

Control and Prevention-Tuberculosis

China Country Narrative Family Health International (FHI 360)

**FY2015 Semi-Annual Performance Report
(October 1, 2014 – March 31, 2015)**



CAP-TB
CONTROL AND PREVENTION
OF TUBERCULOSIS

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Acronyms

AIDS	Acquired immune-deficiency syndrome
BCC	Behavioral Change Communication
CAP-TB	Control and Prevention of Tuberculosis (Greater Mekong Sub-region Multidrug-Resistant Tuberculosis Prevention and Management Project)
CDC	Center for Disease Control and Prevention
THC	Township health center
DQA	Data Quality Assessment
EQA	External Quality Assessment
F&A	Finance and Administrative
FHI 360	Family Health International 360
FY	Fiscal year
HIV	Human Immunodeficiency Virus
IC	Infection Control
IEC	Information, Education, and Communication
LSHTM	London School of Hygiene & Tropical Medicine
M&E	Monitoring and evaluation
MDR-TB	Multidrug resistant tuberculosis
MTB	<i>Mycobacterium tuberculosis</i>
NA	Not Available
NCTB	Chinese National Center for Tuberculosis Control and Prevention
NTP	National Tuberculosis Control Program
OCA	Organizational Capacity Assessment
PLHIV	Person (People) living with HIV/AIDS
PMDT	Programmatic Management of Drug-Resistant Tuberculosis
PPP	Private-public partnership
PTB	Pulmonary tuberculosis
Q	Quarter
RD	Residential District (<i>jie dao</i> 街道)
SBC	Strategic Behavioral Communication
SOP	Standard operating procedures
TA	Technical Assistance
TB	Tuberculosis
TOT	Training of Trainers
YATA	Yunnan Anti-Tuberculosis Association
Yunnan TCC	Yunnan Tuberculosis Clinical Center
The Union	The International Union Against Tuberculosis and Lung Disease
USAID	United States Agency for International Development

Narrative I: Executive Summary

During the first six months of FY15, Family Health International (FHI) 360 continued to implement multi-drug-resistant tuberculosis (MDR-TB) prevention, diagnosis, and treatment in Yunnan Province's Kunming city, implementing the project's strategic model. The USAID Control and Prevention Tuberculosis (CAP-TB) project expanded its scope by focusing on people living with HIV/AIDS (PLHIV) and extended implementation to rural Zhenxiong, the county in Yunnan Province hit hardest by TB. New implementing agencies (IA) and partners for FY15 include: Yunnan AIDS Initiative (YAI) and Yunnan AIDS Care Center for PLHIV; Zhenxiong Center for Disease Control (CDC), Zhenxiong County Hospital, Zhenxiong Shiyan High School, Boji Township Health Center (THC) and Miao Shan village. The Yunnan Anti-TB Association continued its overarching leadership role for CAP-TB and strong partnership with all the CAP-TB partners within the public health system and the TB clinical system.

CAP-TB continues to strengthen the patient-centered, community-driven responses that have been recognized at the national level with the goal to fine-tune them by integration into the existing TB control system in a lasting and cost effective way. The following report details CAP-TB China team's achievements and challenges from October 2014 to March 2015.

Narrative II: Program performance/achievements and key challenges encountered during reporting period by thematic area

A. MDR-TB Prevention

Output 1.1 Mobilized communities to advocate for and use TB services

Activity 1.1.1: Provide support and strengthen local partners' capacity to further implement the CAP-TB Strategic Model for MDR-TB prevention, diagnosis and care in Kunming and Zhenxiong County

In FY15, FHI 360 provided support to Xi Shan CDC which continued TB awareness raising and education in communities of Xishan District, Kunming city. Community mobilization activities were extended to Zhenxiong County in Yunnan Province with a special focus on Zhenxiong Shiyan High school and Miao Shan Village of Boji Township. YAI was involved to strengthen TB education among PLHIV at the HIV clinic and hospital.

Activity 1.1.2 Conduct community educational activities on TB and MDR-TB

Community educational activities included small group activities and community events targeting most-at-risk populations and influential people in the communities (including elderly people, PLHIV, school children, migrant workers, village women and community leaders) implemented through Xi Shan CDC and Boji Township Health Center (THC). During the reporting period, nine small group activities were conducted reaching 184 people (PMP #9: 74 men and 110 women). Xi Shan CDC organized one community event with 350 participants reached (PMP # 9: 150 men and 200 women). At Zhenxiong Shiyan High School, 4,296 students (2,166 boys and 2,130 girls) were taught about TB in class. 227 students took part in the TB posters contest and more than 400 entered the TB essay contest. At the HIV clinic in Kunming, YAI reached 1,391 people (PMP # 9: 849 men and 542 women) through one-on-one or small-group educational sessions, including 1,258 PLHIV (798 men and 460 women).

In Kunming, a community elderly troupe was invited to support community events in Xi Shan District. They danced and performed dramas adapted from true stories of TB patients with remarkable popularity among the audience. With the support of FHI 360, the community events have transitioned to Xi Shan CDC, which is now able to prepare, manage and facilitate interactive knowledge and skill -building sessions with participants.

In Zhenxiong, FHI 360 provided technical assistance through training and on-site demonstration to help Dr. SONG Qing and his team from Boji THC to conduct TB educational sessions in Miao Shan Village. FHI 360 kicked off community TB education by organizing a sensitization workshop to secure community leaders' support to CAP-TB in their community (PMP # 17: 19 men and 8 women). In order to make TB knowledge easy to understand for villagers, Dr. SONG used creative visual aids to explain how TB is spread and affects our lungs. In Zhenxiong, participants of small group activities are mainly elderly people and women caring for young children, as most of the adult men and women have left their homes and work in the city. One important challenge in Zhenxiong is the pervasive TB stigma, with villagers who often deny the existence of TB in their communities or who feel that villagers who are ill with TB should be separated from others. TB stigma will remain a critical issue to be addressed properly in community mobilization.

