

**Control and Prevention-Tuberculosis**

**Burma, Thailand, and Yunnan, China**

**Summary Narrative**

**Family Health International (FHI 360)**

**FY2013 Annual Performance Report**  
**(October 1, 2012 – September 30, 2013)**



**CAP-TB**  
CONTROL AND PREVENTION  
OF TUBERCULOSIS

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## Acronyms

|         |   |
|---------|---|
| APRO    | Asia Pacific Regional Office  |
| BTB     | Bureau of Tuberculosis (Thailand)   |
| CAP-TB  | Control and Prevention of Tuberculosis (Greater Mekong Sub-region Multidrug Resistant Tuberculosis Prevention and Management Project) |
| DNA     | Deoxyribonucleic acid   |
| DQA     | Data Quality Assessment   |
| DOT     | Directly Observed Therapy   |
| DST     | Drug-susceptibility testing   |
| FHI 360 | Family Health International   |
| FY      | Fiscal year   |
| GFATM   | The Global Fund to Fight AIDS, Tuberculosis and Malaria   |
| GMS     | Greater Mekong Sub-region   |
| GP      | General Practitioner  |
| IA      | Implementing Agency   |
| IEC     | Information, education and communication  |
| IR      | Intermediate Result   |
| IUATLD  | International Union Against Tuberculosis and Lung Disease   |
| MBCA    | Myanmar Business Coalition on AIDS  |
| MDR-TB  | Multidrug resistant tuberculosis  |
| MHAA    | Myanmar Health Assistants Association   |
| MMA     | Myanmar Medical Association   |
| MOU     | Memorandum of Understanding   |
| NCCM    | National Catholic Commission on Migration   |
| NTP     | National TB Control Program   |
| OCAT    | Organizational Capacity Assessment Tool   |
| PHO     | Provincial Health Office  |
| PGK     | Pyi Gyi Khin  |
| PMU     | Program Management Unit   |
| RDMA    | Regional Development Mission Asia (USAID)   |
| SLD     | Second line drugs   |
| TA      | Technical assistance  |
| TB      | Tuberculosis  |
| TCC     | TB Clinical Center  |
| USAID   | United States Agency for International Development  |
| WHO     | World Health Organization   |
| XDR     | Extensively drug resistant  |
| YATA    | Yunnan Anti-Tuberculosis Association  |

## Narrative I: Executive Summary

Control and Prevention-Tuberculosis (CAP-TB) is USAID Regional Development Mission Asia’s (RDMA’s) project for MDR-TB in the Greater Mekong Sub-region (GMS) of Burma, Thailand, and Yunnan, China. The CAP-TB team, led by FHI 360 as the prime cooperating agency, completed a busy and productive FY13. Chief on the list of accomplishments was the successful implementation of the project’s model to support multi-drug resistant tuberculosis control in the three CAP-TB countries.

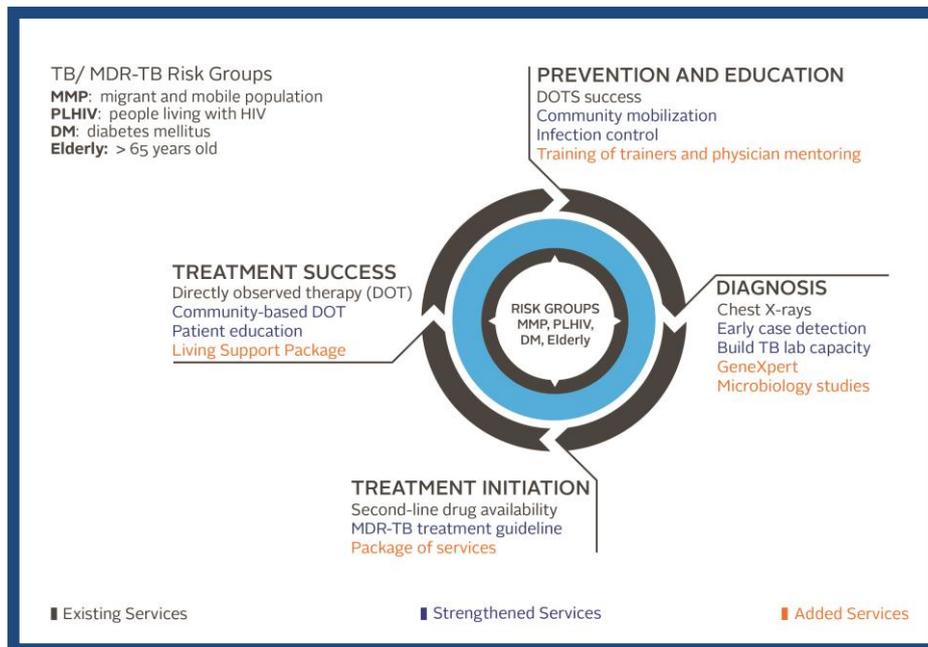
Burma, Thailand, and China are at very different stages of development economically, which significantly impacts their health indicators. The CAP-TB model’s relevance in different settings can be explained in the following ways. First, the model is firmly grounded upon the basic building blocks for TB control and prevention, enabling the strategy to be consistently aligned with national priorities. This helps to ensure sustainability. Second, the project’s alignment is done within the context of the country’s existing capacity--including

support from other partners, ensuring that the project complements others’ contributions to avoid duplication of efforts. Finally, implementation of the CAP-TB model is based on the foundation for TB control while also encouraging innovation through novel methods and new technology, with the goal to pave the way for sustainable support by the government. Key examples of the project’s implementation using this model in Burma, Thailand, and Yunnan, China are described below.

In Yunnan, China, implementation of the CAP-TB model for TB prevention compelled the provincial China government to pay for building renovations for the Yunnan TB Clinical Center. These renovations, recommended by CAP-TB, were needed to improve infection control for doctors and nurses, and the fact that they were funded by the government was a significant demonstration of support toward sustainability. The China government at both the provincial and national level has shown strong support for the project’s strategy and activities; this will be critical as CAP-TB looks beyond the project to ensure sustainability for the interventions that have impacted TB control in Yunnan.

In Burma, implementation of the CAP-TB model highlighted the need for direct service delivery, primarily through the MDR-TB patient “living support packages”, a critical element for treatment success. Because of the high burden of MDR-TB and great need, CAP-TB in Burma is focused on the basic priorities for TB and MDR-TB control: supporting MDR-TB patients throughout their treatment, improving laboratory capacity through novel diagnostics, and building the technical capacity of the health care workforce.

