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**TB CARE II**  
BANGLADESH

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## LIST OF ACRONYMS

ACSM	Advocacy, Communications, and Social Mobilization
AIDS	Acquired Immune Deficiency Syndrome
AOTR	Agreement Officer's Technical Representative
CB-DOTS	Community-based DOTS Program
cPMDT	Community based Programmatic Management of MDR TB
CBO	Community Based Organization
CDC	Chest Disease Clinics
CDCS	Country Development Cooperation Strategy
CDR	Case Detection Rate
CHW	Community Health Workers
DOTS	Directly Observed Treatment Short-course Strategy
DRS	Drug Resistance Survey
DST	Drug Sensitivity Testing
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
HBC	High Burden Country
HIV	Human immunodeficiency virus
IC	Infection Control
ISTC	International Standards of TB Care
LMIS	Logistic Management Information System
M&E	Monitoring and Evaluation
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
PAL	Practical Approaches to Lung Health
PIH	Partners In Health
PMP	Performance Monitoring Plan
PPM	Public Private Mix
PPP	Public Private Partnerships
QA	Quality Assurance
TB	Tuberculosis
TB CAP	Tuberculosis Control Assistance Program
TCN	Third Country National
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

The Bangladesh TB program has already achieved its global targets for case detection and treatment success rates. Emphasis is now on universal access to TB care for all TB patients in the community and high risk groups, expanding facilities and their capacity for diagnosis and treatment of MDR TB services, and strengthening health systems to improve national capacity to provide high quality TB services in a sustainable manner.

Aligned with National TB Control Programme strategic objectives and USAID/Dhaka strategic framework, the TB CARE II partnership's activities complement the Global Fund and Government of Bangladesh efforts to strengthen all the components of Stop TB Strategy with a major emphasis on universal and early access to TB services, Programmatic Management of Drug Resistant TB (PMDT), and health systems strengthening. The TB CARE II Bangladesh project results framework has been developed to contribute to achieving Mission IR 3.2 Increased Use of Integrated Essential Family Planning, Health (including TB) and Nutrition Services and IR 3.3 Strengthened Health Systems and Governance.

The TB CARE II Bangladesh project has completed its second year and has successfully implemented almost all the activities planned for this period. The project has assisted the NTP to develop TB control and prevention plan for all the 64 districts. Significant progress has been made in several areas including strengthening DOT 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, and increasing private sector participation in the TB control program.

## **Increase Access to Quality TB services**

As per Year 2 work plan, the project implemented several activities to increase access to TB and MDR TB services. Given the project focus on increasing detection of TB amongst children, developing the National Guideline and Operational Manual for the Management of Childhood Tuberculosis was a priority for designing and organizing training on detection and management of childhood TB. A major achievement of the project was to facilitate the adoption of policy decisions geared at improving the immediate scale up of IPT based on revised criteria adopted in the national guidelines.

The project provided grants to NGO implementing partners through a competitive process to support ACSM, expand the network of public private mix, improve knowledge and awareness about TB, in-service training of different cadres of service providers, pre-service training of intern medical doctors, and increase timely utilization of TB services by vulnerable populations. The project's grant program is also geared at assisting local NGO partners to sustainably build the capacity to manage local TB projects by focusing on building technical and managerial capacities.

TB CARE II with its sub-partner BRAC contributed to a significant increase in the identification of TB suspects as well as detection of smear positive, smear negative and extra pulmonary cases during the reporting period. During this year, the project support contributed to notification of 23,220 smear positive, 4,855 smear negative and 4,898 EPTB cases. The project was able to reach 64 schools and approximately 35,000 students with educative messages on TB. Starting

implementation of the planned activities targeted to vulnerable population living in the tea gardens is a significant project achievement.

The project supported initiatives to expand public private mix through developing functional linkages with graduate and non-graduate private practitioners (PPs) to increase suspect referrals. This effort resulted in the orientation of 1,039 graduate PPs and 2,377 non-graduate PPs and developing a formal partnership with them. These PPs have referred more than 43,000 suspected TB cases in the current year.

### **Strengthening lab capacity**

Developing national capacity for increasing access to diagnosis of TB and MDR TB was a major focus in this year. The project has installed two GeneXpert MTB RIF machines at the National TB Reference Laboratory (NTRL), Dhaka, and Regional Reference Laboratory (RTRL), Chittagong. The project also provide on-going support to integrate the operations and management of this new technology with the existing government laboratory facilities contributing to significant increase in detection of RIF resistant TB. Since introduction of this technology in May 2012, the project support has enabled NTP to test 915 samples out of which 243 were found to be resistant to RIF. It is anticipated that the introduction of this new technology will significantly enhance the national capacity for faster diagnosis of an increased number of suspected MDR-TB cases.

The project also supported training of 28 laboratory technicians on GeneXpert for diagnosis of MTB/RIF. The training of 26 lab technicians on LED and 238 on AFB microscopy in the current year is going to have a tangible impact on the quality of smear microscopy in the coming months.

### **Management of MDR TB patients**

The project made significant progress in implementing the cPMDT activities during this year. Under this approach, the period of hospital based treatment has reduced from 6-8 months to maximum 2 months. The early release of patients from hospital has helped initiate treatment for increased number of patients immediately after their diagnosis. The project has formed and trained 30 Outpatient MDR TB Teams in the 3 cPMDT pilot districts on clinical care and 51 MDR TB DOTS providers for providing on-going management of MDR TB patients.

The concerted project effort has resulted in enrolment of 53 MDR TB patients under cPMDT in the 5 months since initiation of this intervention. The early release of these patients from hospital has helped initiate treatment for diagnosed patients who were on the waiting list. A strong monitoring and supervision system has been set up requiring national, divisional, district and upazila level participation to ensure that the patients receive clinical care and support in a timely manner and that they adhere to treatment for successful outcome.

### **Increased Compliance with TB and MDR-TB Treatment**

The project has been supporting a program at NIDCH to provide regular counseling services to the MDR TB patients in order to improve patient compliance with treatment regimen. During the project period, the project supported staff conducted 704 sessions of individual counseling and 60 sessions of group counseling for 298 patients who were receiving in-patient MDR TB services at NIDCH.

## 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 2011 report (based on 2010 data), an estimated 330,000 new cases of all forms of TB are emerging every year. Case detection rate of all forms of TB is low at 46%. While detection of smear positive cases has increased, the detection of smear negative and EPTB is well below the expected level. Although there is no estimate on the prevalence of child TB, it is believed that child TB is severely under-diagnosed. Approximately 64,000 people die from TB every year.

The biggest challenge for the country is the emergence of MDR-TB which is 2.1% among new and 28% among retreatment cases with an estimated 4,900 MDR-TB cases developing every year (WHO Global TB Report 2011.) 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. Immediate and effective response is needed as the drug resistance continues to increase and strain the capacities of National TB Program. The NTP has developed a plan to expand coverage for MDR-TB services, but challenges remain to scaling up and integrating MDR-TB case management, ensuring supply of second-line drugs, establishing regular drug resistance surveillance and reporting of MDR data to guide appropriate responses.

