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**TB CARE II**  
BANGLADESH

# **TB CARE II Bangladesh**

## **Annual Report, 2013**

**Submitted on  
October 30, 2013**

**University Research Co., LLC**

**Bethesda, Maryland**

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## LIST OF ACRONYMS

ACSM	Advocacy, Communications, and Social Mobilization
AIDS	Acquired Immune Deficiency Syndrome
BIRDEM	Bangladesh Institute of Research & Rehabilitation for Diabetes, Endocrine and Metabolic Disorders
BADAS	Bangladesh Diabetic Samity
cPMDT	Community based Programmatic Management of MDR TB
CDC	Chest Disease Clinics
CDCS	Country Development Cooperation Strategy
CDR	Case Detection Rate
CHW	Community Health Workers
DAB	Diabetic Association of Bangladesh
DOTS	Directly Observed Treatment Short-course Strategy
DRS	Drug Resistance Survey
DST	Drug Sensitivity Testing
FAST	<b>F</b> inding TB patients, <b>A</b> ctively, <b>S</b> eparating safely, <b>T</b> reating effectively
FDC	Fixed Dose Combination
FHI	Family Health International
GFATM	Global Fund to Fight AIDS, TB, and Malaria
GHI	Global Health Initiative
GLC	Green Light Committee
GOB	Government of Bangladesh
HIV	Human immunodeficiency virus
IC	Infection Control
MDG	Millennium Development Goals
MDR TB	Multi drug-resistant TB
MOH	Ministry of Health and Family Welfare
NIDCH	National Institute of Diseases of the Chest and Hospital
NRL	National Reference Laboratory
NTP	National Tuberculosis Control Program
PIH	Partners In Health
PMP	Performance Monitoring Plan
PPM	Public Private Mix
QA	Quality Assurance
TB	Tuberculosis
TB CAP	Tuberculosis Control Assistance Program
TSR	Treatment Success Rate
URC	University Research Co., LLC
USAID	United States Agency for International Development
USG	United States Government
WHO	World Health Organization
XDR TB	Extensively drug resistant TB

## 1 EXECUTIVE SUMMARY

This report reflects progress made in the implementation of project activities in FY 2013. During this year, the TB CARE II Bangladesh made significant progress on increasing universal access to TB and MDR TB services. Project assistance has contributed to strengthening systems for increased detection and management of all types of TB, identification and management of childhood TB, expanding national capacity for diagnosis of MDR TB using state-of-the art technologies such as GeneXpert, and community based programmatic management of MDR TB (cPMDT), strengthening laboratory services and systems, introducing mHealth to monitor patients' DOT and increasing private sector participation in the TB control program.

There has been a substantial increase in the national case notification. In 2013, the case notification in TB CARE II supported BRAC area has continued to increase since the project has started supporting the intervention. The case notification rate of all forms of TB in these 12 districts has increased from 123 to 139 in the past one year. The partnership with the Diabetic Association of Bangladesh (DAB) for increasing detection of TB cases among diabetic patients showed very encouraging results within a very short period of time. The project has started TB screening at the outpatient departments. Since start of the intervention in July 2013, the DAB project has detected 218 TB cases of all forms by screening the DM patients at the outpatient and inpatient departments of the BIRDEM hospital. Treatment has been initiated for all the diagnosed patients through the DOT center at the BIRDEM hospital. The other NGOs supported by the project have already started implementation of planned activities and contributing to detection of TB cases.

Case notification rate for new smear positive increased from 65 to 69 per 100,000 population between the 2011 to 2012. The proportion of case detection increased from 45% to 49% during the same period. The total number of case notifications of all forms of new TB cases increased from 148,198 to 161,790, an increase of 8%. The total number of notified cases in 2012 for smear positive, smear negative and EPTB has increased by 8%, 11.6% and 12% respectively over the previous year.

The project recorded significant progress in enhancing national capacity for diagnosis of MDR TB using GeneXpert. Eighteen GeneXpert machines are currently operational and nine more are in the process of installation. This year, the GeneXpert test was performed for a total of 8,758 samples including 5,140 DR presumptive TB cases. The detection of RIF resistant TB among the suspected MDR TB cases (retreatment, Cat I and II failures, late converters) is very high. Among the DR TB presumptive TB cases tested, 58% was detected MTB positive of which 23% was MTB/RIF resistant. The project has also started routine screening of smear negative cases by GeneXpert. During this period, 399 MTB positive including 18 MTB/RIF resistant cases have been diagnosed out of a total of 3,463 smear negative suspects.

The project has further expanded the sputum collection and transportation system linking GeneXpert sites with the peripheral labs for increasing access to Xpert tests for DR TB presumptive TB cases and smear negative cases. A total of 1,186 GO and NGO staff has been trained on sputum collection and transportation. The collected samples are transported to GeneXpert sites for testing and to NTRL/RTRL for culture and DST for follow up testing of MDR TB patients. The system is now operational in 19 cPMDT districts.

In FY 2013, the project assisted NTP with technical and logistics support to have 68 additional beds available for enrollment of DR TB patient to hospital based treatment. Renovations works for the remaining 58 beds are in progress. The project also completed training of service providers from these hospitals on the programmatic management of DR TB patients following the national guidelines. The expansion of hospital capacity for inpatient management of DR TB patients and transfer of patients to cPMDT usually within two months after initiation of treatment have enabled NTP to significantly increase the number of patients enrolled in DR TB treatment in this year. From January to September 2013, the number of DR TB patients enrolled in 24-month treatment regimen reached 378 which is equal to the total number of patients enrolled in the last calendar year. The project conducted an orientation for 51 service

providers from NTP and NGOs to develop basic capacity for management of XDR patients at the facility as well as the community level.

In FY 13, the project has expanded the cPMDT to 15 districts and 2 city corporation areas. The project formed Outpatient DR TB teams at the targeted districts and upazilas and trained 1,501 team members on clinical and programmatic management of DR TB patients at the community level. The project also trained 86 new DR TB DOT providers and organized refresher training for 184 DR TB DOT providers. During the reporting period, the technical support of the project contributed to enrollment of 228 patients in the community based treatment. Of them, 13 patients have been declared cured, 12 patients have died, and 2 patients have defaulted.

The project with technical support from its partner PIH has introduced Finding TB patients Actively, Separating safely, Treat (FAST) at NIDCH for infection control and active case finding. The project conducted orientation on FAST for 48 participants from the facility. Using this approach, the project identified and tested 475 coughing patients using GeneXpert and detected 33 MTB including 7 RIF resistant cases. Encouraged by the result, the project has planned to scale up the system to other large hospitals treating COPD patients.

As part of the health system strengthening, the project supported a diverse range of activities to enhance diagnostic and management capacity of NTP and NGO partners for TB and MDR TB. The project completed renovation works of Khulna RTRL and expects to make it fully functional by December 2013. The project has installed and been supporting operation of 198 LED and 100 conventional microscopes to improve quality of AFB microscopy. Sputum microscopy training has been organized to develop capacity of the lab technologists on the use of LED and light microscopes.

During this year, the project supported NGOs oriented 129 graduate doctors and 897 non-graduate doctors. Networking meetings were conducted with 4,195 graduate and 4,886 non-graduate private providers. The PPM effort has contributed to identification and referral of 45,059 presumptive TB cases to the DOTS centers for diagnosis and management. The sub-grantees have also conducted household visits for TB screening message dissemination, courtyard meetings with community people, local level advocacy with opinion leaders, video shows, and orientation of cured patients as peer educators, to improve people's knowledge and awareness about TB and bring positive behavioral changes for early care seeking for TB services.

## **2 INTRODUCTION**

Since the introduction of DOTS in 1993, Bangladesh has made significant progress in increasing detection of smear positive TB, treatment success rate, and achieving nation-wide coverage for DOTS program. TB, however, remains a major public health problem in Bangladesh. According to WHO 2013 report (based on 2012 data), an estimated 350,000 new cases of all forms of TB are emerging every year. The case notification rate of all forms of new and relapse TB case has increased from 101 in 2011 to 109 in 2012 per 100,000 populations. The proportion of case detection increased from 45% to 49% during the same period.

The biggest challenge for the country is the emergence of MDR-TB which is 1.4% among new and 29% among retreatment cases. The total number of MDR TB cases among notified pulmonary TB cases is estimated 4,200 (WHO Global TB Report 2013.) Because of limited capacity for diagnosis, only a small proportion of estimated MDR TB cases are identified. The situation is same with the treatment of MDR-TB patients. The capacity for in-patient treatment of MDR TB is far less compared to the number of patients who need this service. As a result, a large number of patients are always on the waiting list of treatment for MDR-TB. With the introduction of GeneXpert, community based treatment approach in 2012, and increase in the number of beds for inpatient treatment at the hospitals, it has been possible to

increase both detection of RIF resistant cases and enrollment of patients to treatment. The NTP has also developed a PMDT expansion plan with specific strategies and targets to guide effective planning and implementation of activities to cope with the diagnosis and management of DR TB.

The TB CARE II Bangladesh project funded through the USAID TB CARE II Project is designed to enhance capacity of NTP in implementing its TB control and prevention strategies and achieving the national goals. The project, implemented by URC along with its Global partners WHO, PIH, CLA and other partners, leverages the Global Fund and the Government of Bangladesh resources, to facilitate implementation of strategies to strengthen and expand TB DOTS, Programmatic Management of Drug Resistant TB (PMDT) programs, and health systems.

