

# **Control and Prevention-Tuberculosis**

## **China Country Narrative Family Health International (FHI 360)**

**FY2015 Annual Performance Report  
(October 1, 2014 – September 30, 2015)**



**USAID**  
FROM THE AMERICAN PEOPLE

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

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## Acronyms

AIDS	Acquired immune-deficiency syndrome
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
FHI 360	Family Health International 360
FY	Fiscal year
HIV	Human Immunodeficiency Virus
HKAF	Hong Kong AIDS Foundation
IC	Infection Control
IEC	Information, Education, and Communication
IRB	Institutional Review Board
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
PHSC	Protection of Human Subjects Committee
PLHIV	Person (People) living with HIV/AIDS
PMDT	Programmatic Management of Drug-Resistant Tuberculosis
Q	Quarter
SBC	Strategic Behavioral Communication
SOP	Standard operating procedures
TA	Technical Assistance
TB	Tuberculosis
THC	Township Health Center
YACC	Yunnan AIDS Care Center
YAI	Yunnan AIDS Initiative
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
ZXCDC	Zhenxiong Center for Diseases Control and Prevention
ZXCH	Zhenxiong County Hospital

## **Narrative I: Executive Summary**

From October 2014 to September 2015, the USAID Control and Prevention-Tuberculosis (CAP-TB) China team continued to implement the project's strategic model with its scope of work expanded to people living with HIV/AIDS (PLHIV) as well as geographic expansion to rural Zhenxiong, the county in Yunnan Province with the highest TB notification rate.

CAP-TB involved seven new collaborators for FY15: Yunnan AIDS Initiative (YAI, Implementing Agency) and Yunnan AIDS Care Center (YACC) 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 (YATA) continued its overarching leadership role for CAP-TB and partnership with all CAP-TB partners within the public health system and the TB clinical system.

CAP-TB further strengthened the patient-centered, community-driven strategy, with the goal to integrate this into the existing TB control system in a lasting and cost effective way. The project continues to gain recognition at the national and inter-provincial levels throughout China, with additional requests for technical assistance from outside of Yunnan Province. The following report details CAP-TB China team's achievements and challenges from October 2014 to September 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**

During FY15, Xi Shan CDC in Kunming, which has partnered with FHI 360 from the start of the CAP-TB project, demonstrated sufficient capacity on its own to continue the project's interventions for community education in Xi Shan District. This allowed FHI 360 and YATA to focus on community activities with CAP-TB's new partners in Zhenxiong.

In FY15, small group activities, community events and one-on-one educational sessions targeting most-at-risk populations and community leaders (including the elderly, PLHIV, school children, migrant workers, village women and community leaders) were implemented through Xi Shan CDC and YAI in Kunming, and Zhenxiong CDC and Boji Township Health Center (THC) in Zhenxiong. During the reporting period, community educational activities reached 3165 people (PMP #9: 1,922 men and 1,243 women), including 2,774 PLHIV (1,751 men and 1,023 women). With the support of the CAP-TB project, Zhenxiong CDC launched its first ever World TB Day (WTBD) campaign with creative, participatory activities. The campaign included a public/volunteer training session, school-based education and exhibition as well as a community event with strong leadership support of the local county government. The WTBD campaign activities reached 1,100 local people (PMP # 9: 600 men and 500 women).

CAP-TB's success in community education in FY15 was best shown by community engagement of school children in rural Zhenxiong County. At Zhenxiong Shiyan High School, 4,296 students (2,166 boys and 2,130 girls) learned about TB during classroom teaching. More than 4,000 students were actively engaged in school-based TB events (TB posters or essay contest) and community-based activities during their school vacations---including dissemination of TB leaflets or posters, TB education among their family members or neighbors, and rapid assessment of knowledge, attitude and practice in the community.

In addition to community mobilization to raise TB awareness, YATA provided technical support to build capacity for community health workers in Zhenxiong, who were trained to facilitate early uptake of TB services.

Pervasive TB stigma remains a major obstacle that may prevent local villagers from being screened, diagnosed, and treated for TB. Based on the findings of a TB stigma study supported by CAP-TB at the end of FY14, community outreach should continue to address TB stigma in order to improve diagnosis, treatment initiation, completion, and cure.