The TB CARE II Bangladesh project is a field support activity funded through the USAID TB CARE II Project, which is a five year cooperative agreement awarded to University Research Co., LLC (URC) led consortium on September, 2010. A primary function of the USAID TB CARE II Project is to facilitate access to a team of expert organizations able to provide global leadership in TB and to field program teams to assist in implementing TB prevention and treatment strategies, with the goal of building sustainable local capacity to provide high quality TB services. The project, leveraging the Global Fund and the Government of Bangladesh resources, will facilitate implementation of strategies to strengthen and expand TB DOTS, Programmatic Management of Drug Resistant TB (PMDT) programs, and health systems.

### 2.1 USAID/Bangladesh Objectives for the TB CARE II Project

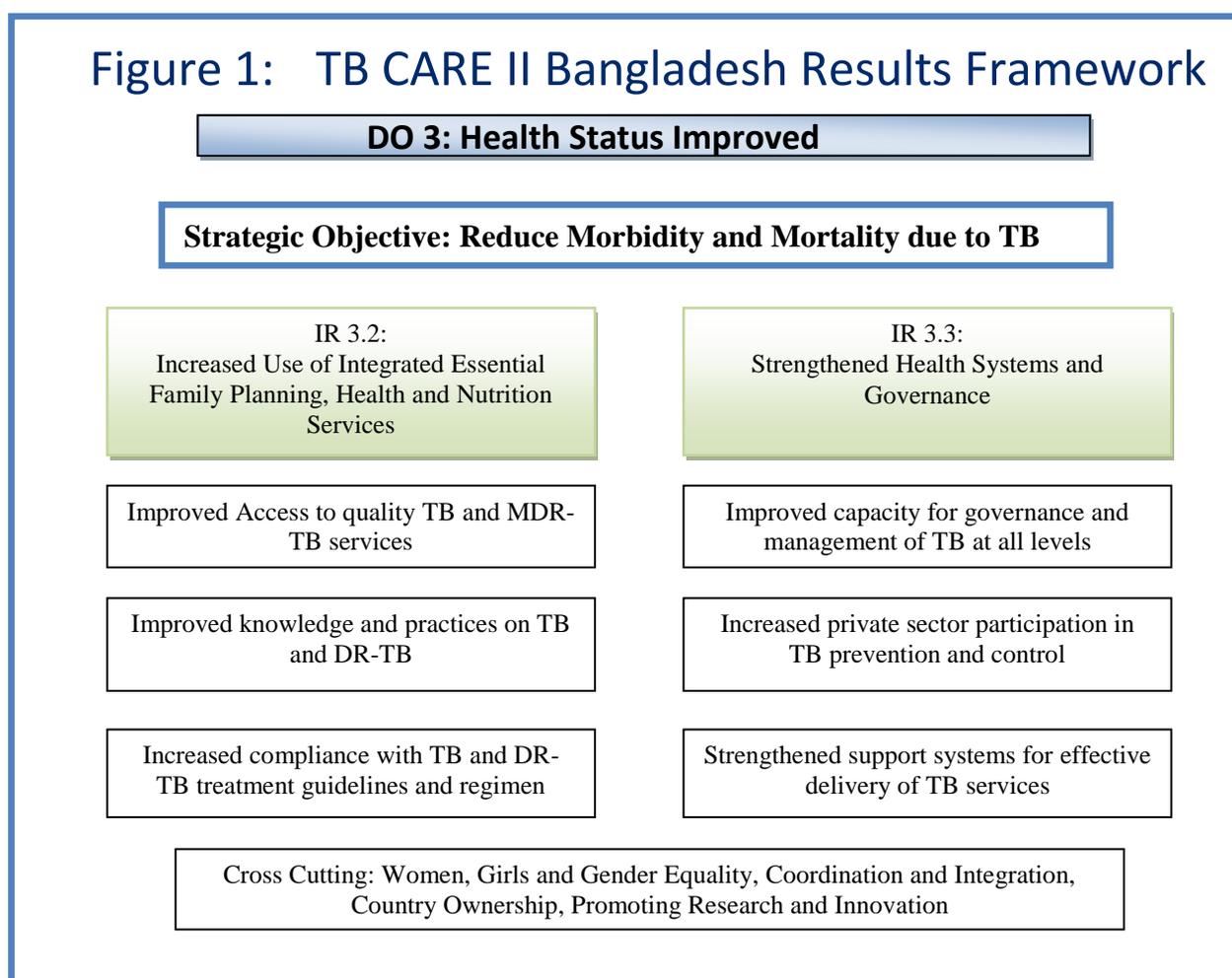
The TB CARE II project has been designed in consultation with USAID/Bangladesh and NTP to contribute to achieving Bangladesh national objectives for preventing and controlling TB and to help GOB achieve its Millennium Development Goals (MDGs) for TB. The specific objectives of the project include the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

- Improve universal access to TB diagnosis and treatment;
- Work with GOB to reach and sustain the global targets of > 80% case detection and > 90% 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 as accepted in GHI Bangladesh strategy

## 2.2 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 will contribute to two Intermediate Results (IRs) of CDCS Development Objective 3: Health Status Improved. These are IR 3.2 Increased Use of Integrated Essential Family Planning, Health and Nutrition Services, and IR 3.3 Strengthened Health Systems & Governance. IR 3.2 covers TB services, which is a part of essential service delivery package. 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.



## 2.3 Geographic Coverage

The project targets the whole country for increasing access to diagnosis and treatment of all forms of TB. The project provides technical assistance to the NTP and NGO partners to strengthen their capacity to improve and expand the management of TB and MDR TB programs.

Division	Estimated Projected population of 2010
Rajshahi	35,702,832
Khulna	17,410,525
Barisal	9,254,080
Dhaka	48,795,514
Sylhet	9,496,717
Chittagong	29,387,799
<b>Total</b>	<b>150,047,466</b>

Source: NTP Annual Report 2011

Note: Rangpur has been declared as a new division recently, the estimated population was not available during the reporting period of NTP.

## 3 ACCOMPLISHMENTS BY RESULTS

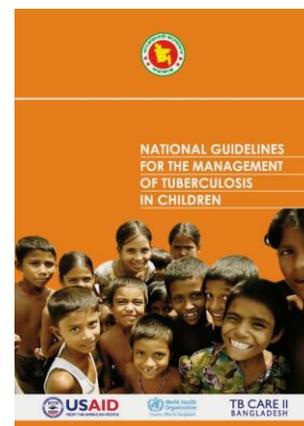
### 3.1 Increased Use of Integrated Essential Family Planning, Health & Nutrition Services

#### 3.1.1 Improved Access to quality TB and MDR-TB Services

##### Strengthen NTP capacity for management of childhood TB

Childhood TB has been a much neglected area in Bangladesh. Nationally, the detection of childhood TB is at 3.15% while the expected detection rate is estimated around 11% of the total detected cases. In order to improve detection of childhood TB, the project developed a detailed plan to support NTP for strengthening case identification and management of childhood TB.

Finalizing the National Guidelines for Management of Childhood Tuberculosis was a major achievement. The project also supported printing and distribution of 6,000 copies of the guidelines. The project supported the development of treatment card, register and quarterly report forms that will be used for the management of childhood TB program. The project also supported NTP to print a poster for IPT. In the first phase, the project



planned to print and distribute 2500 posters and same amount of cards intended to serve as job aids for doctors and field workers in determining the eligibility and doses of IPT.

