thailand was not able to test materials with M2 migrants (those who stay less than six months in country). Issues of trust between government officials and migrants will need to be overcome in testing of materials. Engaging interviewers other than government officials may be one way around this issue.

The need for better evaluation of BCC/IEC interventions was also discussed at length. Improved evaluation methods would become even more important as countries moved towards elimination and levels of malaria decline. In such a context, BCC/ IEC tools and strategies may need to be adapted. Prevention messages will remain important and it will be necessary to broaden coverage and target groups. For example, the Customs and Excise departments, the police and other appropriate agencies should be included as target groups for BCC/IEC messages.

The applicability of the PD approach for use with groups such as soldiers was also discussed. Experience from other sectors such as HIV AIDS, nutrition and anti trafficking projects has demonstrated that PD is very effective in groups with a strong sense of belonging.

Discussion then followed on the efficacy and cost effectiveness of the use of repellents for mobile/migrant communities. Evidence from rubber tappers in Thailand who used clothes dipped in insecticide demonstrated that the powder form (but not the liquid form) of repellent was effective in reducing the incidence if being bitten.

BCC Interventions, challenges and lessons learned – perspectives from the provinces
Mr. Chalermchai Techarat, VBDC, Thailand

- BCC achievements:
  - Strong partnership developed between Thailand and Cambodia on BCC/IEC;
  - Harmonised and culturally appropriate and targeted BCC/IEC materials developed;
  - Mosquito nets: a successful campaign on LLIN and LLIHN for target population;
  - Health education sessions in the community and health education in schools;
  - Engagement of private sector via establishment of malaria corners;
  - Monthly meetings conducted and strong community and volunteer engagement.
- Challenges:
  - High mobility of migrants and low literacy levels;
  - Low level of cooperation from business owners and low levels of commitment from some volunteers;
  - Difficult to engage army, local authorities and health staff from other sectors.
- Recommendations:
  - Improve understanding of target groups/communities in order to engage the community more effectively;
  - Provide opportunities for capacity building and implement performance-based incentives;

- Increase use of mass media and community radio, identify role models from communities as well as celebrities for improved advocacy;
- Evaluate the effectiveness of various communication channels to understand the most effective channel for behaviour changes.

BCC Interventions, challenges and lessons learned – Perspectives from the Provinces

Dr. Yok Sovann, Vice Director, Provincial Health Department, Pailin

- Achievements:
  - Harmonised BCC/IEC materials developed & distributed;
  - VMWs and MMWs provided malaria diagnosis and treatment at community level**.** These villages in turn have shown a significant reduction in morbidity and mortality rates from malaria;
  - Health Education tailored to migrants was provided and monthly meetings and quarterly stakeholder; meetings were also held for partners from the provinces and health centres;
  - Private sector engagement to improve referrals and follow up for appropriate treatment.
- Key Challenges:
  - High mobility of migrants makes it difficult to identify & access migrants;
  - Lack of cooperation from factory owners to allow access to the mobile workers at their workplace to provide health education especially due to time constraints and unavailability;
  - Delays in budget approvals hamper monitoring visits & volunteers' training;
  - Stock-outs and a lack of coordination between health centre staff and volunteers;
  - Poor record keeping, lack of motivation & follow-up by volunteers.
- Recommendations:
  - Volunteers: Increase motivation by providing monetary & non-monetary incentives – capacity building/refresher training/study tours; ensure volunteers get adequate support & supervision;
  - Involve VHVs/MMWs in decision-making; ensure an adequate supply of drugs to facilitate effective work;
  - BCC/IEC: ensure materials are simple & effective and that campaigns are timely and targeted;
  - Ensure mobile & migrant workers are registered to facilitate ease of access for services & campaigns.

Questions and Comments

Discussion centred on *monthly meetings at health centres*, the purpose of these meetings and how they could be more effective. The primary role of the meetings is to monitor the progress of the work of VMWs, to collect the monthly reports (including the number of malaria cases in the villages and the drug distribution rates and needs for the following month) and for exchange of information. In addition, health education activities conducted by VMWs the previous month are reviewed. A suggestion was made for an increased focus on BCC/IEC during these meetings, as an opportunity to also give communication skills to the volunteers and refresh their training.

Engaging the private sector and addressing the low levels of cooperation from business owners in both countries was discussed at length. Helping owners to *quantify* the cost benefit of reducing malaria was suggested as a practical "win-win" approach to engaging business owners. An example of the effectiveness of this approach came from URC's LLIN lending scheme in Cambodia. An assessment was conducted to gauge the acceptability of the LLIN lending scheme to farm owners and results demonstrated that the majority of *farmers accepted the LLIN lending scheme because of the benefits to them.* They received free LLINs for migrant workers and also the benefit that their workers were healthy. This increased the speed of farming production and owners understood and appreciated the benefits. An additional point made was that workers should also be informed of the importance of caring for their

own health and that this was also a key factor in their productivity levels and ability to provide for their families.

Enforcement was another strategy discussed in improving engagement of the private sector. Dr. Nguon (CNM) explained that in Cambodia, the low level of cooperation amongst business owners has started to slowly improve since March, when the Prime Minister prioritised malaria elimination and announced that a Committee for the Elimination of Malaria would be established. At the provincial level, each provincial governor will be chair of this committee and will be empowered to work more intensively on this issue. Business owners will be invited to participate in order to improve access to workers and migrant populations in factories and other enterprises. The provincial governors will have the authority to ensure that everyone contributes and participates.

Discussion then turned to *the use of new technologies* to improve the reach and effectiveness of BCC/IEC interventions. In addition to using SMS messages, it was suggested that *voice messages* could be used instead of (or in addition to) SMS messages to overcome the challenge of the low literacy rates of mobile populations. This would enable people to hear the message rather than having to read it.

Providing incentives for volunteers was another important issue for all participants. Some participants believed that there was a need for caution regarding the types of incentives (monetary versus non-monetary) used to ensure that they are sustainable. Others believed that it was important to address the present situation which may necessitate the use of monetary incentives to effectively motivate volunteers. Mr. Shafique (Malaria Consortium) explained that the key to keeping volunteers motivated was to identify the right people who are committed and who understand that they are volunteers and will not be paid. He reiterated the importance of sustainable systems so that when programs are phased out, the systems in place can continue irrespective of external funding. It is vital that volunteers know that their work is being acknowledged, and that they have access to capacity building activities and other non-monetary incentives. Dr. Wichai (BVBD) explained that in Thailand, there is one volunteer per ten households and, since 2010, these volunteers were given 600 Thai baht per month to acknowledge their work. Dr. Wichai believed this had made a significant difference to the motivation of the volunteers.

Afternoon Session Chair: Dr Wichai Satimai, Director, BVBD, Thailand

BCC Marketplace

Mr. Muhammad Shafique, Malaria Consortium, Thailand

Mr. Shafique presented an overview of the BCC Marketplace activity. He invited participants to visit the four BCC “shops” that were arranged in the meeting room. Participants were asked to keep in mind the following questions as they visited the marketplace:

- What are the activities and products available?

- What has been evaluated and found effective?
- How are these activities being carried out in the project?
- What are some activities/products missing in each shop?
- Are the available products of quality?

Following the visits, each group was asked to provide feedback on the exercise including what BCC materials they thought were useful and any gaps they identified.

Responses

- The activity was very interactive and a lot more interesting than listening to a presentation;
- The materials presented were useful though there were some gaps and participants would like to work together; to produce additional innovative and illustrative materials;
- TV and radio should be used more than written pamphlets in areas of low literacy;
- Cambodia: sometimes workers are confused by the messages. For example, migrant forest workers wanted to know why Malarone is used in Zone 1 in Thailand but not Cambodia;
- Appropriate translation of materials is critical to avoid confusion: the keep it simple and sweet approach should be kept in mind when developing messages;
- When there are insufficient funds to use mass media, mobile video shows can be conducted to transmit messages at the community level;
- IEC/BCC materials should be evaluated and new messages developed accordingly. Limited resources mean that effective targeting of messages is very important;
- Give greater consideration to the intended audience when developing BCC/IEC materials;
- Some materials may not be needed anymore and their continuous production should be evaluated. Also, the durability of some materials, such as stickers, especially in inclement weather was questioned.

BCC Initiatives in the private sector

Dr. Boukheng Thavrin, CNM

- The majority of Cambodians continue to seek treatment for fever from the informal & formal private sector; treatment seeking behaviour is complex and not dichotomous;
- Approximately one-third of private providers also work in the public sector so it is not a simple 'either/or' categorisation;
- PD approach has been tried out on mobile and migrant populations in Cambodia for the first time. It can also be used in the private sector to find other suitable role models in this sector;
- Challenges:
  - Maintain law enforcement and regulatory pressure on private providers to complement public-private mix activities. BCC/IEC can be approached from the carrot and/or the stick perspective;
  - Consider diagnosis and treatment policies that are specific to mobile and migrant populations e.g. provision of stand-by rapid diagnostic tests (RDTs) and artemisinin combination therapies (ACTs);
  - Emphasise the need for a Fixed Dose Combination ACT (improve adherence with minimal consumer education) and avoidance of stock outs.