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

*Infection control in health facilities:* In FY15, all CAP-TB clinical sites were closely monitored for improvements and gaps in capacity. FHI 360 and YATA provided technical support to assess and recommend interventions to improve infection control to Zhenxiong County Hospital and Zhenxiong CDC. Both clinical sites met quality infection control standards after this assessment and improvements for proper infection control were made. With funding from CAP-TB and Zhenxiong CDC itself, the Zhenxiong CDC TB Clinic renovated its building and equipped it with fans to improve air ventilation for better infection control. Zhenxiong County Hospital improved its infection control by managing patient flow in waiting areas and increasing use of surgical masks for patients and N95 masks for clinicians.

*Infection control in households of TB patients:* Trained outreach workers and village doctors continued to conduct regular IC assessments in households of TB/MDR-TB patients who live within the CAP-TB project catchment areas (Xishan District of Kunming City and Miao Shan Village of Zhenxiong County). This was done using the IC checklist developed by CAP-TB. During the reporting period, 133 TB/MDR-TB patients were assessed for infection control and all households met quality infection control standards (CAP-TB # 6).

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

*Private clinics and pharmacies in Fuhai:* 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 materials and referral slips were distributed to the private sector partners through these two oversight organizations, with the goal to influence private providers through their leader organizations.

*Kunming No.3 Hospital and Zhenxiong County Hospital:* As two important private sector partners that take the largest numbers of TB patients in their catchment areas, Kunming No.3 Hospital and Zhenxiong County Hospital received technical assistance from FHI 360, YATA/Yunnan CDC and the International Union against Tuberculosis and Lung Disease (the Union). Considerable effort was made to strengthen proper TB diagnosis and standardized treatment with reliable laboratory data, aligned with patient-centered care for patients.

## ***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.

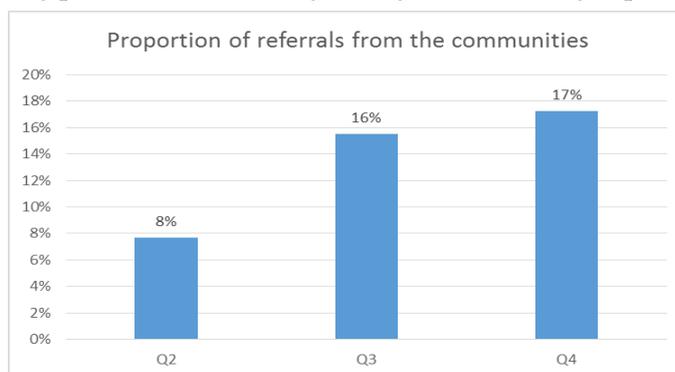
1. During the reporting period, 96 MDR-TB cases (68 men and 28 women) (USAID PMP # 7; CAP-TB # 6) were found, 73 (76%) of whom initiated treatment (USAID PMP # 10; CAP-TB # 11).
2. The two largest hospitals for TB/MDR-TB treatment in Yunnan, the Yunnan Tuberculosis Clinical Center (TCC) and Kunming No.3 Hospital, provided clinical services to 4,807 TB/MDR-TB patients from Yunnan province and beyond.
3. Kunming No.3 Hospital (No. 2 TB Division) screened 9,316 outpatients. Among the Kunming No. 3 Hospital's patient list, 153 were identified as Xishan or Zhenxiong residents (149 TB patients and 4 MDR-TB patients), and 80 were successfully referred to the local CDCs for continuity of follow-up after hospital discharge. Some patients stayed in Kunming and did not return to Zhenxiong, thus explaining the lower follow-up rate.
4. Zhenxiong CDC identified 2,219 TB cases; all patients were initiated on TB treatment.

## **Output 2.1 Ensured capacity, availability, and quality of laboratory testing to support the diagnosis and monitoring of TB patients, including the rapid diagnosis of MDR-TB**

In FY15, Yunnan CDC provided technical assistance through on and off-site trainings and coaching to strengthen the capacity of TB laboratory staff in Kunming No.3 Hospital, Yunnan AIDS Care Center, Zhenxiong CDC and Zhenxiong County Hospital. The latest external quality assessment (EQA) from the National CDC in 2015 showed that Kunming No.3 Hospital met the standards for reliable TB sensitivity and molecular diagnosis. In order to confirm TB sputum tests done by Zhenxiong County Hospital, Zhenxiong CDC performed a confirmatory sputum test for all TB patients referred by Zhenxiong County Hospital to the CDC clinic. In FY16, TA will focus on CAP-TB supported sites to develop and enforce standard laboratory procedures. Yunnan AIDS Care Center will participate in a national EQA for its TB lab performance with technical support from the CAP-TB project.