### ■ ***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 85 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.



TOT on management of childhood TB

The project supported an international expert in childhood TB, Professor Dr. Robert Gie, from Stellenbosch University, South Africa, provided technical assistance to designing and conducting the TOT. Dr. Gie led a team of local experts from medical university, medical colleges, research institute, and program personnel from NTP and partners to develop training materials for ToT.

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

The project developed of 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. The project supported consultant Dr. Robert Gie provided technical assistance to local team of experts in developing the training modules. The project coordinated a debriefing meeting between NTP, WHO and child TB consultants on the newly developed child TB training manuals for doctors and field workers. It has been decided to do field testing of these manuals and finalize these by incorporating the recommendations of the participants.

### ■ ***Adoption of Isoniazid Preventive Therapy (IPT) as a national policy***

The project supported international consultant Dr. Gie from South Africa to facilitate a technical and policy discussion on the strategies and nation-wide implementation modalities for IPT. This helped develop a policy decision for immediate scale up of IPT based on revised criteria adopted in the national guidelines. The inclusion criteria, dose and modality of IPT were thoroughly revised to align with the WHO recommendations. The project developed training materials and trained 38 health care providers on Isoniazid Preventive Therapy (IPT). The NTP has adopted the revised guidelines and already issues a circular to all partners to implement the IPT throughout the country. Apart from orientation of service providers, the project also assisted NTP to develop register, treatment card and reporting forms required to effectively implement IPT.

### ■ ***Orientation of doctors on National Guidelines for the Management of Childhood TB***

The TB CARE II project supported NTP to provide training to the medical professionals on national guidelines for the management of TB in children. Training workshops were organized in the Bangabandhu Sheikh Mujib Medical University and Shahid Suhrawardy Medical College and

Hospital in Dhaka, Narayanganj district hospital, Khulna and Rajshahi Medical College Hospital and Satkhira district hospital. A total of 261 health 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.

### **Detection of extra-pulmonary TB (EPTB)**

The project has developed consensus on the approach to be taken to strengthen national capacity for detection of EPTB cases. A concept paper has been developed describing the approach and actions that include review of the existing national algorithm for EPTB, revision and pilot testing the algorithm, and scaling up the approach through the national health care system after evaluation. The implementation of this pilot initiative will go in to operation in FY 13.

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

Training on Tuberculosis Infection Control is now integrated with other regular training programs on TB. During this year, the project supported training of 528 health professionals from different cadres including doctors, nurses, health assistants, lab technicians and other staff associated with TB services were trained on TB IC. Participants in this training also included TB control program managers who were oriented on fundamental requirements of TB IC from the point of administrative and managerial control. The project also conducted a TB infection control assessment at NIDCH.

#### ■ ***Workshop on revising orientation guidelines***

In response to NTP's request, the project organized a workshop to review and update two existing guidelines, 'Orientation Guideline on TB for Scouts/Girls' Guide/Cured TB patient' and 'Orientation Guideline on TB for Paramedic/Counselor/Health Assistant/Health worker/Community Health Care Provider/Village Doctor.' These guidelines are instrumental for designing any training or orientation for mid and field level HCWs and community level volunteers and TB activists. The project facilitated a participatory approach that engaged resource persons from NTP, URC, WHO and other partner organizations to revise the guidelines.

### **TB & HIV**

The project organized a consultative workshop involving NTP personnel and the NGO implementing partners working in TB and HIV/AIDS. The Self Help Group of HIV/AIDS infected and affected people also participated in the workshop. The project also facilitated consensus building among partners for regular reporting of data related to TB-HIV co-infected cases to both NTP and National AIDS and STD Program (NASP). The list of VCT centers in the country was updated and distributed to the TB stakeholders for cross referral.

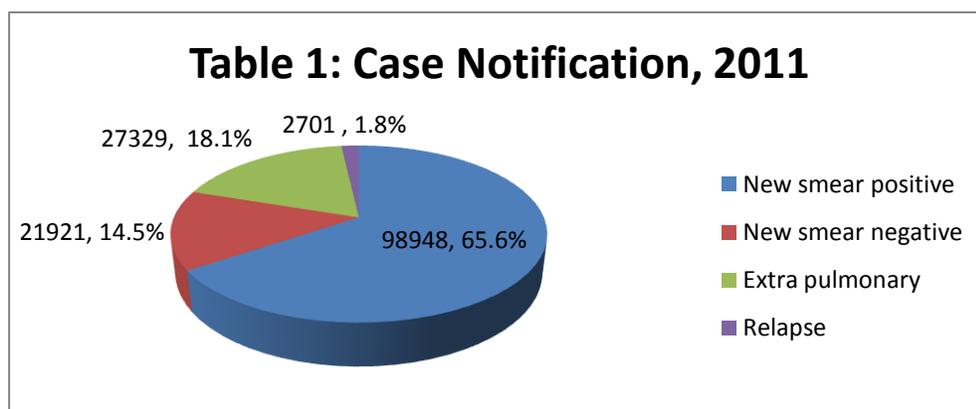
### **Screening Tool for early and intensified TB case finding**

To intensify early case detection among the adult community, the project assisted NTP to develop a simple and user-friendly screening tool for service providers. The screening tool has been approved by NTP. The tool will be introduced in DOTs facilities as well as in outdoor services of public and private health facilities.

## Case notification

In Year 2 the project has assisted NTP to develop TB control and prevention plans for all the 64 districts. Since increasing case detection of all forms of TB is one of the primary objectives of the project, mechanisms have been set up with NTP to collect and track district level TB performance data. Normally, quarterly data is not available from NTP MIS until after 6 months from end of that quarter. In the next year, the project plans to set up a data collection system in order to support reporting of performance indicators in a more timely manner. The data presented in **Table 1** below relates to nationwide case notification in 2011. Case notification rate is defined as the number of cases registered and reported to NTP per one hundred thousand population per year. The case notification rate of new smear positive case was 64.88 per 100,000 population

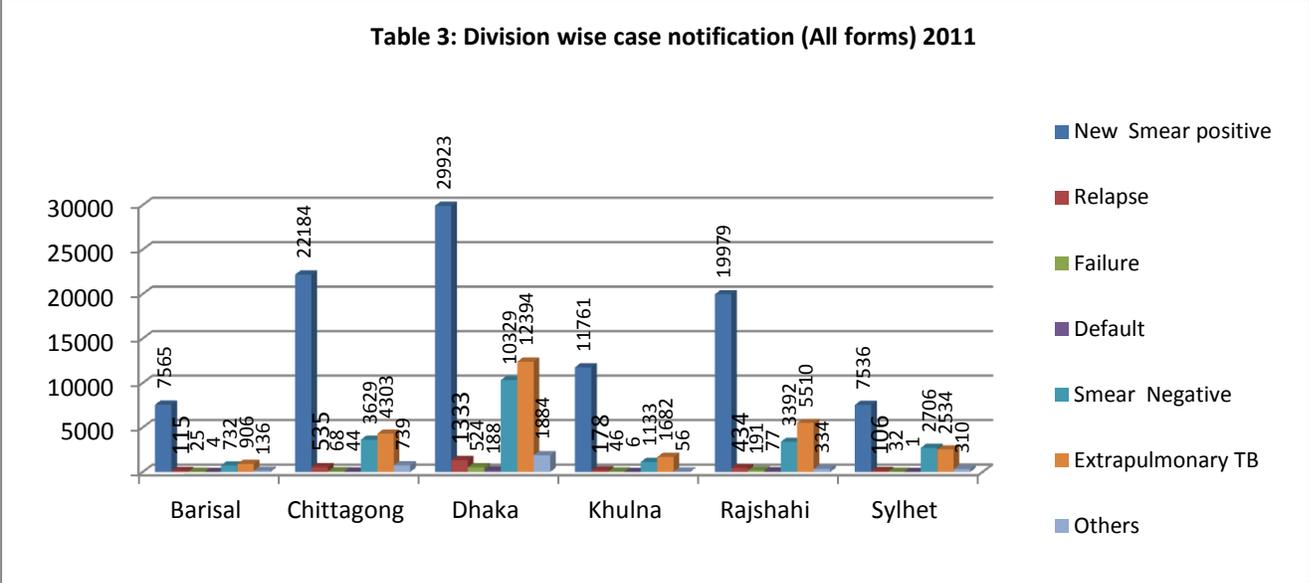
Among the the total 155,564 notified cases, 65.6% of the them were new smear positive, 14.5% new smear negative, 18.1% extrapulmonary and only 1.8% relapse cases. The case notification rate of new smear positive case was 64.88 per 100,000 population in 2011. Of the notified cases, 36.49% were female; (male:female=1.74:1). Source: NTP MIS 2011



