

A Strategy to Contain Artemisinin Resistant Malaria Parasites in Southeast Asia

Final Report

January 2009-December2011



**Malaria Consortium
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Background

Evidence of *Plasmodium falciparum* resistance to artemisinin compounds has been demonstrated in the Cambodia-Thailand border area. In view of the serious implications of this to worldwide control of falciparum malaria which is heavily dependent on artemisinin-based combination therapies (ACTs), the World Health Organisation (WHO) and partners have taken steps to confirm and characterize artemisinin resistance, to define optimal strategies and support the preparation of plans of action in Cambodia and Thailand, and to contain the spread of these artemisinin resistant parasites. This initiative was funded by the Bill & Melinda Gates Foundation (BMGF) from January 2009 to October 2011¹.

Malaria Consortium is one of the partners in this endeavor, and its role is to provide technical and human resource support in Cambodia and Thailand, overall monitoring and evaluation, and dissemination of lessons learned from the project. Supplementary to this, Malaria Consortium provided technical assistance in the development and evaluation of pilot surveillance systems and eventual scale up of overall strengthening of malaria surveillance in Cambodia, in collaboration with the National Center for Parasitology, Entomology and Malaria Control (CNM), WHO, FHI360, and University Research Co (URC).

Key areas of work

Malaria Consortium's duties and accomplishments under the BMGF grant comprised five aspects:

Technical Advisory. Malaria Consortium served as an advisory member on the International Containment Task Force, which reviewed project progress and technical achievements, provided guidance and technical advice, and promoted high level advocacy through regular communication. Malaria Consortium also served as a member on the Cambodian National Containment Task Force with similar roles and functions and provided technical inputs to support the International Task Force for Artemisinin Resistance Containment.

Monitoring and Evaluation. Malaria Consortium led monitoring and evaluation activities for the project, tracking overall progress, while assisting Thailand, Cambodia, and implementing partners to track indicators and critical milestones. We also oversaw the design, implementation, data collection, analysis, and reporting of results from household, outlet and health facility surveys implemented in Containment zones 1 and 2 in 2009 and 2010. In addition, Malaria Consortium provided regular monitoring of interventions, such as with net distributions and surveillance activities, as well as a forum to discuss lessons learned and interventions' accomplishments through cross-border technical workshops on M&E, migrants, behaviour change communications (BCC), and case management.

Human Resource Support. Five full time technical staff (Epidemiologist, Data Manager (international and local hire), Communications Specialist, and Field Officer along with project support staff, were hired and maintained throughout the project period.

¹ Project received a no-cost extension through 31 December 2011.

Operations Research Support. Malaria Consortium supported operational research activities that provided information for strategic planning and evaluation of the project. Support included reviews of study designs and protocols, data analysis, report reviews, and assistance with logistical arrangements.

Dissemination of information. Malaria Consortium assisted in documenting activities, results and outcomes from the project, and made them available for dissemination to the malaria community. As such it has disseminated all reports from meetings and surveys Malaria Consortium organised, and provided technical expertise in the development and evaluation of BCC/IEC materials related to the project as well as provided support for media and advocacy events throughout the project.

Critical Milestones

Throughout the project, the following critical milestones were set and achieved:

1. MC project staff recruited and operational by Q2 2009 and maintained through October 2011.

Epidemiologist: Ms Michelle Thompson began working on the project in July 2009, based at CNM in Phnom Penh. Ms Thompson's responsibilities and key accomplishments included:

- Worked with CNM to design, plan, and implement the household, outlet, and health facility surveys as part of the monitoring and evaluation for the Containment Project. This included the Containment survey 2009 and the Cambodia Malaria Survey 2010 (in which the Containment follow-up survey was nested)
- Provided technical inputs to the Village Malaria Worker (VMW) assessment using quantitative and qualitative tools
- Provided technical support for data analysis, reporting, and presentation of malaria data
- Provided support to Thailand and Cambodia in the collection of data for the Containment Project M&E Indicator Framework
- Served as part of a response team to investigate the increase in malaria cases reported from the provinces
- Supported the development of D3+ surveillance protocols (health facility and community based) and case investigations
- Provided technical inputs for the roll out of operational research, such as for the Focal Screening and Treatment (FSAT) pilot and the respondent driven sampling (RDS) study methodology.
- Provided technical inputs and support to CNM in preparation for the national and international taskforce meetings, M&E cross border workshops, as well as for the Containment Project mid-term review and end of project external evaluation.
- Provided day-to-day technical support and guidance to inform implementation of CNM's project activities.