Activity 1.1.3: Organize activities to commemorate World TB Day

In FY15, CAP-TB was focused on the scale up in Zhenxiong County. The first ever World TB campaign in Zhenxiong was held during the fourth week of March 2015. FHI 360 and YATA/Yunnan CDC worked closely with the Zhenxiong CDC throughout the campaign, using creative activities and strategies as have been used in Kunming. The campaign included a public/volunteer training session, World TB Day community event and school-based education and exhibition. The Angry Bird board game for TB education developed by CAP-TB in 2014 was sensationally popular among the general public and school children. More than 1,100 local people were reached by the World TB campaign activities (PMP # 9: 600 men and 500 women). More than 10 TB patients had consultations with TB doctors, discussing their medical records during the community event. The local government showed its strong political commitment to TB control as Mr. WANG Jianzhu, Deputy County Mayor, kicked off the special World TB Day community event on 24th March 2015.

Activity 1.1.4: Strengthen early uptake of TB services through capacity building to community health care providers

To be conducted in Q3 FY15.

Output 1.2 Scaled-up implementation of TB infection control in communities and health facilities

Activity 1.2.1: Provide support and capacity building to institutionalize proper TB infection control procedure in health care facilities

In FY15, CAP-TB prioritized infection control measures as a priority. All CAP-TB clinical sites were closely monitored for gaps and improvements. FHI 360 and YATA provided technical support to assess and recommend improvements to Zhenxiong County Hospital and Zhenxiong CDC. As a result, Zhenxiong CDC renovated its TB clinic and met quality infection control standards. Zhenxiong County Hospital, however, still needs improvement with more support from CAP-TB. With limited resources to renovate the TB wards for infection control, the hospital will improve infection control by modifying patient flow in waiting areas as well as increase use of basic infection control supplies - surgical masks for patients and N95 masks for clinicians.

Activity 1.2.2: Conduct regular TB infection control assessment and education in households of TB patients

At the community level, trained outreach workers and village doctors continued to conduct regular IC assessments in households of TB/MDR-TB patients by using an IC checklist developed by CAP-TB. They provided education to patients according to the gaps identified during the IC assessments. During the reporting period, 83 TB/MDR-TB patients were assessed for infection control and all their households met quality infection control standards (CAP-TB # 6).

Output 1.3 Strengthened private sector involvement for TB/MDR-TB prevention

Activity 1.3.1: Provide support to private clinics/pharmacies about MDR-TB

In Kunming, Xi Shan CDC continued to promote involvement of private clinics and pharmacies in Fuhai Residential District for presumptive TB patient referral through coordination with the Xishan District Bureau of

Drug Administration and the Xi Shan District Association of Private Medical Care Practitioners. TB material and referral slips were distributed to the private sector partners through these two oversight organizations.

Activity 1.3.2: Strengthen the capacity of Kunming No.3 Hospital to provide appropriate TB diagnosis and first-line treatment for MDR-TB prevention

In FY15, FHI 360, YATA/Yunnan CDC and the Union have been jointly supporting Kunming No.3 Hospital and Zhenxiong County Hospital - two public-for-profit hospitals that receive the largest numbers of TB patients in their catchment areas- to strengthen proper TB diagnosis and treatment with reliable TB laboratory work. The project's patient-centered approach for compliance education was replicated in both sites. For details, please see Sections B and F.

B. MDR-TB Management

CAP-TB strengthened case finding, TB/MDR-TB diagnosis and treatment, and patient support through improved communication, coordination and cross referrals between all the CAP-TB partners in Kunming and Zhenxiong.

1. During the reporting period, 33 MDR-TB cases (23 men and 10 women) (USAID PMP # 7; CAP-TB # 6) were found, 12 of whom initiated treatment (USAID PMP # 10; CAP-TB # 11).
2. As the two largest hospitals for TB/MDR-TB treatment in Yunnan, the Yunnan Tuberculosis Clinical Center (TCC) and Kunming No.3 Hospital provided clinical services to 7,250 TB/MDR-TB patients from all over Yunnan province and beyond.
3. Zhenxiong CDC identified 1,201 TB cases and provided all of them with TB treatment.
4. Kunming No.3 Hospital (No.2 TB Division) screened 7,250 outpatients. Among the Kunming No. 3 Hospital's patient list, 75 were identified as Xishan or Zhenxiong residents (72 TB patients and 3 MDR-TB patients), and 43 were successfully referred to the local CDCs for continuity of follow-up after hospital discharge.

Output2.1 Ensured capacity, availability, and quality of laboratory testing to support the diagnosis and monitoring of TB patients, including the rapid diagnosis of MDR-TB

Activity 2.1.1: Provide TA to strengthen the capacity of laboratory staff in diagnosis of MDR-TB

During the reporting period, Yunnan CDC provided TA and on-site training to strengthen the TB laboratory in Kunming No.3 Hospital, Zhenxiong CDC, Yunnan AIDS Care Center and Zhenxiong county Hospital. Two TB staff from Yunnan AIDS Care Center attended in-service training at Yunnan CDC TB laboratory. As suggested by Yunnan CDC, Zhenxiong CDC recruited and trained one full-time laboratory staff to meet the increasing needs of TB testing in Zhenxiong. The latest external quality assessment (EQA) from the National CDC in March 2015 showed that Kunming No.3 Hospital met the standards for reliable TB sensitivity. TA for the next step will be directed towards Yunnan AIDS Care Center and Zhenxiong county Hospital for EQA and technical training for standard laboratory practice.

