Strengthening the Control of Infectious Diseases among Burmese Migrants and Local Thai Populations along the Thai-Burmese Border

October 2004 – September 2007

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by

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Background Information:

Migrants particularly from Myanmar come to Thailand mainly for economic reason. The migrant worker population in Thailand is notoriously difficult to quantify. Migrants may either be legally registered or they may be working in Thailand illegally.

The Thai government's Ministry of Labor registered more than 1.2 million migrant workers in July 2004 but no reliable data exists on numbers of unregistered migrants, and it is estimated that for every registered (M1) migrant worker, there is at least one unregistered (M2) migrant worker somewhere in Thailand. It is difficult to confirm where M2 migrants come from, but as a proxy indicator, of the 1.2 million migrants registered throughout Thailand in July 2004, 72% were recorded as Burmese, with 14% from Cambodia and an equal proportion from Laos. Concentrations of migrant workers are typically found in border regions, for example M1 migrants constitute 24% of the total population of Tak province (on the Burmese border) and Burmese workers constitute 95% of the workforce in factories in that province.

Under Thai law migrants should register with the Ministry of Labor, however registration is often difficult because migrants may not be able to afford the registration fee and because the seasonal (and thus short-term) nature of their work means that their employers may be unwilling to assist in the registration process. There is also evidence that some Thai employers prefer hiring unregistered migrant workers because they can pay them lower wages and avoid compliance with labor standards. As a result there is a very large population of unregistered migrant workers employed in Thailand, who have no legal rights in the country and are at risk of exploitation, detention and deportation. This risk, combined with other factors such as language barriers and experience/perception of discrimination discourage both registered and unregistered migrant workers from accessing Thai governmental health services.

Eighteen per cent of registered migrant workers are employed in agriculture and a similar, if not higher proportion of unregistered workers are thought to work in this sector. They do seasonal work in fruit orchards, rice, onion and chili cultivation, where they live in simple huts in their employers' fields.

Project goal and objectives:

The primary goal of this project is to obtain a sustainable reduction in the infectious disease burden in four districts experiencing some of the highest concentrations and flows of migrants in Thailand. This goal will be attained through the achievement of three key result areas and for

each key result area objectives were set as guide in the formulation of activities and inputs to achieve the objective. The corresponding objectives for each key result area are as follows:

Key Result Area 1: Increased quality of and expanded access to infectious disease (ID) – related health care services.

Objectives:

1.a. Improved accuracy of ID diagnosis at health facilities.
1.b. Improved quality of ID treatment provided at health facilities.
1.c. Appropriate referrals of ID cases within the referral system.
1.d. Increased utilization of ID services by Burmese migrants.
1.e. Increased utilization of ID services by Thais.

Key Result Area 2: Communities mobilized into action, further integrated with the health care system, and actively involved in their own health care.

Objectives:

2.a. Increased community knowledge of ID prevention, detection, and appropriate care.
2.b. Increased disease prevention practices within migrant and Thai communities.
2.c. Increased community demand for and use of ID health care services.
2.d. Increased use of appropriate homecare strategies for the treatment of IDs.

Key Result Area 3: Increased collaboration between and capacity within the MOPH and the OVBDC, along with broad community involvement, to ensure continuation of project achievements beyond the life of this grant.

Objectives:

3.a. Increased coordination between MOPH and OVBDC Units.
3.b. Increased supervisory skills and capacity within the MOPH and OVBDC Units.
3.c. Increased training, skills and capacity within the MOPH and OVBDC Units.
3.d. Increased assessment and planning skills within the MOPH and OVBDCs specific to working with migrant communities on ID.

Project Areas:

This project was implemented in four districts of three provinces, namely: Thong Pha Phum and Sangklaburi of Kanchanaburi provinces; Kraburi of Ranong province and Thasae of Chumporn province. The provinces were selected because these are on the Top Ten Provinces with high mortality rate as of 2004. Figure 1 below shows the country map which shows Kanchanaburi as # 3 with mortality rate of 2.99/100,000 population; Chumporn as # 6 with 2.53/100,000 and Ranong as # 7 with 2.35/100,000 population. The map below shows the list of Top Ten Provinces with High Mortality Rate and from this we can see the rank of the project sites. It can be seen that these areas are along the border of the country.

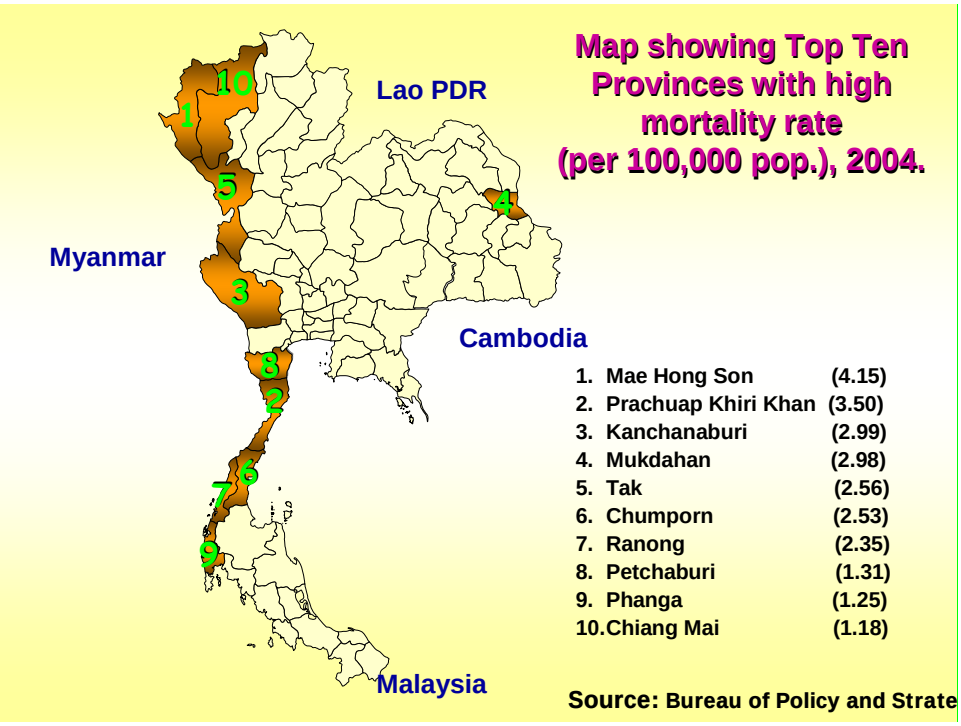


Figure 1. Map showing the Top Ten Provinces according to mortality rate

Demographic characteristics of each district was obtained and these are shown in Table 1 below. Although this project's main target are the migrants, the neighboring Thai communities cannot be ignored in the service that will be supported by this project, thus, they are included in the target beneficiaries. From records, there are small populations of migrants but these are

Table 1. Demographic characteristics of the Districts covered

Provinces	**Kanchanaburi**		**Chumphon**	**Ranong**
Districts	**Sangklaburi**	**Thong Pha Phum**	**Thasae**	**Kraburi**
Total Population	54,000	63,582	46, 806	82,527
Thai population	11,000	31,082	40,806	78, 227
Registered migrant population	8,000	32, 500	6,000	4,300
Unregistered				

migrant population	35,000	20,000	12,000	15,000
Ethnicity of migrants	Burmese, Saw Karen, Po Karen, Mon and Lao	Burmese, Saw Karen, Po Karen, Mon and Lao	Burmese, Tavoy and Mon	Burmese, Tavoy, Mon and Karen
Villages	20	44	60	44
Public Health stations	7	13	11	14
Hospitals	1	1	1	1
Private hospital (NGO)	1	-	-	-
MOPH Village volunteers	15 – 20 persons per village	2 per village	1 per ten houses	2 per village
Leading infectious disease treated at the health facility	Malaria, Diarrheal disease, TB and ARI	Malaria, Diarrheal disease, TB and ARI	Malaria, Dengue and Filariasis	Malaria and Dengue

only those who registered. There are more unregistered migrants and the number shown here are just estimates. It is quite difficult to establish the true population number of migrants due to this non-registration among them. Comparing the four districts, Thong Pha Phum has the highest number of migrants, and these are resettled in a confined area of three resettlements.

The major public health problem of the district are the same infectious diseases which are targeted in this project; namely malaria, diarrhea, TB, diarrhea and dengue.

The project chose the above-mentioned districts on the basis of migrant population which is believed to be significantly high and there being border areas between Thailand and Myanmar in the said districts. Upon consultation with the District of Public Health Offices, the villages to be covered were agreed on and was also based on the presence of migrant communities. The project was implemented in a phased manner, thus Phase 1 and Phase 2 of the project. The project started Phase 1 in Kanchanaburi in Thong Pha Phum and Sangklaburi districts in October 2004, and Phase 2 was started in the last quarter of 2005 in the provinces of Chumporn and Ranong. Phase 2 covered additional two districts, Thasae of Chumporn and Kraburi of Ranong. During Phase 1, the following areas were covered: in Sangklaburi District - catchments of the Sangklaburi District Hospital and health centers , like Viakadee (including Viakadee village and Huamalai village), Songkhalia (Songkhalia village) and Three Pagodas (Three Pagodas village); and in Thong Pha Phum District – catchments of the Thong Pha Phum District Hospital and health centers, like Ban Rai (including Huay Pak Kok village, Tao Tham village and Huay Nam Sai villages) and the Burmese Settlements 1, 2 and 3.