Data Manager: Mr Steve Mellor started working in March 2009, first based at CNM in Phnom Penh, and in January 2011 moving to Bangkok, Thailand to provide more support to the Bureau of Vector-borne Diseases (BVBD), while continuing his work with CNM. Amongst his duties, the following were key accomplishments:

- Liaised with WHO and CNM regarding bed net distribution data and census. This included contributions to data management of bed net gap analysis and micro-planning for Zones 1 and 2
- Completed village coding and census for Zone 1 and Zone 2, while processing census data into household database
- Developed a village-based malaria database and revised data entry formats for data collected from VMWs, which included numbers of cases tested and treated, and bed nets distributed; this database served as the platform for refinement of malaria risk stratification efforts currently underway.
- Provided training to Operational District staff on data entry and analysis of data using updated reporting formats.
- Collaborated with partners on the assessment of surveillance systems in Cambodia and Thailand
- Developed malaria epidemiological bulletins for cross-border surveillance and information sharing for Cambodia.
- Worked with CNM on mapping of private sector outlets and implementation of health centre malaria case reporting forms
- Collaborated with MC consultant Jon Cox and others in the development and evaluation of D3+ surveillance using SMS system
- Worked with BIOPHICS and BVBD to troubleshoot and harmonize the web-based surveillance system in Thailand
- Provided technical support to BVBD and CNM for their presentations at the midterm review, final external evaluation, and cross-border and task force meetings.
- Linked the Health Information Systems and malaria database to provide accurate and timely malaria data for reporting.

Local Data Manager: Mr Pengby Ngor was hired in March 2010 as a local data manager to support surveillance and data management activities for the Containment Project. Mr Ngor's contributions included the roll out, conducted training and troubleshooting of the malaria database in 45 operational districts. He has also supported CNM staff capacity development (organized a series of trainings on Geographic Information Systems (GIS) for OD staff and facilitated trainings for VMWs in the use of mobile phones in the pilot D3 and D0 surveillance system. His contributions and achievements included:

- Contributed to the development of the village malaria database
- Provided support on data management for the malaria database
- Provided training and troubleshooting to district staff on the roll out and use of the village malaria database
- Organized a series of GIS trainings for district staff to improve capacity on surveillance and data management and use
- Coordinated and negotiated with Mobitel and other partners on the use of SMS for D3 surveillance

Communications Specialist: Mr Muhammad Shafique has been part of the Containment project team since July 2009, and based at the Malaria Consortium Asia Regional office in Bangkok, Thailand. His responsibilities and accomplishments include:

- Provided support to both CNM and BVBD for behaviour change communications (BCC) strategy development, monitoring and evaluation of Information, Education and Communication (IEC) materials and activities in the field.
- Contributed to the harmonization of key messages to be used in both Cambodia and Thailand.
- Worked with BVBD and CNM in developing Positive Deviance pilot to promote positive behaviours from within communities, particularly among migrant populations.
- Participated in the Positive Deviance pilot in Cambodia, supporting CNM with technical inputs and designing baseline and endline surveys, and training of role models in communicating positive deviance messages.
- Provided inputs in the development of questionnaires, both for qualitative and quantitative methods, including for the Containment Project Malaria Surveys, respondent driven sampling, and VMW assessments.
- Supported BVBD and CNM to implement the strategy for BCC/IEC, as developed during the cross border meeting in Siem Reap (August 2009).
- Provided technical inputs to CNM and BVBD in development of training manuals on communication and community mobilization skills for volunteers and health officials and assisted in the evaluation and assessment of these tools.
- Supported BVBD and CNM in producing technical presentations on BCC/IEC for cross-border workshops, national and international task force meetings.

Field Officer: Mr Sophal Uth has been part of the Containment Project team since April 2009, providing support to field-related activities, including:

- Provided logistical support for the Focal Screening and Treatment (FSAT) and Respondent Driven Sampling teams and other visitors to Pailin.
- Participated in conducting household census exercises in Zone 1, as well as bed net distributions and rapid coverage monitoring.
- Participated in training of data collectors for the Containment Project Malaria Survey 2009 in Zones 1 and 2.
- Liaised with provincial health department and operational district staff to provide assistance to M&E team.
- Facilitated transport and logistics for media groups and provided translation for them.
- Attended planning workshops and provincial health department meetings in Pailin.
- Provided support to World Malaria Day activities in the field.