Community-based interventions

Village Malaria Workers (VMWs) in Cambodia

Dr. Po Ly, VMW Project Team Leader, CNM, Cambodia

- VMWs have been providing free diagnosis and treatment for malaria since 2001 using RDTs and ACTs;
- 2011: VMW project scaled up to 17 malaria endemic provinces covering 1 million people (1399 villages covered);

- Close monitoring of VMWs from central level to village level via monthly meetings & monitoring team visits;
- In 2008, the VMW project was expanded to include training on ARI and diarrhoeal treatment to children less than five years of age and drug supplies to the VMWs in 400 villages.

Achievements and lessons learned:

- Regular VMW monitoring and visits to VMW villages are priority activities for the project's success;
- VMWs who perform well should be recognised and rewarded with incentives for sustained motivation;
- Health education promoting early diagnosis & treatment for mobile/migrant, pregnant women and mothers should be prioritised;
- IEC materials related to EDAT and LLINs should be produced & distributed in VMW/MMW villages;
- Regular monitoring, refresher training and support to community volunteers to provide free diagnosis with RDTs and treatment with good quality ACTs for malaria is an effective way of ensuring that symptomatic patients carrying potentially multi-drug resistant malaria are treated quickly and appropriately.

Malaria Workers in Thailand

Mr. Vijarn Yisarakhun, Chief, Vector-borne Disease Control Unit, (VBDC) Trat, Thailand

- In 2009, malaria workers were recruited by village committees and given 3-day training by Malaria staff from VBDC. Monthly supervision visits and 6-monthly performance evaluations were conducted. Capacity building through annual training was provided;
- A total of 60 malaria workers provide the following services: health education at malaria posts and in community; follow up of malaria patients; assistance in organisation of malaria campaigns; assistance in net surveys, net distribution and other malaria related activities;
- Achievements and lessons learned
  - Enhance community participation in malaria prevention and control activities at the community level;
  - Improve attitudes regarding personal protection against malaria;
  - Diagnosis and treatment of malaria has reached more people, which contributes to the decrease of the incidence of malaria;
  - Can be a model for community participation (those malaria workers were recruited by village committees);
  - System is not sustainable once the project is finished.

Questions and Comments

Heavy burden for Community Health workers: Once again discussion turned to the issue of how to ensure that community health volunteers do not have too many demands placed upon them. Dr. Hamade (Malaria Consortium) reiterated the need to ensure that community health volunteers are well chosen, that the community trusts them and that they are not overloaded with demands. Dr. Wichai (BVBD) explained that in Thailand, malaria post workers were supported by village malaria workers. For GFR10, Thailand will ensure that the malaria post workers and VMWs have different roles. For villages that still have a high number of cases, the local administration will be asked to maintain the salary of local malaria, to help them cope with the burden of work.

The positive deviance approach to improve malaria outcomes in Cambodia

Mr. Muhammad Shafique, Malaria Consortium

- PD is an innovative behaviour change approach that promotes those individuals in communities as role models whose uncommon positive practices/behaviours enable them to find better solutions to problems than their neighbours who have access to the same resources;

- Successful stories: Rehabilitating malnourished children (Africa/Asia); promoting exclusive breastfeeding (Vietnam); family planning (Guatemala); girl trafficking (Indonesia); antenatal care (Egypt); maternal and new born health (Pakistan);
- *Cambodia pilot:* Sampov Loun district, Battambang province: process is very participatory and helps community to engage.

PD Approach:

- Orient national and community stakeholders;
- Select communities;
- Conduct PD process (phase 1);
- Sensitise communities to PD approach;
- Establish normative behaviours around Malaria;
- Identify and understand PD individuals and their innovative strategies;
- Behaviours are then analysed and validated by the community to ensure they are culturally acceptable, doable, and accessible to all.
- PD implementation – Phase 2:
  - Provide active learning opportunities to practice the PD role model behaviour;
  - Monitor and evaluate – quantitative and qualitative.

Lessons learned:

- PD is a strong tool for community mobilisation;
- PD can be used as a complementary method to malaria prevention and control – evaluation is needed to learn about its impact in malaria;
- PD can be implemented through the provincial, district and health facility staff.

Questions and Comments

Discussion focused on the sustainability of the PD approach. Mr. Shafique explained that the results of the informal mid-term evaluation indicated that PD was well accepted by the community. An indication of this was the high-level of community participation from the *Healthy Communities PD Seminar* six months into the program where there was a lot of enthusiasm with people eager to share their success stories. Mr. Shafique further explained that what makes PD sustainable is that these behaviours come *from* the community making the approach simple and accessible. The approach does not use highly technical interventions or behaviours but interventions that are culturally appropriate and accessible. He reiterated the importance of creating a supportive environment by giving bed nets, hammock nets and other relevant support. As the slogan of PD is "*Finding solutions from within the community today",* it is clear that the focus is on sustainability since the tools come from within the community – it is not something imposed from outside. In this way, everyone from the community has access to the same tools and behaviours. The PD approach has been evaluated for nutrition programs and results indicate a high success rate with behaviour changes still evident after five and ten years. Although this is the first time PD has been used for malaria, the planned August 2011 evaluation will provide a good indication of sustainability.

Monitoring and Evaluation of BCC Interventions: Achievements and Remaining Challenges

Ms. Michelle Thompson, Malaria Consortium

Ms. Thompson reviewed the two M&E goals for the relevant to BCC interventions. These were:

- To support containment of artemisinin resistant parasites through comprehensive BCC, community mobilization, and advocacy;
- To provide effective management, coordination, surveillance, and monitoring and evaluation.

Ms. Thompson briefly reviewed the baseline survey conducted for the containment project in 2009. Following this survey, a National Malaria Survey was conducted in 2010 that included the containment zones but was structured to enable the country to provide end line results for zones one and two. The 2010 survey was the largest national survey conducted covering 3,840 households in 20 provinces, 192 drug outlets, 192 net outlets, 38 public health facilities and 38 private providers.

Preliminary Results:

- High level of knowledge (97% zone 1 and 96% zone 2) that Malaria is acquired by mosquito bites, but many incorrect ideas about transmission remain. This might be a result of so many health education messages beyond malaria prevention;
- A higher percentage of the population in zone 2 received BCC messages about sleeping under a mosquito net or ITN than in zone 1: 62% in zone 2 had been exposed to BCC regarding using a mosquito net and only 39% in zone 1.
- Regarding knowledge about prevention measures, 91% and 94% in zones one and two respectively know that sleeping under a mosquito net reduces risk of transmission but use of insecticide-treated nets is low (only 42% in zone 1 and 58% in zone 2 use ITNs);
- Only 3.9% of population in zone 1 and 3.3% in zone 2 know at least 3 of the 7 ways to prevent Malaria.

BCC Indicators for the Containment Project:

- Proportion of household respondents in Zone 1 aware of key messages increased to 50% by end 2009 and >90% by end 2010;
- Proportion of cross-border mobile/migrant populations aware of key messages at least 30% by end of 2009 and at least 50% by end of 2010;
- Proportion of respondents in Zones 1 and 2 who are aware of new treatment policy and appropriate diagnosis and treatment;
- CMS 2010 preliminary results of Malaria knowledge in Containment Zones 1 and 2;
- Knowledge of Malaria transmission and prevention higher in Zone 2.

Challenges:

- How to assess the impact of BCC/IEC interventions;
- How to effectively monitor and measure changes in behaviour and practices, both routinely and through annual or special surveys;
- How to change behaviour, especially when knowledge & attitudes may be high but practices don't change;
- Not clear how Thailand should report BCC interventions in the framework;
- Cambodia did not target training or IEC materials about the new treatment guidelines (i.e., treat with DHA-piperaquine in Zone 1) to the general public.

Questions and Comments

BCC messages appeared to be better absorbed by the populations in Zone 2 than Zone 1 despite the most intensive BCC efforts occurring in Zone 1. Questions were raised as to whether this could this be due to a difference in the socio-economic status of the populations, or to the sample size. Ms. Thompson pointed out that although the population in Zone 1 is more dynamic than Zone 2, which could affect the data, the statistical analysis has not yet been completed so it is too early to conclude whether the results really are different. Participants discussed various socio-economic factors and the impact this may have had on effectiveness of BCC messages. For example, the areas covered in Zone 1 are very remote and infrastructure is poor with very few schools for children. As a result of the low level of education, only VMWs are used to distribute information. The higher rates of knowledge in Zone 2 could also be due to better access to messages relayed via the mass media in that zone.

In response to concern that knowledge levels appeared to be very low concerning the need to seek rapid treatment (for example, 5-6% knew they should get a blood test before taking drugs and that they should take full course of treatment) discussion about the difficulties in designing a quantitative questionnaire around BCC ensued. Although surveys were agreed to be useful, they also provided a snapshot of a situation in time and it was therefore important to think of more routine mechanisms to collect this information such as using the existing networks of volunteers, health centre staff and so on. Using a diversity of methods, routine data, surveys, focus group discussions and so on, and triangulating this data on malaria cases and fever cases, was seen as the optimal approach.

Thailand's experience: Dr Wichai (BVBD) also commented that in Thailand, delays in funds being disbursed had affected the time that interventions were started. This may also be the case in Cambodia. As the impact of behaviour change is cumulative, in Zone 2, the previous project may have already had an impact. Additional experience from Thailand was shared. Thailand conducted two KAP surveys in 2009 and 2010 and analysis of the data revealed that the level of attitudes and knowledge is very high. The data also showed that channels to receive information were mostly from interpersonal contact not from leaflets. Most received information from village volunteers. Thailand does not yet measure the number of people reached by BCC as the performance framework and indicators were already developed for the program. However the number of people sleeping under any kind of bed net should be reported.