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

Case finding and referrals in Zhenxiong: Yunnan CDC urged Zhenxiong CDC to find and treat more TB patients from the middle of 2015 onward by strengthening proactive case finding strategies to encourage uptake of TB services by presumptive TB patients. CAP-TB provided support to facilitate closer collaboration between Miao Shan village clinic, Boji THC, Zhenxiong Bureau of Education, Zhenxiong county Hospital and Zhenxiong CDC. Referrals through the CAP-TB project focused on strategic priorities for risk groups – identification of presumptive TB/MDR-TB patients based on risk factors, including close contacts, retreatment cases, diabetics, and PLHIV. According to Zhenxiong CDC program data, the proportions of referrals from the community in FY15 Q3 and Q4 doubled compared with Q2, from 8% to 17%.



In FY15, the local government initiated a mass TB screening initiative targeting all high schools in Zhenxiong County funded through the provincial TB programming and the local educational bureau. Screening was completed in June 2015: Zhenxiong CDC tested 95,478 school children for latent TB infection using PPD skin tests. 220 students were identified as having active TB and were initiated on treatment.

Integrated rapid diagnosis strategy for PLHIV: In FY15, FHI 360 worked closely with YAI and Yunnan AIDS Care Center to pilot an integrated screening strategy that integrates GeneXpert into an algorithm for rapid diagnosis of TB/MDR-TB among PLHIV. By the end of September 2015, 800 HIV patients were screened for TB. 354 were positive for TB symptoms; 480 had abnormal chest X-rays; 41 patients were positive for *Mycobacterium Tuberculosis* by GeneXpert and 4 were rifampicin resistant. A total of 200 patients were diagnosed with TB, all of whom were initiated on standardized TB treatment.

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

Cascade approach for TB management capacity building: During the reporting period, CAP-TB provided technical support to existing and new clinical sites through on-site mentoring from the Union experts (Dr. CHIANG Chen-yuan from Taiwan and Dr. Ignacio MONEDERO from Spain). Trained TB doctors from the

Yunnan TCC and Kunming No.3 Hospital, who have demonstrated strong technical capacity and experience in standardized detection and management of MDR-TB, also provided TA to the new sites.

Q-stream course for capacity building:

Since March 2015, FHI 360 managed an online learning course using Q-stream, an innovative online and mobile application for education. By the end of FY15, 162 participants from CAP-TB supported sites and beyond participated in the three scheduled courses. Q-stream data indicated TB treatment knowledge was significantly improved for those who completed the courses. However, there remains a gap in the number of participants who complete each course, although the rates for courses 1 and 2 are on par with CAP-TB Thailand (FY14 data). In FY16, the plan is to facilitate participation through designated focal points at each site.

	Date of Launch	No. of questions	No. of participants	Completion rate	First attempt correct rate	Current correct rate
Course 1	3 March 2015	3	23	43.5%	51.47%	79.41%
Course 2	31 March 2015	5	28	35.7%	64.81%	90.74%
Course 3	5 May 2015	4	162	17.3%	32.35%	78.15%

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

CAP-TB project continued to implement a comprehensive, patient-centered, community driven approach for TB/MDR-TB control in Kunming and Zhenxiong. During FY15, the counseling protocol, SBC tools and checklists developed by CAP-TB were enforced for consistent use across all sites supported by USAID. Highlights of CAP-TB achievements during the reporting period are summarized below:

Treatment adherence education, counselling and support to TB/MDR-TB patients:

- *Hospital setting (inpatients and outpatients):* CAP-TB continued 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. During the reporting period, CAP-TB reached 4482 individual TB/MDR-TB patients through educational activities in the hospitals/clinics (PMP # 9: 2752 men and 1730 women). In addition, CAP-TB saw the need to increase educational efforts to reach TB outpatients. As shown from the recent data among 300 outpatients in Kunming No.3 Hospital (August 2015), TB knowledge and adherence are poor among the clients who use TB services at the outpatient clinic. In FY16, CAP-TB will support Kunming No.3 Hospital and TCC to strengthen the accessibility of TB education and counselling at the outpatient clinic in order to address this gap.
- *Community-based setting:* In FY15, two outreach workers from Xi Shan CDC in Kunming and three village doctors in Miao Shan Village, Zhenxiong County provided community-based care and education to TB patients who continued their TB treatment at home. During the reporting period, CAP-TB reached 137 TB and 4 MDR-TB patients through home visits and supported 245 TB and 6 MDR-TB patients through monthly phone calls (PMP # 9: 196 men and 98 women).
- *Online setting:* Since its establishment in December 2013, 57 Zone, a QQ-based social media network owned and managed by TB/MDR-TB patients, increasingly played a central role in providing timely assistance to TB/MDR-TB patients who have internet access. Trained TB counsellors, nurses and peer educators answer questions daily and facilitate experience-sharing among patients. TB doctors also conduct consultation sessions through the QQ network on a regular basis. By the end of FY15, more than 900 participants were signed up for 57 Zone (including a separate subgroup for PLHIV and Xinjiang 57 Zone branch), 90% of whom are current or former TB/MDR-TB patients and their family members, or PLHIV.
- *Toll-free TB service call center:* In order to improve TB patients’ universal access to treatment education, CAP-TB supported YATA to design the first toll-free TB service helpline with interactive voice system (400 060 5757) in Yunnan. The system included pre-recorded voice messages about basic TB knowledge

for the general public, presumptive TB patients, and patients on treatment. The helpline provides recorded TB messages as a 24-hour service and is also manned at TCC by trained counsellors five days per week for two hours per day. By the end of September 2015, the system received 112 incoming calls. In FY16, efforts will be made to promote uptake of this service. The toll-free TB helpline gained recognition from the China National Center for Tuberculosis Control and Prevention (NCTB) which added it as a valuable TB resource for patient consultation to be used at the national level.

- *User friendly SBC material for TB/MDR-TB patients:* During the fourth quarter of FY15, CAP-TB designed and printed a new set of five posters with TB/MDR-TB educational messages. By the end of FY15, production of a video package for treatment adherence education was developed and will be completed for distribution in FY16.



Innovative technology to strengthen TB/MDR-TB case management:

In FY15, FHI 360 provided support to design, test and strengthen innovative efforts at CAP-TB supported sites, including 1) Using a cloud-based spreadsheet to share, update, track and coordinate timely support to patients, between hospitals that treat TB patients and local CDCs responsible for follow-up care in the community; 2) Developing a TB/MDR-TB case management software with a sophisticated and user friendly solution for efficient case management by TB clinical service providers. A demonstration version was developed for final feedback by the end of September 2015. The final version will be made available to be tested at Kunming No.3 Hospital before dissemination in FY16; 3) Testing a prototype of a Magpi-based mobile application to facilitate compliance to treatment; this effort has been suspended due to lack of funding for application development.

Community resilience

With the support of 57 Zone, TCC invited former TB patients to teach embroidery craft skills to low-income patients for income generation. An emergency fund of 14,500 yuan donated by individuals and managed by 57 Zone provided emergency aid to two MDR-TB patients in need. In addition, FHI 360 provided support for 57 Zone to manage a locally sponsored ‘formula milk’ project that provided milk to young children in families affected by TB (For details, please see Narrative III: Success Story).

The project’s patient-centered approach has been increasingly accepted and promoted by TB service providers over time. The following are key performance results that indicate project success:

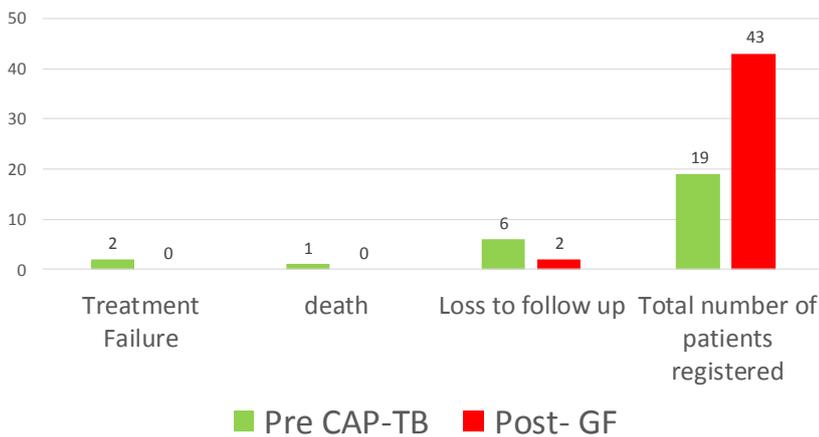
- Ms. NIE Guiying, Deputy Director of TCC was nominated and selected as a Leading Light by the international Council of Nurses in 2015 for her unflinching contribution to patient-centered care;
- TB doctors at TCC and Kunming No.3 Hospital who were trained and exposed to the CAP-TB project now carefully consider standardized diagnosis and treatment, particularly to reserve fluoroquinolones and aminoglycoside antibiotics for MDR- and XDR-TB treatment, and to manage smear negative patients appropriately. Inter-personal trainings and engagement of TB doctors into the patient-centered model of communication has been rewarded with improved doctor-patient relationships reported by both health providers and patients.
- TCC’s program data for the MDR-TB patients registered between 2012 and August 2015 strongly indicate MDR-TB treatment success. The number of patients who are lost to follow up has declined from 2012 through 2015, while the number of patients who stay on treatment, complete treatment, or are cured is higher than the national average. The treatment success rate for the Yunnan cohort in 2012 was 53%,

higher than the national average (49%) as well as the best treatment outcomes (45%) achieved by one of the best chest hospitals in Shanghai. If all patients in 2013 who are currently on treatment (35%) complete their regimens, the treatment success rate for the 2013 cohort will be >75%. Just as importantly, treatment outcome data from pre-CAP-TB compared to post-Global Fund show a dramatic increase in the number of patients registered for treatment and a significant decrease of the numbers of initial defaulters and those who drop out during the treatment course. These positive indicators are seen in spite of the fact that the second-line anti-TB drugs are no longer provided for free after the Global Fund ended in June 2014.

**Table 2. Number of MDR-TB patients at TCC for key treatment outcome indicators at TCC (by year of registration)**

Treatment results for patients	2012	2013	2014	2014 – post Global Fund	2015 (as of Aug)	Total
Treatment success (cure and completion)	10 (53%)	13 (42%)	0	0	0	23
Loss to follow-up	6 (31.5%)	4 (13%)	3 (11%)	0	2 (7%)	15
Deceased	1 (5%)	0	1 (4%)	0	0	2
Failure	2 (10.5%)	3 (10%)	2 (7%)	0	0	7
On treatment	0	11 (35%)	21 (78%)	14 (100%)	27 (93%)	73
<b>Total number of patients registered</b>	<b>19</b>	<b>31</b>	<b>27</b>	<b>14</b>	<b>29</b>	<b>120</b>

**Figure 2. Number of MDR-TB patients registered for treatment has increased when comparing pre-CAP-TB (2012) to post-Global Fund**



Despite these successes, there continue to be challenges for TB/MDR-TB control: these include large gaps in finding, diagnosing, and treating patients in many rural communities; the unavailability of free or affordable second-line drugs; the turnover of peer educators; and the outward migration of TB patients who are then difficult to reach for timely follow-up. In FY16, CAP-TB will provide support to strengthen quality of care for patients and leverage sustainable impact through communication and advocacy at the policy level.

## C. Strategic Information

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

Upon request of TCC and Kunming No.3 Hospital, FHI 360 built an Access database for MDR-TB case management. Since December 2015, the doctors and nurses at TCC and Kunming No.3 Hospital have been using this Access database as a tool to manage their patients in their daily clinical practice. This has allowed these providers to have a clear understanding of the importance of a data-driven approach to manage their individual patients. The access database will be replaced by the TB case management software, which has been developed during FY15 and will be finalized in the first quarter of FY16.