Support staff: Ms. Lina Chhay provided administrative support, including preparation for cross-border meetings, facilitating staff travel and processing financial payments. She also assisted in the close out of the Containment Project. In Pailin, Mr San Vuth served as driver for field activities and visits, while Mr Saron Meak provided administrative support to that office.

Supportive role: Mr. Leang Bunthai was contracted as short-term staff (March-October 2011) to assist with data collection, data quality control and training to provincial and district level staff on the malaria database. Ms Sara Elena Canavati provided technical inputs in the development and roll out of a protocol and tools for the Village Malaria Workers (VMW) assessment, which was implemented in October 2011. Ms Canavati joined the data

collection teams to supervise them and has worked with the data entry and translation team.

2. M&E framework finalised by Q2 2009. The M&E framework drafted was reviewed and finalized during the M&E cross border workshop in February 2009 in Phnom Penh.

The Containment Project M&E Indicator Framework was reviewed and finalized during the M&E meeting in February 2009 in Phnom Penh. This working draft was distributed to relevant individuals, consultants, partners, and organisations for comments and was further reviewed by the International Task Force Committee in May 2009 in Phnom Penh. Further support was provided by the M&E team to both Thailand and Cambodia in collection of data for this framework. The final framework (Annex 1) was utilised to evaluate the project by objective for both countries.

3. Household and outlet surveys designed and planned by end of June 2009. Serology available Q1 2011.

Malaria Consortium provided technical assistance in developing the sampling frame, design, protocol and survey tools for the Containment Project Malaria Survey 2009 and 2010. After finalising the protocol and obtaining ethical approval to conduct the survey, Malaria Consortium provided technical and management inputs for the implementation of the survey – which took place in December 2009-January 2010. The report for the baseline Containment Survey 2009 was finalized and submitted in early 2011 (Annex 2). Malaria Consortium also worked with CNM in providing technical inputs for the design of the Cambodia Malaria Survey 2010, which included oversampling from Containment zones to ensure results on Zones 1 and 2 could be compared to the Containment Survey 2009 to properly evaluate some of the project’s indicators. Due to some initial discrepancies in the results of blood slides and RDTs and problems with data entry, the analysis and reporting were delayed for the Containment Survey 2010 (which was nested in the Cambodia Malaria Survey 2010). These issues were resolved and a draft report was available and distributed by mid2011, and finalised and printed in Q3 2011 (Annex 3).

Serological testing has been an issue since getting adequate supplies of antigen for serological assays was not possible. Sample collection methods will need to be re-evaluated as a significant proportion had high background. Investigators from the London School (Chris Drakeley) have used the CMS 2004 and CMS 2007 samples as opportunities to refine the serological methods.

4. Four technical meetings organised by the end of 2009 and three technical meetings organised by Q3 2011, including available reports.

During 2009, three technical meetings were organized and facilitated by Malaria Consortium:

Technical Workshop	Key Outcomes	Dates	Location
Containment Project M&E Indicators and Framework workshop (Annex 4)	<ul style="list-style-type: none"> M&E Framework drafted and finalized Targets and workplans refined 	4-6 February 2009	Phnom Penh, Cambodia

Workshop on development of strategy to Contain Artemisinin Resistant malaria among Migrant and Mobile populations (Annex 5)	<ul style="list-style-type: none"> • Strategy developed for working with migrants and mobile populations • innovative pilots developed (i.e., taxi drivers and positive deviance) 	8-10 June 2009	Bangkok, Thailand
Technical Workshop on Cross Border IEC/Behaviour Change Communication Strategies to Contain Artemisinin Resistant Malaria (Annex 6)	<ul style="list-style-type: none"> • Key messages harmonized between Thailand and Cambodia • BCC/IEC cross-border strategy and workplan developed 	19-21 August 2009	Siem Reap, Cambodia

One meeting, the Technical Cross-Border Workshop on Malaria Case Management for Artemisinin resistance containment, had to be postponed (24-26 February 2010 in Phnom Penh, Cambodia) due to political challenges.