Figure 2. Map of Kanchanaburi showing the districts of Thong Pha Phum and Sangklaburi

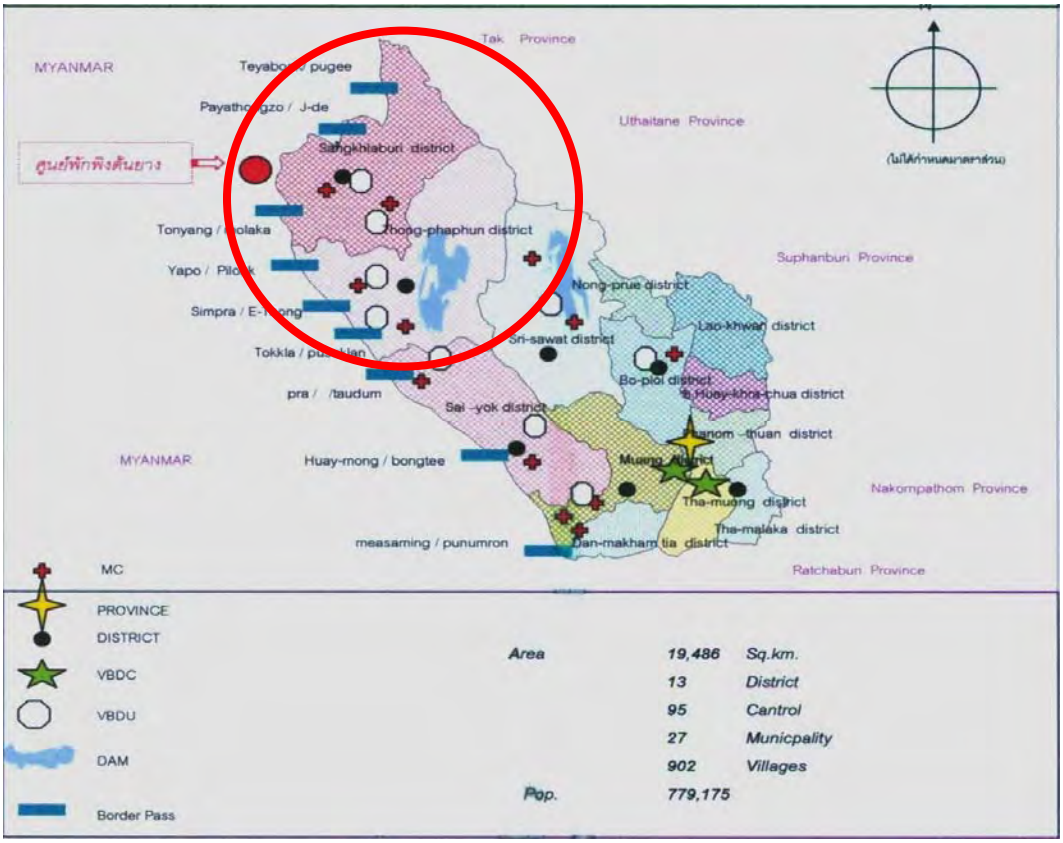
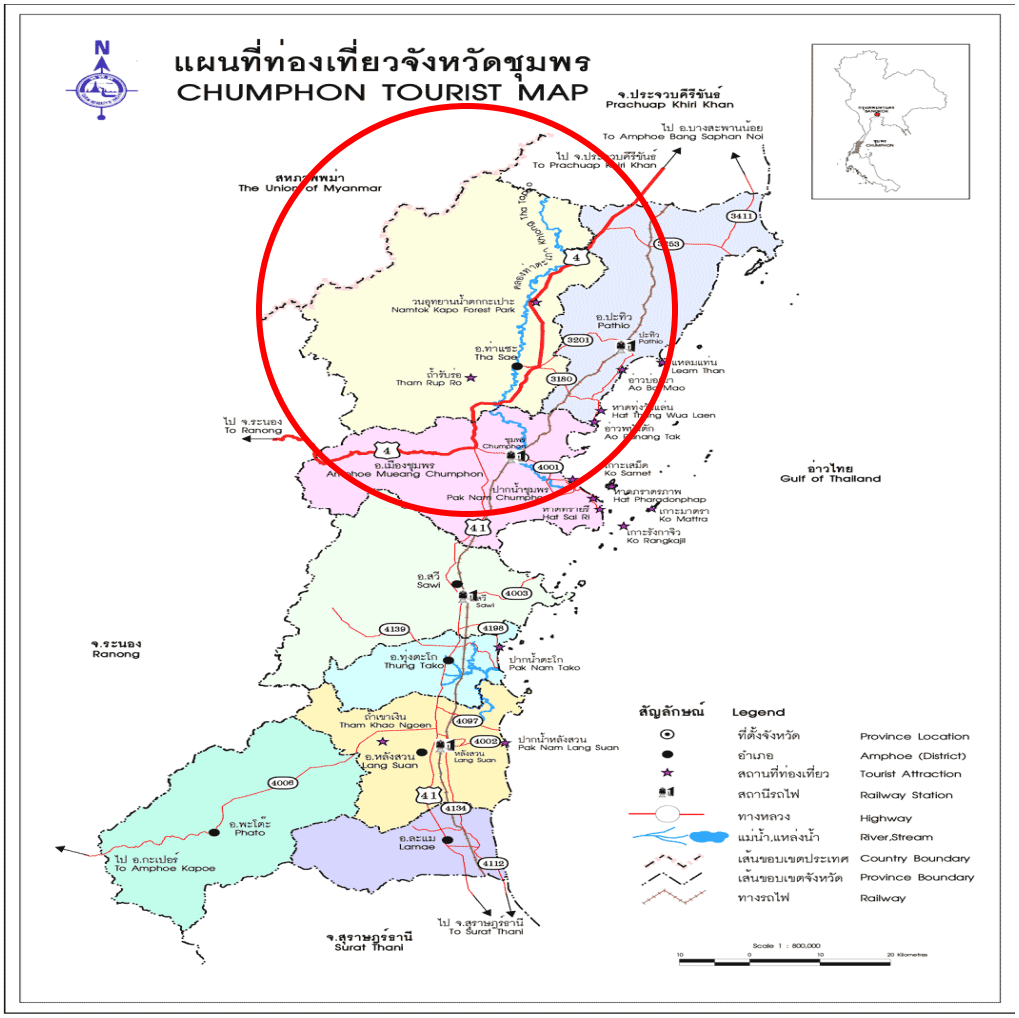


Figure 2 above shows the Kanchanaburi province. The encircled areas are Thong Pha Phum and Sangklaburi districts, the project sites in Phase 1.

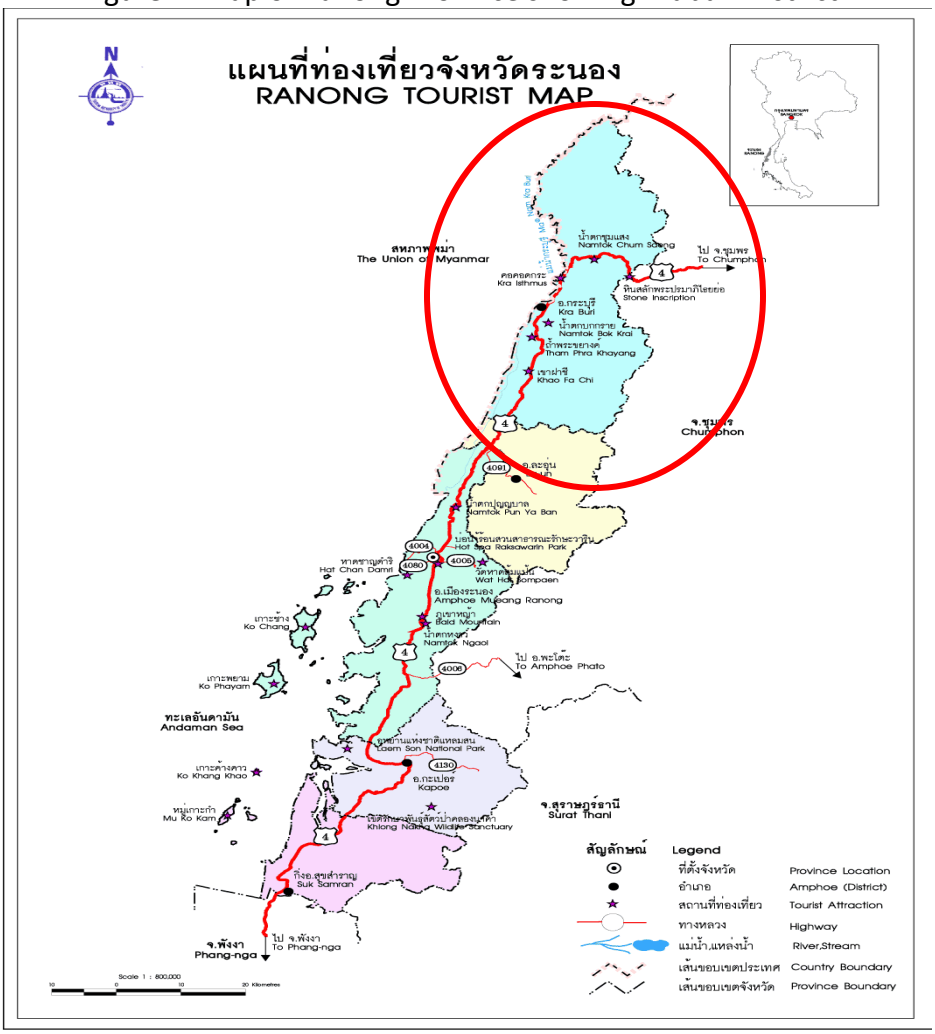
Figure 3. Map of Chumporn Province showing Thasae District



In Phase 2, the project expanded its Sangklaburi and Thong Pha Phum coverage and moved towards the south to cover the districts Kraburi and Thasae of Ranong and Chumporn provinces, respectively. In Sangklaburi expansion areas included the catchments of Chakae Health Center (including the villages of Chakae, Tilaipa, Kohsaderng, Salawa, Sanehpong and Laivo). In Thong Pha Phum, it expanded to cover Krengkravia Health Center, Huay Kayeng Health Center and Etong Health Center. In Kraburi District, the areas covered were the catchments of the Kraburi District Hospital and health centers like: Had Jik (Had Jik and Hadtoon villages); Pak Jan (Nongpakbung, Nanoi, Nongjik, Pakjan, Playklongjan and Klonglueak villages); Jo Po Ro (including Banhinsong, Bannikompung1, Bannikompung2, Bannikompung3, Bannikompung4 and Banklongjanpattana villages); Thungmapraw (including villages Namkoa, Thungmapraw, Rungtan, Naikrang and Rangtantai); Lumlieng (including villages of Huaysai,

Bangmeepattana, Bangbon, Bangplunang, Bangma and Huaythainua); and Songpreq (including villages of Lumleung, Lumleungnai,Songpraq Pragkhao and Huaythaingam). And in Thasae, the catchments of Wanglum (including the villages of Panwal, Hinpoa, and Panwal 4) and Pak Dan (with villages Pakdan, Santinimit, Saungsuksamran, Bansanlampang, Bansatong and Bansankampang1) were covered.