In contrast to Burma, Thailand is a middle-income country with universal health coverage for its citizens, including those with TB and MDR-TB. Recently, the Thai government even passed a law approving health coverage for non-Thais, whether registered or unregistered, to work in the country. Application of the model in Thailand identified needs within the health care sector that were quite different than those in Burma and China, and this enabled the timely shift in the project’s implementation strategy from direct service delivery to technical assistance for MDR-TB clinical expertise. This shift in the project’s strategy has come at a time when Thailand’s Bureau of Tuberculosis (BTB) is prioritizing capacity building at the provincial level, prompted by the country’s decentralization health reform that will be fully implemented in 2014. In keeping



with the project's aim to align itself with the national priorities for TB and MDR-TB control, CAP-TB's Thailand strategy is focused on developing technical expertise outside of the central level (Bangkok) to support the government's decentralization health reform. This is done through innovative digital media to strengthen the MDR-TB network at the regional and provincial levels as well as through novel teaching methodology that has the potential to change the paradigm for how the healthcare workforce is trained.

These illustrations from Burma, Thailand, and Yunnan (China) exemplify the value of the CAP-TB model in different economic and development settings. All countries and cultures are unique, thus TB and MDR-TB elimination must be done within the context of national and provincial TB programs. Applying the CAP-TB model has given FHI 360 as well as our technical and local implementing agencies (IAs) the foundation to determine how to best apply funding and technical assistance. In this document, we report the results and progress from the CAP-TB project's activities in FY13.

## **Narrative II: Program performance/achievements and key challenges**

- A. **MDR-TB Prevention (IR1):** MDR-TB prevention is comprised of two main strategies: primary and secondary prevention. Primary prevention focuses on decreasing the transmission of MDR-TB. This strategy involves a multi-pronged approach that includes a prioritized focus on early case detection and initiation of treatment, with the goal to rapidly decrease patients' infectivity. Decreasing ongoing transmission through education on simple measures of infection control should also be done, particularly with close contacts in the home. Secondary prevention of MDR-TB focuses on decreasing the generation of drug-resistant strains by improving treatment compliance for drug-susceptible TB.

Infection Control: The CAP-TB project effectively intervened to improve infection control in all three countries during FY13. In China, CAP-TB partner, the International Union Against TB and Lung Disease (IUATLD), identified infection control risks at Yunnan Province's TB Clinical Center (TCC), which prompted the provincial government to renovate the building. These renovations were completed over the course of the year; they were made to decrease the risk of TB infection for doctors and nurses caring for TB and MDR-TB patients at the TCC. At least one physician had already been diagnosed with MDR-TB prior to the renovation, likely from his work at the TCC. The building renovations are therefore expected to have a lasting impact by keeping the health care workforce free of TB and MDR-TB.

In all three countries, outreach and community workers also visited TB and MDR-TB patients in their homes to assess infection control using checklists with the goal to ensure compliance to simple measures such as opening windows for ventilation; maximizing sunlight exposure; and decreasing exposure of patients to children <5 years of age, the elderly, and the immunocompromised. Doing these things should help to decrease TB transmission among close contacts, which the project will follow in subsequent funding years to determine the impact of community infection control.

Relevant indicators (Annex III): CAP-TB #6 and PMP #9 (CAP-TB #2).

Ensuring DOT success for TB to prevent MDR-TB: One of the biggest challenges to TB control is the duration of treatment, which increases the risk for default, missed doses, and non-compliance. Drug-susceptible TB is normally treated with 6-8 months of anti-TB drugs. Although this regimen is normally tolerated well, 100% compliance, treatment completion, and cure are not guaranteed. In China, "directly observed therapy" (DOT) is not enforced for either drug-susceptible or drug-resistant TB, mostly due to the lack of human resources. This has contributed to alarming numbers of MDR-TB and extensively drug resistant (XDR)-TB in China, second only to India at the global level. In Yunnan, China, CAP-TB focused on educating patients and health care workers to emphasize the critical need for monitoring patients throughout their treatment. The project's four outreach workers specifically focused on four communities in Kunming, the capital city of Yunnan Province, to pilot community-based support for TB treatment completion (secondary prevention of MDR-TB). In Burma, the high MDR-TB burden and the lack of human resources for DOT required a strong focus on providing "living support packages" for MDR-TB patients. The package comprises nutrition, transportation, and psychosocial support and complements

GFATM-provided second-line drugs (SLD). Together, the drugs and patient support package are critical to ensure MDR-TB treatment success. In addition, CAP-TB has piloted the country's first community supporters for MDR-TB DOT, which may be a critical strategy to meet the urgent shortage in human resources for MDR-TB treatment. If these community supporters can effectively provide DOT for MDR-TB patients, the project's training and implementation strategy will be scaled up throughout the country.

In Rayong, Thailand, the project's IA, National Catholic Commission on Migration, similarly supported DOT for MDR-TB patients. This work will be transitioned during FY14 to the Rayong Provincial Health Office (TB network) for long-term sustainability.

Relevant indicators (Annex III): CAP-TB #17 and PMP #9 (CAP-TB #2), CAP-TB #3 and #13

- B. MDR-TB Management (IR2):** MDR-TB management is expensive, highly toxic to patients, and lengthy—lasting 20-24 months. All of these factors challenge treatment completion and cure. MDR-TB diagnosis using molecular methods (GeneXpert) decreases the waiting time for results from weeks and months to hours. However, national guidelines in many countries still require conventional culture and drug -susceptibility testing (DST) prior to treatment initiation. This means that although GeneXpert has been scaled up in many countries, its true capacity to improve early case detection and treatment success for MDR-TB is yet to be realized. Rapid scale-up of molecular diagnostics without adequate conventional laboratory expertise thus presents a challenge for MDR-TB diagnosis. Finally, one increasingly urgent issue globally is the shortage and delay of supply for SLD resulting in thousands of newly diagnosed MDR-TB patients remaining on waitlists for treatment, many dying during this waiting period. Among the CAP-TB countries, the crisis of MDR-TB waitlists is relevant for Burma, where the resources for MDR-TB diagnosis and treatment are inadequate and the burden of disease critically high. In contrast to Burma, China and Thailand do not have this problem as their SLD supply has been adequately covered by GFATM, with SLD to be produced domestically in China following GFATM closure.

