



Tuberculosis Control in Bangladesh

Annual Report

2017



- ▲ Capital
- Division
- District
- ★ CDC



National Tuberculosis Control Program
Directorate General of Health Services
Mohakhali, Dhaka



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National Tuberculosis Control Program
Directorate General of Health Services
Mohakhali, Dhaka-1212

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Contents

Abbreviations	iii
1. Summary	1
2. Introduction: History of the National Tuberculosis Control Program	2
3. Tuberculosis Scenario	3-5
3.1 Global TB Scenario	3
3.2 South-East Asia Regional Scenario*	5
3.3 Bangladesh Scenario*	5
4. National Tuberculosis Control Program (NTP)	6-7
4.1 Vision of NTP	6
4.2 Mission of NTP	6
4.3 Goal of NTP	6
4.4 Objectives of NTP	6
4.5 Services of the Program	6
4.6 Major Events/Achievements	7
4.7 Major Challenges	7
5. Progress in TB Control	7-21
5.1 DOTS Coverage	7
5.2 Case notification	8
5.2.1 Nationwide case notification	9
5.2.2 Division-wise case notification, New Pulmonary Bacteriologically Confirmed Cases	13
5.2.3 District-wise case notification rates CNR	14

5.3	Treatment Outcomes	16
5.3.1	Nationwide Treatment Outcomes	16
5.3.2	Division-wise treatment Outcomes	18
5.3.3	District-wise treatment Outcomes	19
5.3.4	Treatment outcomes of relapse, new pulmonary clinically diagnosed and extra-pulmonary (new) cases smear negative and EP TB cases	21
6.	Drug Resistant TB	21
7.	Laboratory Activities	23-24
7.1	Sputum Microscopy and Quality Assurance	23
7.2	National Tuberculosis Reference Laboratory (NTRL)	24
7.3	Regional Tuberculosis Referenced Laboratory (RTRL) in Rajshahi, Chittagong and Khulna	24
8.	TB/HIV Co-infection	25
9.	Training Courses and Workshop	26
10.	Collaborating Partners of NTP with area of Collaboration	29-38
Annex 1	District-wise case Notification rate, 2016	39
Annex-2	District-wise Treatment Results, New pulmonary bacteriologically confirmed caases registered in 2015	41
Annex-3	Laboratory report :Year 2016	43
Annex-4	List of EQA Centres : 2016	44
Annex 5	TB Diagnostic and Treatment Services affiliated to NTP in Metropolitan Cities	46
Annex 6	List of the SRs under New Funding Model (Total SRs working-28)	54

Abbreviations

ACSM	Advocacy, Communication and Social Mobilization
ADR	Adverse Drug Reaction
AFB	Acid - fast Bacilli
AHI	Assistant Health Inspector
AIDS	Acquired Immune Deficiency Syndrome
BRAC	Bangladesh Rural Advancement Committee
CAAP	Confidential Approach for Aids Prevention
CDC	Chest Disease Clinic
CDR	Case Detection Rate
CNR	Case Notification Rate
CS	Civil Surgeon
CWFD	Concerned Women for Family Development
DGHS	Directorate General of Health Services
DOT	Directly Observed Treatment
DOTS	Internationally recommended strategy for TB control
DST	Drug Susceptibility Testing
EQA	External Quality Assessment
ESP	Essential Services Package
FDA	Fluorescent diacetate (staining)
FDC	Fixed-dose Combination
GFATM	Global Fund to fight AIDS, Tuberculosis and Malaria
GLC	Green Light Committee
HEED	Health, Education and Economic Development
HI	Health Inspector
HIV	Human Immunodeficiency Virus
HNPSP	Health, Nutrition and Population Sector Program
HPSP	Health and Population Sector Program
HPNSDP	Health, Population, Nutrition and Sector Development Program
HRD	Human Resources Development
ICDDR,B	International Centre for Diarrhoeal Disease Research, Bangladesh
LAMB	Lutheran Aid to Medicine in Bangladesh

LEPRA	(British) Leprosy Relief Association
LPA	Line Probe Assay
MAB	Mukto Akash Bangladesh
MBDC	Mycobacterial Disease Control
MDG	Millennium Development Goal
MDR-TB	Multidrug Resistant Tuberculosis
MO	Medical Officer
MoH&FW	Ministry of Health and Family Welfare
MO (TB/Lep)	Medical Officer (Tuberculosis and Leprosy)
MoU	Memorandum of Understanding
NATAB	National Anti-TB Association Bangladesh
NGO	Nongovernmental Organization
NHSDP	NGO Health Service Delivery Project
NIDCH	National Institute of Diseases of the Chest and Hospital
NTP	National Tuberculosis Control Program
NTRL	National Tuberculosis Reference Laboratory
PO	Program Organizer
PPM	Public-private or Public-public Mix
RDRS	Rangpur Dinajpur Rural Service
RTRL	Regional Tuberculosis Reference Laboratory
SDG	Sustainable Development Goals
SEARO	WHO Regional Office for South-East Asia (New Delhi)
TB	Tuberculosis
TLCA	Tuberculosis & Leprosy Control Assistant
TLMB	The Leprosy Mission, Bangladesh
IUATLD	The Union (International Union Against Tuberculosis and Lung Disease)
UHC	Upazila Health Complex
UH&FPO	Upazila Health and Family Planning Officer
USAID	United States Agency for International Development
WHO	World Health Organization