Use of LED and GeneXpert procured by CAP-TB: During the reporting period, 1,829 LED samples (1,085 men and 744 women) were tested and 442 samples were assayed with the GeneXpert machine, resulting in the detection of 102 rifampicin-resistant cases.

Output 2.2 Strengthened case finding and referral for MDR-TB in Kunming and Zhenxiong

In FY15, the CAP-TB project is more focused on strategic priorities for referrals – identification of TB/MDR-TB suspects based on risk factors, including close contacts, retreatment cases, diabetics, and PLHIV.

Activity 2.2.1: Provide incentives for referrals of MDR-TB suspects

Case finding and referrals in Zhenxiong County: Since October 2015, FHI 360 and YATA/Yunnan CDC have been active in strengthening case finding in Zhenxiong County through close collaboration between Miao Shan

village clinic, Boji THC, Zhenxiong Bureau of Education, Zhenxiong county Hospital and Zhenxiong CDC. All presumptive TB patients identified at the community level were referred directly to Zhenxiong CDC. However, referral service has been constrained by inconvenient transportation and poor resources for and capacity of proper TB diagnosis at the community level.

Urged by the local county government, Zhenxiong CDC initiated mass TB screening among all high school students. As of March 2015, 4,364 students at Zhenxiong Shiyan High School were tested for latent TB infection (PPD) and 34 were identified as having active TB.

Integrated rapid diagnosis strategy for PLHIV: In FY15, FHI 360 worked closely with YAI and Yunnan AIDS Care Center to test an integrated screening strategy for rapid diagnosis of TB/MDR-TB among PLHIV. Over the past six months, peer counsellors from YAI conducted TB education at the HIV outpatient clinic. All patients were first screened for TB symptoms. If a client had any of the TB symptoms listed, he or she would be tested for GeneXpert, sputum acid-fast bacillus (AFB) smear and chest X-ray. Patients diagnosed with active TB were started on standard treatment immediately with one-on-one counseling for treatment compliance provided. CAP-TB screened 1,555 HIV patients for TB, 93 of whom were found positive with signs of TB symptom. Abnormal chest X-ray was found among 37 patients, and 13 patients were detected positive for *Mycobacterium Tuberculosis* using GeneXpert, although none were rifampicin resistant. 11 of the 13 patients diagnosed with TB immediately started standardized TB treatment.

Activity 2.2.2: Train TB health staff in the detection and management of MDR-TB

During the reporting period, CAP-TB provided technical support to existing and new clinical sites through on-site mentoring or trainings from the Union experts (Dr. CHIANG Chen-yuan in Taiwan and Dr. Ignacio MONEDERO in Spain). The Yunnan TCC, which has developed strong technical capacity and experience in standardized detection and management of MDR-TB, has also provided TA to the new sites.

Output 2.3: Strengthened human resource capacity for MDR-TB management

CAP-TB will support representatives and clinicians from project partner organizations to attend in-country and international training workshops to build their capacity in MDR-TB management.

Activity 2.3.1: Support participants to attend provincial, national and international level MDR-TB trainings conducted by National Center for TB Control and Prevention (NCTB), Union and WHO

With support of CAP-TB, Dr. XU Lin, Director of Yunnan CDC TB Center/Secretary General of YATA attended the 45th Union World Conference on Lung Health (WCLH 2014) in Barcelona, Spain dated 28 October – 1 November 2014. She gave an oral presentation on the patient-centered approach that CAP-TB China has implemented with USAID support.

Output 2.4 Scaled-up quality treatment and community approaches for PMDT

Quality treatment and community support for patients has been a key priority area in which CAP-TB can achieve positive outcomes and leverage desirable impact for a successful strategic model. In FY15, CAP-TB initiated an innovative and diversified approach to strengthen implementation of the model in Kunming and Zhenxiong.

Activity 2.4.1: Train health care providers in effective communication with patients

To be conducted in Q3-Q4, FY15.

Activity 2.4.2: Provide treatment adherence education and support to TB/MDR-TB patients

Education and counseling for hospitalized TB/MDR-TB patients: FHI 360 continued to provide support to strengthen patient compliance counseling and education at the TB clinical sites supported by USAID – Yunnan TB Clinical Center (TCC), Kunming No.3 Hospital, Zhenxiong CDC TB Clinic, and Zhenxiong county Hospital as well as Yunnan AIDS Care Center. Nurses and peer educators were recruited, retained and trained to conduct face-to-face counseling through one-on-one and/or small-group sessions. Since FY15, TCC has become a TA provider to help set up counseling services at new CAP-TB sites. During the reporting period, CAP-TB

reached 1,880 individual TB/MDR-TB patients through treatment educational activities in the hospitals/clinic (PMP # 9: 1,155 men and 725 women).

FHI 360 made efforts to ensure that the counseling protocol, Strategic Behavior Communication tools and checklists developed by CAP-TB should be used consistently across all clinical sites supported by USAID. As the patient-centered approach rolled out, it has been accepted by TB service providers who were initially doubtful of its utility. China’s National Center for Tuberculosis Control and Prevention (NCTB) in 2014 has also recognized CAP-TB’s achievements, particularly notable are data from Kunming No.3 Hospital. This hospital developed a pre- and post-test tool to measure the quality and effectiveness of patient education. Face-to-face educational activities by nurses or peer educators reached 150 inpatients at No. 2 TB division with the pre- and post-test tool from July to October 2014 and led to significant increase in their TB knowledge (Table). TB outpatient visits nearly doubled following implementation of this counseling strategy, suggesting an association between inpatient counseling and outpatient compliance.