Molecular diagnosis for MDR-TB: Installing and utilizing the GeneXpert, a machine that detects deoxyribonucleic acid (DNA) for rifampicin-resistant mycobacterium tuberculosis, was the focus of the project's laboratory intervention for FY13. In Thailand, the national guidelines permit MDR-TB diagnosis to be made on the basis of GeneXpert plus clinical judgment, without the need for conventional culture and DST. This flexibility in the guideline enables patients to be initiated on treatment quickly. Because MDR-TB treatment in Thailand is largely supported by the country's national budget (SLD are procured by the government), this greatly expedites the process and enables MDR-TB diagnosis and treatment to be largely independent of external funding (GFATM). In Rayong Province during FY13, 50 patients were diagnosed with MDR-TB on the basis of GeneXpert, some with culture confirmation. Of those, 41 were initiated on treatment, with final results of treatment pending completion (after 20-24 months on SLD).

In contrast, GeneXpert results in China cannot be used without confirmation by culture and DST, thus although 66 patients were diagnosed as rifampicin-resistant by GeneXpert, 48 of these confirmed by culture/DST (China Country Narrative, p. 11), only 28 were initiated on treatment in FY13. The small numbers initiated on treatment can largely be explained by patients forgoing SLD for Chinese medicine, or refusing treatment altogether (particularly for the retreatment cases). In Burma, the need for conventional culture/DST confirmation *plus* the shortage of SLD both greatly delayed the number of diagnosed MDR-TB patients being initiated on treatment, while neither factor was under the control of the project itself. In FY13, the project procured one GeneXpert machine for the Lower Myanmar TB Center in Yangon, which is the clinical center with the highest number of TB and MDR-TB patients in the country. The CAP-TB-procured GeneXpert machine was installed in August (delayed due to challenges with customs permits), and in the last two months of FY13 alone, 48 patients were diagnosed with rifampicin-resistant tuberculosis. These patients are likely to be MDR-TB but await confirmation by culture and DST. Note that because of the long wait-list of MDR-TB patients in Burma, the project provided "living support packages" for 137 MDR-TB patients *previously diagnosed* (and wait-listed) but *newly initiated* on treatment in FY13—although none of these patients were diagnosed using the project's GeneXpert.

Relevant indicators (Annex III): PMP #7 (CAP-TB #9), CAP-TB #17

“Living Support Packages” for MDR-TB patients: Ensuring treatment completion is a serious challenge for MDR-TB patients, largely due to the 20-24 month duration and the highly toxic drugs. It is not uncommon for patients to lose their hearing permanently; sustain kidney, liver and/or nerve damage; and experience severe psychological symptoms leading to suicide. In Burma, the project supported 519 patients with nutrition (rice, fish, peas, and oil), transportation support, and psychosocial support. The 519 target reached was much higher than the initial target of 200, which can be explained by an urgent gap that was identified by the NTP in Quarter 3 of FY13. Because of this funding gap and the need for the international community to help fill this gap, CAP-TB agreed, with USAID approval, to increase the target to 600 in order to increase the number of patients who could be initiated on treatment.

In China, the project provided living support packages for 28 MDR-TB patients who were cared for at the Yunnan TCC. The strategy in China differed from that in Thailand and Burma because the focus was on inpatients with MDR-TB, as opposed to outpatients in the community. This focus was largely due to the limitations of the project’s catchment area (and budget), whereby full community support through home visits for all 28 MDR-TB patients could not be done, but inpatient support for these 28 MDR-TB patients was possible. Finally, in Thailand, the project provided DOT, transportation and psychosocial support through home visits, conducted by CAP-TB IA, NCCM. This was done for six out of 24 MDR-TB patients currently undergoing treatment in Rayong Province; these six patients resided in the four project-supported communities.

Relevant indicators (Annex III): CAP-TB #17

Training to improve MDR-TB expertise: During FY13 in Yunnan, China, the IUATLD (CAP-TB partner), conducted clinical trainings aimed at physicians and nurses at the Yunnan TCC. Four on-site trainings by IUATLD experts on MDR-TB and TB/HIV were conducted in Kunming, with additional training via Skype to reinforce key concepts, improve retention, and increase adherence to clinical guidelines. In Burma, general practitioners (non-TB physicians) were trained on MDR-TB to increase identification of potential MDR-TB patients with the goal to increase referrals and case detection by the TB network.

Relevant indicators (Annex III): PMP #17 (CAP-TB #14); PMP #18 (CAP-TB #15); CAP-TB #16

- C. **Strategic Information (IR3):** CAP-TB follows a coordinated strategy to ensure that critical information is captured from the project’s activities and then disseminated to a broad audience of clinicians, public health professionals, and government officials for maximum impact. Central to this strategy is the CAP-TB Knowledge Gateway, which contains the following key elements:
- **Web portal.** ([www.cap-tb.org](http://www.cap-tb.org)) A convenient, easy-to-use website that places knowledge products such as news stories, “TB Insight” blog posts, e-learning modules, and categorized document libraries within simple reach. The site is based on a powerful content management system and functions in English, Burmese, Chinese, and Thai languages. This web portal serves as the “hub” of communications for the project.
  - **Social media.** CAP-TB maintains a proficiently curated social media platform centered on Facebook (<https://www.facebook.com/ControlAndPreventionOfTuberculosis>) and Twitter ([https://twitter.com/CAP\\_TB](https://twitter.com/CAP_TB)) feeds. These platforms disseminate new CAP-TB resources, news, and developments, as well as relevant TB updates from other organizations targeted for healthcare and TB stakeholders in the GMS and throughout the world.
  - **Information tools.** CAP-TB is implementing a number of “best-of-breed” information applications tailored to the specific needs of certain key audiences. These applications currently include:
    - An online support desk (or “ticketing”) application designed to manage the information requests directed at the MDR-TB experts group at Thailand’s BTB.
    - A mobile learning application that sends intermittent quiz questions to the mobile phones of participants in CAP-TB training workshops (Rayong, Thailand).
    - A periodic e-newsletter that provides summaries of CAP-TB news and developments to key recipients.