Data on treatment guidelines for DHA-Piperaquine: As national treatment guidelines were still being developed, it was proposed that BCC messages should be delayed until this process was concluded in order to ensure that the general public did not become confused by different messages. An additional comment on this issue was that as the drug issue was unlikely to be resolved rapidly, BCC messages could still be developed highlighting the behaviour/importance of taking a full course of medicine even if the exact drug was not specified.

Day Two: Mobile and Migrant Populations

Morning Session Chair: Dr. Chea Nguon, Vice-Director, CNM, Cambodia

Review of Recommendations and action points: achievements and remaining challenges

Dr. David Sintasath, Malaria Consortium

Dr. Sintasath reviewed the objectives and recommendations of the 2009 Mobile and Migrant Populations Workshop held in Bangkok, the progress made towards addressing/implementing the recommendations and the remaining challenges.

The objectives of the 2009 meeting were:

- To share information about mobile and migrant populations (definitions, patterns of migration, identifying organisations working with migrants);
- To get an update on situational analysis of mobile and migrant populations in Thailand and Cambodia;
- To develop novel and creative approaches for the delivery of prevention, diagnosis and treatment of health and malaria interventions for mobile and migrant populations;
- To formulate a working strategic framework to access mobile and migrant populations.

Recommendations and Progress to date:

1. Consolidate existing data on migrants & mobile populations;

Progress

- FHI and URC conducted mapping of farm owners (i.e., loaning of LLINs to migrant workers)
- Respondent Driven Sampling (RDS) methodology developed and piloted in both Thailand and Cambodia
- Malaria, Mobile and Migrant Populations report (PFD and URC)

2. Establish an operational definition (Easy-to-reach, Intermediate and Hard to-reach groups);

Progress

- An operational definition for easy to reach, intermediate and hard to reach migrant populations has been established, with distinct interventions targeting each of these groups.
- Easy-to-reach: Collaboration with farm owners, screening and treatment, active case detection (ACD), directly observed treatment (DOTs)
- Intermediate: Border screening, provision of LLIHNs, repellents
- Hard-to-reach: RDS methods, qualitative studies

3. Establish a clearer definition and selection criteria for Mobile Malaria Workers (MMWs);

Progress

- 69 MMWs were selected in 23 health centres (HCs) in Zone 1 and 381 MMWs in 127 HCs located within malaria risk areas in Zone 2;
- Training completed in June 2010 and VMW and MMW assessments in Containment zones to be conducted.

4. Harmonise BCC/IEC messages and strategies for mobile and migrant populations strengthening cross border communications;

Progress

- BCC/IEC workshop (Aug 2009) defined and harmonized key messages: seeking prompt diagnosis and treatment, ITN/LLIN use, compliance to antimalarials drug treatment
- Innovative strategies trialled; Malaria corners (Thailand)); Reaching migrant populations through taxi drivers; farm owners (LLIN/LLIHN distribution); positive Deviance in migrant communities; bilingual IEC materials and distribution at border crossings.

5. Integrate community-based Malaria data into other information systems

Progress

- Cambodia: village malaria database has been developed, installed in operational districts (ODs), and training provided; further need to ensure quality of data
- VMW reporting forms now include data on migrant and mobile populations

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Questions and Comments

Quantifying the number of Pf *cases occurring within migrant communities on the Thai-Cambodia border* was raised as an important issue as although cases are low, there was concern amongst international partners and donors about the huge risk of artemisinin resistance that could spread to other countries because of this high-risk group. Dr. Sintasath explained that there are currently efforts to assess where Day 3 clusters are and how far they are moving which would help to provide a better understanding of the magnitude of artemisinin resistance. Quantifying mobile and migrant populations by estimating numbers through farm owners who know the numbers of migrant workers they hire for farming purposes was also suggested as a good starting point.

The malaria bulletins: A prototype has been developed for Cambodia based on 2009/2010 data, particularly focused on the containment zone. The bulletin provides a snapshot of what is happening in the country down to district level and focuses not only on containment efforts, but the national malaria situation. The bulletin will be colour coded and easy to see the increase in cases so it would also serve as an alert system indicating need for more investigation and preparedness to address those issues.

Push and pull factors for internal migration: There was extensive discussion about the importance of *improving surveillance and engagement with the private sector to better predict migration patterns.* With the rapid increase in the construction of hydro-dams and other infrastructure projects in the region, it will be increasingly important to engage with relevant institutions and to access available data from Economic Impact Assessments and Social Impact Assessments to try to anticipate and prepare for population movements. To take the example of Cambodia, it was agreed that migration patterns in Cambodia would likely change. In the past there was a lot of out-migration but now Cambodia is receiving migrants from other countries, such as China (Yunnan province), Vietnam and even Thailand. Similarly, Dr. Wichai explained that in Thailand although the context is very different regarding internal migration, there are specific issues that need to be addressed. For example, more work is required on how to improve data and interventions addressing the rotation of military soldiers every six months. With increased cooperation between countries via ASEAN and other institutions, migrants will be able to move more easily to and from construction sites and businesses which provides a challenge but also an opportunity to improve monitoring.

Vector Control strategies for mobile and migrant populations

Dr. Siriporn Yongchaitrakul, Technical Officer, BVBD, Thailand

- Proportion of registered migrants in Thailand: 82% Burmese; 10% Cambodian, 8% Lao PDR;
- Vector control methods used: ITN, LLIN, LHIN, Indoor Residual Spraying (IRS) around active Foci, repellents, Bio Control;
- Net distribution to mobile and migrant populations in 7 provinces: 2009 (28, 004), 2010 (3188) and 2011 (808)
- ITN coverage (2011) in zones one and two respectively was 133% and 110% respectively (some households owning more nets than the number of people in the house);
- Repellent distribution to mobile and migrant populations in 7 provinces: 2009 (122, 637) and 2010 (49, 413)
- IRS coverage increased from 76.2% in 2004 to 99% in 2010

Achievements

- Collaboration between partners and stakeholders at all levels has been strengthened and the community empowered for malaria prevention and control;
- ITN are very effective, well accepted and practical for all high-risk areas, especially LLIHN for forest workers;
- Capacity-building of public health personnel in malaria prevention and control.

Challenges

- To promote the concept of individual responsibility for malaria prevention;
- To promote the use of existing measures for personal protection;
- To develop new and appropriate methods to protect individuals.

Questions and Comments

Insecticide use: In response to a question regarding the efficacy of insecticides, Dr. Siriporn explained that in Chanthaburi (Zone 1), the efficacy of the insecticide used in the LLINs and hammocks was tested and the results showed that it still has strong efficacy, killing more than 80% of mosquitoes even after 2 years.

Clarification on distribution of net by the loan scheme: nets are distributed to farm owners rather than directly to workers as there are insufficient nets and workers are highly mobile. Nets are provided free of charge and left with the owners. The number of nets needed is calculated by discussions with the farmers however, as there are insufficient long lasting nets for all migrants, priority is given to long-term migrants – those who stay more than 6 months in Thailand. One problem with distributing the nets to the farmers/business owners is that workers often fail to use them, as they are concerned that if the net becomes ripped or torn that they will encounter a problem when they return it to their employers.

Convincing business owners to pay for prevention and treatment for workers: Dr. Wichai mentioned that in Thailand all large companies have to pass an Initial Health Assessment and Environmental Impact Assessment and because of this regulation they have to take initiatives themselves to protect workers, for example, providing personal protective equipment. However, the challenge is working with small businesses and providing them with necessary equipment such as bed nets and so on. From 2010, LLINs will be used in Thailand instead of conventional nets although the price is much higher. The use of IRS will be reduced - the key issue is to consider what is appropriate for each setting.

Dr. Gopinath (WHO Lao PDR) explained that in Lao PDR, a database of project developers in the various sectors is being created. The first exercise of compiling a database of development projects in the five provinces where most development projects are occurring has just been completed. The next step is to get a lot more detail about the composition of workers in each company, their background, movement patterns and so on. For example, different projects result in different patterns of migration requiring different BCC and treatment strategies. Some workers bring in their own malaria drugs (e.g. artemisinin injections) but also use public health facilities. So in our efforts to combat malaria, we need to look at individual projects and strategies and promote the benefits to the employers so they see it as a "win-

win" situation. The companies need first need to understand how to protect their workers and be convinced to pay for this while national programmes can provide the tools, technologies and training.

Case Management and treatment: increasing access for mobile and migrant workers

Mobile Malaria Workers

Dr. Neang Vanrith, VMW Project Officer, CNM, Cambodia

- Nov-Dec 2009: 108 MMWs across 9 provinces attended a 2-day received training course;
- Data collection carried out by MMWs: January 2010 - December 2010 provided to the VMW Project Officers every month in nine targeted provinces.

Achievements:

- MMWs treated simple malaria cases using RDTs first to confirm diagnosis and provided anti-malaria drugs to patients according to the national guidelines, referring severe malaria cases and other diseases to nearby health centres and hospitals;
- Mobile/migrant workers received malaria prevention information in endemic areas & related health education from MMWs;
- The success of the MMWs was also due to good collaboration and management by CNM, PHD, OD, HC, and local authorities. In addition, the political and economic commitment for the project was a key factor.