Technical Workshop	Key Outcomes	Dates	Location
Technical Cross-Border Workshop on Malaria Case Management for Artemisinin resistance containment (Annex 7)	<ul style="list-style-type: none"> • Indicators for malaria case management reviewed • Strategies for improving malaria surveillance • Inputs from provincial health staff 	24-26 February 2010	Phnom Penh, Cambodia

In 2011, two technical meetings were organized and facilitated by Malaria Consortium:

Technical Workshop	Key Outcomes	Dates	Location
Workshop to Consolidate Lessons Learned on BCC and Mobile/Migrant Populations in the Strategy to Contain Artemisinin Resistant Malaria (Annex 8)	<ul style="list-style-type: none"> • Critical review of BCC/IEC strategies and interventions among mobile/migrants populations • Consolidation of BCC/IEC materials and outputs from the Containment Project 	5-7 July 2011	Luang Prabang, Lao PDR
Workshop on Monitoring and Evaluation for the Strategy to Contain Artemisinin Resistance Parasites in Southeast Asia (Annex 9)	<ul style="list-style-type: none"> • Review of epidemiological data from both Thailand and Cambodia • Preparation of presentations for the ITF 	5-6 September 2011	Kuala Lumpur, Malaysia

All meetings were conducted successfully and their reports are available in both hard and soft formats. It is important to note that cross-border political issues affected the organisation of some of the meetings, but Malaria Consortium had to work creatively around these issues with the National Malaria Programmes and partners.

5. Support to mid-term reviews and evaluation.

Malaria Consortium staff has continuously provided technical inputs and support in data analysis for BVBD and CNM, including preparation for the Containment Project's mid-term review (Koh Chang, Thailand 14-15 December 2010), International Task Force meetings in Vietnam (Feb 2010) and Thailand (Sept 2011). In addition to contribution to the evaluation of the Containment Project through baseline and endline malaria indicator surveys, Malaria Consortium worked closely with CNM, BVBD, and WHO on a day-to-day basis to ensure data quality and robust analysis. Malaria Consortium also contributed to the External Review of the Containment Project in Aug 2011.

6. Technical and financial reports quarterly submitted to WHO.

Technical reports were submitted for the following periods:

- January-June 2009
- May-October 2009
- January-December 2009 (Year 1)
- January-May 2010
- May-October 2010
- January-December 2010 (Year 2)
- January-March 2011
- April-June 2011
- July-September 2011
- January 2009-December 2011 (Final project report)

Financial reports were submitted for the following periods:

- January-June 2009
- January-December 2009 (Year 1)
- January-May 2010
- June-September 2010
- October-December 2010
- January-December 2010 (Year 2)
- January-March 2011
- April-June 2011
- July-September 2011
- January-December 2011 (Year 3)

Supportive activities

1. ***Advocacy and Communications.*** The field office in Pailin supported visits from WHO, high level authorities and media groups to show the work being implemented in the Containment Zones. In particular, the team helped to organise the Roll Back Malaria Monitoring and Evaluation Reference Group (MERG) visit to Pailin in Jan/Feb 2011, developing and setting up presentations at the provincial health department and visits to the VMWs. The team also assisted in the logistics of local and international journalists and documentary film makers' visits, arranging interviews with VMWs, farm owners, migrant/mobile populations and local health authorities.

Malaria Consortium also worked closely with WHO's Media Team Leader in developing stories for the Containment Project and its website, especially regarding behaviour change, Positive Deviance and surveillance using SMS technology.

An abstract on Positive Deviance was submitted to the American Society of Tropical Medicine and Health (ASTMH) Conference to take place in December 2011. The abstract was accepted to be presented by Mr Muhammad Shafique as a poster, showcasing to a wider audience the process and results of the Positive Deviance pilot in Sampov Loun district in Cambodia.

2. **Operational Research.** The Malaria Consortium team provided technical advice and assistance to both the FSAT and RDS pilots, including technical inputs in reviewing protocols, sampling and choosing study sites. Additionally, the field team provided logistical support during field work, including visiting sites for the RDS study to follow up seed selection.
3. **Behaviour Change Communications.** Malaria Consortium provided technical leadership in the development and implementation of the containment project's BCC/IEC strategy, including the development and evaluation of BCC/IEC materials in both Thailand and Cambodia (Annex 10), while supporting provincial and central-level staff with analysing and presenting data on their BCC interventions. The Communications Specialist supported the development/adaptation of a Communication Skills Training Manual for staff in the Containment provinces of Thailand (Annex 11), while providing also facilitation at the training.

The Positive Deviance pilot was first introduced in Cambodia in late 2010, after the implementation of a small baseline survey in the areas where the pilot was conducted. Malaria Consortium introduced this innovative strategy that had not previously been utilized for malaria, but rather in other health areas that require health behaviour changes. Positive Deviance identifies positive behaviours in the community and empowers those members to share their behaviours with the rest of the community. As it is meant to be a self-sustained activity, CNM and Malaria Consortium worked with the community leaders and positive role models and trained them to continue with 'Positive Deviance' beyond the training and other activities meant to kick-start its implementation. An evaluation was scheduled for late 2011, but CNM had issues with funding and timing and we are still hopeful it will take place prior to the end of the containment project. The Positive Deviance process has been written up and is available for distribution (Annex 12).