Though there was increased case notification of new smear positive cases in Dhaka division (Table 2), the overall case notification rate of smear positive cases is higher in Barisal division (81 per 100,000 population) and lowest in Dhaka division (60 per 100,000 population).

Table 2: Division wise case notification of new smear positive cases

Division	New SS (+)	Relapse	Failure	Default	SS (-)	EPTB	Others	Total	Population	CNR per 100,000 pop
Barisal	7565	115	25	4	732	906	136	9483	9,338,999	81.00
Chittagong	22184	535	68	44	3629	4303	739	31502	29,883,564	74.23
Dhaka	29923	1333	524	188	10329	12394	1884	56575	49,772,330	60.12
Khulna	11761	178	46	6	1133	1682	56	14862	17,661,430	66.59
Rajshahi	19979	434	191	77	3392	5510	334	29917	36,204,971	55.18
Sylhet	7536	106	32	1	2706	2534	310	13225	9,644,939	78.13
<b>Total</b>	<b>98948</b>	<b>2701</b>	<b>886</b>	<b>320</b>	<b>21921</b>	<b>27329</b>	<b>3459</b>	<b>155564</b>	<b>152506234</b>	<b>64.88</b>



The detection of childhood TB (0-14 years) is 3.15%, which is very low compared to expected level of 11%. The Table 4 shows that more child cases were notified in Dhaka division compared to other divisions during 2011. Increasing detection of smear negative, positive and child TB cases is, therefore, a priority area under the TB CARE II project.

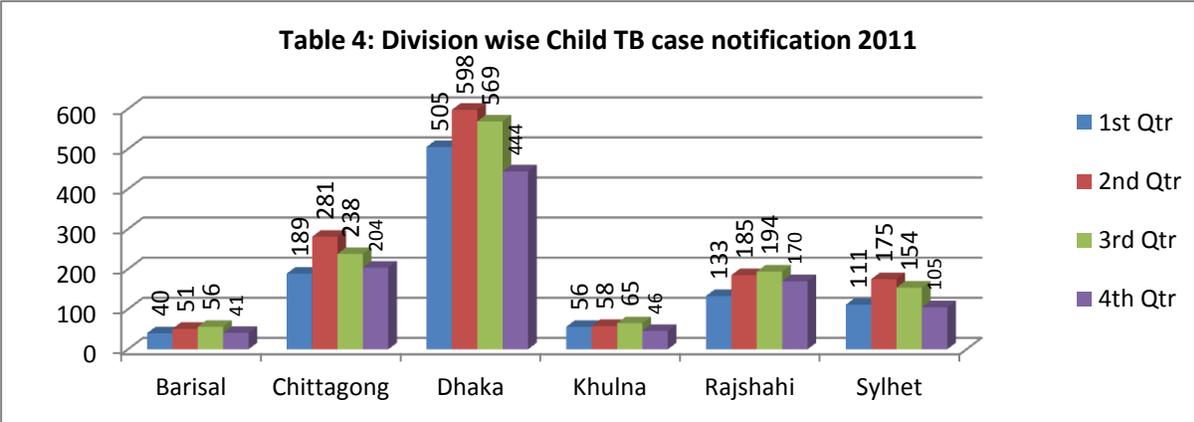


Table 4: Division wise Child TB case notification 2011. Source: NTP MIS

**3.1.1.1 Strengthen NTP capacity for detection of MDR TB cases**

**■ Procurement and Installation of GeneXpert**

Increasing detection of MDR TB cases is a priority area for the TB CARE II project. For this purpose, the project has introduced GeneXpert machines, a state-of-the-art molecular technology, which can identify TB and more importantly Rifampicin (Rif) resistant TB strain that is common to almost all MDR-TB cases in about two hours. Two GeneXpert machines have already been installed and are operational at the National TB Reference Laboratory Dhaka and Regional TB

Reference Laboratory Chittagong. During the reporting period, these two machines analyzed 915 samples out of which 243 were found to be RIF resistant.

The project has also completed procurement of ten more of Xperts which are being installed at selected Chest Disease Clinics across the country. The project has completed renovation works at the selected sites where these machines will be installed. The project also developed an operational manual and trained relevant NTP staff on the operation of the Xpert machines.

The project also developed diagnostic algorithm to be used for sample selection and testing by Xpert. According to this algorithm, all category I and II failures and retreatment cases will be tested by Xpert to detect RIF resistance. The RIF positive cases will be initiated treatment for MDR TB at the hospital and then transferred the patients to their homes after they have converted sputum negative.

■ **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, minor renovations and technical support that were necessary for smooth functioning of the lab as well as for expanding and ensuring quality 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 5 below shows the performance of lab services provided through the NTRL and RTRL for the period from October 2011 to September 2012. In FY 12, out of 915 suspects tested by Xpert, 677 cases were found positive including 243 MTB RIF resistant.

Table 5: Laboratory Performance of NTRL and RTRL

Type of Service	Lab Service Data								Total
	Quarter 1		Quarter 2		Quarter 3		Quarter 4		
	NTRL	RTRL	NTRL	RTRL	NTRL	RTRL	NTRL	RTRL	
Routine Microscopy	14,694	-	18,354	-	15,887	124	15,101	140	64,300
Routine TB Culture	816	96	825	91	1,032	82	1,070	55	4,067
Number of DST	480	66	260	54	180	-	120	-	1,160
Total suspect tested by Xpert	-	-	11	-	286	139	328	151	915
Total MTB tested	-	-	7	-	196	126	221	127	677
Total MTB/RIF detected	-	-	3	-	98	29	84	29	243

■ **TOT and basic training on GeneXpert for laboratory personnel**

The project assisted NTP to conduct a TOT course for the laboratory personnel from NTP, WHO, FIND, NTRL, and RTRL. A total of 13 staff were trained and developed as master trainers on the

management and operations of the Xpert MTB/RIF. This initiative helped build capacity of NTP to conduct cascade training on the management and operations of the Xpert MTB/RIF to meet all future training needs in a sustainable manner. Following the TOT, the project also supported training of 28 NTP staff to help the participants acquire basic knowledge in GeneXpert MTB/RIF principles, advantages of Xpert MTB/RIF, operation of Xperts, sample preparation, and recording and reporting of Xpert performance.