TB knowledge and awareness	Pre-counseling		Post-counseling		p-value
	N	%	N	%	
Total number of patients	150	100	150	100	
• Know their TB category (TB,MDR-TB, newly treated or retreatment)	74	49.3	147	98.0	<0.001
• Know TB transmission route	25	16.7	111	74.0	<0.001
• Know TB symptoms	95	63.3	131	87.3	<0.001
• Know TB and MDR-TB are curable	61	40.7	111	74.0	<0.001
• Know treatment course for TB	76	50.7	139	92.7	<0.001
• Know treatment course for MDR-TB	62	41.3	128	85.3	<0.001
• Know TB medication has side effects	113	75.3	132	88.0	<0.005
• Know TB treatment principles	96	64.0	137	91.3	<0.001
• Know when a newly treated patient should return for sputum test	20	13.3	119	79.3	<0.001
• Know when a retreatment patient should return for sputum test	15	10.0	105	70.0	<0.001
• Know what causes MDR-TB	27	18.0	59	40.0	<0.001

Peer counsellors play a critical role in building knowledge, skills and confidence for treatment compliance among patients. Fear of TB infection or reinfection of an air-borne disease was a major barrier among many people who wanted to help. In addition, peer educators with MDR-TB, especially cycloserine users, may suffer significant adverse drug effects such as drowsiness, depression or acute psychosis that may sabotage their delivery of counseling services to their peers. More than three MDR-TB patients recruited as peer educators were found to be emotional or forgetful in their communication with other peers and doctors. One consideration is to recruit regular TB patients as peer educators who rarely experience these types of significant adverse drug effects. As a lasting way for patient education and counselling, nurses at the TB clinical sites will be trained and empowered to play a bigger role in the support of peer educators.

Without Global Fund support since the end of June 2014, all the new MDR-TB patients now must cover all medical expenses by themselves, with partial reimbursement (approximately 70%) through their health insurance scheme. This is especially critical for the expensive second-line anti-TB drugs. Counseling with new MDR-TB patients will be strengthened with sufficient care at all the CAP-TB sites in order to minimize the numbers of patients who refuse treatment, previously known as “initial defaulters”. This number continues to be high in Yunnan Province.

Care and support to patients in the community

Home visits: In FY15, outreach workers from Xi Shan CDC continued to provide community-based care and education to TB patients discharged home from TCC and Kunming No.3 Hospital. In Zhenxiong, three village doctors were trained to provide support and pay home visits to TB patients in Miao Shan Village. During the reporting period, CAP-TB reached 86 TB and 2 MDR-TB patients through home visits and supported 186 TB and 3 MDR-TB patients through monthly phone calls (PMP # 9: 127 men and 62 women).

Home visits by village doctors in Zhenxiong are challenged by the fact that more than half of the adult patients are not living at home – most of them are outward migrant workers whom village doctors are often unable to meet in person. FHI 360 and YATA will continue to strengthen referrals and track patients across all CAP-TB sites through cloud-based information technology that connects TB service providers.

Ongoing education and support via social media: Since its establishment in December 2013, the 57 Zone group, a QQ-based social media group owned and managed by TB/MDR-TB patients, has played a central role in providing timely assistance to TB/MDR-TB patients who have internet access. Every day, trained TB

counsellors, nurses and peer educators answer questions and facilitate experience sharing among patients. 57 Zone organized four consultation sessions for patients to ‘meet’ and discuss online with Dr. MAO Xiaoyun about their diseases. By the end of March 2015, more than 300 participants were signed up for 57 Zone, 90% of whom are current or former TB/MDR-TB patients and their family members. Since November 2014, CAP-TB has been supporting a separate 57 Zone group managed by and for PLHIV in order to ensure adequate private and confidentiality for them. The NCTB and doctors from Xin Jiang Province Chest Hospital also expressed their interest to expand use of 57 Zone to help TB patients beyond CAP-TB project sites.

Community resilience response: With the support of 57 Zone, TCC organized vocational skills workshops among hospitalized patients. Ms. WANG Qing, a former TB patient, was invited to teach embroidery craft skills for income generation. An emergency fund of more than 10,000 yuan for TB patients in need was donated by members of 57 Zone. A poor family with three MDR-TB patients was the first beneficiary of the fund. From January 2015, FHI 360 has supported 57 Zone to manage a locally sponsored ‘formula milk’ project that will recruit ten TB/MDR-TB patients with young children in their families who will receive formula milk for free throughout the next one or two years. As of the end of March 2015, three patients benefited from the project.

Toll-free TB service call center: After five months of design, preparation, setup and testing, the first ever toll-free TB service helpline with interactive voice system (400 060 5757) in Yunnan went public during the World TB campaign in March 2015. The system included pre-recorded voice messages about basic TB knowledge for general public, TB suspects and patients in treatment. The helpline is a 24 hour-service for the recorded TB messages and manned by trained counsellors at TCC every Tuesday and Friday. On the days without hotline counsellors, incoming calls will be opted into voice TB messages or directed towards a voice mail box. CAP-TB hotline counsellors check the voice mail daily and respond to callers with answers. The ‘400’ helpline will improve TB patients’ universal access to treatment education in addition to the existing support services (internet-based education and home visits). In the next few months, promotional activities will be carried out to increase visibility and access to the system from TB patients.