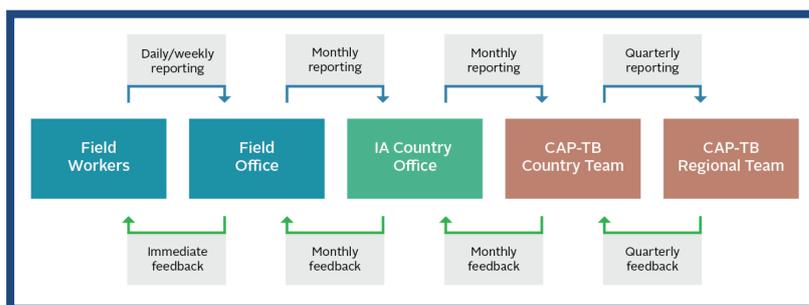
**Research:** The project’s research focus in FY13 was the implementation of a survey on knowledge, attitudes, and beliefs on TB conducted among key communities in China and Burma. Studies have shown that lack of TB knowledge prevents appropriate healthcare seeking behavior by TB-infected individuals, resulting in diagnostic delays and non-compliance with TB treatment. The aim of this research was to identify barriers to TB diagnosis and treatment due to a lack of knowledge and personal beliefs about TB. In Yunnan Province, we conducted a cross-sectional survey of 442 participants convenience-sampled from three communities during March and April of 2013. All participants were interviewed by outreach workers using a pre-validated survey consisting of socio-demographic and socio-economic variables; knowledge about TB symptoms, transmission and treatment; health seeking behaviors; and access to healthcare. Among the 442 participants, 149 (33.7%) had never heard of TB, with more men (41%) than women (26%) lacking this basic knowledge on TB ( $P= 0.001$ ). Lack of knowledge was also found in how TB is cured: 48% of the participants reported that Chinese medicine could cure TB. From these data, targeting male-dominated sectors of the community (businesses and factories) and engaging those who practice Chinese herbal medicine to advocate and educate on TB may be high-impact strategies.

This same survey was conducted in Burma among 1022 participants from the community in Rangoon, Mandalay, and Monywa. Knowledge about TB was no different between men and women, in contrast to the China data. However, we found decreased TB knowledge in construction workers compared to other employment types, and this difference was strongest in the industrial zone of Monywa. These findings for both China and Myanmar underscore the importance of education interventions in the workplace, particularly in areas with large numbers of internal migrants.

Relevant indicators (Annex III): PMP #20 (CAP-TB #21); PMP #21 (CAP-TB #22)

**D. Monitoring and Evaluation**

**(M&E):** CAP-TB has used a regional support model for monitoring and evaluation (right). Data originate from the field, generated by outreach and community workers who conduct the activities. The IAs’ field offices or district/community-level offices



collect these field-level data and submit them to their organizations’ central offices. The IAs then submit data to the CAP-TB country offices, where the project’s M&E Officer or Program Officers then check the data quality. The CAP-TB country offices monitor the data on a regular basis, reporting back to the IAs at least once monthly. Quarterly reports are submitted from the CAP-TB country offices to the CAP-TB regional team for review and input. The FHI 360 APRO Technical Unit in Bangkok supports the project at the regional level, providing additional input on data collection, validation, and quality assurance. Twice yearly, the project submits data and progress reports to USAID RDMA. Training of the IA teams was done through direct visits by the CAP-TB teams, at which time the project’s data collection forms were reviewed for completeness and accuracy. The numbers reported for FY13 are equal to the staff of the IAs who recorded and reported data for the project and were supervised and mentored by the CAP-TB teams.

In addition to the support provided by the CAP-TB Regional Team and the FHI 360 APRO Technical Unit, the project has received assistance from the USAID RDMA Strategic Information team via routine data quality assessments (DQAs) conducted in China and Thailand. The USAID DQA in Burma is planned for FY14, to be conducted by the Burma Mission. Clear recommendations were made during each DQA to the CAP-TB country and regional teams with action items for follow-up. These mechanisms for data quality assurance helped to strengthen the project’s M&E, with the goal to ensure high quality of data collected and reported as well as to build capacity in M&E for all CAP-TB IAs.

Relevant indicators (Annex III): PMP #20 (CAP-TB #21)

**E. Enabling environment for MDR-TB control and prevention (IR4):** Creating an “enabling environment” to support MDR-TB control and prevention is critical for strengthening the TB health

system. This can be done by building linkages within the health system to improve timely diagnosis and treatment success. One critical element of this process is the linkage between the non-TB health sector and the government TB programs. Because government TB control programs do not have designated authority over private physicians and hospitals, non-standard care resulting in low case detection and poor treatment outcomes have been reported from the private sector, most notably in China and Thailand. CAP-TB has engaged the private sector in Yunnan through its work with #3 Hospital in Kunming, which cares for more TB and MDR-TB patients than any other hospital in the province. This hospital is also known for non-standard TB and MDR-TB care, which has likely contributed to the generation of new MDR and XDR-TB cases. Therefore, improving diagnosis and treatment quality in #3 Hospital is likely to have a significant impact on MDR-TB control in Yunnan Province. CAP-TB training for general practitioners in Burma has also been discussed in “MDR-TB Management” (IR2, above). In Thailand, the private sector is a critical problem in Bangkok (urban setting) but not as relevant in most of the 76 provinces in the country, including Rayong. Engagement of the private sector will be done in FY14 as the project scales up its technical assistance on MDR-TB clinical expertise, which is critical to standardize TB and MDR-TB care in Bangkok’s private, academic, and military hospitals.

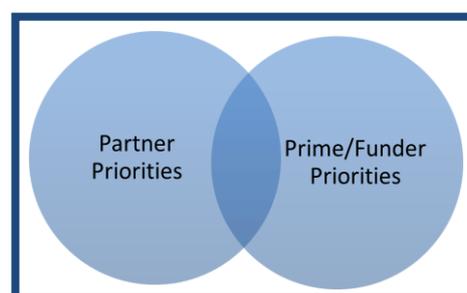
Relevant indicators (Annex III): PMP #24 (CAP-TB #26)

**F. Capacity building and technical assistance:** At the beginning of FY13, a baseline assessment on capacity development was conducted for IAs in all three CAP-TB countries. FHI 360’s Organizational Capacity Assessment Tool (OCAT) was used to assess capacity in the seven USAID Forward priorities: governance, administration, human resource, financial management, organizational (program) management, project performance management, and external communication.