Training on GeneXpert operation

#### ■ ***Development of training materials on Culture and Drug susceptibility testing (DST)***

The National Tuberculosis Control Program (NTP) is responsible for providing certified training course on Culture and DST for diagnosis of MTB. However, NTP did not have the required training materials to provide training on culture and DST for diagnosis of DR TB. To address this important gap, the project provided technical assistance to develop training materials for a two-week training course on culture and DST.

In collaboration with NTP, the project organized a workshop to facilitate review of the draft training materials by local experts. NTP conducted one course of culture and DST training at NTRL where project staff worked as resource persons for successful completion of the the training. A total 6 lab technologists trained on this areas.

#### ■ ***Renovation of Line Probe Assay (LPA) and culture room at NTRL***

The project provided complementary support to FIND for implementing the EXPAND TB Project in Bangladesh. The project supported included renovations of the Line Probe Assay (LPA) and culture laboratory at NTRL. These renovation works were not within the scope of work of FIND. The project completed all renovations in time and handed over the laboratory to NTRL. FIND has already installed all equipment and started to provide LPA services from June 2012.



#### ■ ***Upgrading laboratory training centers***

NTP has three laboratory training facilities in Dhaka which are used to organize certified laboratory training for the whole country. These facilities lacked essential training aids and equipments necessary to conduct training in an effective manner. The TB CARE II project, which needs to frequently use these facilities for different lab based training, found it difficult to organize training in the desired manner. As per the approved work plan, the project upgraded these three facilities providing laptop, multimedia, IPS and sound system. This has greatly enhanced NTP's capacity to organize quality training at all these three facilities.

#### ■ ***Workshop to review reference laboratory data and monitor quality and performance***

NTP organized a workshop with project support to review reference (NTRL and RTRLs) laboratory data to monitor quality and performance of diagnostic services and review of workload of lab staff to handle culture and DST at RTRLs. A total of 40 participants from reference laboratories including representatives from NTP, WHO, and other implementing partners participated in the workshop. This workshop contributed to developing and streamlining the forms and reporting mechanism for reference laboratories and assessing the workload of the existing laboratories. The reference laboratories have already adopted these forms and mechanism for preparing and reporting performance to NTP.

#### ■ ***Renovation of GeneXpert laboratories***

The project renovated 12 GeneXpert laboratories at the district level. The project completed all renovations in time and handed over the laboratory to local authority. Now project is in a process to install the GeneXpert machine one by one. As per plan, all Xperts will be installed by December 2012.

#### ■ ***Developed forms for DR TB suspects***

The project assisted NTP to revise the reporting and shipment forms for DR TB suspects. After completion of the printing, these forms will be distributed throughout the country and will be used by service providers for suspect referral and reporting.

#### ■ ***Training on sputum collection, transportation and reporting for MDR TB***

NTP developed training materials on sputum collection and transportation where introduction of newer technology is also included. With the project support, NTP trained 55 district level staff on sputum collection, transportation, and reporting of specimen in three selected cPMDT districts. The sputum samples will be transported to NTRL/RRL for MDR TB screening in Dhaka and Chittagong.

#### ■ ***Scale up expanded sputum testing and reporting in other districts***

As per request of NTP, project staff conducted orientation of health managers and health workers on newer technology; sputum collection, transportation and reporting mechanism. Three batches of training were conducted and a total of 90 staff trained on this technical areas.

#### ■ ***Power back up for laboratories***

Uninterrupted power supply at the lab is a pre-requisite for ensuring quality and quick diagnosis. As per NTP request, the project planned to procure and install 150 solar panels to be set up at selected labs where continuous power supply is a major concern. The project has already completed selection of vendors and issued PO for the procurement of solar panels which will be installed at the labs in the next quarter.

#### ■ ***Facilitate operation of Khulna RTRL***

The project planned to support renovation and procurement of equipments and consumables to make the Khulna RTRL operational. The project has selected vendors and submitted the procurement request USAID/W for approval.

### **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 6 below shows NTRL’s sustained level of performance to comply with quality assurance standards.

**Table 6: Performance in Quality Assurance**

Services	Standard	Performance	
		2011	2012
EQA for AFB Microscopy (slides discordant)		0%	0%
EQA for Drug Susceptibility Test*	>90%	>90%	>90%

\*EQA performed by Supra National Laboratory, Antwerp, Belgium

### 3.1.1.2 Increased access to quality MDR-TB treatment

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

The TB CARE II project has introduced the community-based programmatic management MDR TB (cPMDT) as a practical solution to developing national capacity for management of increased number of MDR TB patients. According to this approach, patients will be transferred to their homes to complete the treatment after hospital stay of two months or sooner after the patient has converted smear negative. The project has initiated cPMDT approach in Narayanganj, Chittagong and Gazipur districts in the first phase.

#### ■ 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 three districts and respective upazilas where the cPMDT program is piloted. The 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, will meet treatment needs for complicated and referred cases and provide oversight to the implementation of cPMDT activities.

#### ■ TOT on cPMDT

The project has developed training materials for Out Patient MDR TB team and DOT provider on the basis of Standard Operating Procedures of cPMDT. The materials were developed in a participatory manner involving NTP, local implementing partners and technical experts with the overall support and guidance provided by URC and its partner Partners In Health (PIH).

The project trained 20 NTP managers as master trainers who worked as resource persons for training of the divisional, district and subdistrict level Out Patient MDR TB Team.

#### ■ Training of Outpatient MDR TB Teams

The project finalized the training materials for the cPMDT guidelines. The training aims at developing clinical capacity of the teams to be able to provide on-going treatment support to the MDR TB patients. During this year, the project trained one divisional, three districts and 28 upazila Outpatient DR TB Teams. The project trained 216 health professionals on cPMDT and 264 field level health professionals on ambulatory management of MDR TB patient. On completion of this training, the project started enrolment of the patients under cPMDT immediately after their completion of hospital-based treatment phase.

Outpatient MDR TB Team following the



Training of Outpatient MDRTB Team

### ■ *Selection and Training of DR TB DOT providers*

DR TB DOT providers are the key persons for ensuring daily DOT and day to day management of the DR TB patients. The success of the program depends upon the proper selection, training and monitoring and supervision of the DR TB DOT providers. The responsibility for selection of the DR TB DOT providers is with the Upazila Outpatient MDR TB team. Preference is given to selection of DOT provider residing nearest to the patient. The team organizes one day training for selected DOT providers on their roles and responsibilities and clinical management of DR TB. A total of 51 DOT providers have been selected and trained by the Upazila Outpatient DR TB Team during this year.

The project regularly provides one medicine box for safe keeping of the drugs safely, one waterproof bag to carry the medicine, one umbrella and one LED torch light to each DR TB DOT providers.

### ■ *Enrolment of patients under cPMDT*

The project has established a system to transfer MDR TB patients to their homes to complete the treatment after the patients converted smear negative. The project staff works closely with the hospital and the Upazila Outpatient MDR TB Team to coordinate the timing of the discharge of the patients after confirmation of the field preparedness for initiating cPMDT. The field preparation includes selection and training of DR TB DOT provider assigned to the patient, counseling of patient's family members on infection prevention, and arrangements of logistics and supplies needed for patient management.