Activity 2.4.3: Develop a TB case management system for efficient patient care and support

Patients information sharing via Yunpan: In FY15, CAP-TB continued to run Yunpan, a cloud-based spreadsheet to share, update and track patient status between hospitals that treat TB patients and local CDCs responsible for follow-up care and support in the community. The cloud-based system, initially shared between CAP-TB sites in Kunming (TCC, Kunming No.3 Hospital and Xi Shan CDC), is now extended to the Zhenxiong CDC. This helps to improve continuity for patients from Zhenxiong who have been treated for TB in Kunming. Updates at one CAP-TB site will be automatically synchronized and shared with other sites when they are signed in to the cloud account. The system places all the different sites, hospitals, and clinics on the same page so that they will help patients in a timely and coordinated way.

TB/MDR-TB case management system: Through rounds of consultation with YATA/Yunnan CDC, TCC and Kunming No.3 Hospital in Q1, FHI 360 drafted, revised and finalized the descriptive design for a TB/MDR-TB case management software that aims to provide a more sophisticated but user friendly solution to efficient case management by TB service providers. The software will be completed in Q3 and piloted at Kunming No.3 Hospital first. The final plan was that Yunnan CDC would expand use of the software for MDR-TB management at all the TB designated hospitals in Yunnan Province.

Magpi-based mobile application for compliance to treatment: FHI 360 developed and tested a prototype of a Magpi-based mobile application with 20 TB/MDR-TB patients for 30 days during Q1. Although both patients and doctors found the tool helpful, the Magpi system does not have the capacity for a user friendly interface that is attractive enough to secure everyday participation from patients. The initiative has been postponed until adequate funding is secured to develop an independent mobile application.

Activity 2.4.4: Develop user-friendly counseling toolkit and educational material for TB/MDR-TB patients

In FY15, CAP-TB will produce a video package for treatment education among TB/MDR-TB patients with support of TCC. The video package will cover the following topics: anti-TB drugs for TB treatment, infection

control for TB prevention, food and nutrition for TB treatment, importance of follow-up visits for treatment monitoring, handling the activities of daily living, and financial contingency planning. During the reporting period, the script was finalized and field videotaping was underway.

In January 2015, FHI 360 organized a workshop for TB counsellors/peer educators from TCC, Kunming No.3 Hospital, Xishan CDC and YAI to reflect their field experiences about small-group educational sessions on key TB topics. Based on the inputs from the workshop, FHI 360 will draft a step-by-step guideline for small-group educational sessions for TB patients (to be completed during Q3-Q4, FY15).

Activity 2.4.5: Conduct effective post-test counseling for newly diagnosed TB/MDR-TB patients to reduce the number of initial default

In FY15, TCC extended its counselling service to the outpatient clinic of TCC. Ms. YU Zhonghui, TB counsellor, provided counseling services at the outpatient clinic in the morning and reached 38 new patients. TCC will allocate more human resources (trained nurse, volunteers or interns) to shorten the gaps in number of outpatients counseled. Kunming No.3 Hospital is planning to reach outpatients in the next quarter.

Activity 2.4.6: Conduct stress management activities to health care providers

38 TB staff from Yunnan CDC/YATA and FHI 360 attended the stress management activity on 26 December 2014. Through participatory games and reflection sessions, the participants, especially the field workers, expressed and clarified their heartfelt concerns and stress. Through confrontation and clarification, misunderstanding between staff was reduced.

Activity 2.4.7: Conduct on-site sharing and learning between TCC and Kunming No.3 Hospital

To be conducted in Q3-Q4, FY15.

Activity 2.4.8: Conduct follow-up activities based on TB stigma study in FY14

To be conducted in Q3-Q4, FY15.

C. Strategic Information

Output 3.1 Strengthened capacity of TB program to collect, use and analyze data for management

Activity 3.1.2: Provide TA for CAP-TB site supervision

FHI 360 helped TCC and Kunming No. 3 Hospital build up an Access dataset for MDR-TB case management in their daily clinical operation. The Access database has been used since FHI 360 trained the teams on data entry and analysis. The doctors and nurses found it very useful as they had never been able to have such a clear picture of patient management and linkages within the system. Upon request, FHI provided TCC with a series of trainings on how to use SPSS for data analysis. TCC will use the skills to strengthen their data driven response in their counseling services for hospitalized patients. Please refer to Section F for a complete list of strategic information trainings conducted during the reporting period.

Output 3.2 Increased TB research activity

Activity 3.2.1: Conduct three inter-linked projects on incentives, gender, and economic modeling to predict effective TB/MDR-TB control and prevention

With the support of FHI 360 and YATA, CAP-TB's research partner – London School of Hygiene & Tropic Medicine (LSHTM) harmonized and analyzed the national database of TB patients in Yunnan between 2005 and 2013. Initial findings from the secondary data analysis were drafted in report for FHI 360 and YATA to review. Qualitative and economic analysis are underway.

Activity 3.2.2: Document the process of bi-directional screening of TB/DM

CAP-TB supported YATA and the Union to analyze data from TB screening among diabetics in 10 community health centers, conducted in 2013-2014. A paper resulting from these activities, entitled [Screening of patients](#)

[with Diabetes Mellitus for Tuberculosis in Community Health Settings in China](#), was recently accepted for publication in *Tropical Medicine & International Health* and is currently available online.

As planned, TB screening among DM patients was further piloted at three community hospitals in Wuhua District, Kunming in Jan 2015, which will provide valuable data for comparison. As of the end of March 2015, 299 DM patients have been screened and none of them were identified as having TB.