### **3 USAID/BANGLADESH OBJECTIVES FOR THE TB CARE II PROJECT**

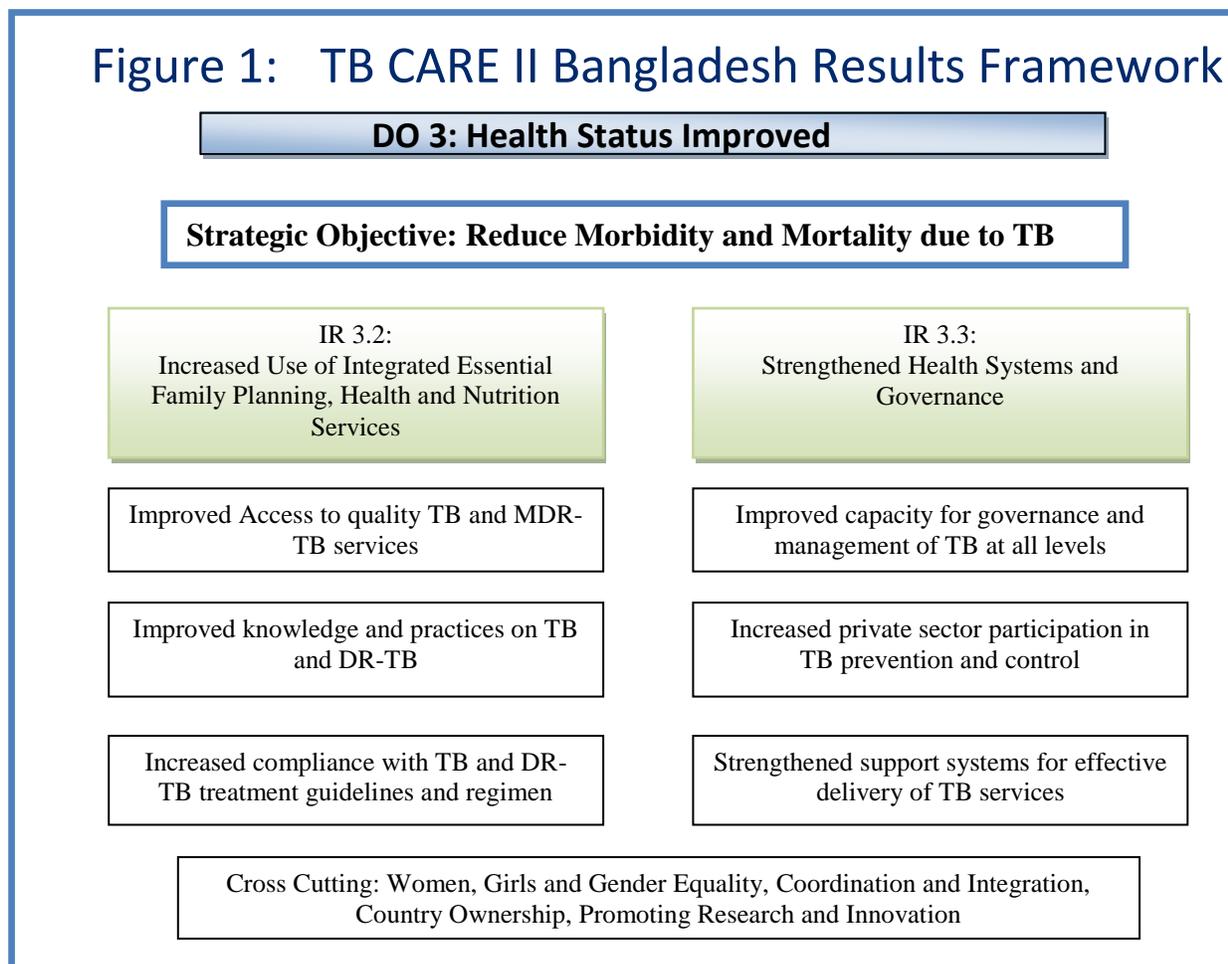
The TB CARE II project has been designed in consultation with USAID/Bangladesh and NTP to contribute to achieving Bangladesh national objectives for preventing and controlling TB and to help GOB achieve its Millennium Development Goals (MDGs) for TB. The specific objectives of the project include the following:

- Improve universal access to TB diagnosis and treatment;
- Work with GOB to reach and sustain the global targets of > 70% case detection and > 85% cure rates under DOTS;
- Providing high quality DOTS through all levels including those of private providers;
- Improve programmatic management of MDR TB and increase access to MDR TB prevention and treatment through community-based approaches
- Strengthening diagnostic capacity for drug susceptible and drug resistant TB
- Health systems strengthening with a Upazila-based approach for decentralized management of TB control and prevention activities.

#### **3.1.1 USAID/Bangladesh Results Framework**

The goals and objectives of this project are in line with the USAID/Bangladesh GHI Strategy, the USAID/Bangladesh CDCS, the GOB's health sector program, and USAID FORWARD reforms. This project contributes to two Intermediate Results (IRs) of CDCS Development Objective 3: Health Status Improved. The GHI principles of gender equity, coordination and programmatic integration, encouraging country ownership and investing in country-led plans and health systems, and promoting research and innovation are cross-cutting themes of this project.

## Figure 1: TB CARE II Bangladesh Results Framework



The project generally targets the whole country for increasing access to diagnosis and treatment of all forms of TB. However, the geographic coverage and scope of project support varies by technical areas. The project support to strengthening community based interventions for TB DOTS activities are limited to 18 districts and parts of Dhaka city corporation area and is designed only to address the programmatic gaps that are currently not supported by the Global Fund or GOB. The project also complements the Global Fund and GOB activities with main focus on strengthening capacity and quality of the sputum microscopy services all over the country.

Developing national capacity for strengthening and expanding PMDT is a major technical focus of the TB CARE II project. The project provides exclusive technical and logistics support to increasing access to GeneXpert services targeted to the whole country. The project supported intervention for community based management of DR TB cases will cover 39 districts and three city corporations by the end of FY 2014. The project also supports activities to improve capacity of culture and DST services that will benefit the total population of the country.

#### 4 MAJOR ACCOMPLISHMENTS

- National case notification rate increased from 101 in 2011 to 109 in 2012. Notification of all forms of new TB cases increased from 148,198 to 161,697 during the same period.

- Case notification rate for all forms of TB has increased from 123 to 143 in the last one year in the 12 BRAC districts with support from the project to target programmatic gaps.
- DAB detected 218 TB cases of all forms among the DM patients with project support started in June 2012;
- Installed and supported operation of 18 GeneXpert machines; performed GeneXpert test for 8,758 samples including 5,140 DR TB presumptive cases; detected 3,407 MTB positive including 753 MTB RIF cases.
- Expanded cPMDT program in to 2 city corporations and 15 districts including 122 upazilas; trained 1,501 Upazila Outpatient DR TB team members and 198 DR TB DOT providers.
- The project supported NTP to make available 68 additional hospital beds for treatment of MDR TB through 5 regional chest disease hospitals.
- Between January to September 2013, 378 patients have been enrolled to DR TB treatment of 24-month regimen.
- Initiated contact tracing and INH for eligible children under 5; of the first cohort of 523 children registered for IPT, 509 completed the course and 14 defaulted; of the second cohort of 573 children registered for IPT, 491 completed the course, report not yet received for the remaining 82 children.
- Provided orientation on XDR TB management for 51 service providers from NTP and NGOs;
- Established sputum collection and transportation system in 19 districts; oriented 1,186 GO and NGO staff on the system.
- Procured and installed 198 LED microscopes and 100 light microscopes at high volume lab facilities to improve quality of AFB sputum microscopy;
- Completed certification of 7 Bio-safety Cabinets to improve capacity and quality of lab services.
- Initiated FAST approach at NIDCH; identified and tested sputum for 475 coughing patients and detected 33 MTB including 7 RIF resistant cases;
- Developed 125 master trainers and training materials for doctors and field workers from NTP and other local stakeholders on the management of child TB.
- Provided TA support to 9 local NGO sub-grantees to implement community based case detection, advocacy and TB awareness activities.
- Supported NGOs to orient 129 graduate doctors and 897 non-graduate doctors, and conduct networking meetings with 4,195 graduate and 4,886 non-graduate private providers. These private providers referred 45,059 presumptive TB cases to DOTS centers for diagnosis and management.
- Developed TV and Radio commercials and supported a communication campaign through these channels to raise mass awareness about child TB and MDR TB.
- Completed training of 1,308 intern medical doctors from 10 medical colleges on programmatic management of TB.

## **5 ACCOMPLISHMENTS BY RESULTS**

### **5.1.1 Improved Access to quality TB and MDR-TB Services**

### **5.1.2 Increase detection and management of TB through local NGOs**

The TB control program in Bangladesh is implemented by NTP through a partnership with the local NGOs. The NGOs are primarily responsible for the community level screening and suspect identification which are the first two steps in the diagnosis of TB. The NGOs are also responsible for providing DOTS to the patients, counseling patients on treatment adherence, and conducting awareness and social

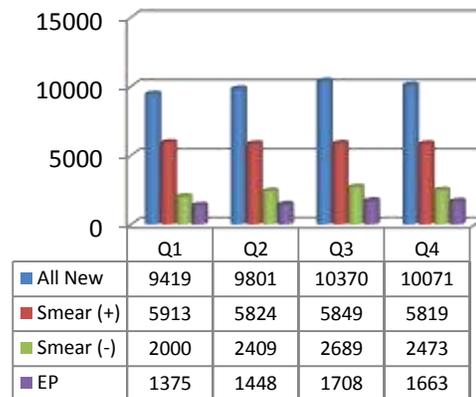
mobilization activities. TB CARE II has developed a program of technical and management assistance for these NGOs to build their sustainable capacity to implement local-level TB awareness and screening activities.

Currently, the project has been supporting eight (8) different sub-grants with local NGOs to implement community based TB control activities particularly in underperforming districts and targeted to populations living in urban slums and inaccessible rural areas. The results achieved through the sub-grant programs are discussed below.

### ■ BRAC

BRAC has been implementing a program with TB CARE II support in 12 districts of the country with a population of 29 million. The project support to BRAC districts addresses the gaps in Global Fund supported activities to increase detection of all forms of TB. The project is designed to increase detection of all forms of TB cases with additional focus on smear negative TB, missing positive cases among smear negatives and EPTB cases.

**Figure 1: Case Detection in BRAC 12 Districts, 2013**



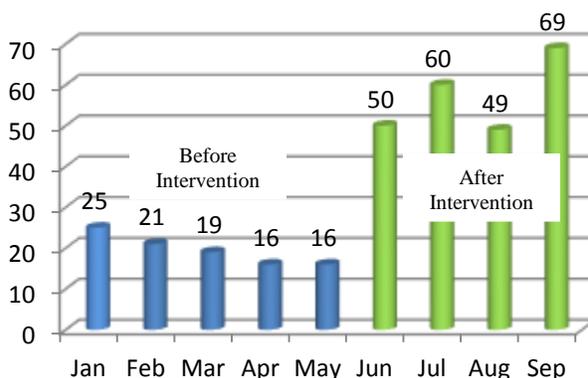
In 2013, the case notification in BRAC areas has continued to increase since the project has started supporting the intervention. The case notification rate of all forms of TB in these 12 districts has increased from 123 to 139 in the past one year as shown in the **Figure 2** above. A slight decline in case detection is evident in the 4<sup>th</sup> quarter. The project is working with BRAC to analyze the data and identify possible causes of decline in the performance including variations in performance by districts and upazilas.

Financial support is given to poor patients to reimburse diagnostic and transportation costs incurred for detection of smear negative and EPTB cases. During this year, BRAC provided this support to 5,056 smear negative and 1,075 EP TB patients during. The project also supports BRAC to provide TB services in 12 prisons. This contributed to testing sputum samples of 1,603 prison inmates and detection of 60 TB cases in the reporting period.

### ■ Diabetic Association of Bangladesh (DAB)

The project awarded a sub-grant to the Diabetes Association of Bangladesh (DAB) to increase access to

**Figure 2: Detection of All Forms of TB Cases Among DM Patients at BIRDEM Hospital**



TB services by the diabetes patients. DAB is a network of hospitals and affiliated associations located in all the districts of Bangladesh. Through this partnership, the project has been supporting an integrated approach with focus on active screening of diabetes patients for detection and management of TB among them. The intervention has only been started at the BIRDEM, which is the largest diabetes hospital in the country.

Early results show a great potential of this partnership to increase detection of TB cases among DM patients once the full intervention has been rolled out to all the district outpatient

diabetes service centers. **Figure 2** shows that number of case detection of all forms of TB immediately increased after the intervention was started in June, 2013. The project is currently in the process of installing a GeneXpert machine at the BIRDEM hospital. This will enable DAB to test smear negative as well as DR TB presumptive cases using GeneXpert and further increase the detection of TB as well as DR TB starting the first quarter of 2014.