The field level implementation of the cPMDT activities started in May 2012. The project has successfully enrolled a total of 76 MDR TB patients under cPMDT. Since initiation of the cPMDT, 53 patients have started receiving treatment at their homes and the remaining 23 are awaiting discharge from the hospital. The table 7 provides a district-wise snapshot of the patients receiving treatment under cPMDT.

Table 7: Distribution of DR TB patients on cPMDT by district

Name of the district	No. of patients May-June 2012	No. of patients July-September 2012	Total number of patients
Chittagong	22	18	<b>40</b>
Narayanganj	5	3	<b>8</b>
Gazipur	2	3	<b>5</b>
<b>Total</b>	<b>29</b>	<b>24</b>	<b>53</b>

Most of the patients enrolled under cPMDT are at the upazila level where NTP has service delivery structure and human resources needed to ensure treatment and care for the DR TB patients.

■ ***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 monitor and supervise the DR TB DOT providers. In addition, project field staffs make monthly visits to patient’s home to monitor treatment compliance, assess patient management needs and take follow up actions in discussion with the Outpatient MDR TB Team. The senior project management staff based at URC Dhaka along with NTP and WHO staff also makes periodic field visit to monitor implementation of cPMDT activities.



Monitoring visit at patient’s home



Consulting patient at CDH



Checking record keeping

The project field staff has visited all the 53 patients and monitored performance of 51 DR TB DOT providers. A joint team consisting of members from NTP, WHO and TB CARE II has also made twelve field visits to monitor the performance of the Outpatient Team, DR TB DOT providers and patients’ compliance with treatment. The team has also visited one Chest Disease Hospital and 4 DOTS centers to check maintenance and accuracy of patients’ record.

■ ***Ambulatory Care Training***

In collaboration with NTP and WHO, the project facilitated ambulatory care training of 264 health care providers on the management of MDR TB and infection control at the household level where the patients are treated after completion of the intensive phase at the hospital.

■ ***Vocational training for rehabilitation of MDR-TB patients***

The project continued to support a Vocational Trainer at the NIDCH for providing training on cutting and sewing dresses. This training is intended to develop a vocational skill for the poor DR TB patients to help them rehabilitate in the community after successful completion of the treatment. A total of 194 DR TB patients have received this training during the year. The patients have also been trained to make protective masks which are used by the patients themselves.



Vocational training in progress

The activities currently implemented for providing socio-economic support, which is critical both for ensuring treatment compliance and rehabilitation of patients in their community, is quite inadequate to meet diverse needs of the poor MDR TB patients. The project plans to conduct an assessment of the current activities and their impact in order to restructure the program in a way that would be more effective and realistic in helping patients improve compliance with treatment and their future rehabilitation.

#### ■ *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.

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

#### **Development of ACSM strategy**

The project has developed an ACSM strategy and implementation plan aligned with the NTP ACSM goals and objectives. ACSM activities will be implemented at the national and community levels using different communication channels to improve peoples' perceptions about causes, symptoms, transmission and prevention of this deadly disease, and generate demand for utilization of TB services. A range of activities have been identified to support behavior change communication, community mobilization, advocacy, and mass media campaigns through TV, Radio, print and outdoor media as well as traditional media to disseminated messages on TB targeting different populations.

#### **Grants Program for local NGOs**

The project supported local NGOs to conduct advocacy, communication and social mobilization activities to increase knowledge and awareness about TB as well as to increase identification of suspected TB cases, and improve access to diagnosis and treatment of TB services. The project has awarded three sub-grants to BRAC, HEED Bangladesh, and RTM International, which have started implementation of the activities as per their work plan. The project also supported two other NGOs through purchase orders to implement ACSM activities. The project is currently in the process of finalizing the applications received in response to second wave of RFA.

The performances of the current NGOs are summarized below:

■ **National Anti TB Association, Bangladesh (NATAB)**

NATAB arranged 7 Divisional sensitization workshops at divisional head quarters with 196 members from chambers of commerce highlighting the importance of better workplace environment to reduce the risk of TB transmission and regular health check-ups for the workers. NATAB also organized interactive workshops with religious leaders in Rangpur, Rajshahi,



Workshop with religious leaders



Awareness campaign with school children

Sylhet, Khulna and Barisal divisions with 347 religious leaders. During the workshops, pre-test and post-test were taken to assess and improve their knowledge on TB. NATAB also conducted awareness program targeted high school students in 32 districts. Through this program, the project was able to reach 64 schools and approximately 35,000 students with messages on TB. A quiz test was conducted among the students to encourage them to know correct information about TB. NATAB completed the development of banner, leaflet, sticker, pad, folder, football, volleyball, etc with TB messages for supporting the sensitization activities.

■ **D-Net**

Through D-Net, the project supported the airing of two episodes of “The Connecting Bangladesh” on the topic of TB. “The Connecting Bangladesh” is a unique live talk show program telecast by the ATN News, a private TV channel. The program connects resource persons sitting at the studio with the people living in peri-urban or rural community through telecom technology. Viewers can call and have their questions addressed on the topic presented by the experts. It is estimated that approximately 300,000 people directly benefited from this program to improve their knowledge about TB.

D-Net also organized video shows of the recorded program in different outreach rural sites for those who were unable to watch the live shows on TV. D.Net conducted 64,761 group sessions in 600 venues reaching approximately 314,496 people across the country. D-Net also produced 60,000 posters and displayed these communication materials through 2912 centers around the country.

■ **BRAC**

During this year, BRAC implemented a number of ACSM and DOTS activities targeted to 29 million people in 12 districts.

**Enhanced community-based screening and referral:** The project provided transportation and TB diagnostic support (X-Ray and FNAC) for poor TB patients for early diagnosis and treatment. This initiative is intended to increase detection of and treatment adherence for smear negative and extra pulmonary (EP) TB cases. During this period, 426 smear negative and 124 EP TB patients received diagnostic and transport support.

**INH prophylaxis for eligible children:** According to WHO recommendation and National Tuberculosis Programs (NTP) policy, all children under 5 years of age who are in close contact with a pulmonary TB case should be screened for tuberculosis and enrolled under prophylaxis. BRAC started this prophylaxis therapy in TB CARE II project areas. During this period, 523 eligible children (less than 5 years) have been registered for INH prophylaxis. BRAC also started active tracing and screening of child TB contacts by applying a simple symptom-based approach under the guidance of national program.

**Enhanced screening in prisons:** During this period, BRAC implemented TB activities in 12 prisons with TB CARE II support. A program organizer visits the prison twice a month to identify patients with symptoms and encourages them to provide two sputum samples. The prison's onsite medical staff, usually a medical officer or a pharmacist, is also trained on the symptoms of TB and referral for testing. The program organizer transports these samples back to the DOTS corner for diagnosis. When a case is identified, the program organizer informs the prison medical staff so that they can initiate DOTS treatment with medications provided by BRAC. As a result of this effort, the project reached 318 prison inmates and diagnosed and initiated treatment for 15 prison inmates with TB.

**Referral of DR-TB suspects:** the BRAC program is also designed to identify and refer suspected MDRTB cases for diagnosis and treatment. During this period, BRAC workers referred 128 DR TB suspects for diagnosis.