### Output 3.2 Increased TB research activity

Throughout FY15, CAP-TB supported three research activities, as follows 1) Multidisciplinary investigation of TB control in Yunnan Province, China, a collaboration between Yunnan CDC and London School of Hygiene & Tropical Medicine (LSHTM) with support of USAID/FHI 360; 2) Documentation of the process of bi-directional screening of TB/DM with the support of the Union; 3) Clinical audit of prescribing practices of anti-TB drugs in Yunnan. Key results are summarized below:

Research led by LSHTM: The two-year research included epidemiological trend analysis and economic modeling analysis between 2005 and 2013, as well a qualitative study. The LSHTM team presented key research findings in September 2015 to stakeholders in Yunnan including the CAP-TB team, public health scholars, experts and health officials. The local participants highlighted several findings as important for future response, including the discrepancy among different ethnic groups on prolonged delay in diagnosis; and investing in active case finding strategies to cost-effectively improve outcomes by increasing case detection and reducing delay. The LSHTM team will submit a summary report with findings and recommendations which Yunnan CDC will use as a powerful evidence to lobby the provincial Chinese government for policy support; A manuscript titled *Delayed DOTS: Analysis of delays in diagnosis and treatment of tuberculosis in Yunnan, China* was submitted to the Bulletin of the World Health Organization

Bi-directional screening of TB/DM: 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 with the original screening in community health centers. As of the end of September 2015, 1058 DM patients have been screened and 1 of them were identified as having TB and another 2 are awaiting confirmation. This case notification rate is approximately 3 times the rate when screening diabetic patients in the community health setting, likely an indication of severity of disease. For the initial screening among community health centers, a paper entitled *Screening of patients with Diabetes Mellitus for Tuberculosis in Community Health Settings in China* was accepted for publication in *Tropical Medicine & International Health* and is currently available online.

Clinical audit of prescription of anti-TB drugs: The study is aimed at comparing prescription/treatment practices for anti-TB drugs by doctors at TCC before and after August 2012, when the CAP-TB project started to provide technical assistance. The research protocol was finalized with the support of the Union, reviewed and approved by Yunnan CDC IRB and FHI 360's Protection of Human Subjects Committee (PHSC). Data collection at TCC is now underway. In FY16, the study will be extended to 26 hospitals designated for TB treatment in Yunnan as a baseline to track standardized TB treatment in these hospitals and as a benchmark for future TA.

Recognition from the international community:

- CAP-TB, Dr. XU Lin, Director of Yunnan CDC TB Center/Secretary General of YATA, gave an oral presentation on *the patient-centered approach that CAP-TB China has implemented with USAID support* at

the 45th Union World Conference on Lung Health (WCLH 2014) in Barcelona, Spain dated 28 October – 1 November 2014;

- Three abstracts were accepted by the 46th Union World Conference on Lung Health to be held in Cape Town, South Africa, in December 2015, including one oral presentation for an abstract titled *57 Zone: Using social media in China to empower TB patients for treatment success*;
- One abstract titled *First use of GeneXpert for tuberculosis diagnosis among HIV patients: An integrated diagnostic approach piloted in Yunnan Province, China* was accepted for oral presentation at the 12<sup>th</sup> International Congress on AIDS and the Pacific, in Dhaka, Bangladesh, on 20-23 November, 2015.

#### ***D. Monitoring and Evaluation***

Monitoring and evaluation in FY15 has become a routine process for CAP-TB's local partners, who have been supported and trained by the FHI 360 team. FHI 360 conducted orientation meetings with IAs/partners on the annual work plan at the beginning of the fiscal year. Bi-monthly working group meetings and semi-annual data quality assurance (DQA) activities were conducted as scheduled. FHI 360 and YATA also conducted monitoring visits to support the partners in Zhenxiong County.

During the last month of FY15, the CAP-TB project in China received a monitoring visit from a USAID team of three experts – Mr. Aaron SCHUBERT, Regional Team Lead for HIV and TB, USAID/RDMA; Dr. Amy BLOOM, Medical Officer, USAID Washington D.C.; and Dr. Michael CASSELL, HIV/TB specialist, USAID/RDMA. Face-to-face discussion with the USAID team reinforced the China team's confidence for their accomplishments and flagged key areas that CAP-TB China will strengthen next fiscal year.

#### ***E. Enabling environment for MDR-TB control and prevention***

##### **Output 5.1: Improved capacity of National Tuberculosis Program (NTP) to develop finance and implement national TB control strategies in line with global strategies**

In order to facilitate an enabling environment for MDR-TB and prevention, FHI 360 and YATA/Yunnan CDC strengthened the quality of project implementation and built the capacity of key learning sites supported by CAP-TB to effectively demonstrate and share experiences. FHI 360 and YATA also leveraged all possible channels to update TB experts, senior health officials and policy makers at the provincial and national levels about the CAP-TB project. The annual YATA board meeting in Feb 2015, Yunnan TB Control Demonstration Area Workshop in March 2015, and debriefing meetings with NCTB, WHO and Beijing Chest Hospital were used by FHI 360 and YATA to secure buy-in for CAP-TB's patient-centered approach for TB control.