Figure 4. Map of Ranong Province showing Kraburi District



In summary the project covered 55 villages, 18 health centers, 4 districts and 4 hospitals from the 3 provinces.

Main activities:

The project developed a log frame matrix based on the project goals and key result areas, as guide in the implementation as well as in monitoring the achievements of the project. The matrix below shows a summary of the log frame:

The ARC-ID Project Log frame

Goal : "Sustainable reduction in ID burden in 4 Districts experiencing some of the highest concentration and flows of migrants in Thailand"

		Activities/Input	Objectives/Output	Verification
KRA 1	Increased quality and access to ID health care	Trainings; Provision of supplies and materials	Improved accuracy of ID diagnosis at health facility Appropriate ID referral system Improved ID treatment quality Increased utilization of ID services	QA results HF records MHV/MLO Forms ARC records
KRA 2	Communities mobilized & actively involved in their own health care	Active and functioning community volunteerism Recruitment, trainings and deployment Community health education IEC materials Vector Control supplies	Increased community knowledge on all aspect of ID Increased disease prevention practices Increased use of appropriate homecare remedies for ID	Community Surveys
KRA 3	Increased collaboration among stakeholders, capacity building and project sustainability	Create ID TF Trainings ARC Management Support	Developed appropriate guidelines decisions and activities Harmonious implementation of ID project among the different stakeholders leading to project sustainability	ARC records and documentation

The matrix was fleshed out to come up with a list of inputs and activities towards achieving the objectives. For every input or activity, targets were also identified and to ensure that the targets are achieved, a set of verifiable indicators were also identified, as well as means of verification. The main output indicators include: 1) progress of implementation; 2) performance of health workers; and 3) performance of health facilities.

For the purpose of facilitating the discussion, the Kanchanaburi project sites will be referred to as the North sites and the Chumporn and Ranong project sites will be referred to as the South sites.

Key Result Area1: Increased quality of and expanded access to infectious disease (ID) – related health care services.

Input 1.1

Training of health center staff, hospital personnel and Office of Vector-Borne Diseases Control (OVBDC) staff on clinical and laboratory diagnosis of TB, malaria, diarrhea, pneumonia and dengue. To determine training needs of the health staff, Health Facility Assessments were done - January to March 2005 in the North and November to December 2005 in the South, through the assistance from AFRIMS. Afterwards**,** refresher courses on treatment protocols were held in April 2005 in the North and in March 2006 in the South. The trainers were both from the hospital, ARC ID staff, OVBDC Regional staff, and ARC ID staff. Diagnostic skills training in microscopy was provided by AFRIMS in the North in April to June 2005. Another microscopy training was given both as refresher for the OVBDC staff and a skills upgrading for MLOs and MHVs who have potentials, during the malaria season in 2007; the training in the North sites was provided by AFRIMS and by the Regional OVBDC for the South sites.

Input 1.2

ARC provided diagnostic supplies and equipments, like microscopes and Optimal IT to OVBDC, hospital and the District of Public Health Offices (DPH). A total of 33 microscopes were distributed. For malaria and dengue prevention, ARC distributed insecticide treated bed nets or ITNs for distribution to families.

Input 1.3

Trained MLOs and MHVs on the existing referral protocol (malaria suspected cases within 48 hours; pneumonia, dengue and diarrhea with dehydration will be referred within 24 hours; cough for more than 2 weeks). These were integrated during the formal training sessions given as discussed previously.

From the trainings, the volunteers acquired the knowledge and skills to identify probable cases, they were also provided with supplies and equipments to do simple diagnostic procedures like making blood smears, counting breaths to identify fast breathing, and give first aid treatment to minor wounds. And, to be able to refer cases, they were taught about the referral system existing in the local health structure. In

addition, a case identification and recording system was developed through a set of report forms that records information about the patients from the time they were identified from the community up to the time they reach the health facility. An MHV form was devised where the signs and symptoms recognizable at the level of the volunteer were written for the volunteers to tick off if present, and action to be taken, and this included referring to the appropriate health facility. A report form for each referral facility are filled out by the MLO who will follow-up the referrals made by the MHV. These data collection forms are then collected by the Field Supervisors of the MLO, to be submitted to the data management unit of ARC for data entry. A flow chart of data reporting, submission and collection was designed as standard procedures for the project. Every month, reports on the case referrals by the volunteers are being summarized for reporting to the head of the data management unit for analysis and reporting.

The case finding and referral described above was hooked up with the government health care delivery system to expand their coverage and be able to reach the migrant communities. In summary, the health system developed consisted of case identification, referral and reporting system between the project (MLO/MHV) and the public health sector; developed data collection forms and flowchart for data management.

Input 1.4

Training on primary health care management for health staff. The AIHD-Mahidol University was commissioned by ARC to provide training on PHC-MAP for health staff. The training in the North site was done in July 2005, while in the South site, it was in November 2006. Twenty two health staffs attended the PHC-MAP training for the North and 20 from the South site. The training curriculum consisted of 11 modules that deal with assessment of community needs for planning; surveillance and monitoring and evaluation; assessing quality of service and program management; cost analysis sustainability; community empowerment, all of which geared towards a PHC approach addressing migrant and Thai health issues. The AIHD-Mahidol shall continue to provide consultancy services to the trainees upon their return to their area of work.

Key Result Area 2: Communities mobilized into action, further integrated with the health care system, and actively involved in their own health care.

Input 2.1

Recruitment of health extension workers: Migrant Liaison Officers (MLO) and Migrant Health Volunteers(MHV). A total of 186 MHV in the north and 86 in the south; and 18 MLO in the north and 16 in the south, were recruited. Three among the MLOs are hospital-based; 6 are border-based; and 25 are health center –based. Recruitment was done through a panel consisting of DPH, OVBDC and ARC staff. A set of criteria was set and a scoring system was used in the selection process.

Standard lesson plans with corresponding visual aids were developed by a team of staff from the DPH, OVBDC and ARC. The lesson plans covered information and skill on diagnosis of infectious diseases (ID), like recognition of clinical symptoms, blood smearing, sputum collection, recognition of fast breathing, proper patient referral, patient treatment follow-up, prevention and control of IDs.

Training was held in April to June 2005 in the North (also Phase 1 of the project) and in May to August 2006. During this second training schedule, the North sites were also re trained for the first set of volunteers and a fresh training for the newly recruited volunteers from the expansion areas in the North site. A pre-post test was done for this training, certificates of completion for the training were issued and MHV kits were distributed to the trainees. The MHV kits contained blood smear paraphernalia, sputum cups, one-minute timers, thermometer, alcohol, cotton, first aid kits and record books. In addition to infectious diseases, health games were also taught to MLOs and MHVs as additional strategy in their health teachings. The health games as a tool in health teaching, is an innovative tool which delivers the health messages through games played by the participants. In the process, the training is made more interesting and a pleasant experience for the trainees. The MLOs and MHVs were given red balls as their tool in using health games in their health education meetings.

The MHVs were deployed in specified areas within the vicinity of their residence and identification of these assignments were done according to community mapping done previously. The MHV's area of work is usually remote and far from health facilities. They were supervised and monitored by the MLO.

Input 2.2

Conduct community information activities. MHV & MLO conducted health education activities in cooperation with the health staffs. These were done through community health education in the village; holding of Mobile Clinics in coordination with the health staff, both hospitals, health centers and malaria units . The MLOs and MHVs also facilitate the conduct of community-wide events to raise awareness of the people on the significance of prevention and control of infectious diseases. They held Malaria Prevention and Control Week and Dengue Prevention and Control Week, especially during the expected rise in malaria or dengue cases. The MHVs did home visits where they do one-on-one teaching on health for households under their care. The MHVs were given their assigned areas of coverage after dividing the communities into clusters of households numbering from 20-25.

Input 2.3

Coordinated with private sector for participation in the community-based infectious

disease prevention and control. This was particularly done in certain areas where there are big company owners who are employing migrants. In Vigitphan Palm Plantation, ARC, through the work of the MLO and MHV, the management coordinated with ARC for the setting up of malaria health post within the confines of the company for the benefit of the employed migrants. The company became a site for the training, health education, distribution of bed nets and re treatment of nets.

Input 2.4

Provided additional support to malaria health post manned by an MLO. This malaria health post was supported by the members of the community who utilize the health post and voluntarily paying for services that is otherwise given free by the MLO. ARC provided microscope, blood smear supplies and materials and funding support for health education activities that are being conducted in the post.

Input 2.5

Developed and distributed IEC materials on prevention and control of infectious diseases. The development of the materials were started and used for training of MLOs and MHVs. There are other existing IEC materials that are available from the DPH and the OVBDC. These materials were reprinted by ARC and were distributed during trainings and during health education activities. Other materials used and distributed were malaria storybooks developed by other ARC projects and Health Games manual developed by Right To Play, one of the implementation partners of ARC ID project. The Health Games manual was also distributed to the health center staff for their reference when they do their own health education.

Input 2.6

Recreational infrastructures were built through funding from ARC to provide the community a more safe location for recreation, these are either basketball courts, takraw or badminton courts. These infrastructures were mainly given in the South project sites during Phase 2 of the project.