**Case notification:** The project support through BRAC contributed to a significant increase in the identification of TB suspects. This also resulted in increased detection of smear positive cases, and a significant increase in the detection of new smear negative and extra pulmonary cases during the last one year. One of the possible reasons of this success lies in good networking developed with the PPs. During this year, BRAC reported notification of 23,220 smear positive, 4,855 smear negative and 4,898 EPTB cases in the TB CARE II supported project areas.

#### ■ *HEED Bangladesh*

The project has been supporting HEED Bangladesh for implementing DOTS and ACSM activities targeted to people living in 157 tea gardens of Sylhet, Habiganj and Moulvibazar districts. Major activities implemented by HEED during the reporting period are summarized below:

**TB Awareness meeting:** HEED organized 117 TB awareness meetings among the tea garden communities with different TB messages. Approximately 5,857 community people in the tea gardens participated in the meetings organized for raising awareness about TB.

**Advocacy meeting:** HEED also organized advocacy meetings with government and private health officials, tea garden management officials. These meetings were organized to engage the local influential people to get their support and cooperation in implementing the TB program activities.

**Orientation of tea factory workers and tea garden women:** The tea garden workers and their family members are vulnerable to TB because of due to a variety of socio-economic factors including poor hygienic living conditions and in the work place environment. During the period, the project supported orientation of 865 men and women factory workers including family members on TB symptoms, the importance of early care seeking and treatment.



Orientation of tea garden workers

**Orientation of cured TB patients:** During this year, HEED oriented 75 cured TB patients to act as peer educators on TB. The objective of this activity is to use the peer educators to disseminate messages about TB among the tea garden communities, encourage people about early care seeking for TB services, and encourage TB patients in treatment adherence.

HEED Bangladesh also established 25 sputum collection centers. The project identified and tested 274 suspects, detected 10 sputum positive cases, and initiated treatment for these patients.

### Special events

**Launching of cPMDT:** The project organized a launching event for the introduction of the GeneXpert technology and community-based management of MDR TB (cPMDT) in Bangladesh, on September 11, 2012. Professor Dr. A.F.M. Ruhul Haque, MP, Minister, Ministry of Health and Family Welfare (MOHFW), attended the event as the Chief Guest. Senior Bangladesh government officials, representatives from USAID and other donors, public health professionals and other dignitaries participated in the event. The event ended with the USAID Mission Director handing over of a GeneXpert MTB/RF machine to the health minister of the Bangladesh government to mark the occasion.



Handing over of GeneXpert machine

**Observation of World TB DAY 2012:** The project supported NTP to observe the World TB Day 2012 in various ways including rallies both at the national and divisional levels to raise mass awareness about TB. The project supported the production of a documentary on TB with messages and commitments for strengthening TB control program from different levels of health professionals including the health minister. The documentary was aired through the Bangladesh

Television and the private TV channel ATN Bangla. The project developed short messages on the signs and symptoms of TB encouraging people to seek care for TB from nearby health facility for diagnosis and treatment. The project got the support of the Bangladesh Telephone Regulatory Commission (BTRC) to disseminate TB messages through all the mobile phone networks reaching millions of people.



*World TB Day rally*

**Observation of American Week and 50th USAID anniversary:** The project participated in the America Week 2012 which also coincided with the 50<sup>th</sup> anniversary of USAID. The project set up a booth at the American Week fare, displayed project activities, and disseminated messages about signs and symptoms of TB and healthy practice.

### **3.1.3 Increased Compliance with TB and MDR-TB Treatment Guidelines**

#### ■ *Increased Patient Compliance with MDR TB Treatment Regimen*

The project has been supporting a Counselor at NIDCH to counsel MDR TB patients both individually and in groups. The counseling is tailored to ensure treatment adherence by the patients and to provide psychological support that is critical to help the patients overcome depression and stress due to prolonged treatment.

During this year, the counselor conducted 704 sessions of individual counseling and 60 sessions of group counseling for 298 patients who were receiving in-patient MDR-TB services at the NIDCH.



*Group counseling of MDRTB patients*

## **3.2 Strengthened Health Systems and Governance**

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

#### ■ *Update and Finalization of National Strategic Plan for TB Control 2012-2016*

The project supported NTP to update and finalize the National Strategic Plan for TB Control 2012-2016. A consultative workshop was organized involving SEARO personnel, WHO and other implementing partners. The comments and feedback generated from the workshop were used to revise and finalize the strategic plan.

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

The project awarded a sub-grant to RTM International to provide pre-service training on TB to 1,300 intern doctors from 12 public and private medical colleges. The sub-grantee form a working group with members from NTP, URC and other implementing partner to provide guidance to design and implementation of the pre-service training of intern medical doctors. During the year, the project finalized the training materials for TOT following national and

international guidelines. RTM has also completed training of 24 faculty members from the medical colleges as trainers who will conduct the basic training for the intern medical doctors beginning FY 13.

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

During the year, BRAC organized 2,574 outreach sputum collection centers in the functional community clinics. BRAC also oriented 397 community clinic staff to develop their capacity on TB screening for suspect identification and referral.

### **3.2.2 Increased Private Sector Participation in TB Prevention and Control**

#### ■ *Partnership with SMC*

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 also obtained NTP approval for expanding DOTS services through the Blue Star network. A total of 120 Blue Star providers have been trained on DOTS and linked with the DOTS program.

#### ■ *Networking meeting with graduate and non graduate private practitioners*

To enhance functional linkage and to increase suspect referrals, BRAC conducted several networking meetings for graduate and non graduate private practitioners (PPs). They play a significant role and can make major contributions to the national program referring suspects and cases to the DOTS facilities. Through these networking meetings, 1039 graduate PPs and 2377 non graduate PPs have been linked to the referral network.

### **3.2.3 Strengthened Support Systems for effective delivery of TB services**

#### **3.2.3.1 Laboratory Services and Systems strengthened**

#### ■ *Strategy and guidelines for new diagnostics*

An algorithm of new TB diagnostics and guidelines for the introduction of new diagnostic tool was developed in collaboration with NTP, WHO, PIH and other partners. This algorithm will be incorporated in to the revised National Operational guidelines for DR TB.

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

The project developed a Standard Operating Procedures (SOP) for LED microscopes. The project also developed training materials on LED microscopy and provided TOT to develop 10 master trainers. The project assisted NTP to train 26 lab technologists selected from the districts and upazillas. The project also assisted the NTP to conduct training for 348 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.

#### ■ *Finalization of Handbook for Light and Fluorescent Microscopy*

The project worked with NTP, SRL South Australia and SRL Antwerp, Belgium, for developing a handbook for light and FM microscopy. With project support, the NTP organized a workshop for review and finalization of the handbook. The project is making final revision to the handbook incorporating feedback received from the workshop.

#### ■ *EQA review workshop*

The project conducted 4 batches of one day EQA review workshops. The objectives of these workshops were to review EQA activities for further standardization of the system, effective use of the EQA data and to discuss and address EQA related issues in order to improve quality of the sputum smear microscopy at each laboratory. The participants of the workshops included all 40 EQA first controller and EQA coordinators, partners M&E staff, NTP and WHO program managers. The project developed a report on the workshop proceedings, findings and recommendations.

### *3.2.3.2 Improved Monitoring and Evaluation Systems*

#### ■ *MDR TB Surveillance*

The project assisted NTP in completion of the first National Drug Resistance Survey (DRS) analysis of the surveillance data and preparation of the report. The report has been submitted to WHO Headquarters for finalization.