1. Summary

Tuberculosis (TB) is a major public health problem in Bangladesh since long. Under the Mycobacterial Disease Control (MBDC) unit of the Directorate-General of Health Services (DGHS), the National Tuberculosis Control Program (NTP) is working with a mission of eliminating TB from Bangladesh. The goal of the program is to reduce morbidity, mortality and transmission of TB until it is no longer a public health problem through achieving universal access to high quality care for all people with TB

The NTP adopted the DOTS strategy and started its field implementation in November 1993. By 2007 the DOTS services were made available throughout the country including the metropolitan cities. NTP also adopted the Stop TB strategy in 2006.

Since the introduction of DOTS in 1993, remarkable progress in TB control has been made. The program crossed the target of 85% treatment success rate of the new smear-positive cases in 2003 and has been maintaining over 90% since 2005. The program has successfully treated 95 % of bacteriologically confirmed new pulmonary TB cases registered in 2015.

The Case Notification rates per 100 000 population in 2016 were 77 and 138 respectively for bacteriologically confirmed new pulmonary, and all forms (new and relapse) of TB cases. Number of all types notified TB cases increased in 2016 with a substantial increase of the extra-pulmonary cases compared to 2015 (43549 vs 41974). Child TB (among new cases) also increased from 7984 in 2015 to 9152 in 2016.

As of 31 December 2016, countrywide a total of 5500 MDR TB patients were enrolled for treatment including 918 in 2016. Among the 918 patients in 2016, 750 are under 24-month regimen and 168 under 9- month regimen.

This report covers the activities related to TB control performed in 2016, case finding in 2016 and treatment outcomes of cases registered in 2015.

2. Introduction: History of The National Tuberculosis Control Program

Tuberculosis (TB) is a major public health problem in Bangladesh since long. The history of tuberculosis in Bangladesh has different stages.

In 1965, tuberculosis services were mainly curative and based in TB clinics and TB hospitals. TB services were expanded to 124 upazila health complexes (UHCs) during the Second Health and Population Plan (1980-86), and were operationally integrated with leprosy during the Third Health and Population Plan (1986-91) under the Mycobacterial Disease Control (MBDC) unit of the Directorate-General of Health Services (DGHS).

The revised NTP adopted the DOTS strategy during the Fourth Population and Health Plan (1992-98) under the project "Further Development of TB and Leprosy Control Services". The NTP started its field implementation in November 1993 in four thanas (upazilas) and progressively expanded to cover all upazilas by mid-1998. In July 1998, the NTP was integrated into the Communicable Disease Control component of the Essential Services Package under the Health and Population Sector Program (HPSP). In 2003, HPSP was renamed as "Health, Nutrition and Population Sector Program" (HNPSPP), (2003-2011). Now Ministry of Health and Family Welfare (MOHFW) has been implementing the Health, Population and Nutrition Sector Development Program (HPNSDP) for a period of five years from July 2011 to June 2016, (has been extended to December 2016) with the goal of ensuring quality and equitable health care for all citizens in Bangladesh by improving access to and utilization of health, population and nutrition services. In all the sector programs tuberculosis control has been recognized as one of the priority programs. It is to be noted that similar importance has also been given for TB in the 4th HPNSP (January 2017 - June 2022).

In 2002, DOTS services were expanded to Dhaka Metropolitan City and by 2007 the services were available throughout the country. The country also adopted Stop TB Strategy since in 2006.

The program achieved the initial target of 70% case detection rate of the new smear-positive cases in 2006 and that of treating successfully 85% of them in 2003, and has been maintaining over 90% treatment success rate since 2005.

The NTP started programmatic management of drug resistant TB with 24-month regimen in (August) 2008 at NIDCH, Dhaka and by end of 2013 this service has been made available in CDHs Chittagong, Khulna, Sylhet and Pabna. The CDH, Rajshahi and 3 Damien Foundation Hospitals have been managing drug resistant TB since May 2005 with 9-month regimen under operational research.