4. **VMW/MMW assessment.** A short-term consultant was hired to provide assistance in developing the VMW assessment protocol, as the assessment itself was funded through CNM. There was general consensus that an assessment of VMWs/MMWs in and out the Containment Project areas would be valuable to inform the programme on the impact of these community-based workers. The consultant worked on developing quantitative and qualitative tools to be piloted and provided CNM with technical assistance in data collection and supervision during data entry. She oversaw the translation of transcription notes of data collected during individual interviews and focus group discussions and assisted CNM in writing up the results. The methodology used during this assessment will serve as the basis for other assessments that will take place in different geographical regions of Cambodia through the Global Fund Round 9 programme. The tools cover topics such as knowledge of malaria, access to education, access to treatment and care, acceptability of

interventions, and behaviour change. Qualitative and quantitative data are currently being analysed and the draft report is pending.

5. **Costing evaluation.** Two consultants (international and local) were hired to undertake a costing evaluation of two key interventions of the Containment Project: Day 3+ follow up and Directly Observed Therapy (DOTs) in Thailand and Focal Screening and Treatment (FSAT) in Cambodia. The rationale for conducting a costing analysis of the interventions was principally to provide evidence on how well these interventions worked, and whether these should be continued and/or scaled up in the future. The consultants interviewed partners in both countries to put together a framework and tools for the costing evaluation of these interventions. Unfortunately, the national malaria programmes had been busy preparing for the international task force meeting and Global Fund re-programming (Cambodia) and therefore had limited time to find the information necessary for the costing evaluation. A preliminary report and tools/framework developed were considered the final output of this work (Annex 13).

Surveillance Addendum

Background

In order to contain and prevent the spread of resistant parasites the Cambodian government, supported by WHO and partners are aiming to move from control of malaria in this region to elimination of the parasite and in so doing to eliminate the resistant parasite. Achieving this will require an enhanced system of surveillance capable of timely detection and response to individual cases, particularly those coming from the communities. Ultimately such a system would include both cases of Pf and Pv and day-3 positive Pf cases after treatment with artemisinin-based therapies to make sure they are managed correctly and to ensure that the infection source is eliminated through adequate case investigation and follow-up. However, in the short term the priority is to develop systems and capacity for day-3 positive Pf surveillance, particularly as little is known about the overall incidence and geographical distribution of such cases.

Within the Containment Project, a core objective is the creation of a surveillance/mapping system in Cambodia to detect day-3 Pf positive cases and facilitate response activities. The project also has the broader aim of strengthening collection and management of data from sources at all levels and improving information flow within and between Cambodia and Thailand. Given these objectives, activities implemented under the Containment Project represented a valuable starting point in the longer-term development of a more comprehensive system of surveillance to support malaria elimination.

Malaria Consortium worked with CNM, WHO and partners to introduce a practical, user-friendly surveillance of Day 3 positives in seven former district hospitals and referral hospitals in Zone using SMS technology to rapidly inform those who need to know at the district and central levels of the existence and location of such cases of malaria.

In order to achieve elimination of *P. falciparum* malaria parasites, the surveillance system needed to be sensitive enough to detect and respond to individual Pf positive cases. Initially the focus was on detecting Pf malaria patients who remained positive on Day 3 following treatment with artemisinin-based combination therapies in health facilities and communities. The purpose of such

a system to detect Day 3 positive patients is to be able to mount an adequate response which should include individual case investigations and follow up.

Through a concept note (Annex 14) based on recommendations made through a series of technical assistance provided by Malaria Consortium (Jon Cox) throughout the Containment Project, WHO provided an addendum and funding to the original Containment Project contract to focus on surveillance activities, including the development, roll out, and evaluation of Day 3+ reporting through SMS (in collaboration with other implementing partners).

Critical milestones: Seven key milestones were identified for this piece of work for Malaria Consortium.