The project assisted DAB in training of the doctors, nurses and other health staff of the BIRDEM and affiliated facilities. Total 215 doctors and nurses from the BIRDEM General Hospital, National Health Care Networks (NHN), Bangladesh Institute of Health Sciences (BIHS) and other affiliated centers from 63 districts received training to improve their knowledge and skills about DOTS strategy, screening, diagnosis and management of TB, and counseling of patients on TB diabetes co-morbidities. The project has started active screening of diabetes patients to identify presumptive TB cases at the outpatient and inpatient departments. **Table 1** shows the achievements made by DAB during implementing period.

**Table 1: Detection of TB among DM patients**

Indicators	Achievements
DM Patients referred for sputum AFB microscopy test	376
DM patients diagnosed as sputum positive for pulmonary TB	77
DM patients diagnosed as sputum negative for pulmonary TB	68
DM patients diagnosed as EPTB case	73
Total number of DM patients diagnosed with TB	218
DM-TB patients put on treatment (at BIRDEM)	218
Number of DM patients received counseling on TB-Diabetes co-morbidities	6,295

Since start of the intervention in July 2013, the DAB project has detected 218 TB cases of all forms. Treatment has been initiated for all the diagnosed patients through the DOT center at the BIRDEM hospital.

#### ■ HEED

The sub-grant with HEED Bangladesh supports implementation of DOTS and ACSM activities targeted to 650,000 people living in 157 tea gardens of Sylhet, Habiganj and Moulvibazar districts. HEED Bangladesh has set up 25 sputum collection and smearing centers in the tea garden areas. All these centers are linked to the labs where the sputum slides are sent for microscopy test.

**Table 2: Case Notification by HEED during October, 2012-September, 2013 period**

Districts	Suspect tested				Smear(+) ve				Smear (-) ve				EPTB			
	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4
Sylhet	175	257	307	387	17	19	25	31	0	4	2	5	0	1	3	5
Hobigonj	248	340	521	661	15	29	56	80	1	5	9	27	1	2	5	12
Moulvibazar	716	1021	1560	1635	42	58	116	128	1	11	44	60	0	8	13	35
<b>Total</b>	<b>1139</b>	<b>1618</b>	<b>2388</b>	<b>2683</b>	<b>74</b>	<b>106</b>	<b>197</b>	<b>239</b>	<b>2</b>	<b>20</b>	<b>55</b>	<b>92</b>	<b>1</b>	<b>11</b>	<b>21</b>	<b>52</b>

The case detection in the HEED areas have steadily increased since the project has started its support. During the year, 7,828 presumptive TB cases identified through community based screening of the tea garden workers and their family members and tested. This resulted in the detection of 616 smear positive, 169 smear negative and 85 EPTB cases. The case detection is still very low compared to the size of the

target population and needs stronger active screening and social mobilization at the community to improve performance.

### ■ Wave 3 Sub-grantee Performance

Under wave 3 grants, the project awarded 5 (five) other sub-grants to local NGOs to increase detection and management of TB cases. The project support through these NGOs is limited to complementing the Global Fund activities by way of addressing the programmatic and geographic gaps. The implementation of TB control activities through these sub-grants are still at the initial stage. Table 2 shows the additional cases detected by these NGOs during the current quarter.

**Table 3: Case Detection by Wave 3 NGO Sub-grantees**

Name of NGO	Case Detection with Project Support			
	Smear (+)	Smear (-)	EPTB	Total
BCCP (in collaboration with 5 NGO clinics)	81	57	67	205
Leprosy Mission	139	8	1	148
Lepra Bangladesh	79	0	0	79
Nari Maitree	40	0	3	43
FIDA	71	16	11	98
<b>Total</b>	<b>410</b>	<b>81</b>	<b>82</b>	<b>573</b>

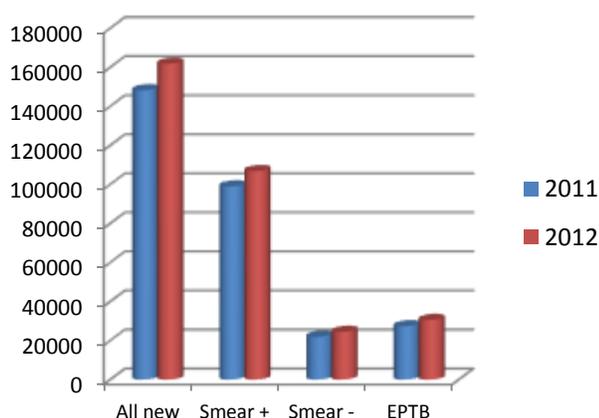
#### 4.1.2 Case Notification at the National Level

The case notification rate of all forms of new and relapse TB cases have increased from 101 in 2011 to 109 in 2012 per 100,000 populations. The proportion of case detection increased from 45% to 49% during the same period (WHO report 2013.)

Case notification rate for new smear positive increased from 65 to 69 per 100,000 population between the 2011 to 2012. The proportion of case detection increased from 45% to 49% during the same period. The total number of case notifications of all forms of new TB cases increased from 148,198 to 161,790, an increase of 8%. The total number of notified cases in 2012 for smear positive, smear negative and EPTB has increased by 8%, 11.6% and 12% respectively over the previous year. According to NTP data, 38.26% of the total notified cases were female which translate to male:female ratio = 1.61:1.)

Although the data shows increase in case notification of new smear positive cases in all divisions in 2012, it is higher in Barisal division (92/100,000 population) and lowest in Rajshahi division (59/100,000 population). The notification of child TB cases has slightly increased in absolute number to 4,842 in 2012 from 4,668 in 2011. However, the proportion of child TB cases notified out of all notified cases remains low at 3% for which increasing detection of child TB cases will be a priority of the TB CARE II project in the next year.

**Figure 3: Case Notification in 2011 and 2012**



### **4.1.3 Increasing diagnosis and management of child TB**

#### **■ Improve case finding among vulnerable children**

To increase case finding among the vulnerable children, the project conducted orientation of 44 school teachers from Anjumane Mafidul Islam on TB. In addition, similar orientation was organized for 145 managers and teachers from 3 madrasahs. The objective of these orientations was to enable the teachers to raise knowledge and awareness about TB among the madrasah students and other vulnerable children as well as to increase identification and referral of presumptive child TB cases.

#### **■ Training of Trainers (TOT) on Management of Childhood TB**

Following the National Guidelines for Management of TB in Children, the TB CARE II project in collaboration with the NTP organized TOTs and developed 125 master trainers selected from NTP and other local stakeholders. This pool of trainers will serve as the national resource for training of health personnel including doctors and other cadres of service providers on the management of childhood TB.

#### **■ Development of Child TB training modules**

The project developed relevant training materials for basic training on the management of childhood TB. Two different training modules have been developed, one for training of the medical doctors and the other one for the health workers. Field testing of Child TB training manual and orientation of 109 field staff on Child TB were conducted in collaboration with NTP, WHO and Bangladesh Pediatric Association (BPA) in two upazilas of Sylhet and Mymensingh districts. Feedback generated through the field test was to revise and finalize the training manual.

The project developed a partnership with the Bangladesh Pediatric Association (BPA) for training of public and private doctors and field workers from Dhaka divisions on screening, diagnosis and management of child TB cases. A training plan has been developed for training of 580 public sector pediatricians and other doctors, and orientation of 544 private general physicians and 7,645 government and NGO field workers on screening and referral of suspected child TB cases. The master trainers developed by the project will act as resource persons for conducting the training of doctors and field workers.

#### **■ Printing and distribution of IPT posters and cards**

The project printed and delivered 2,500 IPT posters, 10,000 IPT cards, and 2,500 IPT framed posters to NTP for distribution. The posters will be used in district hospitals, CDC, CDH, UHC etc for better understanding of doctors and field workers about the eligibility and doses of IPT. The project also distributed the IPT cards to be used as job aids by the health care professionals during their orientation on IPT.

#### **■ INH prophylaxis for eligible children**

The project has been supporting the sub-grantees to provide IPT to eligible children living in the families of active TB patients. During the household visits, the field workers identify the child contacts of TB patients and refer them for TB screening. During this period, 573 eligible children (less than 5 years) have been registered for INH prophylaxis. BRAC also started active tracing and screening of child tuberculosis contacts using a simple symptom-based approach under the guidance of national program.

During this year, out of the 523 children registered for IPT in July-September 2012, 509 children have completed the full course of treatment. The remaining 14 children defaulted mainly because of the non-cooperation and reluctance of the parents to administer IPT for their healthy children. Another cohort of 573 children was registered for IPT in October-December 2012 quarter. Of these children, 491 children

completed the course. The report on the status of the remaining 82 children is not yet available. Scaling up the IPT program through other NGOs have been delayed mainly due to shortage and irregularity in supply of IPT drugs.

#### ■ **Orientation of doctors on the management of childhood TB**

TB CARE II project conducted orientation workshops for the medical professionals on the national guidelines for the management of TB among children. The objective of this orientation was to apprise the doctors of the policies adopted by NTP and orient them on the guidelines for diagnosis, management and referral of the child TB cases. Training workshops were organized in the Dhaka, Pabna, Bogra and Sylhet medical college hospitals. A total of 346 professionals from different cadres both from public and private sectors were oriented on the new policy and guidelines adopted for diagnosis and treatment of TB in children.



**Orientation of doctors on child TB**

#### ■ **Annual workshop on Child TB**

The detection of childhood TB is low at 3.15% although childhood TB is estimated to be 11% of the total disease burden. The pediatric TB cases are also underreported with most of the reported cases are among



**Annual workshop on Child TB**

the smear positives over the age of 10. The major limitations are in diagnosis, reporting, contact tracing and administration of IPT. TB CARE II project in partnership with NTP organized an annual workshop on childhood TB. The program was attended by 48 participants including NTP, pediatricians, WHO, partner NGOs, USAID/Bangladesh. The workshop helped develop priority strategies and actions to address the issues that hinder early identification, diagnosis and management of child TB cases following the national guidelines. Following the workshop recommendations, the project plans to work with NTP and partner NGOs to develop capacity of the service providers in screening diagnosis and management of child TB, strengthen contact tracing through NGOs at the community, improve referral of presumptive child TB cases to appropriate facilities for proper diagnosis and management, and provide IPT for eligible children <5 years.

#### **4.1.4 Diagnosis and Management of Smear Negative and EPTB cases**

##### ■ **Smear Negative Cases**

Following the new NTP policy, the project has established systems for use of GeneXpert test for diagnosis of smear negative TB starting February 2013. The implementation of this new policy is making a significant difference in detecting missing MTB positive as well as RIF resistant TB cases among the smear negatives. The project has established referral systems to enable the peripheral microscopy labs to refer smear negative cases to the GeneXpert sites for testing. During the reporting period, a total of 3,463 smear negative cases have been tested, and detected 399 MTB positive including 18 MTB/RIF resistant cases.