The Government of Bangladesh, together with its many and diverse partners from the public and private sectors, was committed to further intensify the TB control activity in order to sustain the achieved success and to reach the TB control targets linked to the Millennium Development Goals (MDGs). Now NTP is working to achieve END TB STRATEGY; (pl see page 5).

This report covers the activities related to TB control performed in 2016, case finding in 2016 and treatment outcomes of cases registered in 2015. The country's estimated population for 2016 based on the projected population of 2011 census of the Bangladesh Bureau of Statistics (BBS) is 161 109 252.

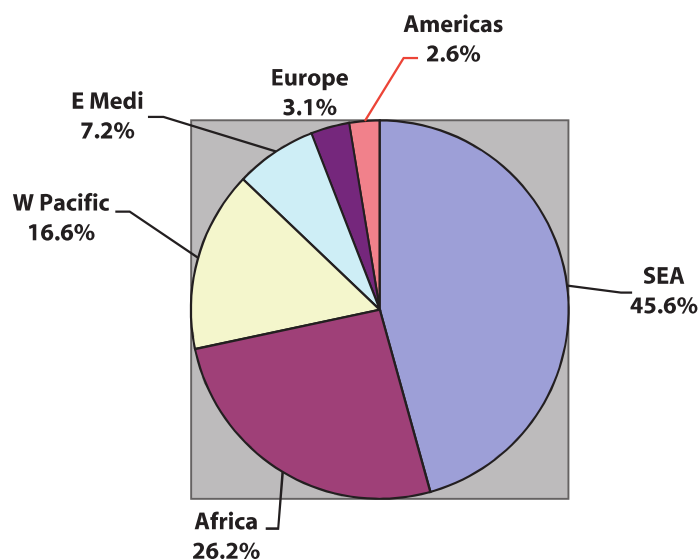
3. Tuberculosis Scenario

3.1 Global TB Scenario¹

In 2015, globally an estimated 10.4 (8.7-12.2) million new TB cases occurred, equivalent to 142 cases per 100,000 population. Among the 10.4 million incident cases, 5.4 million were men, 3.4 million were women and 1 million were children. An estimated 1.2 million (11%) of the 10.4 million new TB cases were co-infected with HIV. In this year an estimated 1.4 million died from HIV-negative TB, (deaths among HIV-positive TB patients were 0.39 million).

The majority of cases worldwide in 2015 were in the South-East Asia (45.6%), Africa (26.2%) and Western Pacific (15.3%) regions (fig 1). India, China and Indonesia alone accounted for 45% of the global TB cases in 2015.

Fig.1. Proportion of estimated incidence of all forms of TB cases by WHO Region



Source: Global Tuberculosis Report, WHO, 2016

In 2015, 6.4 million TB cases were reported globally; among them about 6.1 million were new and relapse. Globally the treatment success rate for 5.9 million new and relapse cases that were registered and treated in 2014 was 83%.

National TB control program Bangladesh also introduced the Stop TB strategy, the approach recommended by WHO to reduce the burden of TB in line with global targets in line with Millennium Development Goals (MDG) set for 2015.

¹ According to "Global Tuberculosis Report, WHO, 2016".

Stop TB strategy at a glance

- Vision : A TB- free world
- Goal : To dramatically reduce the global burden of TB by 2015 in line with the Millennium Development Goals and the stop TB partnership targets.
- Objectives :
- Achieve universal access to high-quality care for all people with TB
 - Reduce the human suffering and socioeconomic burden associated with TB
 - Protect vulnerable populations from TB, TB/HIV and drug resistant TB
 - Support development of new tools and enable their timely and effective use
 - Protect and promote human rights in TB prevention, care and control
- Targets :
- MDG 6. Target 6c. Halt and begin to reverse the incidence of TB by 2015
 - Targets linked to the MDGs and endorsed by the stop TB partnership
 - 2015: reduce prevalence of and deaths due to TB by 50% compared with a baseline of 1990
 - 2050: eliminate TB as a public health problem (defined as the global incidence of active cases <1 per 1 million population per year).

Components:

1. Pursue high quality DOTS expansion and enhancement

- a. Secure political commitment, with adequate and sustained financing
- b. Ensure early case detection and diagnosis through quality assured bacteriology
- c. Provide standardized treatment with supervision and patient support
- d. Ensure effective drug supply and management
- e. Monitor and evaluate performance and impact

2. Address TB/HIV, MDR-TB, and the needs of poor and vulnerable populations

- a. Scale- up collaborative TB/HIV activities
- b. Scale- up prevention and management of multi-drug resistant TB (MDR-TB)
- c. Address the needs of TB contacts, and of poor and vulnerable populations

3. Contribute to health systems strengthening based on primary health care

- a. Help improve health policies, human resource development, financing, supplies, service delivery and information
- b. Strengthen infection control in health services, other congregate settings and households
- c. Upgrade laboratory networks, and implement the Practical Approach to Lung Health (PAL)
- d. Adapt successful approaches from other fields and sectors, and foster action on the social determinants of health