Challenges:

- Some of mobile population or migrants did not have full trust in MMWs knowledge about EDAT of simple malaria;
- High mobility and remote location of mobile and migrant populations made follow-up difficult;
- Not all MMWs were able to regularly attend the monthly meetings;
- High cost and limited access to transport makes it difficult for referred cases to reach health centres and hospitals;
- Mobile and migrant people are usually not registered & are not familiar with local context (social services and programme intervention).

Fixed Schedule Malaria Clinics (FSMCs)

Mrs. Saowanit Vijaykadga, Public Health Officer, BVBD, Thailand

Objective of FSMCs: To eliminate artemisinin-resistant malaria parasites through active case-finding in targeted areas, while providing effective treatment for every case

FSMC Locations: Border markets, check points, meeting points of migrant workers in seven target provinces

Risk groups: Migrant workers, local population and army personnel

Achievements:

- Improved accessibility to early diagnosis and effective treatment;
- Improved attitude and collaboration of cross-border migrants;
- Improved collaboration among military and citizens of both countries.

Lessons Learned:

- Blood slides should be collected close to the FSMC because of a low slide positivity rate;
- Activity should be conducted more frequently during high transmission season;
- Appropriate BCC should be integrated into FSMC to improve efficiency;
- Regular supervision is required to ensure success of activities.

Questions and Comments

Some migrants and mobile populations do not fully trust MMWs in diagnosis and treatment due to the short training course they attend. Including communication skills as a component of the MMW training was seen as important. To date, MMWs received basic health education training but there was no focus on interpersonal communication. Including communication training would help MMWs, farm owners

and local authorities who also attended the training to encourage their workers to join awareness raising activities about prevention, using posters, banners and other materials.

Refresher trainings for MMWs may help to increase migrants' trust in the MMWs. In addition, a suggestion was made to make use of the monthly meetings to provide MMWs with the on job training. In this way, the communities will see that the knowledge levels of MMWs have increased and that the MMWs are more confident and committed. Some MMWs have low confidence because they know that doctors study for seven years and MMWs for only two days. They know that if they make a mistake they will suffer in the community. Trust levels also appear to vary between provinces. One provincial worker reported that in his province, the MMWs provide treatment for malaria and refer severe cases to health clinics. However, some people even with severe cases want to continue treatment from MMWs because they trust them, as well as due to the inaccessibility of health clinics and hospitals.

Raising profile of MMWs and ensuring the program is known: Knowledge about MMWs is limited amongst some mobile and migrant populations. The farm owners usually inform the workers where the MMWs are so they can get treatment and a billboard is posted in front of the house of the MMWs. However, in order to ensure that more migrants and mobile people access MMW services, the MMW services should be "marketed" correctly. For example, radio or TV spots could be produced to promote the MMW network.

Comment to clarify the roles of MMWs and VMWs: The MMWs' services target mobile and migrant populations. In the original plan the aim was to have 3 MMWs for each health centre, however there are only one or two. In Pailin, the MMWs were selected from amongst the farm owners – some clinics have more than ten MMWs but it depends on the situation. They are selected from the resident population, not the mobile population because mobile people move continuously.

Collaboration with the private sector

Use of Malaria corners in factories and businesses

Ms. Urivan Thadtong, Chief, VBDC, Sao Kaeo, Thailand

The objective of malaria corners is to provide information on malaria, personal protection, diagnosis and treatment to employees of private factories, plantations and farms.

- Locations: Businesses, health facilities in target areas, check points and tourist areas**,** meeting point where migrant workers gather, and communities where risk groups live;
- Primary targets: Migrant workers: non-Thai and Thai;
- Secondary target: Local people, soldiers and army, and tourists.

Lessons Learned

- Some people are illiterate, so other types of BCC materials should be produced (i.e. audio CD, Video clip);
- Should consider local settings when comes to distribution outlets;
- More channels to distribute BCC messages i.e. TV, radio;
- Regular supervision is needed to ensure the success.

Evaluation of LLIN loan scheme and use of taxi drivers in Cambodia

Dr. Kheang Soy Ty and Ms. Linna Khorn, URC, Cambodia

LLIN scheme

Achievements:

- Malaria Control in Cambodia (MCC) LLIN lending scheme is currently acceptable among the farm owners based on cost-benefit analysis;
- Farm owners cooperating well but still a need to emphasise better management of LLINs each season.

Challenges:

- Incomplete records and neglected management of LLINs by some farm owners could undermine the expected coverage of LLIN use among mobile migrant workers;
- Maintaining up to date lists of farm owners & migrant workers;
- Accessibility to mobile and migrant people;
- Competing priorities of farm owners has resulted in some missing the opportunity to get nets;
- Indicators.

Health Education through taxi drivers for mobile and migrant populations in Cambodia

Preliminary results:

- In the 3 project areas (Sampov Loun, Samlot and Pailin), over 47,000 passengers were transported by taxi drivers;
- Approximately 45% (21,660) were mobile or migrant workers, an average of 2,166 per month;
- Estimates are that each driver transported between 90 - 120 migrants per month depending on the area.

Lessons Learned:

- Taxi drivers play a vital role in sharing health education messages to their passengers and contributing to behaviour change;
- Maintaining good communication and motivation with them is mandatory and can be achieved through active involvement & regular feedback;
- On-going technical support is critical to success of program;
- Taxi-drivers can also be referral source for patients in remote areas.

Questions and Comments

Accuracy of taxi drivers' reports: There was a brief discussion to clarify how URC ensured that the reports from taxi drivers were correct. The response was that it was relatively easy to gauge if reports had been made up. In addition, URC planned to conduct an evaluation that will include exit interviews with travellers and use mystery passengers to ensure the taxi drivers perform well.

Duplication of messages/reporting: A comment was made that as mobile populations move around a lot passengers might be duplicated and this should be considered regarding an overlap in the reporting of passengers targeted. In addition the comment was made that the same passengers might be exposed to the messages several times. However, it was agreed that multiple exposure to the key messages should be seen as a positive thing. In addition to mobile populations receiving these messages, others in the taxi are also exposed meaning that additional people besides mobile/migrants receive the messages.

Afternoon Session

Chair: Mrs. Saowanit Vijaykadga, BVBD, Thailand

Migrant Situational Analysis using Respondent Driven Sampling (RDS) in 3 provinces in Thailand

Ms. Piyaporn Wangroongsarb, Technical Officer, BVBD, Thailand

The RDS objectives are:

- To determine the proportion of settled and mobile migrant workers;
- To explore the knowledge perception, practices and treatment-seeking behaviour in this population.

Study Area and Population

- Trat, Chantaburi, Sa Kaeo with 900 participants from Cambodia and 900 from Myanmar;
- Two sites in Trat for migrants from Myanmar and one site in each province to recruit Cambodian migrants;
- Three staff at each site (recruitment, coupon management, questionnaire administration) and 6 seeds per site.

Lessons Learned:

- The method was successful for studying migrant population in remote areas of Thailand and for gathering information among migrants;
- Short term mobile migrants have low access to health messages and health treatment;
- The majority of mobile migrants know that malaria is transmitted by mosquitoes and own a net (not an impregnated net);
- The patterns for crossing borders of Cambodia and Myanmar are different.

RDS in Pailin and Veal Veng, Cambodia

Dr. Chea Nguon, Vice-Director, CNM, Cambodia

- **RDS in Cambodia**: important study since migrant/mobile populations in Cambodia have never been previously surveyed due to technical and feasibility issues.
- Four study sites in Pailin and Veal Veng, 675 respondents in each site.
- Mobile/migrant populations remain at high risk and are not always reached by VMWs and other village-based services. They may also spread drug-resistant strains elsewhere in Cambodia and the region.

Results/Conclusions:

- Majority of migrant workers are young, poorly educated males, though many are married;
- Migrants in Pailin are primarily there less than three months, working in agriculture, while those in Veal Veng are there for longer, with more diverse occupations;
- Pramuoy, Veal Veng hosts many migrants who plan to settle there;
- 5% have been to Thailand in the past six months, mostly from Pailin;
- Over 90% have received health messages about malaria in the past 3 months, mostly from family, friends, neighbours, TV, billboards, and radio;
- Less than half own or sleep under an ITN;
- Drug outlets were the primary care-seeking choice for the last episode of illness;
- Amongst the 25% of migrants in Pramuoy, Veal Veng treated for malaria in the past three months, 80% were reported to have been diagnosed by blood test, and 60% took an appropriate treatment.

Questions and Comments

There was intensive discussion about the *importance of **using the data** obtained from the RDS. Dr. Najib (WHO Cambodia)* congratulated both Cambodia and Thailand for conducting the studies and commented that the data from these studies was one of the more significant outputs of the containment project as it *provided real insights into how programmes can be adapted and better targeted to the populations*. The RDS data is very valuable information; it is current and can be used to improve IEC and BCC interventions. Dr. Najib encouraged participants to use the evidence now and to carry out the interventions that the studies point to as useful. Dr Nguon echoed these comments saying that the information should be used now and triangulated with other data. Interventions should not be delayed until there is a new strategy or until the methodology is perfected.