##### ■ **Extra-Pulmonary TB (EPTB)**

The TB CARE II partner Canadian Lung Association (CLA) has been leading the project initiative to improve screening and diagnosis of EPTB in Bangladesh. The project has completed systematic reviews on four types of EPTB, e.g., Pleural, Lymph node, Genito-urinary (GU), and Musculoskeletal (MSK) TB,

which are most common forms of EPTB in Bangladesh. A systematic review and meta-analysis of the sensitivity and specificity of GeneXpert in diagnosis of EPTB is also in process and should be shared in Q1 of FY14. This effort will contribute to the development of separate algorithms for screening and diagnosis of four common types of EPTB identified above.

Through the NGO sub-grantees, the project has been supporting limited diagnostic and transportation costs for people presumptive of EPTB. The result of this effort is showing gradual increase in the detection of EPTB cases in the project supported areas.

#### **4.1.5 TB screening for HIV patients**

NTP has made a policy decision to conduct TB screening for all HIV patients with GeneXpert. To implement this policy, the project collaborates with the existing HIV/AIDS NGOs to facilitate referral of HIV patients for GeneXpert test. The test result is communicated to the referral physician through m-Reporting system established by the project. During this period, 155 HIV patients have been tested; 11 of them were MTB positive including 4 RIF resistant cases.

#### **4.1.6 Active case finding at high volume chest disease facilities**

The project with technical support from its partner PIH has introduced Finding TB patients Actively, Separating safely, Treatment (FAST) at NIDCH. FAST is a simple approach for infection control and active case finding at congregated service delivery facilities. To identify TB cases, all patients are screened at the entry level of the hospital and coughing patients are segregated for TB screening.

During this period, the project conducted orientation on FAST for 48 participants including NTP consultants, physicians, nurses and lab technicians. Using this approach, the project identified and tested 475 coughing patients using GeneXpert. This initiative contributed to detection of 33 MTB including 7 RIF resistant cases. The project developed FAST hand book, laboratory register, modified nurse registers, and prepared ward for initiation. Encouraged by the results, the project has planned to scale up the system to other large hospitals treating COPD patients.

#### **4.1.7 Strengthen NTP capacity for detection of MDR TB cases**

##### **■ Procurement and Installation of GeneXpert**

Currently 18 GeneXpert machines are operational at the national, regional reference labs, CDCs and CDHs. Installation of 9 more machines are in progress at different district level facilities. The project has completed renovation works at the selected sites where these machines will be installed and training of relevant NTP staff on the operation of the Xpert machines.

##### **■ Increased detection of MDR TB cases**

In FY 13, the project has supported NTP to perform a total of 8,758 GeneXpert tests for all three suspects groups. These tests contributed to detection of 3,407 MTB cases including 753 RIF resistant cases. The Table 3 provides GeneXpert test results by different suspect groups.

**Table 3: GeneXpert Test Results by Suspect Groups, 2013**

<b>Suspects Groups</b>	<b>Total tested</b>	<b>MTB positive</b>	<b>MTB/RIF Resistant</b>
<b>DR TB presumptive cases</b>	5140	2997	731
<b>Smear Negative presumptive cases</b>	3463	399	18
<b>HIV patients</b>	155	11	4
<b>Total</b>	<b>8758</b>	<b>3407</b>	<b>753</b>

The detection RIF resistant TB among the suspected MDR TB cases (retreatment, Cat I and II failures, late converters) is very high. Among the DR TB suspect tests, 58% were MTB positive of which 14% was MTB/RIF resistant. Of the total samples tested, MTB positive was 39% and RIF resistant and 9% was MTB RIF cases.

The project has also started routine screening of smear negative cases by GeneXpert following the new policy adopted by NTP. During this period, 399 MTB positive including 18 MTB/RIF resistant cases have been diagnosed out of a total of 3,463 smear negative suspects tested by GeneXpert. The information presented above confirms beyond doubt that the introduction of GeneXpert technology has significantly enhanced the national capacity for faster diagnosis of increased number of MDR TB cases.

#### ■ **Sputum collection and transportation**

The project has further expanded the sputum collection and transportation system linking GeneXpert sites with the peripheral labs at the upazilas and districts for the purpose of increasing access to Xpert tests. A total of 1,186 GO and NGO staff has been trained on sputum collection and transportation. This training is part of project's plan to establish sputum collection, transportation, and reporting of specimen in 19 districts to improve access to GeneXpert, culture and DST services for increased detection of MDR TB cases. The collected samples are transported to GeneXpert sites for testing and to NTRL/RTRL for culture and DST for follow up testing of MDR TB patients. The system is now operational in 19 cPMDT districts and that has eliminated the need for the patients to come to the facilities for providing sputum sample for GeneXpert, DST and culture.

Identification and referral of DR TB presumptive cases for GeneXpert test is a common approach built in to the grants program. Following the national criteria, BRAC identified 981 DR TB presumptive cases from its catchment areas and referred them to GeneXpert labs for MTB/RIF test.

#### **4.1.7 Increased access to quality MDR TB treatment**

The project assisted NTP to develop a national plan for expansion of PMDT program. According to this plan, the target for NTP is to expand MDRTB treatment coverage for 70% of the estimated number of cases that develop annually by the year 2017. The target for treatment enrollment of DR TB patients is 700 in 2013. In order to achieve this target, the project adopted strategies to support NTP in expanding hospital capacity for inpatient management of DR TB patients while continuing gradual expansion of the cPMDT approach to other districts.

#### ■ **Expanded capacity for hospital based management of MDR TB**

In FY 2013, the project planned to add 126 new beds for DR TB patients in 5 CDHs. Renovation works have already been completed for 68 beds (16 in Chittagong CDH, 32 in Khulna CDH and 20 in Pabna CDH) which are available for enrollment of patients. Due to procedural delay, the renovation works could not be completed for the remaining 58 beds which are expected to be available for patients by the end of the current calendar year.

A major achievement of the project was starting the MDR TB treatment at the Khulna CDH in June 2013. The hospital allocated 32 beds for management of MDR TB. The project provided renovations and logistics support to set up the beds, improve the physical conditions specifically to upgrade the inpatient management area and infection control requirements. Training



**Khulna CDH starts MDRTB treatment**

was organized for the doctors and nurses to develop their clinical and management skills on MDR TB. The initiation of MDR TB treatment through this hospital is an important achievement to expand the treatment coverage for MDR TB services in the Khulna division. Patients from the Khulna division will no longer require travel to Dhaka for treatment and that will reduce undesired delays between diagnosis and treatment initiation.

**Table 4: Bed capacity for MDR TB treatment by hospitals**

Name of hospitals providing DR TB services	Bed Capacity for DR TB as of 2012	# of DR TB beds added in 2013
NIDCH, Dhaka	120	0
Chest Disease Hospital, Chittagong	32	32*
Chest Disease Hospital, Khulna	0	32
Chest Disease Hospital, Pabna	0	20*
Chest Disease Hospital, Rajshahi	40	0
Chest Disease Hospital, Barishal	0	10*
Chest Disease Hospital, Sylhet	0	32*
Chest Disease Hospital, Rangpur	0	0
Chest Disease Hospital, Brahmanbaria	0	0
Chest Disease Hospital, Faridpur/ Bogra	0	0
Chest Disease Hospital, Jessore	0	0
Damien Foundation 3 Hospitals (9-month regimen)	60	0
Total DR TB beds	252	126

*\*Renovation works for 58 beds in these hospitals are in progress*

#### ■ Community-based Programmatic Management of MDR TB (cPMDT)

The community based model introduced by the project has proved to be an effective approach for NTP to expand coverage for DR TB services and reaching its annual PMDT treatment targets. This model has been rolled out to 19 districts and two city corporation areas in the last two years. In FY 13, the project has expanded the cPMDT to 15 districts and 2 city corporation areas where the largest number of MDR TB patients is concentrated.

##### ○ *Formation of Outpatient MDR TB Teams*

The project worked closely with the NTP and respective district/upazila level health officials to form Outpatient MDR TB Teams in each of the fifteen districts and respective upazilas. These teams are led by the Civil Surgeon at the district and Upazila Health and Family Planning Officer (UHFPO) at the upazila level. The Upazila Outpatient MDR TB Team is primarily responsible for providing routine treatment including side effect management, and monitoring of the patients and MDR TB DOTS provider. The district Outpatient Teams, which also include chest disease consultants, support treatment needs for complicated and referred cases and provide oversight to the implementation of cPMDT activities.

##### ○ *TOT on cPMDT*

The project developed training materials for Out Patient MDR TB team and DOT provider on the basis of Standard Operating Procedures of cPMDT. These was developed in a participatory manner involving NTP, local implementing partners and technical experts. Using these materials, the project trained 49 CDH staff as master trainers who worked as resource persons for training of the divisional, district and Upazila level Out Patient MDR TB Teams.

##### ○ *Training of Outpatient MDR TB Teams and DOTS Providers*

During this period, the project trained 1,501 field level health professionals of Outpatient DR TB teams on cPMDT including refresher training for 184 DR TB DOT providers. The project also assisted the Outpatient DR TB teams to conduct orientation of 198 new DR TB DOT providers in their respective upazilas. The training for Outpatient DR TB teams aims at developing programmatic and clinical capacity of the teams to be able to provide on-going treatment support to the MDR TB patients. The DOT providers are supplied with one medicine box for safe keeping of drugs, one waterproof bag to carry the medicine, one umbrella and one LED torch light.

■ **Enrolment of patients on DR TB treatment**

In Bangladesh, NTP follows the GLC approved 24-month treatment and the Damien Foundation follows 9-month treatment regimen. According to the PMDT expansion plan, the national target is to enroll 700 DR TB patients in treatment in the 2013 calendar year through these two regimens.

The expansion of hospital capacity for inpatient management of DR TB patients and transfer of patients to cPMDT usually within two months after initiation of treatment have enabled NTP to significantly increase the number of patients enrolled in DR TB treatment in this year. From January to September 2013, the number of DR TB patients enrolled in 24-month treatment regimen reached 378 which is equal to the total number of patients enrolled in the last calendar year. The treatment initiation delay after diagnosis has considerably reduced and the waiting list of patients for enrollment in treatment has shrunk.

*Table 5: DR TB patients enrolled in treatment*

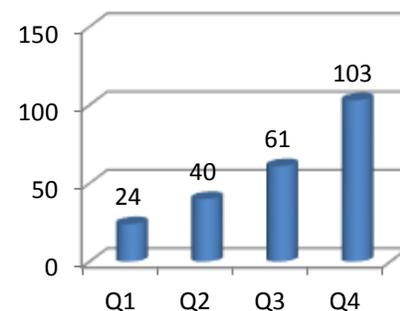
Year	GLC Approved 24-month Regimen				Damien 9-month Regimen	# of DR TB Patients enrolled in treatment
	NIDCH Dhaka	CDH Chittagong	CDH Khulna	CDH Pabna		
2010	183	0	0	0	173	356
2011	212	41	0	0	137	390
2012	290	87	0	0	132	509
2013 (Jan-Sep)	248	101	7	22	135	513

■ **Enrollment of patient in cPMDT**

The project has established a system to transfer DR TB patients to their homes to complete the treatment after short-stay at the hospital until the patients become smear negative. The transfer of patient is coordinated with the respective hospitals and the Upazila Outpatient teams. Before transferring the patients, the project staff looked in to the field preparations and ensured that the assignment of DOT providers, counseling of patients’ family members, and arrangements for logistics and supplies needed for patient management are completed.