**Burma:** According to the OCAT, the following areas were prioritized by the Burma IAs:

|      | AREA 2<br>Administration | AREA 3<br>Human Resource | AREA 5<br>Organizational<br>Management | AREA 7<br>External<br>Communication |
|------|--------------------------|--------------------------|--|-------------------------------------|
| MMA  | 3                        | 2                        |  | 1                                   |
| MHAA |                          | 3                        | 2                                      | 1                                   |
| MBCA |                          | 3                        | 2                                      | 1                                   |
| PGK  |                          | 2                        | 3                                      | 1                                   |

An action plan according to each specific priority area was then drafted, including the objectives, measures of achievement, activities, responsible persons and time frame. In addition to the priorities chosen by the IAs, the CAP-TB team prioritized financial and project management as key areas for FY13. The CAP-TB strategy for capacity development takes into consideration two contributions for prioritization, as shown in the venn diagram (right): 1) the partner priorities in order to maximize their commitment and sustainability; and 2) the prime and funder priorities to ensure the inclusion of critical elements necessary for the local IAs to receive direct funding from international donors.



- 1. Finance:** The CAP-TB finance officer in Burma provided regular coaching to finance staff from the IAs. During Quarter 3, the CAP-TB country office also conducted a Finance and Administrative assessment of all CAP-TB IAs. The assessment covered 1) Financial control systems, 2) Administration, 3) Human Resource Management, 4) Procurement and 5) Travel policies, which helped the IAs to recognize their strengths and weaknesses. There has been significant progress noted on the IA financial management in Quarter 4 of FY13 as a result of the close monitoring and feedback from the CAP-TB team.
- 2. Program Management:** The CAP-TB Burma team has worked closely with IAs, providing information on program management and USG compliance, both of which are important for the Burma setting. A training on “USAID Rules and Regulations” was conducted by the Director of Compliance

and Risk Management from FHI 360 headquarters. Program/finance staff from the four IAs and seven staff from the CAP-TB country team participated in the training. Topics covered included the role of a USAID-supported implementation agency, the current status of compliance, USAID and compliance, USAID Forward, and fraud awareness training.

3. **Project Management:** Monthly supervision visits to the IAs were conducted by the project's program officers and M&E officer. Findings, recommendations, activities matrices, and deliverable matrices were discussed with the IAs during these visits. These documents are also used by the project to track program deliverables, issues discovered during the monitoring visits, and performance improvement.

During Quarter 4, the FHI 360 APRO Program Management Unit provided on-site training with the CAP-TB country team and the IAs. Each IA reviewed their program management quality using a standardized assessment tool with a focus on: 1) Sub-award Guidelines, Processes & Tools, 2) Sub-award Performance and 3) Capacity Building.

**China:** Using the OCAT during the baseline assessment in January 2013, CAP-TB China IA, YATA, identified three priority areas for FY13: 1) external communication, 2) human resource management, and 3) administration. In addition to these priority areas identified by YATA, the CAP-TB country and regional teams also designated financial management as the key priority area for FY13.

1. **Finance:** Financial management training for all IAs

FHI 360 finance officer at the regional APRO office conducted a financial management training for all the IAs in Quarter 4. The participants included 17 financial and project management staff from YATA, Yunnan CDC, Kunming CDC and Xi Shan CDC. Detailed explanation about the FHI 360 financial management regulations for IAs and review of the appropriate preparation for monthly sub-award financial reports were covered in the training.

**Finance:** Training for timely submission of monthly subaward financial report and sound burn rate

In the first two quarters of FY13, financial reports provided by YATA showed low burn rates for project expenses. It was found that reimbursement claims for the CAP-TB activities from YATA were not being done in a timely manner. The CAP-TB team worked closely with YATA to develop a clear, detailed procedure and designated finance staff to follow up with project payments. On a monthly basis, the CAP-TB China finance and program staff closely monitored the expense details to ensure good donor compliance, and then shared the financial analysis with YATA for feedback.

2. **Project Management:** Regular monitoring visits and communication with all members of the CAP-TB team characterized the project's strategy for FY13. Monthly CAP-TB team meetings were also conducted throughout FY13, which gathered all people working on the project from the community level, district level, city/municipal level, up to the TB division in Yunnan. The purpose of the regular communication, monitoring site visits, and monthly team meetings was to ensure that the overall goal and strategy for the project remained clear throughout FY13. Problems and weaknesses identified in the field and through implementation were also discussed at the monthly meetings and site visits, with adjustment in monitoring or implementation made as needed.

**Thailand:** Using the OCAT during the baseline assessment in Quarter 1, CAP-TB IAs (NCCM and Rayong Provincial Health Office) identified program management, external communications, human resources management, and project management as their priorities. Financial management was also identified as a key priority by the CAP-TB team. Financial and Administration reviews were conducted by the FHI 360 APRO finance officer, and recommendations were made for the partners. M&E training/visits were conducted by the Associate Director for Strategic Information, FHI 360 APRO; routine and intensive training on M&E were also part of the regular site visits conducted by the Country Program Manager. A financial audit of NCCM was also conducted by FHI 360 headquarters. During this audit, several areas for improvement were identified and followed up by the FHI 360 APRO finance team, CAP-TB country manager, and NCCM.

In addition, USAID RDMA conducted a routine DQA during Quarter 4, which helped to identify areas for improvement in data recording and reporting. The Thailand TB system for data recording and

reporting is currently in a state of transition from paper-based to fully electronic, online databases. Improving the TB recording/reporting system has been identified as a national priority, and the CAP-TB project aims to help Rayong Province to improve its systems, both from a project management standpoint as well as to be aligned with the government's priorities for the country.

### **Narrative III: Success stories:** *Please reference Burma, China, and Thailand Country narratives*

#### ***A technical facebook post goes viral, gives glimpse into Burma's medical context***

There seems to be no limit to the new perspectives made possible through innovative digital media. CAP-TB gained such insight while recently launching our online Knowledge Gateway at <http://www.cap-tb.org>. One morning, our Yangon team sent us the just-released "Guidelines for the management of multidrug-resistant tuberculosis in Myanmar." We placed the document into [the new site's library](#) and then posted the link onto [CAP-TB's Facebook page](#). We suspected the document would be useful to our followers. What we didn't expect was that the post would go viral-- spreading through Burma's medical community, ultimately adding over a hundred new followers to our site within 24 hours and dwarfing our previous rate of growth.

This gives insight into the medical context in Burma and points the way for CAP-TB's knowledge management strategy. Almost every one of the recent followers was associated with a hospital or a medical school in Burma. This suggests that the Burmese medical community is eager for reputable guidance materials -- and what is more, they utilize social media to serve this professional syndication. CAP-TB has worked hard to synchronize our new site, our social media feeds, and our e-newsletter. We've done this to maximize the impact from sharing knowledge gained by the project—with the hope to reach those who thirst for insight using innovative media, regardless of where they live.