Input 2.7

Distribution of ITNs to migrant and Thai families. ARC distributed ITNs to families through the distribution system of the DPH and OVBDC. ITNs also need to be re treated every 6 months. The OVBDC trained the MLOs how to re treat the bed nets and also trained the community leaders so they can initiate the re treatment by themselves according to prescribed schedules. On these prescribed schedules, the community can initiate the re treatment with supplies requested from the OVBDC.

Input 2.8

Establish communication linkage between community leaders and health facility staff. A standard adopted by ARC ID project is the involvement of community leaders during health education activities. Community leaders including the Tambon Administrative Officers (TAO) were invited during these events. As the health center staffs are always part of these meetings, opportunity for communication between the health staff and the community leaders are opened.

Key Result Area 3: Increased collaboration between and capacity within the MOPH and the OVBDC, along with broad community involvement, to ensure continuation of project achievements beyond the life of this grant.

Input 3.1

Creation of ID Task Force Committees by district with members coming from DPH, District Hospital, Health Center, OVBDC (district and provincial). The Task Force Committees are management committees whose task is to collaborate and coordinate the implementation of the ID project, though not limited to it, through monthly meetings with ARC support. During these meetings, issues and concerns arising from the implementation were discussed to arrive at effective solutions acceptable to every government organization involved. Program plans are also devised during these meetings based on feedback from the field staff like MLOs, Field Supervisors and health staffs of the government. The Task Force Committees is chaired by an officer from the government health facility while ARC serve as secretariat, also providing logistic support. Through this strategy, a sense of ownership of the project is inculcated in them to pave the way towards sustaining the project.

Input 3.2

Train health facility staff on Primary Health Care Management Advancement Program. This was discussed earlier in this paper. This training also enhanced the capacity of the health staff, both DPH and OVBDC, in program planning, management and evaluation. It was found from previous field assessment that health staff has the perceived need for training to upgrade their skills and knowledge. Included in the module was Training of Trainers to enhance the training capacity of the local health staff.

Input 3.3

Conduct of baseline survey before and at midpoint of the project. The baseline demographic and knowledge, attitudes and practices (KAP) survey were done by the Chulalongkorn University, School of Public Health. The baseline surveys were done in March to April 2005 in the North, and in February 2006 in the South. The follow-up survey in the North site was done in March 2006, while that of the South was done in July 2007. The follow-up survey in the South was taken over by the ARC ID project staff with training and supervision from the Chulalongkorn University. The results of these surveys were fed back to the local partners during the strategic planning workshops. They were also provided with copies of the final report. The follow-up surveys were also reported during the culminating conferences at closure of the project.

Input 3.4

ARC will handover 4x4 vehicles for each District OVBDC to enable them to reach remote areas to increase the coverage of their malaria control program. Several units of computers were also provided to the DPH complete with LAN system, barcode reader and scanner to facilitate their patient recording (especially for migrants whose mobility is a problem in recording). The computer units were also utilized in electronic entry of data from the field to facilitate their data processing which is a necessity for a more relevant health program planning for the community.

Implementation strategies:

This project was built on the skills and shared commitment of four groups of partnering organizations and agencies. The ***Principal Partners*** were the provincial and district levels of the MOPH and the OVBDC, whose capacity were strengthened during this project and who will continue to administer project activities and services during and beyond the life of this grant. The ***Implementing Partners*** were the Toronto-based organization Right to Play (RTP) and the ASEAN Institute for Health Development (AIHD) of Mahidol University, who provided key project inputs in community mobilization and training in primary health care management, respectively. The ***Technical Assistance (TA) Partners*** were the Armed Forces Research Institute of Medical Sciences (AFRIMS) and the Thailand MOPH – U.S. CDC Collaboration (MOPH/CDC). They provided technical assistance on the project's malaria, TB, and diarrheal disease interventions. The ***Donor Partners*** was Project C.U.R.E., which provided project specific donated medical supplies and equipment to district health facilities, and USAID as funding agency. As the prime, one of ARC's principle roles was to coordinate and support the relationships between project partners.

Several unique strategies were undertaken to **build and strengthen connections between the Burmese migrants, the local Thai communities, and the healthcare system**. The local health facilities were actively involved in reaching out to the most isolated and mobile segments of the Burmese migrant population – namely the un-registered. Migrant Liaison Officers and Migrant Village Volunteers were recruited and supported initially by ARC and later by the health facilities. The Migrant Liaison Officers were Thais (some were Burmese) who worked at district level health facilities, where they acted as community point people and interpreters for migrant clients coming to health facilities. This strategy was field tested initially in four of the Phase One health facilities and then later scaled up as locally available resources allow. Migrant Health Volunteers had similar responsibilities as their Thai counterparts (the Thai Health Volunteers) – providing health education to the communities, interpretation of health messages at health facilities, and referrals for medical care – except they focused most of their attention on other migrants. Right to Play's SportWorks Project helped to bring these communities together on the

sport field and in the schools through innovative and field proven activities – providing unique and targeted opportunities to communicate project-related health messages.

The project focused on **building local capacity – the most effective way of ensuring that project investments and accomplishments continue to impact positively on peoples' health.** First, project activities was phased in two sets of adjacent districts – Phase One will begin in Sangklaburi and Thong Pah Pum Districts in Kanchanburi Province in year one and Phase Two will begin in Kraburi and Tha Sae Districts in Ranong and Chumporn Provinces, respectively, in year two. During each phase the nature of ARC's role was changed. As the principal partners in the Phase One districts develop their skills in administering the expanded project activities, ARC began to step back, changing from a leadership to a mentoring/monitoring role. This allowed the principals the time necessary to adapt to new responsibilities and approaches before the end of the project, while they can still seek the support of ARC and the other project partners. This also allowed ARC and the implementing partners the time necessary to focus more fully on Phase Two startup. This approach also provided the partners a way to truly measure sustainability and have the time necessary to make further improvements to the project's design.

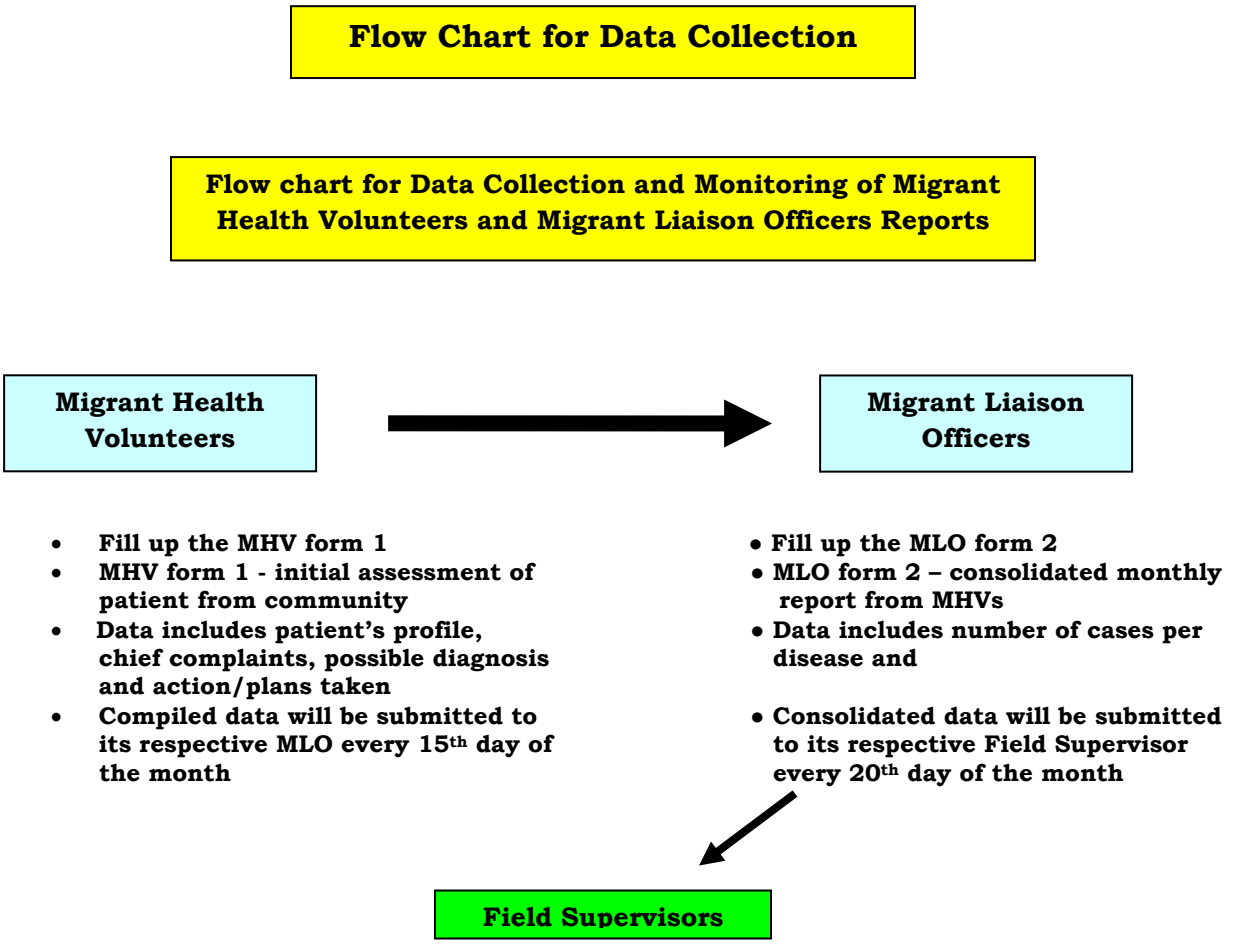
Second, senior staff from the principal partners were made to participate in each phase of the life cycle of this project – assessment, design, setup, implementation, administration/ management, monitoring, and evaluation. This provides partners with the opportunity to develop and hone their own skills while working on-the-job and learn how to work with a variety of international and national partners. This was done through the formation of the ID Task Force Committee, a management committee which acted as overseer in the field implementation of the project. All throughout the project implementation, regular Task Force Committee meetings were done. The meeting is chaired by a nominee among the members, giving them opportunity to participate in decision making and policy direction to the project activity implementation. Overall this meetings developed program or project management capacity among the member local health staff.