In FY 13, the project has enrolled a total of 228 patients in the community based treatment. **Figure 6** shows the quarterly enrollment of patients who have been enrolled in treatment at the community level. Most of the patients are located in Dhaka and Chittagong city corporation areas. The Table 6 shows the enrollment status since the cPMDT has been introduced in May 2012.

**Fig 4: Enrollment of patients in cPMDT in FY 13**



**Table 6: Status of Patients in cPMDT**

Patient Status	# of Patients
Enrolled in cPMDT	281
Cured	13
Transferred out	4
Died	12
Defaulted	2

■ **cPMDT performance review meetings**

The project has started organizing performance review meetings at the district level with the DR TB DOT providers to improve coordination of cPMDT activities and provision of DOT services for the DR TB patients. During this year, the project staff conducted one monthly review meeting and three quarterly review meetings in Chittagong, Narayanganj and Gazipur.

Facilitated by the project staff, the DOT providers discussed issues related to coordination of cPMDT activities, availability and supply of drugs, patient compliance with treatment, patient support, side effects management and generation of social support for the patients. The participants also discussed and identified possible ways to address the issues and barriers. An action plan was developed after each of these meetings identifying the main common issues including roles and responsibilities of the DOT providers and project staff in resolving these issues.

■ **Workshop for improving management of Child DR TB**

There has hardly been any improvement in the management of children exposed to, infected with and sick from MDR-TB. No child under the age of 5 years has been treated for MDR-TB in Bangladesh and only 11 children under the age of 14 have been treated since 2009. In order to change this situation, the project in partnership with the Sentinel Project and NTP organized a workshop on “Improving the Quality of Care for Children with MDR-TB” in July, 2013. The workshop was designed to sensitize and train program managers and service providers on the programmatic actions need to improve the quality and coverage of DR TB services for the children. A total of 36 participants, mostly pediatricians from public and private hospitals and medical colleges, attended the workshop.

Local and international faculty with expertise on pediatric MDR TB made presentations at the workshop. The presentations were tailored to develop participants’ understanding of the current situation with regards to pediatric MDR TB, the specific diagnostic and treatment challenges, and strategies for ensuring treatment adherence, monitoring and infection control. The recommendations from the workshop include actions to establish an expert committee to guide planning and implementation, support policy change, develop capacity of service providers on pediatric DR TB management, and implement a pilot project for systematic contact tracing to identify child DR TB presumptive cases.



**Participants in Child DR TB Workshop**

■ **Orientation on XDR TB**

Although the reported number of XDR TB cases in the past couple of years was few, programmatic response to managing these cases was not possible due to lack of capacity. In this context, NTP has requested technical support of the TB CARE II project to address the situation. The project conducted an

orientation for 51 service providers from NTP and NGOs to develop basic capacity for management of XDR patients at the facility as well as the community level.

#### ■ **Supervision and Monitoring of DR TB DOT providers**

The project has set up an intensive monitoring and supervision system for effective implementation of cPMDT activities. The Outpatient DR TB Team members regularly monitored and supervised the DR TB DOT providers. In addition, project field staffs made monthly visits to patient's home to monitor treatment compliance, assess patient management needs and take follow up actions in discussion with the DOT provider and the Outpatient DR TB Team. The senior project management staff based at URC Dhaka along with NTP and WHO staff also made periodic joint monitoring visit to monitor implementation of cPMDT activities.

#### ■ **Ambulatory Care Training**

In collaboration with NTP, WHO and NGO implementing partners, the project facilitated ambulatory care training for 51 health care workers on ambulatory care for DR DT patients. The project also supported training of health care workers on infection control at the household level where the DR TB patients are treated after completion of the intensive phase at the hospital.

#### ■ **Recording and Reporting of MDR TB patients**

The project supports a MIS Assistant at NIDCH and developed a computer-based system for recording, tracking, and reporting of MDR TB patients. During the project period, the MIS Assistant recorded and periodically updated in-patient and ambulatory care status of all the MDR TB patients including patients under cPMDT.

### **5.1.3 Increased Knowledge and Behavior on TB and MDR-TB**

#### **4.2.1 Communication Campaign on Child TB and MDR TB**

The project has developed and been supporting a 6-month long communication campaign through TV and Radio channels to improve mass knowledge and awareness about child TB and MDR TB. Airing of these TV and Radio commercials started through 6 popular TV and 5 radio channels.

#### **4.2.2 Community based Awareness Activities**

The project supported the NGOs sub-grantees to conduct community based to conduct behavior change communication and social mobilization activities to increase people's knowledge and awareness about TB, signs and symptoms of TB and where to access for TB services. The activities included household visits, courtyard meetings with vulnerable population groups, advocacy with community leaders, and school based TB awareness programs. A summary of the awareness and social mobilization activities implemented by the NGOs in the reporting quarter is included here.

- The project partner **HEED** reached more than 2,000 male and female tea garden workers and community leaders through sensitization meetings conducted at different tea gardens. The project also organized entertaining events such as pot show, drama and gombhira in the tea gardens to communicate TB messages. The project also oriented and engaged 1,397 cured TB patients to act as peer educators to provide adherence support to the existing TB patients as well as to identify and refer presumptive TB cases from the community. HEED also conducted advocacy meetings with tea garden management staff, local health managers and opinion leaders to improve access to TB services by the marginalized tea garden workers.
- The grants program through **Bangladesh Center for Communication Programs (BCCP)** aims to improve detection of TB cases and knowledge and awareness about TB among slum populations in Dhaka. During this quarter, BCCP oriented 63 NGO clinic staff on effective communication and counseling skills as well as 46 peers on TB screening and referral. With project support, BCCP

organized three video shows in the slums, conducted 107 community group meetings, and 29 advocacy meetings with local influential people. BCCP has also developed a draft generic guideline on the appropriate use of different BCC materials on TB. This guideline will be used as a job aid by the field workers of all the NGOs working on TB.

- **TLMI Bangladesh** oriented 50 community volunteers on suspect identification and social mobilization activities. These volunteers conducted 638 households visit and 934 sputum collection sessions during this quarter. A total of 151 government health staff working on maternal and child health services were oriented on TB screening and identification of presumptive TB cases in the satellite clinics. The project also oriented 100 school teachers on TB messages, conducted 130 community awareness and advocacy meetings, and 6 events of folk songs and drama were to raise community awareness about signs and symptoms of TB and promote early care seeking for TB services.
- The project sub-grantee **Lepra** oriented 499 government maternal and child health field workers and 199 community volunteers on screening, identification and referral of presumptive TB cases. This NGO also conducted orientation for 1,250 school students on signs and symptom of TB using poster, leaflet, flip chart and other IEC materials. The NGO staff conducted 3,923 household visit and 886 courtyard meetings and organized 11 film shows in the evening reaching more than 50,000 people with important message on TB. Lepra also conducted 11 Focus Group Discussions (FGDs) to understand people’s knowledge and perception about TB, social stigma associated with TB, care seeking practices, and how the project could



**Orientation of MCH workers on TB by Lepra**

better organize its TB services to meet the community needs.

- The project supports **Nari Maître** to implement TB a project in few wards of Dhaka city. Through this project, the project supported orientation of 85 maternal and child health service providers of UPHCSDP on screening and referral of presumptive TB cases. The project volunteers conducted 4,073 household visits in the specified slum areas to identify people with TB symptoms, and 7 community awareness meetings to sensitize people about TB control and prevention, and 12 advocacy meetings with local community leaders to generate their support to and participation in the project activities. The project also oriented 120 madrasah/orphanage teachers to educate the students/orphans about TB.
- **FIDA** implements TB control and prevention activities in five upazilas of Lalmonirhat district. During this quarter, FIDA conducted 5,856 household visits and to identify presumptive TB cases and spread TB messages to community people. It also organized 451 courtyard meetings with community people and 90 advocacy meetings with Union Council members and village leaders to sensitize them about TB disease burden in the community and engage them in project activities for TB control and prevention.

#### **4.2.3 Promotion of TB Messages through Print Media**

The project printed and distributed different communication materials, e.g., posters, stickers, and leaflets with TB messages, cough etiquette, MDR TB messages highlighting treatment adherence, to raise public awareness about TB. The materials are displayed at the government and NGO health facilities, DOTS centers, SMC Blue Star outlets, pharmacies and sub-grantee working areas.

## 5.1.4 Increased Adherence to TB and DR TB Treatment

### 4.3.1 *Counseling of DR TB Patients at NIDCH*

The DR TB patients are counseled at the time of admission, during inpatient treatment at the hospital and continuation phase of treatment at the community. The project has been supporting a Counselor at the NIDCH where the largest number of DR TB patients is enrolled for treatment. During the year, almost all the patients received pre-admission counseling that informed the patients about treatment duration, intensive and continuation phase treatment, when patients are released from hospital and shifted to home for continuation phase, how the patient will receive treatment services at home, and infection prevention practices.



The counselor also organizes individual and group counseling for the patients. The counseling is tailored to ensure treatment adherence by the patients and to provide psychological and emotional support to help patients manage the side effects and overcome depression and stress due to prolonged and complicated treatment. During this year, the Counselor conducted 527 sessions of individual counseling and 24 sessions of group counseling for 106 patients who were receiving in-patient MDR TB services at NIDCH. **Group counseling of DR TB patients**

### 4.3.2 *Counseling of DR TB patients under cPMDT*

The counseling during the continuation phase of the treatment is provided by the DR TB DOT providers who visit the patients at their homes for administration of drugs. During home visit, the DOT providers also provides counsel tailored to individual patient needs with emphasis on helping the patients to adhere to the treatment regimen, manage the side effects and complete the treatment successfully. Almost all the patients on continuation phase of treatment received counseling by the DOT providers.

### 4.3.3 *Improving counseling skills for DOT Providers*

The project conducted a quick assessment to identify gaps in the current counseling activities. Based on this assessment the project has developed training materials including a facilitator's guide and participant's to improve communication and counseling skills and quality of the DR TB DOT providers and other health workers who are like to provide DOT to the DR TB patients. The project plans to start training of the community-based DOTS providers, and nurses and doctors from NIDCH, CDCs and CDHs on counseling following in the next year.

### 4.3.4 *Vocational training for MDR-TB patients*

The project continued to support a Vocational Trainer at the NIDCH for providing training on cutting and sewing dresses. The training is intended to help the patients manage depression and stress and complete the treatment, and develop vocational skills that they would be able to use for income generation. More than of 65 DR TB patients, mostly female, has received this training during this period. The trainer also helped patients make protective masks which are used by the patients themselves.

The project conducted focus group discussions (FGDs) with male and female MDR TB patients to identify areas for vocational training that would develop the capacity of the poor patients to generate extra income while on and after treatment. Considering the interest of participant patients, the project started training on a new embroidery technique, locally known as karchupi, for the female patients.