#### **Table 1-1 – 1-7: Program level monitoring results:** *Please reference "CAP-TB Data Collection" Excel sheet and Annex III, pp. 11-17(below)*

## **Annex I: Method to estimate total number of individuals reached and adjustment factor to calculate for potential overlap among different partners and other USG**

No estimations were made in Burma data; all data reported represent actual numbers recorded and reported. Even for data in forms for which estimated numbers could be used, the Burma IAs reported actual numbers and not estimations. Different methods of recording from attendance sheets or other records were used to verify data. Attendance sheets are kept in the finance department of each IA due to the inclusion of confidential information in these records. Further detail can be found in the Burma country narrative.

In China, estimations were made for large-group activities reported for PMP #9 (CAP-TB #2). Estimations were performed as follows for large community events (e.g., WTBD): all volunteers were instructed to keep count of the number of participants with whom they interacted and conducted surveys. At the end of the event, the number of volunteers was multiplied by the average number of participants. For community events, an average head count was conducted at the beginning, middle, and end of the event, and the average of the three counts was used to give the total participants in the event. For Thailand, estimations were used for the total number of individuals reached through community radio (PMP #9, CAP-TB #2). This was estimated at 10% of total population in the target communities (based on population registration). This proportion was defined in the FY13 monitoring and evaluation plan, in which the population reached through TB prevention and treatment messages is estimated to be 10% of the total population in the catchment areas.

The project regularly assessed potential overlap with other donors and other USG-funded activities, thus there is no adjustment factor for overlap since none occurred to our knowledge. When initial implementation in Mandalay uncovered overlap with the IUATLD, the CAP-TB project revised our strategy to avoid duplication of services in TB prevention, education, and referral. This resolved the issue without

further impact. Project programming in all three countries was done in close alignment with the government TB control programs, other donors, and partners in order to ensure that the strategy and implementation plans were coordinated and complementary.

**Annex II: Processes carried out to ensure data quality:** *Please reference Monitoring and Evaluation Narrative II, Section D (above).*

**Annex III: Summary of accomplishments against the work plan and targets:** *Please see following pages 11 – 17 for country results and progress against workplan and targets.*

## Summary of accomplishments against the work plan and targets.

| Burma |        |  |        |             |     |  |
|-------|--------|--|--------|-------------|-----|--|
| PMP   | CAP-TB | Indicator description  | Target | Achievement |     | Explanation  |
|       |        |  |        | #           | %   |  |
| 9     | 2      | Number of individuals reached with TB prevention and treatment messages, through outreach and small group activities | 9,576  | 9,382       | 98% | <p><u>MBCA</u> (3,543 out of 2,930) 121%: This over-achievement is due to TB Champions reaching higher than expected numbers in their target workplaces; services being more readily accepted in the Monywa industrial zone meaning that more health education sessions were conducted than planned.</p> <p><u>MMA</u> (431 out of 1,000) 43%: MMA planned to reach 900 people through World TB Day activities in three different locations. Even with 3 World TB Day events, the number participating is below expected targets. This is a large-group activity, and thus estimation of the target was based upon population registration; predicted interest among the population on WTBD; and other variables, including the fact that WTBD fell on a Sunday for FY13.</p> <p><u>PGK</u> (2,213 out of 1,950) 113%: This over-achievement of the target is due to the addition of two new townships in the last two months of FY13 enabling outreach workers to reach more MDR-TB patients and close contacts. In addition, PGK’s strategy of dividing tasks among outreach workers enabled some to focus on delivering the package of services while others focused on reaching the community with TB prevention messages.</p> <p><u>MHAA</u> (3,195 out of 3,696) 87%: Field activities had a delayed start in March due to long process of negotiation before contractual agreement. Late arrival of programming funds is the primary reason for under-achievement for MHAA.</p> |
|       | 3      | Number of individuals referred to TB- and MDR –TB related services   | 870    | 197         | 23% | <p><u>MBCA</u> (46 out of 155) 30%<br/>Since case finding activities focused on factories in Monywa industrial zone, most of the workers are healthy and fewer than expected numbers of potential TB patients were identified (“healthy worker effect”), even though symptom screening done at health education activities. This has been reported as a challenge under activity 1.1.3.</p> <p><u>MHAA</u> (25 out of 500) 5%: Shift in strategy explains the underachievement<br/>To avoid duplication and overlap with the IUATLD, who conduct referral activities in Mandalay, MHAA shifted its strategy to focus more on the package of support and home-based care activities within these townships in Mandalay. This has been reported as a challenge under activity 1.1.2.</p>   |

| Burma |        |   |        |             |      |  |
|-------|--------|---|--------|-------------|------|--|
| PMP   | CAP-TB | Indicator description   | Target | Achievement |      | Explanation  |
|       |        |   |        | #           | %    |  |
|       |        |   |        |             |      | <p><u>MMA</u> (22 out of 115) 19%<br/>Delayed funding caused PMDT trainings to be started only in Q3 and Q4. So the referral activities of the general practitioners will be started in FY14. Late arrival of programming funds is the primary reason for this underachievement.</p> <p>104% (104 out of 100) PGK: no explanation needed for this result</p>   |
|       | 6      | Percentage of households with MDR-TB patients meeting quality infection control standards | 100%   | 98%         | 98%  | CAP-TB selected 10 top questions from the IC checklist directly related to infection control, in line with National TB Programme. Number of households receiving 7 of 10 points were defined as “meeting infection control standards”. 257 households passed the standards out of 262 respondents supported by PGK and MHAA.   |
| 14    | 7      | Number of individuals trained in TB laboratory diagnosis techniques with USAID support    | 40     | 0           | 0%   | <p><i>Shift in programming emphasis: Training for Xpert and LED microscope</i></p> <ul style="list-style-type: none"> <li><b>There was a shift in strategy</b> since the NTP received LED microscopes through GFATM and TB REACH. Thus, the training for LED microscope through CAP-TB was cancelled</li> <li><b>Delay in arrival of GeneXpert:</b> The unit arrived in August due to lengthy process for customs permit. NTP staff at GeneXpert site did not need additional training on the machine as they have already been trained. Refresher training will be conducted in FY14 if needed by the NTP.</li> </ul> |
| 15    | 8      | Number of laboratories provided with TA for the rollout of new diagnostics                | 2      | 0           | 0%   | This has been postponed to FY14, as NTP plans to start 2 New BSL3 Labs in 2014. The primary reason for under-achievement is a shift in the host government environment, prompting a shift in the project strategy to keep aligned with the country needs.  |
| 7     | 9      | Number of MDR-TB cases diagnosed  | 270    | 48          | 18%  | Xpert unit was installed in August 2013, and only 201 samples were tested. Unexpected program implementation delay due to the issues surrounding the customs permit, as described above.   |
|       | 13     | Percentage of successful referrals  | 75%    | 94%         | NA   |  |
| 17    | 14     | Number of individuals trained in TB-case-finding activities                               | 53     | 117         | 221% | A total of 57 reported participants from Chest X-ray Reporting and Recording System trainings in Yangon and Mandalay during October 2013 were initially not included in CAP-TB targets.  |
| 18    | 15     | Number of individuals trained in programmatic management of MDR-TB                        | 315    | 324         | 103% |  |
|       | 16     | Number of individuals trained   | 10     | 14          | 140% | Capacity development priorities using the USAID’s organizational capacity assessment (OCA) tool. According to the needs of organizations’ finance and admin staff, a total 14 individuals participated, above the target.  |