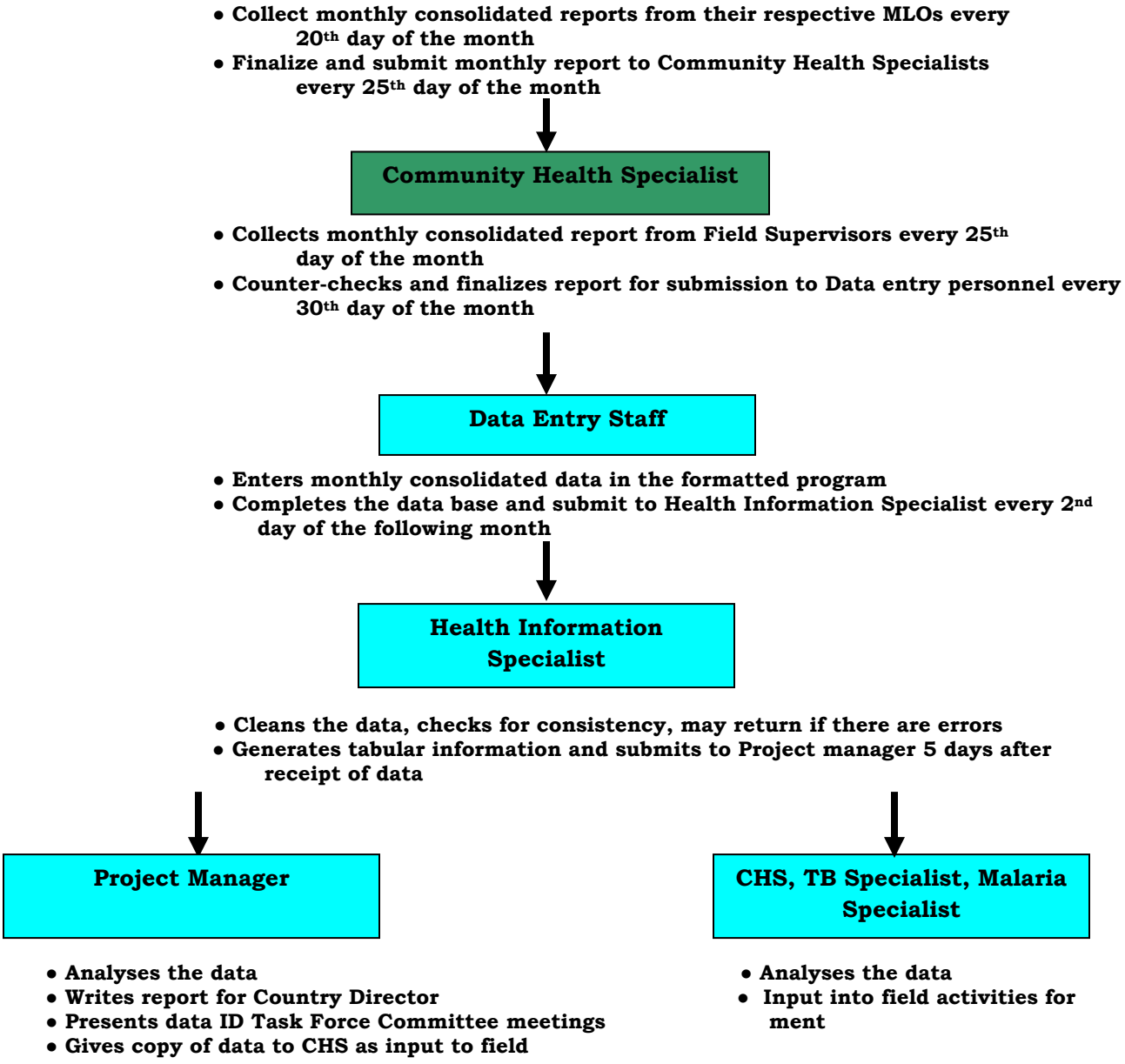
Third, this project's primary activity were training, through the use of peer education, behavior change communication (BCC), and training of trainer (TOT) methodologies so that not only invaluable content will be conveyed, but the skills for transferring this expertise will also be fostered within the principal partners. TOT capacity was provided to the principal partners so they will be equipped to orient and train future staff and volunteers.

The main feature of the project was health systems development thru the formation of a network of trained Migrant Health Volunteers (MHV) and Migrant Liaisons Officer (MLO). These MHV and MLO were valuable in augmenting the health manpower of government Health Facilities, reaching migrant communities where government health staff had difficulty or

limitation delivering health care to migrant patients. They were trained to do various infectious disease control and prevention activities like, malaria case screening, referral to appropriate health care facility, treatment follow-up, health education, house visits and collaborative activity with field vector control team particularly on community bed net treatment and spraying. Most of the MLO were assigned in the various Health Centers assisting and facilitating the health staff in migrant patient care. In this system also, the MHVs and the MLOs were trained how to diagnose suspected patients through indicative syndromes of the illness; the critical period for referral of the acute diseases and the system of referral which is hooked up into the government health care delivery system. A set of report forms were designed for the MHV and MLO level, including report forms at the level of the government health facility but to be filled out by the MLO. A flowchart of reporting from the field to the health facility to the ARC was also designed as monitoring of effectiveness of the system of case detection by the volunteers. The report forms were bilingual, Burmese and Thai; Burmese for the MHV and Thai for the MLO who are tasked to collect MHV recording forms and validate consultation of the health facility by the patient.

Figure 5





ARC ID Project was also able to provide capacity building in many of the local health facilities that include trainings in malaria microscopy, malaria diagnosis and treatment, vector control measures and some management and operational skill for malaria and dengue control. The knowledge and skill they acquired in these various training had equipped them to improve service delivery especially in dealing with the migrant patients.

Through the baseline and follow-up population survey, ARC supported Health Center data collection system and an established ARC internal data management system, a lot of important insight and information on migrant health situation were gathered including health seeking

preferences, health related attitudes and practices. Again, these data is vital to future projects that address the migrant's health.

Accomplishments:

I. Improved quality and access to health care

To improve the quality of service delivered by the local health facilities, skills and knowledge of health facility staffs were upgraded through refresher courses on the diagnosis and treatment of infectious diseases; Training of Trainers were given, and advanced course on primary health care management was likewise given.

A preliminary measurement of effectiveness of trainings was pre and post tests. The chart below shows the result of the pre and post test obtained from training of microscopists. The chart showed a general increase in the knowledge of participants at post test.

Figure 6. Microscopy training pre-post test result

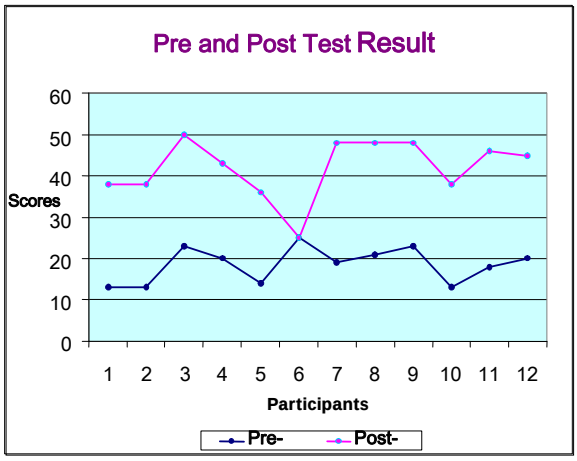


Figure 7a. Refresher course pre-post test –TB

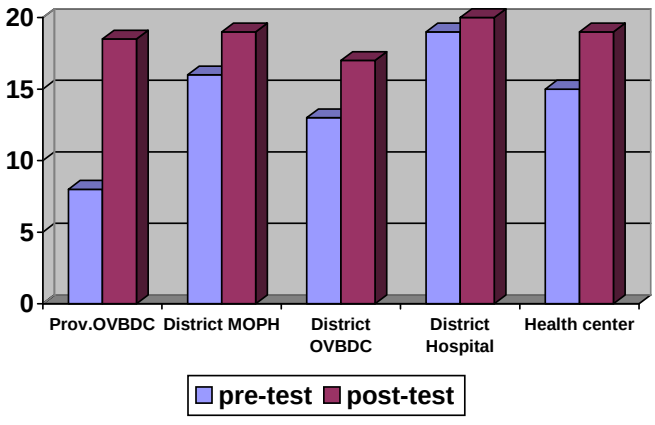


Figure 7b. Refresher pre-post test-Diarrhea

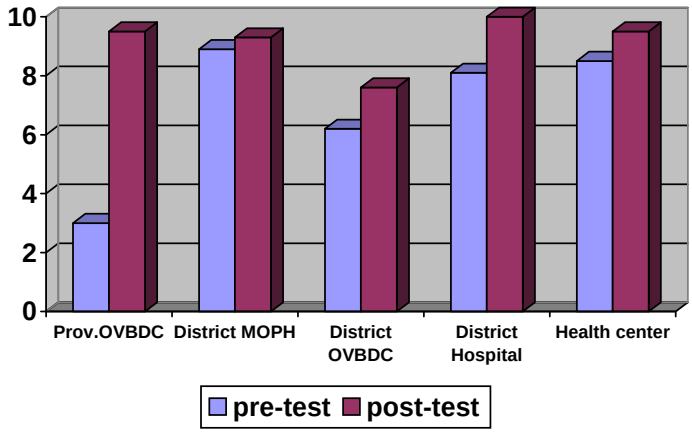
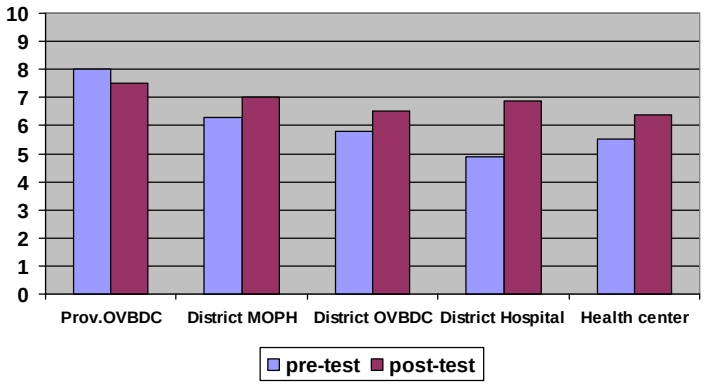


Figure 7c. Refresher pre-post test - Malaria



The above charts show the results of pre-post tests given for the refresher courses given to health staffs including health centers, OVBDCs and hospital staffs. In general improvement in the test scores were observed at post tests, but it should also be noted that at pre test, there are already high scores in all three diseases, but the increases at post test is still noticeable.