### 4.3.3 *Education and counseling for the DM patients*

The education and counseling sessions for the diabetic patients are routine procedures followed at the BIRDEM hospital. DAB with the support of TB CARE II project has incorporated TB in the counseling module and has been organizing regular sessions to deliver TB messages and information to the diabetic patients. Audio-visual materials are used to make the sessions interactive and effective. Following counseling sessions, counselors and health assistant operate active screening procedure and assist presumptive TB cases to get tested for sputum microscopy at the DOTS center located at the hospital premises. In the reporting quarter, DAB organized 72 such sessions and counseled 6,295 diabetes patients at the BIRDEM hospital.

#### 4.3.4 Special Outreach and Communication activities

##### ■ World TB Day 2013

The theme of the World TB Day 2013 was “STOP TB – IN MY LIFE TIME”. The project supported NTP to observe the World TB Day 2013 in various ways including rallies both at the national and divisional levels to raise mass awareness about TB. At regional level miking and folk songs were organized in different public places to disseminate TB message. The project also printed and distributed T-Shirts, Cloth Calendars, Stickers, Posters, and Newsletters with TB messaged.



Rally to observe World TB Day 2013

##### ■ US Ambassador visit to project site

In January 2013, the honorable US Ambassador to Bangladesh Mr. Dan W. Mozena along with USAID Mission Director Mr. Richard Greene visited a tea garden to observe community awareness and education session on TB organized for the garden workers by HEED. The guests observed ‘Pot Song,’ a traditional enter-educative media for educating people about social and health care issues. Rendered by a local folk song group, the Pot Song delivered basic messages in local dialect on TB encouraging people to seek immediate services for TB.



Dan W. Mozena spoke to the audiences

### 5.1.5 Strengthened Health Systems and Governance

#### 4.4.1 Improved Capacity for Governance and Management of TB at all levels

##### ■ Stakeholder workshops to develop/update guidelines and training materials

The project partner WHO facilitated several workshops to develop and update guidelines to support implementation of different components of Stop TB strategy. These workshops contributed to finalize the draft SOP for EQA incorporating new diagnostic tools adopted by NTP for improving quality of laboratory services, and finalize the national TB Strategic Plan (2012-2016). The national PMDT guidelines and the National TB Control guidelines were also updated and finalized reflecting policy and operational changes adopted by NTP. The TB IC guideline for field workers was drafted in English and finalized through a workshop. This guideline has been translated in to Bangla for use by the field workers. These materials will be distributed among implementing partners and service providers after printing which is in process now.

##### ■ Exposure to best practices and innovations

The project supported four NTP persons to participate in the 43rd International Union against TB and Lung Disease (IUATLD) conference, Kuala Lumpur, Malaysia to expose them to best practices and innovative models used for improving TB and MDR TB management. The project supported a study tour for MOH&FW staff, NTP personnel and TB CARE II project staff to an MDR TB implementation site in South African to observe and learn field experience. The teams visited different MDR TB management sites and learned different innovative ideas for management of MDR TB at the community level.

#### ■ **Expansion Plan for PMDT**

As part of the national PMDT program, NTP adopted the cPMDT approach for expanding coverage for MDR TB treatment to cope with the increasing number of patients in the country. WHO with the project support engaged an international consultant to develop the expansion plan in concordance with the National TB Strategic Plan and the country's MDG goals for TB. The expansion plan was finalized through a workshop participated by NTP and other local implementing partners.

#### ■ **Scale up e-TB Manager**

NTP piloted TB data registration of individual patient in six selected sites using "e-TB Manager." The system has been scaled up to another 100 centers. WHO issued an Agreement of performance of work (APW) to Mantrust Computer Centre to train the staff on the system. Under the TB CARE II project, WHO worked closely with MSH and provided necessary technical and coordination support to expanding the system to new sites.

#### ■ **Capacity Development of Dhaka city corporation health staff**

TB control program in the city corporation area is generally weak and many of the city corporation health staff did not receive any specific orientation to effectively engage them in TB screening and referral of presumptive TB cases to DOTS centers managed by different NGOs. In the Dhaka city with a population of about 15 million, the city corporation is primarily responsible for coordinating and providing primary health care services including TB. The project in collaboration with the Ministry of Local Government, oriented 261 health staff of the city corporation on TB screening and referral to improve case notification which is low in the urban areas.

#### ■ **Pre-service training of intern medical doctors on TB**

The project sub-grantee RTM International arranged 48 batches of three-day pre-service training for intern medical doctors from 10 medical college hospitals on programmatic management of TB control. During the reporting period, a total of 1308 intern doctors from 6 public and 4 private medical colleges received this orientation. As a part of the training session, the intern doctors visited the Medical College Hospital's DOTS corner to observe patients' DOT and reviewed recording and reporting documents used for TB program.

#### ■ **Guidebook on TB diagnosis and management for MBBS course**

The project in partnership with the Center for Medical Education (CME), NTP and RTM International developed a Handbook on TB which will be used as a course material for teaching students of the undergraduate medical program. This handbook fills the information gap in the existing curriculum to provide pre-service education to the medical students about the national TB control strategy and programmatic aspects of diagnosis and management of TB. A dissemination workshop was organized in September 2013 to officially introduce the Handbook to the policy makers and medical academia including faculty members from different medical college hospitals.



**Dissemination workshop on TB handbook**

The handbook has been developed through a series of working

groups meetings led by the CME which is responsible for reorienting the medical education system in Bangladesh with updated curricula to meet the emerging health needs of the people. After incorporating the workshop recommendations, the Handbook will be finalized and distributed to the medical college hospitals.

■ **Orientation of community clinic health care providers**

BRAC organized outreach centers for sputum collection in the functional community clinics in the TB CARE II supported areas. In FY 2013, BRAC organized 15,951 smearing centers in the community clinics and oriented 1,158 community clinic staffs to develop their skills in TB screening and referral of presumptive TB cases.

**5.1.6 Increased Private Sector Participation in TB Prevention and Control**

■ **Public Private Mix (PPM) through project sub-grantees**

The project has been supporting PPM activities through the grants program to engage formal and informal private sector service providers in TB control program. In order for enhancing functional linkage and to increase suspect referral, the NGOs conducted orientation of graduate and non-graduate private providers on screening and referral of presumptive TB cases. The project also supported BRAC to conduct networking meetings with these providers to strengthen linkage and referral of cases to the DOTS centers for diagnosis and management.



**Orientation of graduate PPs**

During this year, the project supported NGOs oriented 129 graduate doctors and 897 non-graduate doctors. Networking meetings were conducted with 4,195 graduate and 4,886 non-graduate private providers. The NGOs awarded grants under Wave 3 are still at the initial stage of implementation of the planned activities. Some of these NGOs could not yet complete the orientation of private providers. During this quarter, the PPM effort has contributed to identification and referral of 45,059 presumptive TB cases to the DOTS centers for diagnosis and management. The NGO-wise data for orientation of PPs and referrals are captured in Table 5 below.

**Table 5: Orientation and Referrals through PPM**

Sub-Grantee	Orientation/ Networking with Graduate PPs	Orientation/ Networking with Non-graduate PPs	Presumptive TB case referrals by PPs
BRAC	4,195	4,886	44,967
FIDA	-	150	15
BCCP	8	50	6
Lepra	61	437	38
Leprosy Mission	-	140	-
Nari Maitre	60	120	33
Total	4,324	5,783	45,059

The project has developed a partnership with the USAID supported Social Marketing Company to expand provision of DOTS by engaging Blue Star providers. The project organized two consultative Workshops on Establishing Linkage with Blue Star Providers. A total 76 participant from SMC's Blue Star network and NHSDP and UPHCSDP partner NGOs attended in the workshop. Following the workshop 9 Blue star providers with the support of partner NGO's have started providing DOT to TB patients. To develop

linkage with the professional organization the project organized a consultative workshop with Bangladesh Lung Foundation (BLF).

## 5.1.7 Strengthened Support Systems for effective delivery of TB services

### 4.6.1 Laboratory Services and Systems strengthened

#### ■ Strengthen laboratory capacity and performance

The project has continued its assistance to NTRL Dhaka and RTRL Chittagong with equipment e.g., AVR for auto generator and autoclave, reagents and consumables, minor renovations and technical support that were necessary for smooth functioning of the lab as well as for expanding and ensuring quality of diagnostic services.

The project continued to support a Microbiologist based at the NTRL to enhance its capacity to meet the increasing demand for essential lab services including DST and culture for diagnosis of MDR TB cases. The project is also supporting a MIS staff member to assist NTRL in managing service delivery information including tracking and reporting lab service data. The **Table 4** below shows the performance of lab services provided through the NTRL for the period from October 2012 to September 2013.

*Table 6: Laboratory Performance of NTRL (October' 2012-September' 2013)*

Type of Service	Lab Service Data				
	Quarter 1	Quarter 2	Quarter 3	Quarter 4	Total
<b>Routine Microscopy</b>	17022	19715	15026	13018	64781
<b>Routine TB Culture</b>	1191	1188	1393	1600	5372
<b>Number of DST</b>	90	100	79	112	381

#### ■ Basic training on GeneXpert for laboratory personnel

The project supported NTP to conduct a TOT course for the laboratory personnel from NTP, WHO, FIND, NTRL, and RTRL. A total of 39 staff were trained. The training was designed to help the participants acquire basic knowledge in GeneXpert MTB/RIF principles, advantages of Xpert MTB/RIF, operation of Xpert, sample preparation, and recording and reporting of Xpert performance. This initiative is expected to result in NTP's improved capacity to organize and provide training on Xpert in a sustainable way in the future.

The project also supported NTP to conduct orientation on GeneXpert for government and NGO service providers. A total of 297 participants including divisional, district and upazila level health managers, chest disease consultants, Medical Officers, Lab Technologists, nurses and NGO staff attended the orientations. The participants were oriented on the new diagnostic tool and use of the national guidelines for routine screening and referral of MDR presumptive TB cases and smear negative cases.

#### ■ Developed forms for DR TB presumptive cases

The project supported NTP to develop request form, and reporting and shipments forms to be used for referral of DR TB presumptive cases to GeneXpert sites. These forms have been printed and delivered to NTP for distribution to the referral sites across the country.

#### ■ Certification of Bio-safety cabinets

With technical support of Alliance Bioscience, the project organized a 2-day training for 3 microbiologists and 10



Medical Technologists-Lab from reference laboratories. The training was designed to develop participants' skill in Selection, Use and Maintenance of Bio-safety Cabinets & Laboratory Equipment Use, Maintenance and Calibration. Dr. J. Craig Reed from Alliance Bioscience conducted the training. The training session covered Bio-safety and Waste management, risk assessment process for a microbiology laboratory, laboratory equipments handling and maintenance, etc. Alliance Bioscience also certified 7 Bio safety cabinets.