##### **Output 5.2: Strengthened partnership for quality TB care including private sector**

*57 Zone* continued to work well in providing peer education and support to patients. As more TB/MDR-TB patients were supported through the *57 Zone* online network, there has been a growing sense of belonging and expression of care and support to each other through the registered members. Looking toward the long-term goal of sustainability, there remains a gap in organizational development, namely, that trained and experienced peer educators often leave the program upon completion of their treatment. Future TA will focus on leadership and organizational development, and strategic planning for growth and sustainability.

In FY15, CAP-TB provided support to replicate the *57 Zone* model to geographic areas beyond Yunnan. Upon request of Xin Jiang Chest Hospital, FHI 360 and *57 Zone* peer educators in Kunming provided both online and on-site trainings to Xin Jiang nurses and peer volunteers, and helped them to set up *57 Zone* Xin Jiang QQ peer group. As new *57 Zone* subgroups are built, their own experiences provide insight on different perspectives for *57 Zone* development, i.e. *57 Zone* can be more than a social group, by providing a package of standard and quality TB services driven by peer participation and community empowerment.

## **Output 5.3: Created crosscutting mechanism to support health portfolio**

### Document and package CAP-TB Model

As CAP-TB gained recognition from the health authorities at the provincial and national levels, YATA/Yunnan CDC increased their commitment to document the CAP-TB model. In FY15, FHI 360 and Yunnan CDC discussed the development of the following technical documents:

- 1) Operational guideline on community-based care and support to TB patients which Yunnan CDC will incorporate as quality standards into the primary health care service package for community health workers;
- 2) Training manual/operational guideline for TB counselling;
- 3) Guideline on how to organize small-group thematic session for TB adherence education;
- 4) Operational guideline on TB screening among diabetic mellitus patients in a community setting.

### ***F. Capacity building and technical assistance***

Technical assistance: As TCC and Kunming No.3 Hospital increased their capacity and experiences in standardized TB/MDR-TB management and patient-centered care, CAP-TB provided support to develop these institutions into learning sites and TA providers. In FY15, both institutions received visits from two delegates from NCTB and the national TB health team. To develop TA skills, CAP-TB sent experienced TB doctors from both learning sites to provide capacity building to the local partners in Zhenxiong County. During the second half of FY15, FHI 360, TCC and the peer team in Kunming provided in-depth capacity building through on-site and online technical assistance to help Xin Jiang Chest Hospital set up its own peer support group to serve thousands of TB patients in Xin Jiang Autonomous Region.

Training activities: CAP-TB 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. Starting in FY15, more training resources were directed towards new CAP-TB partners in Zhenxiong, with Yunnan CDC, TCC and Kunming No.3 Hospital building capacity for the new partners. During the reporting period, CAP-TB organized 37 training workshop with 549 participants (213M and 336F), including TB doctors, nurses, TB counsellors, peer educators and TB program staff (See Annex IV for details).

## **Narrative III: Success stories**

### **The “Milk for Baby Project”: Helping families affected by tuberculosis through nutritional support**

Since January 2015, Kunming’s 57 Zone network has sponsored a formula milk project for families affected by tuberculosis. 57 Zone is an online social media network of people infected with or affected by tuberculosis, and it is managed with support from the USAID Control and Prevention of Tuberculosis (CAP-TB) team, led by FHI 360 Kunming. Through the “Milk for Baby Project”, ten tuberculosis or multi-drug resistant tuberculosis patients with young babies in their families will be recruited by 57 Zone and provided with free formula milk powder over the next 1-2 years.



He Xuancun, a 19 year old mother of a baby boy, had left her home village with her family to work in Kunming, driven by desperate poverty. She was diagnosed with tuberculosis at Kunming No.3 Hospital in March 2015. The CAP-TB team visited her home, where five family members shared two tiny, shabby rooms in a peri-urban village in Kunming. “I was very ill in the hospital twice. My husband and I worked at a construction site. I was so ill that I could hardly work. My husband had to quit his job to take care of me at home,” said Ms. He. Unable to work themselves, they relied on support from their elderly

parents who worked long days at a hotel. She added, “We could hardly make both ends meet with such a humble salary.”