| Burma |        |   |        |             |      |  |
|-------|--------|---|--------|-------------|------|--|
| PMP   | CAP-TB | Indicator description   | Target | Achievement |      | Explanation  |
|       |        |   |        | #           | %    |  |
|       | 17     | Number of individuals received package of TB/ MDR-TB service through USAID supported sites  | 200    | 519         | 260% | The achievement to date, as of September 2013. As explained in the narrative, the NTP requested an increase in the project's targets due to decrease in donor funding (GFATM) leaving large numbers of patients unable to initiate treatment. The primary reason for this over-achievement was a shift in the host government environment due to funding constraints from GFATM.   |
| 19    | 18     | Number of local organizations provided with TA for strengthening community-based approaches for PMDT                                      | 4      | 4           | 100% |  |
| 20    | 21     | Number of individuals trained on the collection, use, and analysis of data and strategic information for the management of the TB program | 27     | 8           | 30%  | <b>The target had been set based on three activities:</b> FHI 360 training for CAP-TB focal points, MEASURE training, and the national training on data management/HMIS. "National training on data management/HMIS" was not done in FY13 in keeping with the NTP's timeline (potential FY14).<br><br>The primary reasons for underachievement are due to host government shift in strategy (HMIS shifted to FY14) as well as the inclusion of MEASURE training, which was not supported by CAP-TB and thus cannot be reported under this indicator. |
| 21    | 22     | Number of operational research studies supported with USAID funds   | 2      | 1           | 50%  | There was a shift in program strategy, with the inclusion of LSHTM in late FY2013 and plans to implement studies in 2014 on gender, MDR-TB risk, and economic impact of MDR-TB.  |
| 24    | 26     | Number of private-sector partners working with NTP with USAID support   | 104    | 237         | 228% | The target was originally set for 4 implementing agencies and 100 GPs, but the scope of work for MMA was revised and there were a total of 233 GPs trained, over target.   |

| China |        |  |        |             |      |   |
|-------|--------|--|--------|-------------|------|---|
| PMP   | CAP-TB | Indicator description  | Target | Achievement |      | Explanation   |
|       |        |  |        | #           | %    |   |
| 9     | 2      | Number of individuals reached with TB prevention and treatment messages, through outreach and small group activities | 3,500  | 17,489      | 499% | This over-achievement is largely due to the target having been set from FY12 achievements, during which time there was more of a focus on small-group and individual activities. We shifted strategy to focus more on large, community events in FY13 since we saw significantly higher numbers of people coming in to TB clinics after large-group community events. Thus, the over-achievement is due to an increase in large group events throughout FY13, which was |

| China |        |   |        |             |       |  |
|-------|--------|---|--------|-------------|-------|--|
| PMP   | CAP-TB | Indicator description   | Target | Achievement |       | Explanation  |
|       |        |   |        | #           | %     |  |
|       |        |   |        |             |       | prompted by a shift in our strategy to maximize impact.  |
|       | 3      | Number of individuals referred to TB- and MDR –TB related services                        | 620    | 821         | 132%  | 728 referrals made to the community and district levels and then 93 referrals from the districts to Yunnan TB Clinical Center. More referrals were made due to a higher than expected commitment from TB staff at the community and district levels.   |
|       | 6      | Percentage of households with MDR-TB patients meeting quality infection control standards | 100%   |             |       | All MDR-TB patients were educated about infection control in households, through one-on-one conversation or small group activities. A checklist for infection control assessment in households of TB patients was developed and finalized in Q4 of FY13, will be widely used in FY14.  |
| 14    | 7      | Number of individuals trained in TB laboratory diagnosis techniques with USAID support    | 20     | 44          | 220%  | Laboratory staff from YNCDC, TCC, Kunming CDC, No. 3 hospital, Yunnan Care Center attended trainings provided by FHI and YATA. The original target had not included No. 3 Hospital, since they were not engaged at the beginning of the year, explaining the target’s overachievement.   |
| 15    | 8      | Number of laboratories provided with TA for the rollout of new diagnostics                | 1      | 1           |       | Yunnan CDC Laboratory was provided TA  |
| 7     | 9      | Number of MDR-TB cases diagnosed  | 56     | 48          | 85.7% | Note that a total of 66 patients were diagnosed as MDR-TB using GeneXpert alone (pending culture/DST confirmation). China report, pp. 15-16. The under-achievement is largely due to the difference in molecular versus conventional diagnostic techniques, since reporting on total MDR-TB cases diagnosed on GeneXpert would have totaled 66. <b>However, the China policy does not allow diagnoses to be made on GeneXpert alone.</b> |
|       | 13     | Percentage of successful referrals  | 75%    | 88.7%       | 118%  | Among 821 referred patients, 770 were successfully “received” in the TB network for TB- and MDR-TB related services (728 at the screening level and 42 at the final diagnosis level)   |
| 17    | 14     | Number of individuals trained in TB-case-finding activities                               | 129    | 433         | 336%  | The primary reason for over-achievement is due to the engagement of the Women’s Federation community workers, Blue Sky peer counselors, and No. 3 Hospital staff, none of whom had been engaged at the beginning of FY13 when the targets were set.  |
| 18    | 15     | Number of individuals trained in programmatic management of MDR-TB                        | 60     | 132         | 220%  | Similar to Indicator 17, No. 3 Hospital, Blue Sky CBO, and the Women’s Federation contributed to the over-achievement as they had not been included in the original target.  |
|       | 16     | Number of individuals trained   | 13     | 143         | 110%  | Other trainings on issues of finance, counseling, TB/HIV, and communication skills, etc.   |