■ **Set up power back up for selected laboratories**

**Training on Bio-safety Cabinets**

Ensuring uninterrupted power supply to the labs is critical for ensuring quality and quick diagnosis. Considering the frequent outages of power supply in Bangladesh, the project planned to procure and install 150 solar panels at selected labs across the country. In consultation with NTP, the project has identified and prioritized sites for installation of solar panels. In consultation with NTP, the project has identified and prioritized sites for installation of solar panels. 72 solar panels have been installed during this period. Remaining 78 solar panels are under process of installation.

■ **Facilitate the completion of Khulna RTRL**

According to FY 13 work plan, commissioning of Khulna RTRL is one of the priority of the project. The project completed renovation works of Khulna RTRL and also completed the procurements of reagents, consumables. The lab is expected to be fully functional by early of next quarter.

■ **Facility Assessment for Establishment of Sylhet RTRL**

Establishment of Sylhet RTRL is a planned activity under the FY 13 work plan of the project. The project staff along with NTP and WHO officials made a visit to Sylhet CDC and CDH for selection of the suitable facility for placement of the pre-fabricated containerized TB laboratory. After assessment of facility conditions and discussion with the local authorities, the team selected the CDC for placement of the containerized lab. Preparation of documentation for international procurement of the lab is currently underway.

■ **Laboratory Quality Assurance**

The project supported Microbiologist at the NTRL plays a key role in maintaining quality of lab services provided by NTRL. In addition to working at the bench level, the Microbiologist is also acting as a technical supervisor to ensure that laboratory personnel are following the standard operating procedures for performing all laboratory tests. Table 7 below shows NTRL's sustained level of performance to comply with quality assurance standards.

*Table 7: Performance in Quality Assurance*

Services	Standard	Performance	
		2012	2013
EQA for Drug Susceptibility Test (Conducted by Supra National Laboratory, Belgium)	>90%	>95%	>95%

■ **Procurement and Distribution of Microscopes**

WHO recommends use of LED microscopes to improve correct diagnosis of TB. Following this recommendation, NTP plans to gradually replace the light microscopes with LED to improve the capacity

and quality of sputum microscopy. To support this national initiative, the project procured and installed 200 LED microscopes in FY 2013. The table below shows the distribution of LEDs procured in FY 2013.

**Table 8: Distribution of LED microscopes**

Distribution Site	Quantity Distributed	
	No. of Sites	No. of LEDs
LED Training Center	3	34
Upazila Health Complex	94	94
BRAC operated peripheral labs	14	14
Chest Disease Clinics (EQA centers)	32	32
Other NGO peripheral labs	26	26
Total	169	200

The main criterion for selection of the distribution sites for the microscopes is the volume of smear microscopy tests performed at the lab. Most of the microscopes have been installed at the Upazila Health Complex labs and Chest Disease Clinic labs which serve as the EQA centers. The distribution plans has been finalized in discussion with the NTP.

■ **Training on LED Microscopy and AFB Microscopy**

The project has already distributed 198 LED & put into operation 75 LED and 100 conventional microscopes which have been procured for selected high volume labs. Standard Operating Procedures (SOP) for LED microscopes has been finalized. The project conducted two-week training course for 233 lab technologists on sputum microscopy using LED fluorescence microscope at three training venues of NTP. The project also assisted the NTP to conduct training for 27 lab technologist on AFB microscopy. The training was designed to update lab technicians’ skills in sample collection, smearing and staining, microscopic examination, smear evaluation, recording and reporting, supply management, quality assurance, reagents preparation, and troubleshooting.

**4.6.2 Improve NTP Capacity for Infection Control**

■ **Implementation of FAST Approach**

The project has introduced Finding TB patients, Actively, Separating safely, Treatment (FAST), is a simple approach for infection control and active case finding at congregated service delivery facilities. According to this approach, all patients are screened at the entry level of the hospital and segregated the coughing patients for TB screening. The project with technical support from PIH has introduced this approach at NIDCH and oriented doctors and nurses on the methodology.

During this period, project performed sputum tests for 475 coughing patients and detected 33 TB cases and 7 RIF resistant through FAST approach. The segregation of the coughing patients suspected of TB and early diagnosis of the cases helped prevent infection of the disease to other COPD patients.

■ **Training of health professionals on TB Infection Control (TBIC)**

Training on TB Infection Control is now integrated with other regular training programs on TB. The project organized TBIC training for 1,929 health professionals including doctors, nurses, health assistants, lab technicians and other staff associated with TB services. Participants in this training also included TB control program managers who were oriented on fundamental requirements of TBIC from the point of administrative and management control.

### 4.6.3 Improved Monitoring and Evaluation Systems

#### ■ Improved Monitoring and Data Management

To improve capacity for management and analysis of TB data at the upazila, district, and central levels, the project assisted NTP to organize a 3-day training on data collection, analysis and use of data for performance improvement. A total of 236 government and NGO staff responsible for data collection, compilation and report preparation participated in this training. The participants also received hands on training on using computers for data recording and reporting. The participants were also oriented on web based TB reporting system which NTP plans to expand throughout the country in a phased manner.



The project also supported NTP to organize a 1-day orientation to strengthen routine monitoring and supervision of TB control activities at the field level. A total of 284 government and NGO staff from the national, district and upazila levels attend this orientation.

#### ■ mHealth

The TB CARE II has introduced mHealth which allows DOTS providers to quickly identify patient's drug regimen dosing requirements and to send DR TB patients' treatment information from patients' homes on a daily basis to the central server. The application is also an important tool for monitoring performance of DR TB DOT providers and improving treatment compliance by patients. mHealth is currently operational in 3 pilot districts and is being gradually scaled up to cover remaining other cPMDT districts.

The project organized an orientation on mHealth for 137 participants including DR TB DOT providers who are primarily responsible for operating the system. Besides, refresher orientation sessions were also organized in two other districts for 23 DOT providers.

#### Training on data management



Orientation on mHealth

At present, 120 DOT providers are using mHealth and updating patient data on a daily basis. The project was unable to register all the patients receiving treatment under cPMDT due to various reasons including mobile phone network problems. Since initiation of mHealth, the project has registered 180 DR TB patients in to mHealth. Out of them, 13 patients got cured, 6 died, and remaining 161 patients are being supported and monitored through the mHealth.

#### ■ GeneXpert Test Reporting

The project has set up computerized reporting of GeneXpert test results in all the GeneXpert sites. The system has enabled the project to communicate the test result on the same day and improved the routine management and analysis of data in a timely manner. The test result is send to the patient and the referral physician through text message to ensure that the treatment is initiated to the patient without any delay.



DR DOT provider collects patient data using smart phone

#### ■ Evaluation of cPMDT

NTP adopted community based PMDT (cPMDT) in 2011 and planning to scale-up the program as clinical and diagnostic capacity



Evaluation of cPMDT

expands. Before the program is implemented on a national scale, the NTP needs to identify and characterize issues that might warrant further attention. With the support of TB CARE II project, CDC and Icdrr,b has started the field work for an evaluation of the cPMDT intervention. The evaluation is design to provide information that will allow the NTP to appropriately focus their resources on improving the program. WHO and project staff are participating in this study as observer and providing technical support as needed by the evaluators.

#### ■ **Evaluation of ACSM activities**

The project has selected a local agency to conduct surveys for evaluation of the reach and impact of the TV and Radio media campaign and community based ACSM activities on the target clients' knowledge, attitudes, intentions, and utilization of TB related services. The survey will be repeated four times spread over a period of one year to measure the baseline level and the changes in the desired outcome of the ACSM activities.

#### ■ **TB Prevalence Survey**

The project partner WHO has been providing technical support to designing and implementing TB prevalence survey. Under this activity Agreement of performance of work (APW) was issued to IEDCR to develop protocol on National TB prevalence Survey. A draft protocol was developed and shared with partners and Dr. Ikushi Onozaki from WHO HQ. Dr. Ikushi Onozaki from WHO HQ and Dr. Susumu Hirao from RIT Japan came during the first week of April to finalize the protocol with the support of TB CARE II. Draft protocol was reviewed by the WHO HQ, RIT and CDC Atlanta and handed over to NTP for review and endorsement.

#### ■ **Review workshop on Xpert lab performance**

The project hosted a workshop in partnership with NTP to review Xpert laboratory data to monitor quality and performance of DR TB diagnostics and monitoring services. A total of 45 participants included lab technologists from CDC and CDH, CDC consultants, WHO, NTP consultants attended the workshop presented the Xpert lab data and participated in the discussion.

#### ■ **DQA visit**

USAID/Bangladesh team conducted a routine Data Quality Assessment (DQA) in Jessore district. TB CARE II Project staff, USAID Activity Manager for the project, Divisional Consultant and Medical Officer from NTP and BRAC participated in the DQA. During this visit, data from the reporting units, DOTS corner and microscopy lab reports were verified. Another team visited NIDCH as part of the DQA to assess the MDR TB data quality and reporting mechanism.

## **6 CHALLENGES ENCOUNTERED**

The ongoing political unrest in the country severely interrupted and delayed the implementation of a number of activities in the reporting quarter. Some activities needed to be postponed and rescheduled due to unpredictable nationwide strike that made it impossible for staff to participate or organize the planned event. The project staff worked on weekends and at short notice to reschedule and implement priority activities to minimize disruptions and recoup any backlogs.

The limited number of MDR TB beds is a major challenge for the project to expand the cPMDT coverage in the targeted districts in a planned manner. To address this issue, the project has identified CDHs and CDCs at the district level and supporting renovations to increase the inpatient capacity of these facilities.

Collection of follow up data from the diabetes patients who were referred to their convenient DOTS centers is a challenging task. These patients usually are not interested to come to BIRDEM unless they face any problem regarding DM. So, it has become very hard for the project to maintain the standard

follow up schedule as per national guideline and to make the data updated. However, BADAS TB CARE II project is trying to maintain link with these patients over phone and make the data updated.

Many health staff lack clear knowledge and understanding of the criteria to be used for identification and referral of DR TB presumptive cases. To address this problem, the project in discussion with NTP has planned to conduct refresher orientation of the health staff from the government and the NGO partners to reinforce their knowledge about suspect criteria and motivate them to increase referral.

The tracking mechanism in prison is very challenging. Prior information about transfer of inmates from one prison to another or release of patients is not available. It is also very difficult to identify the prison population in a systematic manner. The project updated the NTP on these issues and sought their assistance to address this problem.

The TB CARE II Bangladesh project relies on the NTP information system for data that is needed for planning and reporting on outcome indicators. However, collection of TB data from NTP is a long and arduous process. Disease specific performance data is not available until after six months from the end of a quarter. This hampered URC to develop realistic performance benchmarks, and track and report performance outcome.

Initiating INH prophylaxis at the community level was a challenge for the program. Significant effort was needed to counsel and convince parents to provide prophylactic therapy to under-5 children who are quite healthy. Supply of INH for IPT is irregular and inadequate for which most of the project sub-grantees were unable to register children in IPT. The project staff has consulted the problem with NTP which assured that they will solve the problem in discussion with the local level health officials.