Other issues to consider with the RDS Methodology: RDS is used amongst peer groups; therefore the results might be biased as the social networks can influence each other. It is important then to map the study participants to ensure that they do not all come from only one cluster. Dr. Sintasath (Malaria Consortium) stated that as there is no established denominator for migrants to facilitate random sampling from that population, RDS is a good tool to give a more representative sample of the population. The seed selection is critical and it is important that studies adhere to strict criteria of how seeds are selected. One of the key challenges is to identify seeds who are well connected within the community. They can then play an important role in implementation. It may be important to consider how RDS can be used as part of the national programmes as a way to deliver services routinely. For example, at a site specifically for migrants, a questionnaire could be delivered, a blood slide conducted and also biological data could be taken and included as part of the surveillance system. In this way, IEC /BCC materials and also bed nets could be distributed. This could all be incorporated into the national programmes to improve delivery of malaria services for migrant populations. These issues should be considered when thinking about whether RDS should be continued or scaled up.

Another issue discussed was the *length of time it took to conduct an RDS and whether the process and methodology could be simplified* and conducted on a smaller scale at district or provincial level. As migration patterns change rapidly there is a need for strategies to be constantly updated and adapted. If RDS was conducted in the same area in two years time, the cohort of migrants could be very different. There was general agreement that the methodology yielded important results but concern remained whether *the data analysis takes too long and the need for more thought on how to increase the speed of the data analysis in order to start taking action more quickly.*

Monitoring and Evaluation: Achievements and remaining challenges

Ms. Michelle Thompson, Malaria Consortium

Ms Thompson presented the r*esults of the situational analysis of Mobile and Migrant populations in Cambodia and Thailand against Indicators 4.1 and 4.2, 4.3, 4.4 and provided an update of Malaria cases in the Containment zones 2009-2011*

Key results for Thailand:

- Overwhelmingly the plasmodium infections were amongst people of Thai nationality in the seven containment provinces, with *Pv* being the dominant infection;
- The number of *Pf* cases has dropped dramatically since the beginning of the containment project with a small increase of cases in May and June 2011, which are being investigated.

Results from Cambodia

- The malaria database collects detailed information down to village level for cases detected by VMWs and indicates whether the cases are mobiles;
- The proportion of cases diagnosed in Zone 1 is about 40-45% mobile people in 2010/2011 which contrasts with what is seen in Zone 2. This is not unexpected since western Cambodia has seen a lot of rapid development and an influx of seasonal labourers. VMWs are accessing and treating these mobiles.

Remaining M&E Challenges:

- How to assess the impact of mobile/migrant interventions given the dynamic nature of these population groups, and the lack of population lists for sampling;
- For Thailand, the key challenge in monitoring is the issue of registered versus unregistered migrants;

- For Cambodia, the key challenges are increasing internal migration, rapid environmental changes and definitions of migrants;
- Need for novel methodologies - RDS methodology in the context of malaria control is innovative and can provide a picture of the movement and social networks of migrants, however it will not be able to give definitive data.

Economic Development in the GMS – impact on migration and malaria

Dr. Deyer Gopinath, WHO/Lao PDR

Key points:

- To date, most strategies for migrants and mobile populations are reactive and responding to disease outbreaks. It is now important to start trying to anticipate where disease outbreaks may occur. Looking beyond the malaria world and engaging development sectors, such as the River Commission and ASEAN will help to *forecast migration patterns in the future;*
- It is important to identify key entry points to improve engagement with project developers, donors and political decision makers in the energy, transportation and agricultural sectors;
- Partnering with the private sector extends the reach in providing malaria services to mobile populations but emphasis also needed on promoting individual responsibility for health and malaria prevention;
- Large-scale infrastructure projects present significant challenges for malaria control and elimination leading to the creation or elimination of new mosquito breeding sites, changes in vector behaviour and increased opportunities for spreading disease;
- Changes in migration patterns alter human-vector-parasite contact patterns;
- Current surveillance systems need to be strengthened to capture these change and predict outbreaks before they occur and to initiate control programs before the population has become seriously affected.

Questions and Comments

Environmental, Health and Social Impact reports: Participants discussed the importance of accessing these reports for infrastructure projects. Dr. Gopinath explained that regarding road projects, the assessments are done very rapidly and the reports are therefore difficult to access. For dams the process is longer so reports are available but are often released only after the project has already been approved. The situation varies from country to country. In Thailand there is a good community-based system, however, in Lao PDR, projects are fast-tracked very quickly even before these reports are available.

Dr. Piyarat *(Mahidol University)* explained that in Thailand the health impact assessments are carefully reviewed and the results are sent to the national subcommittee for review. The potential impact from increased disease or other health-related issues is considered prior to the construction of development projects. The social, health, and economic impact assessments are looked at together when feasibility studies are conducted. It is also important to look at mitigation plans and address problems in advance of the implementation of the project. If the mitigation plan is lacking or is not optimal, a lot of projects are frozen in Thailand until they get Cabinet approval. Dr. Wichai echoed Dr. Piyarat's comments stating that improved economic growth also helped with the types of BCC that can be implemented around infrastructure projects in the GMS. In Thailand, the good quality roads, higher salaries and improved technologies enable populations to access media even in remote areas. As the solar cell phone becomes less expensive it may enable a significant change in how BCC and health education activities are conducted.

An additional point made was that the large infrastructure projects frequently displace people from where they live and this increases mobility patterns. As the situation is so dynamic in this region, it will change the ecology and vectors so all programs need to be dynamic in the response and develop innovative approaches.

Day Three: Assessment and next steps

Introduction to Group Work: Determining what works, what needs improvement, and potential scale up, *Mr. Muhammad Shafique, Malaria Consortium*

Mr. Shafique informed participants that the final day of the meeting would be focused on discussing the next steps for the Containment Project. He reviewed the BCC objectives of the meeting and introduced the Group Work activity. Participants were divided into four thematic groups: Case Management, Prevention Measures, Engaging the Private Sector and Operational Research. Participants in each group were asked to come up with up to three key activities to modify and scale up, and to identify who would be responsible for the scale up. Within each thematic group, two sub-groups for Thailand and Cambodia respectively would be formed to discuss the activities which should fall within the scope of BCC and mobile/migrant population interventions.

Group feedback

Each group presented an overview of achievements to date and identified key activities to be considered for future implementation. The full list of activities is annexed at the end of the report.

Questions and Discussion

Group 1. Case Management

Discussion focused on the importance of ensuring that all trainings provided were followed up with appropriate supervision at the provincial level. This was highlighted as being critical to the success of interventions. The discussion took place in the context of trainings provided by PSI for the private sector. Although these trainings had been well received, staff from provincial departments had requested that they be informed of follow-up supervision to private sector outlets so that all partners could work in a more collaborative manner. PSI responded that they were learning from the project's PPM initiative and using it as a platform to engage NGOs and create cohesion in the private sector strategy. In addition, PSI explained that their research reports on behaviour change are shared with all partners.

Group 2. Prevention measures

Regarding the range of prevention measures being used by programs, a question was raised about bed net coverage and why this was not included as a tool in Thailand's containment areas. The response from Thailand was that the programme had started using IRS and then, as in Africa, followed with LLIN. IRS is only used if there is an outbreak. The Global Fund grants urge countries to promote the use of LLINs. However, many villagers have only ever used conventional nets, and it takes time to help them adapt to using LLINs.

Group 3. Engaging the private sector

Questions were raised regarding plans to integrate other interventions, besides IEC/BCC activities in malaria corners and whether integration with other health activities could also be implemented. Dr. Piyarat explained that the group had discussed the need to improve malaria corners and a key issue identified was how to clearly communicate the information to the target population. There is a need to train some migrants as volunteer educators for the malaria corners so they can clearly explain to their fellow workers. The group also believed music/video players and a TV set in malaria corners with messages in appropriate languages would help the audience to understand the messages more easily. The group did not discuss integrating malaria corners with other disease interventions. Dr. Piyarat commented that both Thailand and Cambodia face similar challenges regarding the private sector. For example, both Thailand and Cambodia need to improve cross-border cooperation, deal with time and budget issues and improve cooperation between business owners and malaria workers**.** There isn't social security or health insurance for daily labourers and there is always a conflict between the time that the malaria workers are available and the time the migrants are available.

Ms. Dolenz (Clinton Health Access Initiative) explained that one of the positive outcomes of the Containment Project was the production of large amounts of data to better design and target messages. Once interventions are evidenced-based, programmes can have a lot more confidence in implementing and targeting for specific populations. In addition, evidence-based interventions are more financially viable. For example, if we know what percentage of private providers are implementing certain activities then we can better target our resources. We know that we can now use private providers as targets for information and also as channels of information. It will be important to use this strategy particularly as funding decreases.

Group 4. Operational Research: What else is needed?

Dr. Hamade (Malaria Consortium) explained that a key issue is how to *engage the farm and business owners to take responsibility for their workers*. Dr. Bounlay (CMPE, Lao PDR) said that in Lao PDR, the approach was to show the cost benefit to farmers. It is possible to influence and change businesses. This is clear from the development of Corporate Social Responsibility departments at major companies, such as pharmaceutical companies. We need to look at innovative strategies to get these farm and business owners to engage.

Dr. Gopinath (WHO Lao PDR) raised the question of *whether BCC is really possible for mobile and migrant populations*. He highlighted that due to their high mobility he doubted populations would retain the message and change their behaviour over several months. He stated that it was important to better understand the views and perceptions and thinking of these populations. He also explained that although several hundred KAP studies have been undertaken, we are still unable to address the problems in a way that comes from knowing the actual situation of the target populations. Regarding operational research, Dr. Gopinath reiterated his earlier point that all programs should be looking at forecasting trends because what is currently being addressed may not be relevant in two or three years. It is therefore necessary to consider how to engage others beyond the malaria world and to take into consideration the broader influences beyond this work.