Clinical audit of prescription of anti-Tuberculosis drugs

With support of the Union, YATA/Yunnan CDC developed and finalized the questionnaire for the clinical audit of anti-TB drugs in Yunnan, China. The study will compare prescription and treatment practices about anti-TB drugs by TB doctors at the TCC before and after CAP-TB began technical assistance in August 2012. A secondary objective of the study is to investigate prescription and treatment practices of anti-TB drugs in 26 hospitals designated for TB treatment in Yunnan as a baseline for future TA to these hospitals. The protocol has been submitted to both Yunnan CDC IRB and FHI360's Protection of Human Subjects Committee (PHSC) for review. Data collection is scheduled in Q3 FY15.

Disseminating Strategic Information for Scale-Up and Advocacy

As the project has rolled out, CAP-TB initiated more innovative responses with successful experiences to share with the international community. In FY15, FHI 360 submitted three abstracts for the 46th Union World Conference on Lung Health, which will be held in December 2015.

D. Monitoring and Evaluation

Activity 3.1.1: Continue bi-monthly TB Working Group meetings

At the beginning of FY15, FHI 360 updated data collection forms and conducted orientation trainings for all IAs with focus on new IAs/partners (YAI and the local partners in Zhenxiong). On a quarterly basis, FHI 360 collected program data from all IAs and gave feedback to each IA/partner separately or during working group meetings.

Activity 3.1.2: Provide TA for CAP-TB site supervision

Activity 3.1.3: Strengthen Data Quality Assurance (DQA) and data analysis for data management

Each month, FHI 360, YATA/Yunnan CDC, Kunming CDC, Xishan CDC and Zhenxiong CDC paid separate or joint monitoring visits to all CAP-TB sites. As usual, CAP-TB working group meetings were held on a bi-monthly basis or upon project needs. FHI 360 conducted a semi-annual data quality assessment (DQA) for all USAID/FHI 360 projects with focus on new IAs/partners – Kunming No.3 Hospital, YAI and Zhenxiong CDC and provided on-site and follow-up TA to improve data collection and use.

Activity 3.1.4: Conduct CAP-TB annual review meeting

To be conducted in Q4, FY15.

Activity 3.1.5: Strengthen monitoring of processes and outcomes of key project activities for project documentation

The TB case management system and the access database FHI 360 supported (section 2.4.3) are instrumental in providing valuable data to monitor and track project processes and outcomes. These will show CAP-TB's impact on TB/MDR-TB treatment, patient adherence behavior and treatment outcomes.

Activity 3.1.6: Conduct QA/QI activities for TB services at TCC and Kunming No.3 Hospital

Client satisfaction survey for TB services will be designed and implemented at TCC and Kunming No.3 Hospital in Q3-Q4, FY15.

E. Enabling environment for MDR-TB control and prevention

Output 4.1: Improved capacity of National Tuberculosis Program (NTP) to develop finance and implement national TB control strategies in line with global strategies

Activity 4.1.1: Conduct a CAP-TB project debriefing and project update meeting with institutional members of YATA

In order to facilitate an enabling environment for MDR-TB and prevention, FHI 360 and YATA/Yunnan CDC have presented the CAP-TB model at national and provincial-level tuberculosis control meetings attended by key health policy makers. At the annual YATA board meeting dated 6 Feb 2015, all 26 TB experts and leaders from hospitals in Kunming unanimously endorsed CAP-TB's patient-centered approach and innovative and diversified formats for treatment education.

Another milestone was the Yunnan TB Control Demonstration Area Workshop on 31 March 2015 attended by 29 key officials from the National China TB Bureau (NCTB), Yunnan Bureau of Health and Family Planning (YBHFP), and Yunnan Provincial and lower-level CDCs. The participants flagged priorities and gaps to be addressed in the next five-year action plan for TB control and prevention in Yunnan. The local government urged for a data-driven response with reliable TB surveillance and research systems for projections of prevalence and cost of effective interventions. Ms. OUYANG Lin, Deputy Director of Diseases Control, YBHFP, stated that the provincial and local governments will mobilize and allocate resources to give TB/MDR-TB patients affordable access to quality treatment.

Activity 4.1.2: Strengthen CAP-TB learning sites for CAP-TB model dissemination and replication

In FY15, CAP-TB has strengthened the project's sites to ensure consistency in quality of care. The CAP-TB FHI 360 team has also trained TB doctors, TB counsellors and peer educators on communication and facilitation skills to effectively share project experiences, conduct trainings or facilitate coaching. This year, TCC was instrumental in providing TA and capacity building to new CAP-TB clinical sites in Zhenxiong County, a successful demonstration of CAP-TB's IA now having the technical capacity to train others.

Activity 4.1.3: To collaborate with Beijing Chest Hospital to scale up capacity building at the national level

TA in Beijing: In December 2014, Ms. LI Ling, CAP-TB China Program Manager introduced the framework of the CAP-TB patient-centered care service to Ms. WANG Xiuhua, the director of the Nursing Department of Beijing Chest Hospital and her team. As agreed, CAP-TB will provide a training of trainers (TOT) for counselling services to Beijing Chest Hospital in Q3 FY15.

Qstream course for capacity building: In order to provide ongoing capacity building for TB management staff, in March 2015 FHI 360 initiated an online learning course using Qstream which sends participants TB questions via email. The course was successfully completed by 28 participants in Kunming and will be extended to Qujing and Zhenxiong in Yunnan and Xinjiang Province in Q3. FHI 360 will provide TA to help Beijing Chest Hospital use Qstream for training TB physicians throughout the country.