Alongside this initiative, the project also provided assistance to set up MDR TB surveillance system through the Chest Disease Clinics (CDC) located in the targeted districts. According to this system, CDCs will routinely send the samples of MDR suspects to NTRL for culture and DST.

#### ■ *m-Reporting*

The project developed a concept note on m-Reporting system to document the activities of DR TB DOT providers and monitor treatment compliance of MDR TB patients at cPMDT sites. Concept note on m-Reporting system has also been developed for GeneXpert sites to monitor lab performance.

## **4 CHALLENGES ENCOUNTERED**

Since beginning, the TB CARE II project team has encountered several issues and challenges to implementing the project activities in a planned manner. Firstly, while the TB CARE II project is expected to complement GF supported activities, delays in disbursement of Global Fund resources hampered technical coordination with the NTP and resulted in delays in timely implementation of some activities.

The project encountered delays around the procurement of equipment such as GeneXpert machines and microscopes due to administrative reasons. This has affected timely implementation of some planned activities and achieving the expected results. However, it has been possible to install and put the Xpert machines in to operation. The project also received approval of the procurement of light and LED microscopes which will be installed in the early part of FY13. The sub-agreement with WHO has been approved after considerable delay. The

project is now working with WHO to reschedule and speed up implementation of the activities to be supported through the WHO sub-grant.

The implementation of community level activities specifically ACSM, expanding public private mix, and suspect identification and treatment, which were planned for implementation through the NGO partners has delayed due to lengthy administrative procedures.

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 performance data from NTP is a long and arduous process. Normally, 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.

## **5 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, and increasing private sector participation in the TB control program.

In FY 13, the project will plan activities to build on and further expand the initiatives started this year. Scaling up management of childhood TB across the national health system will remain a program priority. Concerted effort will be given to develop an effective approach compatible with the country context for increased diagnosis and management of smear negative and EPTB cases. Installation and supporting operations of additional 23 GeneXpert machines and new microscopes and capacity building of service providers, as planned in FY 13, will have a major bearing on the health systems to provide high quality diagnostic services and increase early detection of TB and MDR TB cases. The project will also make a massive effort for rapid expansion of cPMDT program in 12 priority districts to enable NTP to initiate timely treatment to a large majority of the MDR TB patients.

## **6 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 2<sup>nd</sup> Quarter of 2012 NTP MIS data are available which is used for reporting in the Table 8 below.

Table 8: Indicators reported using NTP Management Information System

	Outcome Indicators	Baseline 2010	CY 2011 Qtr 4	CY 2011 Total	CY 2012 Qtr 1	CY 2012 Qtr 2	CY 2012 Total
	<b>Indicators reported using NTP Information System</b>						
1	Notification Rate of all forms of new TB cases	100	Reported Annually	97	Reported Annually	Reported Annually	99
2	Number of all forms of TB cases notified	155,138	37,707	152,865	39,396	41,983	158,301
3	Notification Rate of new smear-positive (SS+) TB cases	70.5	66.5	64.8	68.33	71.67	65
4	Number of smear Positive (SS+) patients notified	105,772	25,379	98,948	26,480	27,776	102,896
5	Number of smear negative (SS-) patients notified	21,625	4,856	21,921	5,555	6,044	23,828
6	Number of extra pulmonary patients notified	23,506	6,437	27,329	7,361	8,163	25,802
7	Number of child TB patients notified	4,235	1,035	4,667	1,080	1,364	5,374
8	Number of new multi-drug resistant-TB (MDRTB) patients diagnosed and initiated on treatment	183	67	212	46	92	250
9	Cure Rate of notified SS+ TB cases	90.80%	91.00%	>90%	90.55%	91.17%	>90%
10	Treatment Success Rate of notified SS+ TB cases (disaggregated by sex)	92.30%	92.50%	>90%	91.72%	92.18%	>90%
11	Treatment Success Rate for MDR-TB cases	65%	Reported Annually	65%	63.47%	63%	>65%
12	Percent of labs participating in EQA for smears	100%	100%	100%	100%	100%	100%
13	Percentage of concordant slides under EQA system (high false positive, high false negative, scanty false positive, scanty false negative)	99%	97%	98.50%	98.5%	98.7%	>95%
14	Percent of labs performing TB microscopy with over 95% correct microscopy results	100%	100%	100%	92.5%	93.4%	>95%
15	Smear Conversion Rate of new smear positive TB cases.	87.1%	85%	Not yet Available	87.6%	86.2%	>75%

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

Table 9: Indicator reported using TB CAERE II Project Management Information System

	<b>Indicators</b>	<b>Target FY 2012</b>	<b>FY 2012 Qtr 1</b>	<b>FY 2012 Qtr 2</b>	<b>FY 2012 Qtr 3</b>	<b>FY 2012 Qtr 4</b>	<b>Total FY 2</b>
1	Percent of health care providers complied with correct prescription of TB treatment regimens	40%	Reported Annually	Reported Annually	Reported Annually	98%	<b>98%</b>
2	Number of new districts with a TB control and prevention plan developed with USG funding	30	18	40	64	64	<b>64</b>
3	Number of people trained in DOTS with USG funding	1,100	0	194	361	516	<b>1071</b>
4	Number of people trained in MDR-TB (clinical care, MDRTB DOTS, ambulatory care) with USG funding	320	0	74	169	192	<b>435</b>
5	Number of private providers participating in TB program through referrals, diagnosis, treatment, and follow up	3,000	0	120	361	2356	<b>2837</b>
6	Number of TB suspects/cases referred by a particular type of health care provider (e.g., health assistance, shasthya shebika, village doctor, private practitioners, others) with USG funding	30,000	0	0	0	43,628	<b>43,628</b>
7	Number of lab technologists trained on AFB, LED and other new diagnostic technology with USG funding	400	103	141	125	126	<b>495</b>
8	Number of service providers trained on Infection Control						<b>528</b>
9	Number of children aged less than 5 registered for IPT						<b>523</b>
10	Number of people trained in other strategic information management with USG funding	200	0	0	0	202	<b>202</b>

## **7 PROJECT ADMINISTRATION**

### **7.1 Staffing**

The project has completed recruitment of staff for all the technical and administrative positions as per project staffing plan.

### **7.2 Administrative Challenges**

Recruitment of staff for key technical positions was a major 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. However, all recruitment has been completed for all the technical positions, at the end of the reporting period.

### **7.3 Environmental Monitoring and Mitigation Activities**

In tandem with the development of the Year 2 work plan, TB CARE II developed an Environmental Monitoring and Mitigation plan, following the determination of potential

environmental threats for certain proposed project activities. The activities that were identified during the Environmental Screening of the project Year 2 work plan, relate 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.

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

### **8.1 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 2 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 has been given to increase TB case detection among women and to address the social, cultural, and institutional barriers that inhibit them from seeking care.

### **8.2 Coordination and Programmatic Integration**

Coordination and programmatic integration have been given due attention in design and implementation of the project activities. The Year 2 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.

### **8.3 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 with 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 MDRTB Teams and lab technologists is intended to strengthen the country-led health systems, government's ownership of the program and sustainability.

### **8.4 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 also partner with TRAction in conducting the research intervention and scaling up best practices on scaling up management of childhood TB, increasing case detection of low performing urban areas and prisons, and the use and cost-effectiveness of GeneXpert MTB/RIF.