1. ***Feasibility and costing assessments conducted for D3 health facility, community-based surveillance systems.*** Jon Cox provided support for the feasibility and evaluations of the D3 health facility and community-based surveillance systems, conducted field visits and interviews at health facilities and communities in Cambodia through a series of consultancies. Dr Cox has been instrumental since the beginning of this project to conduct an assessment of the surveillance systems in both Cambodia and Thailand, which contributed to the development and piloting of the D3 health facility and community-based surveillance systems. Malaria Consortium worked closely with CNM, WHO, and other implementing partners to provide support on strengthening of the overall surveillance system in Cambodia stemming from the need for D3 detection and response in the Containment Project.
2. ***Recommendations and next steps outlined based on findings from feasibility and costing assessments.*** A draft report (Annex 15) with recommendations on the feasibility and costing assessments for the community and health facility-based D3+ surveillance system was shared with WHO and CNM in October 2011. A final report will follow once feedback has been received from these parties.
3. ***Organise meeting for dissemination of results.*** A meeting to discuss the draft report and key recommendations was organised at CNM during November 2011 (Annex 16). The participants included CNM, WHO, URC, FHI, and other relevant partners. Feedback was incorporated into the draft report.
4. ***Software developed and available for use for reporting (SMS).*** D3/D0 surveillance software designed by Malaria Consortium was developed by InSTEDD, a Cambodian organisation identified to do this work locally. Malaria Consortium and InSTEDD assisted in brokering an agreement with Mobitel for free non-expiry SIM cards and airtime for the project's SMS texting from health facilities, community workers, and CNM at central level.

Malaria Consortium purchased phones, tested, and distributed them to VMWs involved in the evaluation. Health workers were trained in three operational districts which included 184 VMWs and 17 health centres.

5. ***Malaria database installed at all operational districts and health staff trained on use and maintenance.*** The malaria database was installed in 44 target operational districts. CNM recently included one more target operational district in Kampong Cham province, and the installation took place in October 2011. Malaria Consortium conducted technical

backup, trouble-shooting and supervisory support visits over the course of the project to follow up on progress and provided quality assurance.

6. *Ensure malaria database is available for updating of malaria risk stratification.*

The malaria database has been up and running since early 2010. Since then, efforts to fill in data points in this database were ongoing. More than 14,000 villages in Cambodia are included in the malaria database, which includes data on patients screened, malaria patients treated, LLIN distribution, and private sector. Malaria Consortium is assisting CNM to include information from the military which will be incorporated into this malaria database. With relatively incomplete data prior to 2010, this database over time will provide an excellent basis for updating of malaria risk stratification in Cambodia. MC will continue to provide technical assistance (through the Global Fund R9) to improve data quality and the use of incidence-based data for malaria risk stratification. This will also be useful for developing the sampling frame for the upcoming Cambodia Malaria Survey 2012.

7. *Conduct training on GIS and mapping.* A total of 14 participants from national and sub-national levels were supported by MC in a series of training courses in ArcView GIS (run by Aruna Technology Ltd) throughout May and June 2011. The agenda for this training is attached to this report (Annex 17).

The improvements made to malaria surveillance in Cambodia have been significant, which has resulted in the availability of innovative tools for containment of artemisinin resistance and setting the stage towards malaria elimination. These innovative tools and achievements are described in a report (Annex 18).

Annex List

- Annex 1. Containment Project M&E Indicator Framework
- Annex 2. Containment Survey (CS 2009) report
- Annex 3. Cambodia Malaria Survey (CMS 2010) report
- Annex 4. Containment Project M&E Indicators and Framework Workshop Report, Feb 2009
- Annex 5. Strategy to Contain Artemisinin Resistance among Migrant and Mobile Populations Workshop Report, June 2009
- Annex 6. Cross-border BCC/IEC Strategy Development Workshop Report, Aug 2009
- Annex 7. Malaria Case Management for Artemisinin Resistance Workshop Report, Feb 2010
- Annex 8. Consolidation of Lessons Learned on BCC and Migrant Populations Workshop Report, July 2011
- Annex 9. Monitoring and Evaluation of the Containment Project Workshop Report, Sep 2011
- Annex 10. Summary on Progress and Lessons Learned on BCC, July 2010
- Annex 11. Interpersonal Communications Skills Training Workshop Report, July 2011
- Annex 12. Progress on Positive Deviance, March 2011
- Annex 13. Costing Evaluation Draft Report and Framework, Aug 2011
- Annex 14. Concept Note: Technical Assistance for Strengthening Malaria Surveillance in Cambodia
- Annex 15. Evaluation of community- and health facility-based systems for the surveillance of cases of day-3 positive *Plasmodium falciparum* in Cambodia, Oct 2011
- Annex 16. Day 3 Surveillance Evaluation presentation, Nov 2011
- Annex 17. GIS Training Agenda
- Annex 18. Innovative Tools for Strengthening Malaria Surveillance in Cambodia