Regarding migrant populations and behaviour change, Ms. Dolenz added that it is important to look at other sectors, such as anti-trafficking programmes that focus on migration and look at the origin, transit patterns and destination of mobile populations. If migration patterns are going to change we should focus also on the *origin*. For example, the Global Fund will fund national programmes that target populations *before* they become migrants.

Mr. Shafique (Malaria Consortium) added that the positive deviance approach identified one way of targeting mobile populations. Landowners are being actively involved and partners are building their capacity, resulting in them now also being in a way volunteers for the programme. They have a large influence on migrants and we have to take advantage of this influence. This creates an enabling environment. The targets of our approach must be the landowners and business owners as they are the only constant wherever migrants go; URC's LLIN lending scheme is also very important and they should be equipped them with health education materials in addition to being net distributors. Additionally, he added that the programme needs to use approaches similar to PD to identify actual behaviours in the communities. The PD pilot will give us a lot more information for future strategies.

Mr. Krishnan (WHO Cambodia) asked the Thailand national programmes about the problem with M2 migrants and how decisions should not be made in isolation but rather involve cross-border initiatives. There is a social economic dimension and a political dimension and both need to be considered. To follow Dr. Gopinath's comments, Mr. Krishnan explained that the national programme strategies have to involve *advocacy* with ASEAN and also within the GMS and the Mekong River Commission especially in regards to large infrastructure projects. In terms of advocacy, we have to learn how to better engage these institutions.

Closing Remarks:

Dr. Bounlay, Lao PDR: Dr Bounlay paid his respects to all presenters and participants from Cambodia, Thailand and Lao PDR. He concluded that Cambodia and Thailand have worked together very well and can increase dialogue between the countries and solve their problems together. Regarding the Containment Project, he expressed his belief that it will benefit other countries as cases cases and target groups for each country can be followed up with diagnosis and treatment. He said that containment is a big issue in Southeast Asia and that this project is a very good model. Economic problems that are the root of migration because people have to move for daily survival need to be also be addressed. This meeting has been successful in providing a good opportunity for exchange of information and experiences.

Dr. Nguon (CNM): Based on the dynamic and active participation in the past three days, and what he has observed over the past 2 years, Dr Nguon concluded that Thailand and Cambodia have achieved a lot and they should be proud of these achievements. However, he observed this is only just the beginning of the path to eliminate malaria in Cambodia by 2025 (both *Pf* and *Pv* cases). The discussions have identified gaps and challenges and recommendations for further progress to ensure the project is a

success. The approach to reaching the vulnerable communities is still limited – there is a need to ensure that messages are given in the right place. Generalised or fragmented approaches will cause resources to be allocated separately without adequate prioritisation. Some strategies such as net distributions need to be revised and evaluated for impact.

Mrs. Saowanit (BVBD): Mrs. Saowanit extended her thanks to the organizers of the workshop and praised all participants for their efforts and active participation. In addition, she outlined the importance of continuing efforts towards the containment of artemisinin resistance. The containment project had achieved a great deal and the efforts of everyone involved at community, district, provincial and national levels were recognized. Cross-border collaboration between Thailand and Cambodia was a key to the success of the project and continued regional cooperation amongst countries in the GMS would help to ensure that future projects would also be successful. Mrs. Saowanit wished all the participants a safe journey home and brought the meeting to a close.

Summary and Recommendations

Dr. Sintasath provided participants with an overview of the key achievements, lessons learned, recommendations, and tools and products that emerged from the Containment Project. These are outlined below:

Key Achievements

- Harmonised messages and strategies in the effort to contain artemisinin resistance.
- BCC Working Groups established.
- Bilingual IEC materials produced and distributed.
- Exemplary cross-border collaboration and communication, particularly for BCC.
- Innovative BCC strategies and interventions for target populations piloted and evaluated.
- Positive Deviance approach to identify and promote positive behaviours within communities.
- Use of taxi drivers to provide health education and IEC.
- Working with private providers.
- Engaging business owners with malaria corners.
- MMWs and fixed schedule malaria clinics (FSMC) for improved malaria case management and prevention services for mobile and migrant populations.
- Increased involvement with the private sector including:
    - LLIN loaning scheme with farm owners.
    - Use of taxi drivers.
    - Malaria Corners – factories, restaurants, tourist centres, etc.
    - Mobile phone service providers – free texting for the malaria programme efforts in D3+ surveillance at the village level.
- Explore the further use of RDS methodology to:
    - improve understanding and knowledge of migrant networks and treatment-seeking behaviours;
    - to improve strategic frameworks for mobile and migrant populations

Lessons Learned

- VMWs, MMWs, health workers and farm workers are seen as important agents for delivery of BCC/IEC to target communities, but may need additional support to serve as health educators/promoters.
- Maintaining motivation for VMWs, MMWs, health workers and volunteers, farm owners, and other agents remains a key challenge and their attrition should be addressed.
- BCC is cross-cutting and will require innovation and targeted approaches to reach intended audiences.
- Proper training for MMWs is needed in order for them to provide quality malaria services, so that trust amongst the community can be maintained.

Recommendations

1. Assessing behaviour change through cross-sectional surveys is difficult and has limitations. There is a need to find more creative ways to capture behaviour change over time particularly through routine monitoring, with less reliance on surveys.
2. Prolific IEC materials have been produced and distributed, but there is a need for emphasis on ensuring quality, targeted messaging (with consideration of language and interpretation), and proper M&E of these materials, approaches, and strategies.
3. BCC/IEC activities and strategies should emphasise a sense of individual responsibility and duty.
4. Maintaining motivation of health staff and community workers will be critical as the malaria burden decreases and countries move towards elimination. There is a need to look at other sustainable non-monetary incentive schemes.
5. There is a need to ensure and **maintain quality of delivery of services from MMWs,** by having clear terms of reference, more training of at least 5 days (with emphasis on communication skills), development/use of standards of practise, and more frequent monitoring. Improving quality of MMWs will help to promote the MMW network.
6. The RDS methodology allows the opportunity to identify “super seeds” (those who are well connected and influential), but further analysis of this data is required**. It may be possible to utilise these “seeds” for delivery of BCC and potentially integrate other malaria services.**
7. The use of taxi drivers to deliver health education seems to be a good way to expand reach to the general population (including mobile and migrant populations), but there is a need to ensure proper routine **monitoring and evaluation of taxi drivers** and customer feedback.
8. It is projected that the GMS will undergo tremendous economic development (with expansion of roads, railways and construction projects). It will be critical for malaria programmes to be **engaged with these and other sectors** (e.g., at the Regional level – ADB, WB, ASEAN etc and at the National level – relevant ministries, associations and research institutes) to better understand migration patterns; collaborate/contribute on appropriate interventions, and ideally to forecast potential “hotspots”.
9. There is a need to address common challenges of **coordination mechanisms, time-constraints and budget limitations** to improve engagement with the private sector.
10. **Positive deviance can be used to identify relevant role models** (e.g., farm owners, private providers)

Examples of tools and activities from the Containment Project

BCC/IEC

- Cross-border BCC/IEC materials (posters, billboards, CDs, etc);

- Evaluation tools and monitoring for positive deviance;
- BCC assessment tools;
- BCC strategic frameworks for Cambodia and Thailand.

Mobile and Migrant Populations

- Respondent driven sampling methodologies adapted for Thailand and Cambodia;
- Survey design/questionnaires to address indicators for mobile and migrant populations tested;
- Mapping of farm owners;
- Training curriculum for taxi drivers;
- VMW and MMW assessment tools.

APPENDIX 1: GROUP WORK FEEDBACK

A. THAILAND INTERVENTIONS

STRATEGY ONE: CASE MANAGEMENT			
Activity	**FIXED SCHEDULE MALARIA CLINICS**	**MALARIA POST**	**Active Case Detection (MMC, CIS, SCD)**
Achievement	Service mobile population at border checkpoint	Villagers in A1 area receive free EDPT	Villagers in outbreak areas receive free early diagnosis, prevention and treatment
Challenges	Not all checkpoints are covered	Coverage close areas in A1 village	Coverage of all at-risk villages
Gaps	Not enough staff to follow-up patients after treatment	Most of patient's houses not in A1 area	VBDC, VBDU, LAO
Recommendations	Need permanent building, need collaboration with Cambodian staff for follow-up of patients	Should be considered for patient's houses in A2, B1, B2 areas and tourists; Need collaboration with PHO, LAO	
Responsibility	Health staff from VBDC, VBDU need collaboration with local administrative organisation (LAO), village leader, immigration	Provincial Health Office (PHO), LAO	
Strategy for continuation	Increase FSMC to cover some illegal routes of entry into Thailand	Encourage LAO responsible for MP include salary, supply (RDT), non health product (LLIN, insecticide etc.)	Encourage LAO to indicate villagers & illegal migrants who have a fever
Where	Mini route, illegal route	A2 or B1 or B2	Villages, Camps, Big farms and factories related to agriculture
Resources needed	Budget; equipment for laboratory; training medical staff and malaria workers; bilingual patient cards	Budgetary, equipment for laboratory, training medical staff and malaria worker, conduct meeting with LAO, media	Budgetary, equipment for laboratory, training medical staff & malaria workers; conduct meeting with LAO and media
Timeframe	Harvest season	Year round. Malaria Posts funding through GFR7 will be finished in two years.	Harvest season