When the CAP-TB team presented the formula milk boxes to Ms. He, holding her beautiful baby in her arms, she burst into tears – it was only the second time that she touched and kissed him since he was born. In order to protect the child, the family had kept him away from his mother, even after she was no longer infectious. The CAP-TB team carefully explained how to use the formula milk properly and reassured Ms. He and her family by correcting their misperceptions about tuberculosis. Women with tuberculosis can safely breastfeed their babies, but they often lack adequate nutrition and are underweight; the formula milk can help to supplement nutrition for their babies.

Tuberculosis is curable. However, many patients living in poverty are struggling with hard choices on a daily basis, including how to provide basic nutritional support for their families. Providing milk for babies in homes affected by tuberculosis can help to supplement nutrition. By the end of September 2015, the “Milk for Baby Project” had reached seven families affected by tuberculosis.

## **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. In each small group activity, participants are asked if they are reached by the CAP-TB educational activity for the first time since the Chinese National Day (1<sup>st</sup> October – the first day of a new fiscal year). Any participant reached more than once since that particular day are marked as follow-up and will not be double counted. 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, the middle, and the end of the event, and the estimated total number of participants is the average of the three counts.

For TB/MDR-TB patients and HIV/TB patients reached by clinical or care services, the 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, as well as 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 of the same topic area are counted only once, but are counted once again for any trainings they have attended that fall into 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.

**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; and 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 quarterly 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 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 allow timely response 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. Internal DQA is conducted semi-annually at every program site.

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

Please see details in a separate word document.

## Annex IV: Summary of training activities in FY15

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) Xu Zhixiang (FHI 360)	18 participants (TCC and FHI 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)
21 May 2015	how to deal with TB patients who poorly adhere to treatment	Ms. OC Lin (HKAF)	18 participants (Kunming No.3 Hospital)
22 May 2015	Counselling training	Ms. OC Lin (HKAF)	15 participants (YATA and TCC)
27 May 2015	Interpersonal communication training between doctors and patients in Zhenxiong	Mr. Xu Zhixiang (FHI360)	16 participants (Zhenxiong CDC)
28 Aug 2015	Care and support on patients, communication skills between doctors and patients	Ms. Wang Kerong (Beijing Ditan Hospital)	25 participants (TCC, Kunming No.3 Hospital, and YAI)
7 Sept 2015	Psychological intervention skills and practice	Ms. Chen Qingling (Yunnan AIDS Care Center)	17 participants (TCC, Kunming No.3 Hospital, and YAI)
<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)
24 June 2015	Infection control training	YATA lab staff	95 participants (YAI), including YAI's lab staff
27 Aug 2015	Infection control training	YATA lab staff	207 participants (Kunming No.3

Dates	Training topic	Trainer	Participants
			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)
23-24 April 2015	MDR-TB management training	Dr. Ignacio (UNION)	48 AIDS doctors from all over the Yunnan Province
6 July 2015	TB diagnosis training and case discussion	Dr. Chiang Chen Yuan (UNION)	9 participants (YAI)
8 July 2015	MDR-TB management	Dr. Chiang Chen Yuan (UNION)	78 participants (Zhenxiong CDC and Zhenxiong county Hospital)
21-23 July 2015	Standardized MDR-TB treatment training for Yunnan MDR-TB designated hospitals	YATA and Mr. Wang Kai (FHI360)	75 participants (CDC and MDR-TB designated hospitals all over the Yunnan province )
14 Aug 2015	MDR-Tb diagnosis, treatment and management	Dr. Li Mingwu (Kunming No.3 Hospital)	13 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	Mr. WANG Kai (FHI 360)	4 participants (YACC)
13 May 2015	How to conduct questionnaire data collection	Ms. Zhao Xinru	8 participants (Kunming No. 3 Hospital)

**For indicators 17, 18, and 20, we have de-duplicated across the three training areas to produce the total number of people trained. This is shown in the table below.**

	Before revision	De-duplicated		After revision
Indicator 17	201	Remove 24 trainees who overlapped with indicator 20		177
Indicator 18	411	Remove 10 trainees who overlapped with indicator 20	Remove 21 trainees who were overlapped with 17	380
Indicator 20	56	No change		56
Total	668			613