## 7 SUCCESS STORIES

**Management of TB and Diabetes Co-morbidities:** Bangladesh is a TB endemic country with approximately 350,000 new TB cases and 64,000 TB related deaths annually. Diabetes Mellitus (DM) is also a big threat for Bangladesh with prevalence between 2-5% in population aged over 15 years, and an estimated 8.4 million people between 20-79 years living with diabetes. To address this challenge, the project has developed a partnership with the Diabetes Association of Bangladesh (DAB) for implementing an integrated approach for diagnosis and management of TB among diabetic patients through BIRDEM, which is the largest diabetes hospital in the country, and 63 outpatient diabetes facilities managed by affiliated associations. The project is in operation for only four months. During this period, the DAB project has detected 218 TB cases of all forms by screening the DM patients at the outpatient and inpatient department of the BIRDEM hospital, and initiated treatment for all the diagnosed patients. The early results show a great success for early detection and management of TB among diabetes patients.

**FAST Approach:** Finding TB patients, Actively, Separating safely, Treatment (FAST), is a simple approach for infection control and active case finding at congregated service delivery facilities. The project has started implementation of this first time in Bangladesh at the non-TB wards of NIDCH, the largest hospital providing TB and other chest disease services. According to this approach, all patients are screened at the entry level of the hospital and segregated the coughing patients for TB screening. Doctors, nurses and other staff have been oriented on this on the methodology. In a few months since start of this intervention, NIDCH staff has screened identified 475 coughing patients in the non-TB awards and tested them by GeneXpert. This initiative has contributed to detection of 33 MTB positive including and 7 RIF resistant cases. Encouraged by the result, the project has planned to scale up implementation of this approach at 4 other hospitals including BSMMU and BIRDEM for screening coughing patients with COPD problems for TB.

**TB Handbook for Medical Students:** The project in partnership with the Center for Medical Education (CME), NTP and RTM International developed a Handbook on TB which will be used as a course

material for teaching students of the undergraduate medical program. A dissemination workshop was organized in September 2013 to officially introduce the Handbook to the policy makers and medical academia including faculty members from different medical college hospitals. This handbook fills important information gaps in the existing curriculum and will be used a resource material for pre-service education to the medical students about the national TB control strategy and programmatic management of TB and DR TB.

## 8 BUILDING ON THE CURRENT PROGRESS

During this year, the TB CARE II Bangladesh made significant progress that is expected to make wide ranging impact on increasing universal access to TB and MDR TB services. Project assistance has contributed to strengthening DOTS for increased detection and management of all types of TB, management of childhood TB, expanding national capacity for diagnosis of MDR TB using state-of-the art technologies such as GeneXpert, and community based programmatic management of MDR TB (cPMDT), strengthening laboratory services and systems, introducing mHealth to monitor patients' DOT and increasing private sector participation in the TB control program.

In FY 2014, the project will further strengthen the active case finding efforts through different strategies including developing capacity of public and private doctors and government field workers on screening, diagnosis and management child TB. New algorithms will be developed for improved screening and diagnosis of EPTB. Sputum collection and transportation system and referral network will be further expanded in FY14 connecting microscopy centers with GeneXpert facilities for screening and diagnosis of smear negative and suspected DR TB cases.

Developing quality and capacity of labs will be a major focus in FY 2014. The project will procure and install additional 100 LED microscopes for selected high volume labs and train lab staff to improve quality and capacity of smear microscopy. The project will set up 12 additional GeneXpert machines and support their operations to expand service coverage.

The project support has helped NTP to increase the number of beds for DR TB patients through chest disease hospitals at the district level. At the same time, the project will expand management of DR TB patients at the community level to another 20 districts. The project has also planned activities to address the major programmatic gaps to improve detection and management of children with DR TB.

## 9 PERFORMANCE MONITORING PLAN

The TB CARE II project is designed to strengthen and improve performance of National TB control program. Except for some project specific indicators, the project has adopted the NTP service delivery indicators for reporting its performance. Therefore, the project exclusively relies on NTP Management Information System (MIS) for collection and reporting of TB case detection, treatment outcomes, and laboratory performance data. The NTP MIS is already in place and generates service delivery data on a daily basis. The data is reported on a quarterly basis. The project M&E specialist works with relevant NTP counterpart to collect service delivery data on the project. Up to 2nd Quarter (April-June) of 2013 NTP MIS data are available which is used for reporting in the Table 8 below.

**Table 9: Indicators reported using NTP Management Information System**

Outcome Indicators	Baseline 2010	CY 2012 Qtr 4	Target CY 2013	Result CY 2013 up to Qtr 2	CY 2013 Qtr 1	CY 2013 Qtr 2	CY 2013 Qtr 3*	CY 2013 Qtr 4*
<b>Indicators reported using NTP Information System</b>								
Notification Rate of all forms of TB cases	100	106	104	Reported	Reported	Reported	-	-

				Annually	Annually	Annually		
Number of all forms of new TB cases notified	155,138	39,569	163,802	92,201	43,951	48,250	-	-
Notification Rate of new smear-positive (SS+) TB cases	70.5	66.02	65	Reported Annually	67.7	71	-	-
Number of smear Positive (SS+) patients notified	105,772	25,584	106,471	53,512	26,064	27,448	-	-
Number of smear negative (SS-) patients notified	21,625	6,688	24,196	21,456	9,856	11,600	-	-
Number of extra pulmonary patients notified	23,506	7,297	26,213	17,233	8,031	9,202	-	-
Number of child TB patients notified	4,235	1,091	6,045	2,546	1,137	1,409	-	-
Number of children under 5 registered for IPT	0	0	0	0	0	0	-	-
Number of new multi-drug resistant-TB (MDRTB) patients diagnosed and initiated on treatment	183	132	600	332	162	170	-	-
Cure Rate of notified SS+ TB cases	90.80%	91%	>90%	Reported Annually	91%	92%	-	-
Treatment Success Rate of notified SS+ TB cases (disaggregated by sex)	92.30%	92%	>90%	Reported Annually	92%	93%	-	-
Treatment Success Rate for MDR-TB cases	65%	75%	>65%	Reported Annually	77%	56%	-	-
Percent of labs participating in EQA for smears	100%	100%	100%	Reported Annually	100%	100%	-	-
Percentage of concordant slides under EQA system (high false positive, high false negative, scanty false positive, scanty false negative)	99%	not available	>95%	Reported Annually	98.5%	Not available	-	-
Percent of labs performing TB microscopy with over 95% correct microscopy results	100%	94.2%	>95%	Reported Annually	94%	94.8%	-	-
Smear Conversion Rate of new smear positive TB cases.	87.1%	84.71%	>75%	Reported Annually	86%	85.5%	-	-

The TBCARE II project also maintains Project Management Information System (PMIS) for monitoring and reporting on project specific data that is not generated by NTP. The PMIS specifically tracks outputs of US government investments in capacity building and NGO contributions to TB suspect identification and referrals as shown in the Table 9 below:

**Table 10: Indicator reported using TB CAERE II Project Management Information System**

	Indicators	Target FY 2013	Result FY 2013	FY 2013 Qtr 1	FY 2013 Qtr 2	FY 2013 Qtr 3	FY 2013 Qtr 4
1	Number of people trained in DOTS with USG funding	8,000	16,800	3,859	4,040	3,397	5,504
2	Number of people trained in MDR-TB (clinical care, MDRTB DOTS, ambulatory care) with USG funding	1,200	1,601	91	333	727	450

3	Number of private providers participating in TB program through referrals, diagnosis, treatment, and follow up	30,000	13,019	2,985	3,225	2,378	4,431
4	Number of presumptive TB cases referred by health care provider (e.g., health assistant, shasthya shebika, private practitioners, others) with USG funding	50,000	45,470	8,754	12,976	12,250	11,490
5	Number of lab technologists trained on AFB, LED and other new diagnostic technology with USG funding	500	312	12	13	120	167
6	Number of service providers trained on Infection Control with USG support	300	1,929	201	455	1,007	266
7	Number of people trained in other strategic information management with USG funding	200	705	236	284	98	87
8	Number of children under 5 registered for IPT with USG funding	0	573	491	40	14	28
9	Number of DR TB presumptive TB cases tested by GeneXpert	0	5,140	818	1,393	1,064	1,865
10	Number of smear negatives sputum samples tested GeneXpert	0	3,463	0	402	1,342	1,719
11	Number of HIV patients tested for TB by GeneXpert	0	155	0	2	101	52
12	Number of MTB positive identified by GeneXpert	0	3,407	449	789	857	1,312
13	Number of MTB RIF identified by GeneXpert	0	753	141	213	168	231

## 10 PROJECT ADMINISTRATION

### 10.1 Staffing

The project has recruited one medical officer for providing technical support to manage DR TB patients at NIDCH.

### 10.2 Administrative Challenges

There were some staff turnovers during the year and recruitment of staff to fill these positions was an administrative challenge. URC received and reviewed more than 400 applications for different technical positions with very few candidates having the required technical background and experience. All recruitment has been completed for all the technical positions, at the end of the reporting period.

### 10.3 Environmental Monitoring and Mitigation Activities

In tandem with the development of the Year 1 work plan, TB CARE II developed an Environmental Monitoring and Mitigation plan, following the determination of potential environmental threats for certain proposed project activities. However, the activities that were identified during the Environmental Screening of the project Year 3 work plan, relating primarily to minor renovations of labs and health facilities and procurement, management, and storage of health commodities. The project has taken appropriate mitigation measures while implementing these activities. Please see Annex A for Environmental Monitoring and Mitigation Report.

## **11 PROGRESS TOWARDS PROMOTING GHI GUIDING PRINCIPLES**

### **11.1 Woman and girl-centered approach**

TB CARE II is committed to including a women- and girl-centered approach at each level of program design and implementation. The TB CARE II team undertook several activities during Year 3 to support the equitable access to and use of TB and other social support services by women and girls, including expanding access to vocational training for female MDR TB patients to assist them to find employment after completion of treatment. Through the NGO grants program, special attention was given to increase TB case detection among women and to address the social, cultural, and institutional barriers that inhibit them from seeking care.

### **11.2 Coordination and Programmatic Integration**

Coordination and programmatic integration have been given due attention in design and implementation of the project activities. The Year 3 work plan was developed in a participatory approach involving NTP, Global Fund, WHO and other local implementing partners in order to avoid any duplication of activities.

### **11.3 Encouraging country ownership & investing in country-led plans & health systems**

Designed to complement and supplement the National TB Control Programme, the TB CARE II project identified the activities and priorities of the project and developed the work plan in consultation with NTP and other local implementing partners. The project has positioned itself as a resource partner to support NTP and other implementing partners with best practices and approaches developed at the global level. A pertinent example is the introduction of cPMDT, which is now a part of national program led by NTP. The project support to development of guidelines on cPMDT, management of childhood TB, infection control, and training of Outpatient DR TB Teams and lab technologists is intended to strengthen the country-led health systems, government's ownership of the program and sustainability.

### **11.4 Promoting Research and Innovation**

The project coordinated with USAID supported TRAction project to identify research needs and concepts to develop new and innovative approaches to TB control. The project will continue its partnership with TRAction in conducting the research intervention and scaling up best practices on management of childhood TB, increasing case detection in low performing urban areas and prisons, and the use and cost-effectiveness of GeneXpert MTB/RIF.