Another indicator that was used to measure success of improvement of quality and access of services at the health facilities is the proportion of confirmed consultation. Data collection started in April 2005 to July 2007, for Phase 1 and April 2006 to September 2007 for Phase 2 areas. Data were collected mostly from the hospitals except for malaria where data were collected from the OVBDCs. Shown below is the pneumonia data in the south project sites taken from the hospital. Data shows that those consulting or referred to for pneumonia had a high confirmation rate, especially in the year 2007. In 2006, there seem to be a lower batting average of 50% while in 2007, the average confirmed referral is 67%.

Figure 8. Per cent confirmed Pneumonia referrals, South Site

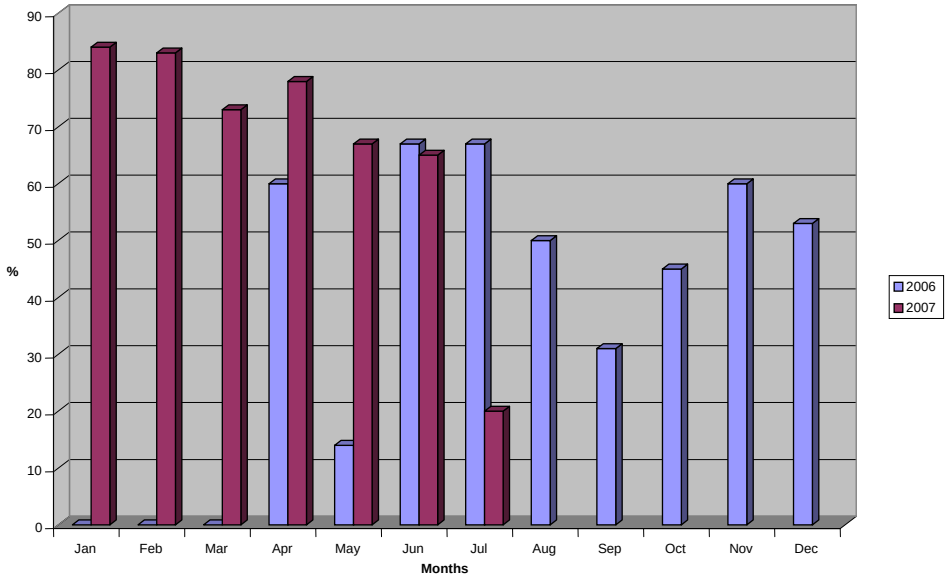
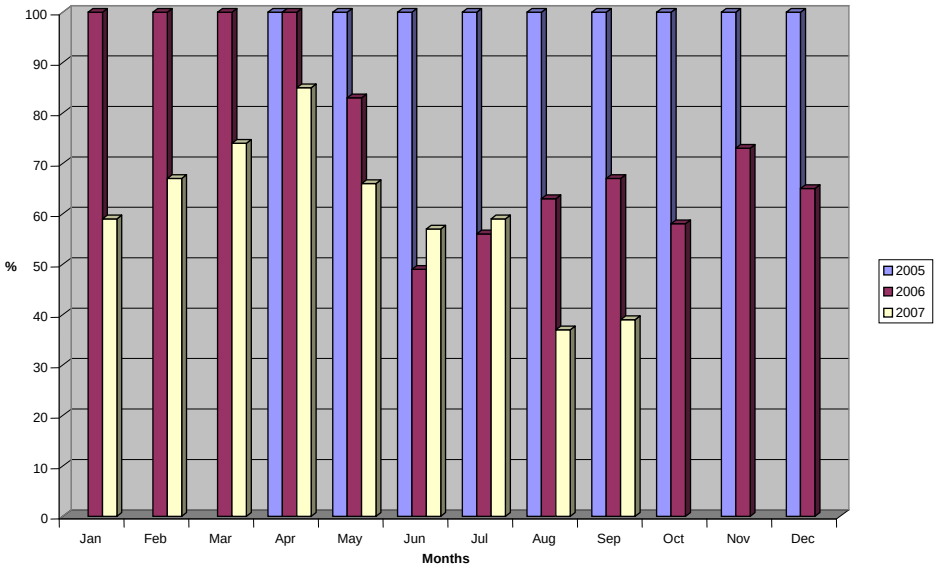
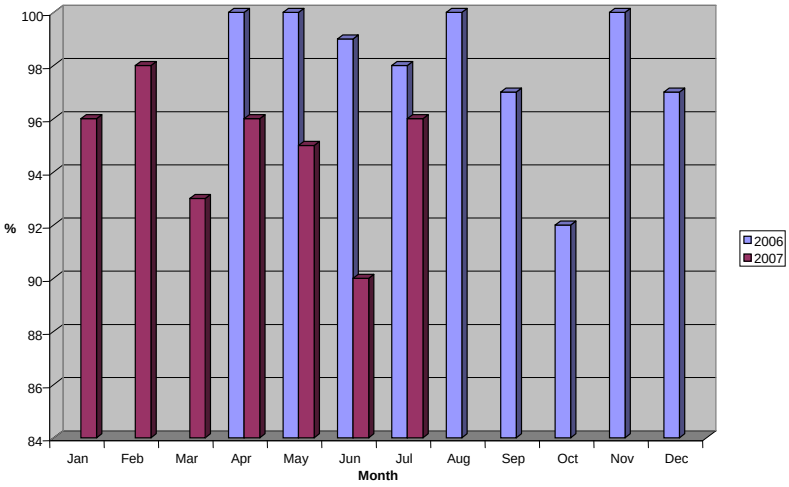


Figure 9a. Per cent confirmed Diarrhea referrals



Diarrhea confirmed referrals/consultations are even higher. It ranged from 35% to >95%. Figure 9a above shows high percentage of confirmed referrals among patients consulting or referred for diarrhea. In 2005, data collection started in April, the year 2007, data collection covered the whole while in 2007 data collection was from January to September. But there seemed to have a lower % confirmed in 2007 compared with 2006 and 2005, but this is not significantly different. This situation was seen in the North. In the south the situation is a bit different.

Figure 9b. Percent Confirmed Diarrhea referrals, South

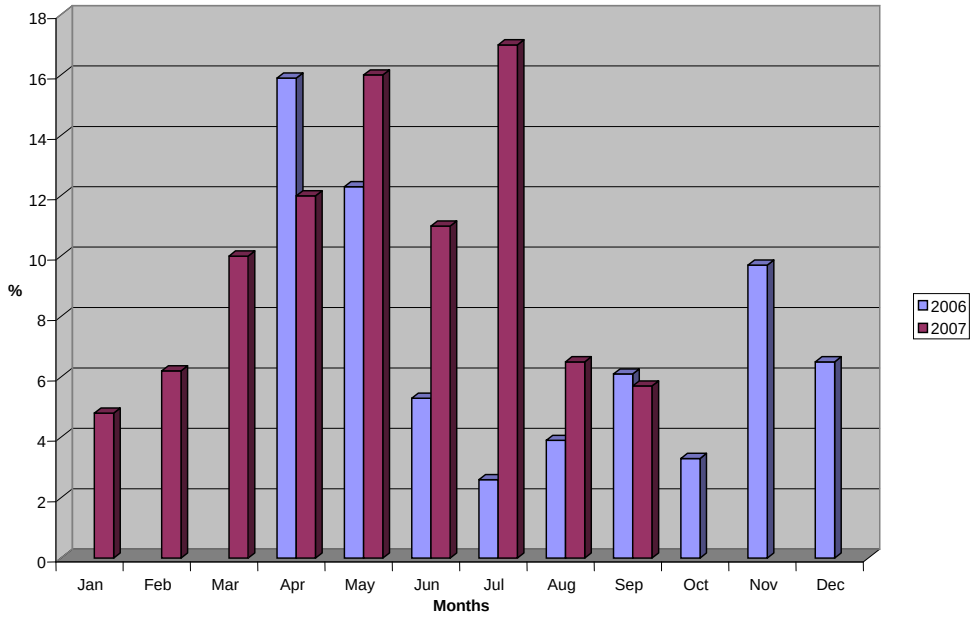


In the south, data collection was started in April 2006 until July 2007. The range of confirmed consultation rate is around 40% to >95%. There seemed to be a higher confirmation in 2006 than in 2007, but again this is not significantly different.

For dengue, the number of cases is very small that no presentation is made. The same is true with dengue.

For malaria, a very different picture was seen in comparing the north and the south sites. In the south, the % confirmed malaria consultations/referrals ranged from less than 5% to around 18 % in two years (see Figure 10a).