| China |        |   |        |             |      |  |
|-------|--------|---|--------|-------------|------|--|
| PMP   | CAP-TB | Indicator description   | Target | Achievement |      | Explanation  |
|       |        |   |        | #           | %    |  |
|       | 17     | Number of individuals received package of TB/ MDR-TB service through USAID supported sites  | 56     | 28          | 50%  | In order to avoid duplication with GFATM, CAP-TB only provided the package of support to patients who are not also supported through GFATM support. The target had been set assuming 56 patients would be initiated on treatment in FY13, but only 28 of these patients were supported by the project as the others were supported by GFATM. |
| 19    | 18     | Number of local organizations provided with TA for strengthening community-based approaches for PMDT                                      | 5      | 8           | 160% | YATA, Yunnan TB Clinical Center, Kunming CDC, Xi Shan CDC, two CHCs, Women's Federation and Yunnan Blue Sky. Women's Federation and Blue Sky were newly engaged in FY13 but were not included in the target.   |
| 20    | 21     | Number of individuals trained on the collection, use, and analysis of data and strategic information for the management of the TB program | 20     | 58          | 290% | 4 YATA/Yunnan CDC staff, 3 Xi Shan CDC staff, 5 outreach workers, 7 peer educators/volunteer (Blue Sky), 2 TB staff (community health centers), and 37 women community leaders. The 37 women community leaders contributed to the overachievement: without these 37, the number achieved would have been 21.                                 |
| 21    | 22     | Number of operational research studies supported with USAID funds   | 1      | 1           | 100% | DM/TB Bi-directional screening conducted with support from partner, IUATLD. LSHTM will do gender analysis in FY14 along with economic study.   |
| 24    | 26     | Number of private-sector partners working with the NTP with USAID support   | 125    | 115         | 92%  | 125 was the initial target, but closure of small clinics/pharmacies has decreased the total number in the province to approximately 115.   |

| Thailand |        |   |        |             |      |   |
|----------|--------|---|--------|-------------|------|---|
| PMP      | CAP-TB | Indicator description   | Target | Achievement |      | Explanation   |
|          |        |   |        | #           | %    |   |
| 9        | 2      | Number of individuals reached with TB prevention and treatment message in USAID-supported project areas | 8900   | 4775        | 53%  | The target population reached through community radio was originally estimated to be higher as the catchment area for project implementation was larger at the start of the year. Due to a shift in strategy and focus of resources, the village health volunteers and NCCM implemented in a smaller catchment area. As such, the 10% of the community reached through the radio totaled 2216 (Thailand p. 2) |
|          | 3      | Number of individuals referred to TB- and MDR-TB related services                                       | 500    | 879         | 176% | Stronger than expected performance from the community and sub-district promotional level to refer people to TB services.  |
|          | 6      | Percentage of households with MDR-TB patients meeting quality infection control standards               | 100%   |             | 27%  | Most of the patients live in rental room/house which does not allow good ventilation.   |

|    |    |  |     |    |      |   |
|----|----|--|-----|----|------|---|
| 15 | 8  | Number of laboratories provided with technical assistance for the roll-out of new diagnostics  | 1   | 1  | 100% | GeneXpert laboratory technician at Rayong Provincial Hospital is part of the multi-disciplinary MDR-TB team receiving TA from the project.  |
| 7  | 9  | Number of MDR-TB cases diagnosed during the reporting period (both by conventional and molecular)  | 20  | 36 | 180% | Higher number of individuals diagnosed with MDR-TB likely due to availability of GeneXpert which enables rapid diagnosis. In addition, the MDR-TB burden in Rayong (prior to GeneXpert) was much lower, leading to the target set at 20. Thus the diagnosis of 36 over the course of 12 months is higher than expected.   |
| 10 | 11 | Number of new MDR-TB diagnosed patients initiated on treatment in USAID-supported project areas  | 20  | 31 | 155% | Of the total 36 patients, 5 died leaving 31 on treatment. This number is higher than the target due to higher than anticipated numbers of MDR-TB patients being diagnosed with GeneXpert. (above)   |
| 16 | 12 | Number of USAID-supported facilities with strengthened MDR-TB referral systems   | 4   | 3  | 75%  | Initial project catchment area was estimated to be larger than the actual implementation. This was due to focusing the project in specific areas to maximize human resources and efficiency.  |
|    | 13 | Percentage of successful referrals   | 75% |    | 72%  | Calculated as (# of cases referred and received services among the four hospital / total cases referred reported for FY13) * 100 i.e. (140/194)*100.  |
| 18 | 15 | Number of individuals receiving training in programmatic management of MDR-TB  | 43  | 64 | 149% | Strong commitment and engagement from Rayong health care team resulted in overachievement of the target.  |
|    | 17 | Number of individuals received package of TB/ MDR-TB service through USAID supported sites   | 20  | 11 | 55%  | The 11 MDR-TB patients received package of services from CAP-TB Project. GFATM also provides package of services, so to avoid duplication, CAP-TB provided the package of services for a lower target number of patients. These 11 patients currently receiving support are being transitioned to GFATM funding for FY14. |
| 19 | 18 | Number of local organizations provided with technical assistance for strengthening community-based approaches for PMDT                   | 3   | 0  | 0    | CAP-TB's focus on community-based approaches in Rayong is primarily on the village health volunteers, which are not a local organization. Thus, this indicator is not relevant to the Rayong project.   |
| 20 | 21 | Number of individuals trained on the collection, use and analysis of data and strategic information for the management of the TB program | 30  | 26 | 86%  | Includes the IA staff training carried out in December 2012. 24 participants were from Rayong PHO and Rayong Hospital. 2 participants were NCCM staff.  |
| 21 | 22 | Number of operational research studies for TB conducted during the reporting period  | 1   | 0  | 0    | FY13 plans initially included a gender assessment but Mahidol University funded by GFATM is already conducting a gender analysis in Rayong.   |
| 24 | 26 | Number of private-sector partners working with the NTP with USAID support  | 2   | 2  | 100% | Two private hospitals have been engaged with Rayong PHO through overview/refresher on NTP care and treatment guidelines for MDR-TB cases. These hospitals are: Ruampad and Mongut Rayong Hospitals.   |