Output 4.2: Strengthened partnership for quality TB care including private sector

Activity 4.2.1: Provide TA to incubate 57 Zone as a community-based organization to provide professional peer education and support to TB/MDR-TB patients

57 Zone continued to work well in providing peer education and support to patients. However, there remains a gap in organizational development, namely, that peer educators may leave the program upon completion of their treatment. QQ managers (most of whom are peer educators) volunteer significant amounts of their time to 57 Zone to manage the group. Efforts will be made to build a stronger sense of community among TB patients and to recruit more peer educators who are interested to help.

Activity 4.2.2: Conduct a sensitization meeting for TB health care providers in Kunming

To be conducted by Kunming No.3 Hospital during Q3-Q4, FY15.

Output 5.1: Created crosscutting mechanism to support health portfolio

Activity 5.1.1: CAP-TB project expanded to a rural health setting

In FY15, CAP-TB was expanded to Zhenxiong. See sections A, B, D, and E for details.

Activity 5.1.2: To document and package CAP-TB Model

To be carried out during the second half of FY15. Significant work has already been done to disseminate CAP-TB training and educational tools, to the National China TB Bureau, Beijing Chest Hospital, Xin Jiang Chest Hospital, and Zhenxiong County. CAP-TB will continue to hone these tools and materials in anticipation for further scale-up at the national level.

F. Capacity building and technical assistance

Technical assistance: The CAP-TB team in Kunming was visited by a team from the NCTB comprising five public health experts led by Mr. CHEN Mingting, NCTB Deputy Director, in Q1. In Q2, a team of five senior health leaders from Xinjiang Chest Hospital also visited the CAP-TB Kunming team. FHI 360 shared the guidelines and tools developed by the project with both teams. The NCTB acknowledged the innovative efforts, especially the patient-centered care in the TB clinical setting and social media education via 57 Zone, and they have requested evidence-based documentation so that CAP-TB experiences can be replicated in other parts of China. Upon Xinjiang Chest Hospital's request, FHI 360 provided TA to strengthen their counseling and education for TB patients and have set up a Xin Jiang 57 Zone QQ group.

Training activities: CAP-TB has continued to build and strengthen capacity for doctors, nurses, laboratory staff, TB counsellors and peer educators at all TB clinical sites supported by the project. Training resources were directed towards new CAP-TB sites (Kunming No.3 Hospital, Yunnan AIDS Care Center, Zhenxiong CDC TB Clinic, Zhenxiong county Hospital and Zhenxiong Shiyan High School) to strengthen their quality of laboratory testing, appropriate diagnosis and treatment as well as patient-centered education and counseling. Yunnan CDC and TCC, for their demonstrated capacity and rich field experiences, have shouldered more capacity building to new CAP-TB partners, including laboratory strengthening, standardized TB/MDR-TB treatment and patient counseling and education at the clinical sites. FHI 360, the Union and the LSHTM team continue to build capacity for collecting, analyzing and using strategic information among the CAP-TB partners.

The table below outlines the key training activities that took place during the reporting period:

Dates	Training topic	Trainer	Participants
<i>Education, counseling and communication</i>			
13 Oct 2014	Training of peer educators	Ms. YU Zhonghui (TCC) and Ms. Xinru ZHAO (FHI360)	10 peer educators (TCC and No.3 Hospital)
19 Oct 2014	TB training for school teachers in Zhenxiong	Mr. XU Zhixiang and Ms. LI Ling (FHI 360) ; Ms. YANG Rui (YATA/Yunnan CDC)	28 teachers from eight schools in Zhenxiong
21-23 Oct 2014	Counseling skills for TB counsellors in Zhenxiong	Mr. XU Zhixiang, Ms. ZHAO Xinru and Ms. LI Ling (FHI 360) ; Ms. YU Zhonghui (TCC)	14 participants (Zhenxiong CDC, Zhenxiong Hospital and Zhenxiong Shiyan High School)
22 Oct 2014	Small group facilitation for community TB education	Mr. XU Zhixiang and Ms. LI Ling (FHI 360)	3 participants (Boji THC)
3-5 Nov. 2014	Refresher training for TB counsellors	Ms. OC Lin (HKAF) Xu Zhixiang (FHI 360)	14 participants (TCC, Kunming No.3 Hospital, YAI and 57 Zone)
14 Nov 2014	TB training for HIV peer educators for YAI	Ms. ZHAO Xinru (FHI 360)	6 participants (YAI)
19 Nov 2014	Follow-up TB training for school teachers in Zhenxiong	Ms. LI Ling and Mr. XU Zhixiang (FHI 360) Ms. YU Zhonghui (TCC)	44 teachers (Zhenxiong Shiyan High School)
19 Nov 2014	On-site training for TB counsellors in Zhenxiong	Ms. LI Ling (FHI 360)	4 counsellors (Zhenxiong CDC and Zhenxiong county Hospital)
12 Jan 2015	Telephone counselling skills	Ms. OC Lin (HKAF)	18 participants (TCC and FHI