STRATEGY TWO: PREVENTION			
Activity	**Local radio messages (bilingual)**	**Health education sessions at public gatherings**	**Coordinate with landlords and business owners**
Strategy for continuation	Mass media	Interpersonal communication training	Interpersonal communication training for landlords, business owners and foremen about malaria symptoms and service points
Responsibilities	Malaria Staff	Malaria staff, VHV, peer network	Malaria Staff
Location	Local areas	Border markets; landlord's house, common social places and temples	Where migrants work and live
Resources	Bilingual radio spots; interpreters; scripts	Bilingual radio spots; interpreters; scripts, video clip	Video and video player, pamphlets, posters, fact sheets including contact telephone numbers
Timeframe	During working hours. Rubber plantations should be targeted around 2 pm. Should extend service time during periods of high malaria transmission	During public gatherings and special events such as religious holidays	Year round (Depending on availability of target group especially in the harvesting and planting seasons)

STRATEGY THREE: ENGAGING THE PRIVATE SECTOR			
Activity	**Engage private businesses (plantations, mills and farms)**	**Establish Malaria Corners**	**Active Case Detection of Migrants**
Achievements	• Owners refer migrants to malaria clinics when presenting fever • Sensitization of the owners in malaria prevention and control	Have met the target number (but this is too few, only 1-2 per year)	• Estimated 100% of migrants positive for malaria have completed treatment • Estimated 80% of treated cases are followed up at Day 3
Challenges	• Factory owners do not always agree with active case detection schedule • Landlords do not always allow/trust malaria officers to enter their factory; • Hiring unregistered M2 is against the	• Wording used in Khmer/Thai is different in length, meaning and understanding • Difficult to find translators who have good understanding of specific health words, particularly for malaria	• Need 100% coverage for case detection and this is difficult to achieve due to incomplete registration data • Malaria staff only visit the farms two days per week

	law • Malaria officers are not always able to access migrants during working hours • Language barriers • Lower wages in the dry season means changes movement of migrants		• Malaria officers are not always able to access migrants during working time as they are working
Gaps	• Security – political conflict • Lacking data on numbers of M2 migrants, which changes with seasons. • Provide budget to malaria officers for overtime work, gasoline, supplement/incentives for M2 to participate in activities • Provide more IEC materials	• Quality, effectiveness, satisfaction of the audience (migrants) have not been evaluated • Too few malaria corners established (even though target has been reached, more are needed)	• Need rapid tests for M2 at the border areas • Have not worked with Border Trading Association who has some control over the farm owners and may be an effective ally
Recommendations	• Build communication skills among migrants volunteers who provide information at malaria corners • Provide interpreters for Malaria Officers • Provide health education at markets, checkpoints • Health education through radio spots on community radio • Train long-term factory workers in health-seeking behaviour as focal points for migrants in factories.	• Add more languages to the IEC material in malaria corners: Lao, Thai, Burmese, Karen, Mon (i.e. leaflets, pamphlets, brochures, flipcharts in various languages) • Expand the service area	• Build network through the Border Trading Association representatives • Announce that the services provided to migrants are free of charge in Malaria Corners, public service announcements in markets and checkpoints, etc. • Increase malaria staff to detect cases and increase malaria staff's working days to 4 days per week
Strategy for continuation	Gather more information from business owners regarding: • Census of M1 and M2s unregistered • BCC materials used in businesses • Whether bed nets are used and if so which.	• Expand locations of malaria corners • Evaluate achievements to date • Provide training for factory and farm workers in communication skills	• Address allocation of time between factory and malaria staff by setting a fixed schedule for blood checks in factories
Responsibility	Malaria officers	VBDC and VBDU with support from BVBD	Factory owners, VBDC, VBDU

Location	• All current locations	• In farms not currently covered • Border checkpoints and factories in current target provinces	• In factories in the seven target provinces, in A1 and A2 areas • Implement along with malaria corners
Resources needed	• Train malaria officers to ask these questions, communication skills.	• Factory and farm workers as volunteers • Engagement of employers • Budget • TVs or CD players and earphones for people to watch and listen to messages in the malaria corners	• LAO Officers to link between the factories and Malaria Clinic • Recruit additional malaria staff • Increase working days of malaria staff from 2 to 4 days
Timeframe	On-going	• External evaluators • Evaluation within one year • Expand to reach 10% of the factories per year in the seven target provinces	On-going

STRATEGY FOUR: OPERATIONAL RESEARCH		
Activity	**Implementing cross border D3+ follow up**	**Implementing RDS along Thai-Cambodia and Thai-Myanmar borders**
Responsibility	CNM, BVBD, BIOPHICs, VBDC, VBDU	BVBD, VBDC, PHO, ARC, IOM, RAKTHAI, BIOPHICs, MC
Strategy for continuation	Establish system to share information of D3+ for follow up between Thailand and Cambodia using mobile phone technology and web-based malaria online system (SMS and email)	• Expand RDS study along Thai-Cambodia and Thai-Myanmar borders • Apply RDS/KAP results to improve BCC activities
Location	Seven provinces along Thai-Cambodian border	2 provinces along Thai-Cambodian border and 3 provinces along Thai-Myanmar border
Resources Needed	• Budget for adjusting web-based system, training, and SMS fees • Technical Assistance	Budget for data collection and training/workshop and Technical Assistance
Timeframe	2012	2012 and 2014

B. CAMBODIA INTERVENTIONS

<table>
<tr><th colspan="4">STRATEGY ONE: CASE MANAGEMENT</th></tr>
<tr><td>Achievements</td><td colspan="3">• Training of health staff in BCC/IEC
• Selection of VMWs, MMWs
• M&E, supervision, monthly and quarterly meetings with health staff and private sector staff
• Awareness through health messages related to case management
• TV, radio, mobile video shows, drama, concerts and special events
• Taxi drivers
• Positive deviance (PD)</td></tr>
<tr><td>Challenges</td><td colspan="3">• Farm owners and business owners are still unaware of malaria protection
• No registration of newcomers and no patient cards distributed to them</td></tr>
<tr><td>Gaps</td><td colspan="3">• PSI provides training to private sector, but supervision is still needed
• Not enough MMWs
• No control of drug outlets</td></tr>
<tr><td>Recommendations</td><td colspan="3">• Enough BCC materials have already been developed and deployed as needed
• Focus should be on training of health staff and business owners, as well as registration of mobile/migrants</td></tr>
<tr><th>Activity</th><th>Training and motivation of staff</th><th>Registration of mobiles arriving at village</th><th>Training of business owners</th></tr>
<tr><td>Strategy for continuation</td><td>• Follow national guidelines
• Monthly meeting
• Community level training, through VMWs and PD
• Lottery at monthly meetings for health staff and private sector
• Rewarding best health workers</td><td>Better exchange of information between the parties, including farm and business owners, village chiefs and police.</td><td>• Training in malaria and prevention; use of IEC materials is business/farm</td></tr>
<tr><td>Responsibility</td><td>PHD, OD and HC staff for training and motivation</td><td>Village chief, VMW/VHV/MMW and police</td><td>PHD, OD and HC</td></tr>
<tr><td>Location</td><td>Villages, health facilities</td><td>Villages where migrants are expected</td><td>Training at business site</td></tr>
<tr><td>Resources</td><td>Budget, materials. Lottery and reward/recognition to be backed by national programme and NGOs</td><td>Budget not needed. Additional sensitisation only</td><td>Fuel, materials, and per diem for trainers</td></tr>
<tr><td>Timeframe</td><td>Training every six months, monthly and weekly meetings at the village
Lottery quarterly and annual rewards for best staff</td><td>Monthly</td><td>Seasonal or as required</td></tr>
</table>

STRATEGY TWO: PREVENTION			
Activity	**Strengthening village level volunteers/workers**	**Interventions for difficult-to-access migrant workers**	**Monitoring and Evaluation of prevention activities**
Achievement	Targeted IEC to migrants	Improved malaria prevention and treatment seeking behaviours	Quality services ensured and quantifiable outcomes based on evidence
Challenges	Difficult to access migrants	Reaching hidden and unregistered populations due to their unregulated movements	Quantifying outcomes based on fluctuating denominators, validation of anecdotal evidence and outcome bias
Gaps	No standard operating procedures for VHV/VMW/MMW	No support from authorities	Funding shortfalls, lack of priority among implementers and poor M&E skills
Recommendations	Clearer terms of reference are needed to improve and harmonise IEC messages	Regular stakeholder meetings at grassroots levels and advocacy with high level authorities	Basic M&E training for grassroots implementers. M&E components should be well defined and budgeted (at least 10%) when designing projects; develop participatory indicators and monitoring at community level.