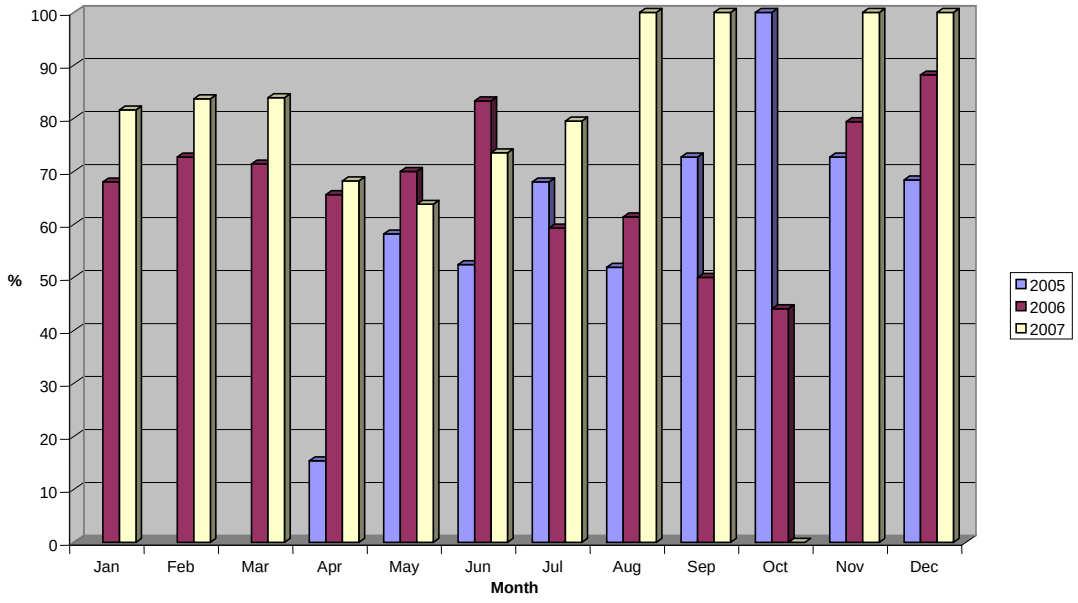
Figure 10a. Percent malaria confirmed consults/referrals, South sites, 2006 & 2007



While in the north site, the range was as broad as between less than 40% to more than 95% (see Figure 10b.) There was a difference in the strategy between the OVBDCs of the two sites which could explain the difference. In the south, the OVBDC is doing active case detection, going out to the field in a regular manner and taking blood smears of persons who show signs pathognomonic of malaria and in so doing, they will necessarily get hundreds even thousands of persons to be tested, of which those who will yield positive result would be much lower especially, if it is not a malaria season. While in the north, where the % confirmation was quite varied, the OVBDC does not do active case detection. Also, the average % confirmation rate of the south would be lower than that of the north. But this is not an indication of the skills of the OVBDC, but rather a technical result of their strategy. While active case detection may have

the advantage of immediate action if there is a case, this method also uses up a lot of resources that can easily deplete the agency's budget.

Figure10b. Percent malaria confirmed consults/referrals, North sites, 2005-2007



The project collected data on TB patients from the hospitals in the project sites. During the project year, the case notification rate in Kanchanaburi was 80/100,000 population, 79/100,000 in Thasae and 31/100,000 in Kraburi. These achievements are a little higher than the reported trend in the southeast Asian regions where 49/100,000 was the observed trend. In terms of case detection rate among new smear positive TB cases, the national target was 70%. The case detection rate in Kanchanaburi was 57%, 56% in Thasae and 22% in Kraburi. Again, the accomplishment of the local health facilities are below the national target, as in case notification. There is still room for improvement in the delivery of TB health services most especially in the identification of patients. Although the project has provided additional manpower who are at the field sites, but three 2-3 years of implementation is still a very short period to expect full functioning or maximal functioning of these field personnel (MLO and MHV). Their skills should still be upgraded to enable them to fully implement the TB health services at the field site, specifically case detection and treatment follow-up using the DOTS program.

Figure 11. TB patients and outcomes, North and South sites, 2005-2007

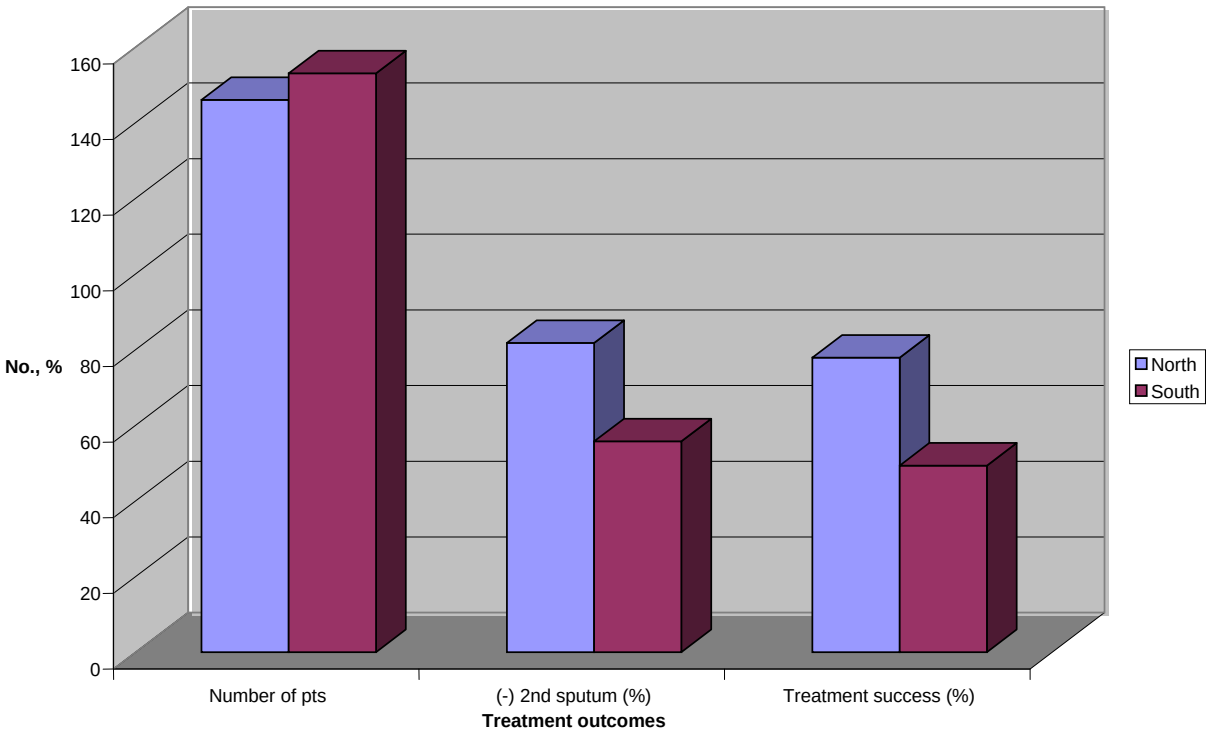


Figure 11 above shows the total number of TB patients recorded in the hospitals in the North and South project sites from 2005 to 2007. The table of data of the above chart is as follows:

Table 2. TB Treatment Outcomes, 2005 - 2007

	No. of patients	(-) 2nd sputum smear (%)	Treatment success (%)
North (SK and TPP)	146	81.7	78%
South (Kraburi, Thasae)	153	55.7	62-67%

In the North, out of 146 patients for 2.5 years, 81.7 % became negative upon bacteriologic testing at second sputum smear collection, while in the South 55.7% converted into negative at second sputum smear examination. In terms of treatment outcome, in the North, 78% were treated successfully while in the South, 62% (Ranong) and 67% (Chumporn) were treated successfully. The national target for treatment success is 80 – 85%. Both North and South sites

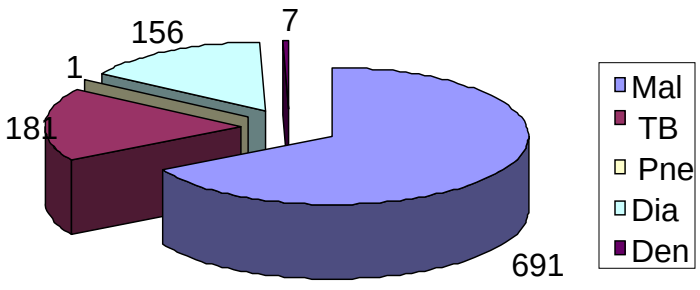
did not reach the national target. There is still room for improvement in the delivery of TB DOTS program in both areas.

2. Communities mobilized into action and actively involved in their own health care

Overall, thousands of migrant and Thai population as well, benefited from the services of the ARC supported volunteers and Health Staff of Health Facilities that were recipient of ARC supported trainings. The services are essential that could not otherwise be provided by Government Health Facilities to the migrants. Despite the short implementation -- accomplishments are enormous -- it has develop materials, methodologies and systems that will help jump start ARC future project targeting any of the 5 IDs including malaria.

Through the presence of the MLO (who can speak the language of the migrants) in the Health Center, it encouraged migrants to avail more of the Health Center services. Several of the MLO were also assigned in hospitals, and just like in the Health Centers they were instrumental in facilitating migrant's access to health care. Some MLO particularly in Ranong province were assigned in a very strategic place (borders) to set-up a sort of Malaria Clinic (in full coordination and supervision of the Ranong Provincial Health Office) whereby, incoming and outgoing Burmese migrants in Thailand were conveniently intercepted to undergo treatment. Exceptionally performing MLO like the one in Ban Nam Sai in Thasae, had established a kind of innovative Malaria Clinic fully supported and supervised by the Thasae OVBDC technically and provided with logistics for diagnosis and treatment. The clinic afforded easy, convenient and easy access to malaria care to all migrants alike. This model envisioned to be replicated in some other places either by Government Health Facilities or future ARC health projects.