Dates	Training topic	Trainer	Participants
		Xu Zhixiang (FHI 360)	360)
14-15 Jan 2015	Thematic sessions design workshop for TB patients education	Ms. OC Lin (HKAF) Xu Zhixiang (FHI 360)	14 participants (TCC, Xishan CDC, Kunming No.3 Hospital and YAI)
22 March 2015	TB training for World TB Day volunteers at Zhenxiong	Mr. XU Zhixiang (FHI 360) Ms. YU Zhonghui (TCC)	75 participants (students and teachers from Zhenxiong Shiyan High School, Little Red Hat Volunteers Group)
23- 27 March 2015	Refresher on-site training for TB counsellors	Ms. YU Zhonghui (TCC) Mr. XU Zhixiang (FHI360)	4 nurses/peers (Zhenxiong CDC and Zhenxiong county Hospital)
<i>Laboratory work strengthening</i>			
22-26 December 2014	In service training with laboratory testing focus on using GeneXpert for rapid diagnosis	Yunnan CDC TB laboratory staff	2 participants (Yunnan AIDS Care Center)
23-27 March 2015	On-site training in Zhenxiong	Mr. YANG Xing (Yunnan CDC)	3 participants (Zhenxiong CDC and Zhenxiong county Hospital)
<i>Standard TB management</i>			
4 Dec 2014	MDR-TB management	Dr. Anh INNES (FHI 360)	70 participants (Zhenxiong CDC and Zhenxiong county Hospital)
5 Jan 2015	New diagnosis methods for TB/MDR-TB	Dr. CHIANG Chen-yuan (Union)	172 participants (Kunming No.3 Hospital)
23-27 March 2015	On-site TB clinical training for standardized TB management	Dr. MAO Xiaoyun (TCC)	72 participants (Zhenxiong CDC and Zhenxiong county Hospital)
27 March 2015	Case conference for diagnosis and treatment of pleural TB	Dr. Anh INNES (FHI 360)	72 participants (Zhenxiong CDC and Zhenxiong county Hospital)
<i>Strategic Information</i>			
20 Oct 2014	M&E orientation training for local partners in Zhenxiong	Ms. ZHAO Xinru (FHI 360)	6 participants (Zhenxiong CDC and Zhenxiong Hospital)
29 Oct 2014	M& E training for YAI in Kunming	Ms. ZHAO Xinru (FHI 360)	5 participants (YAI)
31 Oct 2014	SPSS training	Mr. WANG Kai (FHI 360)	10 participants (TCC)
13-14 Nov 2014	Qualitative analysis	Mr. Coll HUCHINSON (LSHTM)	22 participants (Yunnan CDC/YATA, TCC and FHI 360)
5 Jan 2015	An overview of operational research	Dr. Chiang Chen-yuan (Union)	26 participants (Yunnan CDC, TCC and FHI 360)
16 Jan 2015	M&E training for YACC	Ms. WANG Kai (FHI 360)	4 participants (YACC)

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

Small group activities are carefully planned targeting different communities or different groups. For each small group activity, the participants are asked if they have been reached by the CAP-TB educational activity for the first time since the Chinese National Day (1st October – the first day of a new fiscal year). Any participants reached more than once were marked as follow-up and will not be counted twice. Estimations were made for large-group community activities (e.g., WTBD) reported for (PMP #9 CAP-TB #2), as follows: 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 TB/MDR-TB patients and PLHIV reached by clinical, education or care services, names of the participants were recorded in the activity log and entered into an electronic database, which was used to identify duplicate names to ensure that the follow-up beneficiaries are not double counted.

For all the training activities across different topics for project staff and health care providers and educational activities for TB patients and their family members (PMP # 9, 14, 17, 18, 20 and CAP-TB # 16), names were recorded to track the unique numbers of individuals reached. Therefore, people who attend more than one training (in the same training area) are counted only once, and can be counted once again if he/she attends a training in a new training area. ***In light of this, please note that in this narrative, when details of the trainings are discussed individually, simply adding up participants for each training may not yield the total number that is reported*** (PMP # 9, 14, 17, 18, 20 and CAP-TB # 16). When data are aggregated for reporting in the summary of accomplishments and PMP excel spreadsheet, the number of participants trained in each training area is “de-duplicated” across the reporting period.

For individuals reached with TB prevention and treatment messages in USAID-supported project areas (PMP # 9), an educational activity attended by more than 30 participants is often counted as a “large group”. However, in the event that a group of more than 30 participants was divided into smaller groups and managed through a team of facilitators/educators to ensure sufficient participation from each individual, such an educational activity is recognized as small group with quality behavioral communication delivered to each participant.

USG funded partners: There are no other USG funded partners in Kunming conducting TB or HIV activities.

Partners funded by other donors: Close coordination with all other donors has primarily been done through YATA/Yunnan CDC, the implementing agency which leads the CAP-TB work in China. Through regular meetings with the health officials and CDC leaders responsible for TB work in Kunming and Yunnan, the CAP-TB project clarified the scope of work to other TB programs funded or supported by the Chinese government. Yunnan CDC manages the GFATM funded TB program in Yunnan. In coordination with YATA, CAP-TB has supported: 1) MDR-TB diagnosis and treatment TA to health providers; 2) Patient-support peer group.

Annex II: Processes carried out to ensure data quality

FHI 360 developed a data flow chart that included all the involved local partners with components, flow of reporting, feedback mechanism and responsibilities of related staff. The data management process of CAP TB was explained to program and M&E staff of each local partner through CAP-TB bi-monthly meetings and field visits to each service site. Through the CAP-TB Working Group via QQ, a social media site in China, all the M&E staff are connected conveniently for instant communication and feedback about M&E issues on a daily basis. FHI 360 provided new IAs/partners with data collection training and follow-up support to ensure that they use data collection tools properly in compliance with the M&E guideline. Timely feedback and explanation over phone calls or via QQ instant messenger was made to respond to errors or mistakes. The CAP TB DQA checklist and assessment documents were developed based on the *Data Quality Assessment Standard Operating Procedure of USAID RDMA Performance Management Plan by APRO*. It serves as a guideline for DQA practices in the country. All the local partners have prepared and reviewed their M&E data carefully on a monthly basis to ensure data is collected and managed properly consistently before submission.

Annex III: Summary of accomplishments against the work plan and targets

Please see details in CAP-TB Data Collection Excel Sheet and Project Narrative Summary document.