STRATEGY THREE: ENGAGING THE PRIVATE SECTOR			
Activity	**Public Private Mix (PATH pilot project)**	**LLIN Lending Scheme**	**Taxi Driver Scheme**
Achievements	• Used training as well as posters and job aids to influence behaviours of private providers • Good collaboration with the national programme at district level • Private providers are following protocols • Strong support from the Ministry of Health (MoH), commune councils and police • Referral forms are useful and referrals to the public sector have increased	• High net coverage for mobile/ migrant population (Pailin and Sampov Loun) • Creation of a network that can be scaled up • Channel for malaria education (farm owners) – training, posters, stickers	• Taxi drivers are educated and contributing to the scheme • Passengers are informed about prevention, diagnosis and treatment of malaria and avoidance of counterfeits • BCC/IEC materials (both print and electronic) that are targeted for mobile and migrant workers have been developed and used
Challenges	• Some providers still prescribe monotherapy	• Poor recording of LLIN use	• No incentive for taxi drivers to

	• Some providers do not educate their patients • Lack of education of private providers • Inability to work with unregistered providers (MoH policy) • Some private providers do not refer	• Farm owners are not fulfilling their role as educators and information sharers • Limited monitoring of LLIN use from owners to workers	participate • Difficult to monitor both quality of process and impact of intervention
Gaps	• Lack of Khmer language information (inserts) • Not enough BCC/IEC materials/methods	• Too few nets (for scale up) • Difficult to forecast needs • Lack of net distribution and use records • Motivation of farm owners is low: incentives/training to be considered	• No denominator or census (taxi drivers) • No funding to scale up • Limited monitoring system
Recommendations	• Complement PPM method with enforcement and regulation messages • Involve community/commune councils as channels to inform providers and consumers through quarterly meetings • Link collaboration to licensing • Provide more BCC/IEC materials through PPM platform • Use PD method to identify role model private providers and share their stories to motivate other providers	• Link with bundling strategy • Provide more nets • Seek contribution to net loaning scheme (following the successful strategy of Lao) from companies and businesses • Provide training to farm owners to enable them to be better educators • Hold forums for sharing experience of farm owners	• Seek funding to scale up as intervention is also viable in other provinces • Provide non-monetary incentives
Strategy for continuation	• Targeted and focused BCC/IEC is needed based on evidence (assessments, surveys and research) • Link to national PPM strategy, ensuring that an informed BCC/IEC component is included	• Incorporate/align with national strategic plan and PPM strategy • Improve and expand pilot, including LLIHN distribution for example	• Incorporate/align with national strategic plan and PPM strategy • Improve and expand pilot, including improvement of marketing of taxis • M&E taxi driver performance through mystery clients and provide feedback
Responsibility	• National programme, decentralising responsibility to OD level • Partners, such as NGOs, WHO, ministries and private sector for implementation and technical assistance support	• National programme – leadership and supply of LLINs/LLIHNs • Farms, factories, business owners and migrant workers for participation • Community network for distribution	• National programme – decentralise to provincial level, with leadership under elimination task forces • URC (TA for transition support) • Taxi drivers for participation

		and monitoring	
Location	• Nationwide, through a first expansion in targeted areas	High malaria endemic areas with mobile and migrant workers, nationwide	Malaria endemic areas with mobile and migrant workers, nationwide
Resources	• Human resources, budget, capacity and skill building – specifically on elimination, BCC/IEC approaches for private sector, migrant and mobile populations	• Supply of LLINs and LLIHNs in the future • Human resources at health centre and community level	
Timeframe	Align with national strategic plan for malaria elimination	Align with national strategic plan for malaria elimination	Align with national strategic plan for malaria elimination

STRATEGY FOUR: OPERATIONAL RESEARCH		
Activity	**LLIN Loan Scheme**	**Respondent-driven sampling**
Achievement	Bed net distribution to Mobile/Migrant	Methodology used in zone 1 has provided information on migrant/mobile populations using LLINs/ITNs, treatment-seeking behaviour, movement patterns, and health education received.
Challenges	Farm owners do not feel motivated to participate Difficult to control net use and migrants returning nets	• Duration of the study is limited • Short wave • Small number of seeds
Gaps	• No treatment for migrants positive for malaria • No health education on malaria prevention • Statistics on numbers of migrants not clearly defined • MMWs are limited	Missing information from zone 2
Recommendations	Provide training on malaria treatment, health education and bed net distribution to farmers	• Extend to zone 2 • Extend length of study and seed selection
Strategy for continuation	• Census farm owner • Inform community and farm owners • Training/selection • Supply material from CNM/Provinces • Monthly meeting/Monitoring / Supervision	Select sites in Zone 2 and use lessons learned from previous study to recruit staff, provide training, implement with supervision and monitoring
Responsibility	National malaria programme and provinces (PHDs/ODs/HCs)	National malaria programme, provinces (PHDs/ODs/HCs) and local authorities

Location	Containment zone 1	Containment zone 2
Resources	Budget and human resources	Budget and human resources
Timeframe	2012	2012

APPENDIX 2: AGENDA

Consolidating Lessons Learned on BCC and Mobile/Migrant Populations in the Strategy to Contain Artemisinin Resistant Malaria

5 – 7 July 2011

AGENDA

Objectives:

1. To **review and assess achievements** of activities for BCC/IEC and the implementation of other containment interventions among migrant populations
2. To **identify lessons learned from implementation of BCC/IEC and innovative approaches** among mobile and migrant populations and to identify what works and what else is needed
3. To **plan next steps** for BCC/IEC strategy and improving uptake of interventions by mobile and migrant populations, **identification of gaps and scaling up** beyond Containment

Day 1: Behaviour Change Communication

0800-0830	Registration	
0830-0845	Opening remarks and welcome	Dr. Bounlay Phornmasack, Deputy Director of Hygiene and Prevention, MoH Lao PDR
0845-0900	Introduction of participants	
	Chair: Dr Bounlay Phornmasack	
0900-0930	Review of recommendations / action points and Objectives of the Meeting	Dr. David Sintasath, MC
0930-1030	Overview of National Programme strategy for BCC/IEC	Dr. Rungrawee Tipmontree, BVBD Dr. Bou Kheng Thavrin, CNM
1030-1100	TEA BREAK	
1100-1200	BCC Interventions, challenges and lessons learned – Perspectives from the Provinces	Mr. Chalermchai Techarat, VBDC Dr. Yok Sovann, PHD, Pailin
1200-1300	LUNCH BREAK	
	Chair: Dr Wichai Satimai	
1300-1400	BCC ‘Marketplace’	Mr. Muhammad Shafique, MC
1400-1430	BCC initiatives in the private sector	Dr. Bou Kheng Thavrin, CNM
1430-1500	Community-based interventions: VMWs (CAM) and Malaria Workers (THA)	Dr. Po Ly, CNM Mr. Vijarn Yisarnkoon, VBDC Trat
1500-1530	TEA BREAK	
1530-1600	Positive Deviance Approach and Pilot	Mr. Muhammad Shafique, MC
1600-1630	Monitoring and Evaluation: Achievements and remaining challenges	Ms. Michelle Thompson, MC

1630-1645	Summary of Day 1	Chair

Day 2: Mobile and Migrant Populations

Chair: Dr Chea Nguon

0830-0930	Review of recommendations and action points: achievements and remaining challenges	Dr. David Sintasath, MC
0930-1000	Vector control strategies for mobile and migrant populations	Dr. Siriporn Yongchaitrakul, BVBD
1000-1030	TEA BREAK	
1030-1130	Case management and treatment: increasing access for mobile and migrant workers	
	• Mobile malaria workers – Cambodia	Dr. Neang Vannrith, CNM
	• Fixed Schedule Malaria Clinics – Thailand	Mrs. Saowanit Vijaykadga, BVBD
	• Standby treatment approaches in Vietnam	Dr. Guang Thieu, NIMPE
1130-1215	Collaboration with the private sector:	
	• Use of malaria corners in factories and businesses	Ms. Urivan Thadtong, VBDC Sa Kaew
	• Evaluation of LLIN loaning scheme and use of taxi drivers in Cambodia	Dr. Kheang Soy Ty, URC and Ms. Linna Khorn, URC
1215-1315	LUNCH BREAK	

Chair: Mrs Saowanit Vijaykadga

1315-1400	Migrant Situational Analysis using Respondent Driven Sampling (RDS)	
	• RDS in 3 provinces in Thailand	Ms. Piyaporn Wangroongsarb, BVBD
	• RDS in Pailin and Veal Veng, Cambodia	Dr. Chea Nguon, CNM
1400-1430	Mobile and migrants in Cambodia in the context of drug resistance	Dr. Philippe Guyant, PFD
1430-1500	Monitoring and Evaluation: Achievements and remaining challenges	Ms. Michelle Thompson, MC
1500-1530	TEA BREAK	
1530-1600	Economic Development in the region – impact on migration and malaria	Dr. Deyer Gopinath, WHO
1600-1630	Summary of Day 2	Chair

Day 3: Assessment and next steps

Time	Session	Speaker
0830-0845	Introduction to group work	Mr. Muhammad Shafique
0845-1030	Group work: Determining what works, what doesn't, and scaling up of interventions for BCC and other containment tools among Mobile and Migrant populations Group 1. Case management Group 2. Prevention measures Group 3. Engaging the Private Sector Group 4. Operational Research: what else is needed	All participants
1030-1100	TEA BREAK	
1100-1200	Group work: continued	
1200-1300	LUNCH BREAK	
1300-1500	Group work presentations	Group rapporteurs
1500-1530	Summary of lessons learned, gaps, and recommendations	TBD
1530-1545	Closing remarks	Dr. Bouasy Hongvanthong, Lao PDR

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