Figure 12. Pie chart of cases identified and referred by MLO/MHV

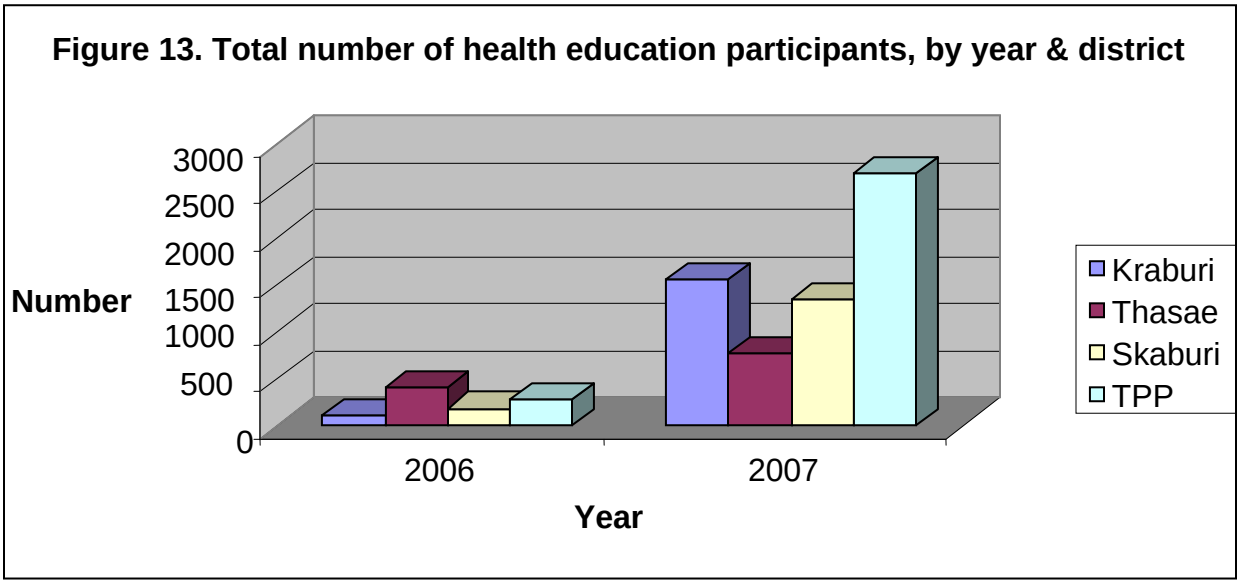


In terms of case finding of the project's health systems development, the total number of cases screened by the project was 873 distributed into: 248 (Sangklaburi); 82 (Thong Pha Phum); 62

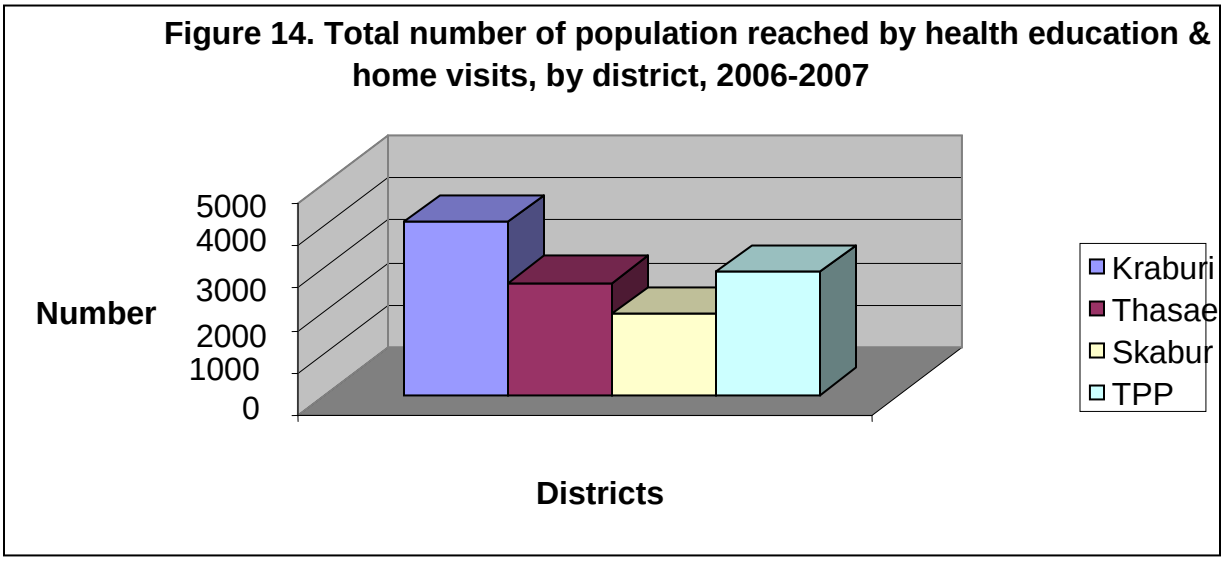
(Thasae) and 481 (Kraburi). Figure 12 above shows the distribution of cases by disease where malaria was the highest, 691 cases; followed by diarrhea, 156; TB was next with 18 cases; and dengue (7), pneumonia (1).

Several health education meetings, mobile clinics and community-wide health campaigns were undertaken with the participation of the health staff, community leaders and villagers. The activities were made possible with the community mobilization done by the MLOs/MHVs under the supervision of ARC field staffs. RTP likewise participated in these health education activities blending their health games into the health teachings. They also trained the health staff, MLOs and MHVs on the use of health games for health teachings and giving out Health Games handbooks as reference for future health teachings. The charts below illustrate the accomplishments in terms of total population reached through health education. Figure 13 below shows the total number of health education participants disaggregated by year and by district. There are lesser population reached in 2006 because only the North sites are fully implementing the project. The second phase has included the South project sites and this added to the population reached by health education by the project.

Figure 13. Total number of health education participants, by year & district



Health education meetings are not the sole methodology used to reach the grassroots population. Home visits to give one-on-one teaching were also done by the MHVs in particular. Figure 14 shows the total population reached by the project in its health education, combining both years and disaggregated by district. The chart shows the range of population reached was from 2,000 to 5,000 where Kraburi was the highest. RTP also participated in these health education meetings. Health games were blended into the health teachings to add learning by virtue of the interest stimulated by the game. A Health Game manual was produced and distributed to the MLOs, MHVs and health staff to assist them in their future trainings.



3. Increased collaboration between MOPH and OVBDC to ensure sustainability

A strategic approach undertaken in the project was the formation of ID Task Force Committees in each district to serve as management committees that has an oversight role over the project. These committees have members coming from the Provincial Public Health Office, District Public Health Office, District Hospitals, District Office, Tambon Administrative Office, Health Center Staffs and the OVBDCs, with ARC serving as secretariat. The chairman was chosen by the members and was usually the DPH head or the District Office head. They meet regularly every month and was then given the opportunity to participate in decision making and policy direction to the project activity implementation. Overall this meetings developed program or project management capacity among the member local health staff.

Through this structure, the local health staff took responsibility in planning and implementing the recruitment of MLOs and MHVs. During meetings, both the health center and the OVBDC is given the chance to report on their activities, make plans for the month and discuss issues arising from field implementation and recommend resolutions.

Other fora were also utilized to increase the capacities of the local health staff, and these are the strategic planning workshops when they presented project proposals for possible funding and where they were also given advise on environmental scanning to determine other possible funding sources.

An illustration of the improved capacity in planning of the local health staff was the idea of having border MLOs who are stationed right at the borders which are known points of entry by migrants. With the presence of a border MLO migrants who might possibly be sick is intercepted and tested and referred to the nearest health facility for final diagnosis and subsequent treatment. ARC provided support to this idea by adding MLOs to its contracted MLOs.

Sustainability:

Infectious Disease (ID) Project was implemented in a joint effort, collaboration and coordination between ARC and its identified stakeholders. All throughout its implementation, sustainability schemes are purposively integrated. This will ensure that the MoPH Provincial and District level as well as the community will have its ownership of the project especially after ARC phases out. The following sustainability measures were undertaken within its 3-year of project implementation.

In the target communities, the project was able to enhance the participation and involvement of the beneficiaries, families, community leaders, plantation owners/managers and health volunteers in all the target areas. The mentioned individuals or groups will serve as a vehicle for continuous functionality of strategies workable in their specified areas.

With the project's initiation of recruiting MHVs and MLOs, at the grassroots, this will eventually become a more permanent structure in the community that will bridge the gap in delivering health services to the targeted population. This significant structure is a link between the migrant communities to the Thai health care system and able to assist in existing networks and established new networks within each target areas.

The project was able to advocate and build up this structure in the health care system of all target areas and is expected to be carried out and be permanently set, as it resulted to a very positive outcome in the delivery of health services to migrant population.

The involvement of local health officials and community leaders in the recruitment process also enhanced collaboration and appreciation of the project strategies.

Organizing and formation of a project management committee in each project site is also a big step to project sustainability. ID Task Force is a structure formed to act as an advocacy and recommendatory body for project implementation. This group is compose of staffs from provincial, district and sub-district level that meets regularly to update, discuss, resolve issues and concerns affecting program implementation. With its long time working relationship with local officials and community leaders, these Task Forces also played an integral role in the

selection of MHV and MLO. It is anticipated that after its project phase out, these task forces will continue to sustain all related activities.

On the latter stage of ID project implementation, membership of the Task Force Committee does not only involve health staffs but local officials from Tambon Administrative Office (TAO). The project realizes that local Thai government should be involved in managing their own health care system – both benefiting the Thai and migrant population.

Series of advocacy activities to enhance partnership and involvement of local officials were conducted. Giving recognition to TAO as an independent implementing body which have its own budget from the national government will help ensure in the sustainability measures hoped to be accomplished by the project after its phase out. TAO officials in particular will help in ensuring that the built-in services of ID project (MLO and MHV structure) are being sustained by providing funds through policy legislation.

The best part of ID project sustainability measures is the participation in a write shop for Global Fund proposal for TB. The grant approval paved the way to continually carry out the lessons learned, experiences, best practices and project collaboration with other agencies to come up with more project plans for the betterment of health care system.