4. Engage all care providers

- a. Involve all public, voluntary, corporate and private providers through Public-Private Mix (PPM) approaches
- b. Promote use of the International Standards for Tuberculosis Care (ISTC)

5. Empower people with TB, and communities through partnership

- a. Pursue advocacy, communication and social mobilization
- b. Foster community participation in TB care, prevention and health promotion
- b. Promote use of the patients' charter for tuberculosis care

6. Enable and promote research

- a. Conduct program based operational research
- b. Advocate for and participate in research to develop new diagnostics, drugs and vaccines

From the beginning of the year 2016 global TB control has entered into the post -2015 era of the Sustainable Development Goals (SDG: 2016-2030) and the End TB Strategy(2016-2035), which have superseded the MDG (2000-2015) and the Stop TB strategy (2006-2015)

The End TB Strategy : **"Global Strategy and targets for TB prevention, Care and control"**

THE END TB STRATEGY 2016-2035: PILLARS AND COMPONENTS

1. INTEGRATED, PATIENT-CENTRED CARE AND PREVENTION

- A. Early diagnosis of TB including universal drug susceptibility testing; and systematic screening of contacts and high-risk groups
- B. Treatment of all people with TB including drug-resistant TB; and patient support
- C. Collaborative TB/HIV activities and management of co-morbidities
- D. Preventive treatment of persons at high-risk; and vaccination against TB

2. BOLD POLICIES AND SUPPORTIVE SYSTEMS

- A. Political commitment with adequate resources for TB care and prevention
- B. Engagement of communities, civil society organizations, and public and private care providers
- C. Universal Health Coverage policy and regulatory frameworks for case notification, vital registration, quality and rational use of medicines, and infection control
- D. Social protection, poverty alleviation and actions on other determinants of TB

3. INTENSIFIED RESEARCH AND INNOVATION

- A. Discovery, development and rapid uptake of new tools, interventions and strategies
- B. Research to optimize implementation and impact, and promote innovations

"Global strategy and targets for TB prevention, care and control"

Indicators	Milestones			Targets	
	2020	2025	2030	SDG	End TB
Percentage reduction in the absolute number of TB deaths (compared with 2015 baseline)	35%	75%	90%		95%
Percentage reduction in the TB incidence rate (compared with 2015 baseline)	20%	50%	80%		90%
Percentage of TB-affected households experiencing catastrophic costs due to TB (level in 2015 unknown)	Zero	Zero	Zero		Zero

3.2 South-East Asia Regional Scenario*

Tuberculosis continues to remain one of the major health and developmental problems in the South-East Asia Region of WHO. With about 26.36% of the world's population this region carries 45.6% of the global TB burden. An estimated 4.7 million new TB cases and 710,000 TB deaths occurred in 2015.

3.3 Bangladesh Scenario**

In Bangladesh, the estimated incidence rate for all forms of Tuberculosis in 2015 was 225 per 100 000 population. An estimated 45 per 100 000 people died of TB in the same year. The estimated incidence rate of HIV positive TB cases increased from 0.36/100,000 in 2014 to 0.39/100,000 in 2015. The incidence of MDR/RR-TB was 6/100,000 population (Table 1a). According to draft global TB report, WHO, 2017 TB burden estimates for the year 2016 are shown in Table 1b and it has been incorporated after finalization of report

Table 1a : Estimated population and TB Burden, Bangladesh- 2015

o Population:	161 million
o Mortality rate (excluding HIV+ve TB):	45 / (27-68)100 000 pop
o Mortality rate (HIV+ve TB only):	0.14(0.12-0.18)/ 100 000 pop
o Incidence rate (including HIV+ve TB):	225(146-321)/100 000 pop
o Incidence rate (HIV+ve TB only):	0.39/100 000 pop
o Incidence of MDR/RR-TB:	6(3.4-8.7) /100 000 pop

*Ref: Global Tuberculosis Report, WHO, 2016

Table 1b : Estimated population and TB Burden, Bangladesh- 2016

o	Population:	163 million
o	Mortality rate (excluding HIV+ve TB):	40 / (26-58)/ 100 000 pop
o	Mortality rate (HIV+ve TB only):	0.11 (0.05-0.18)/ 100 000 pop
o	Incidence rate (including HIV+ve TB):	221 (161-291)/100 000 pop
o	Incidence rate (HIV+ve TB only):	0.31 (0.16-0.51) /100 000 pop
o	Incidence of MDR/RR-TB:	5.3 (2.7-8)/100 000 pop

*Ref: Draft Global Tuberculosis Report, WHO, 2017

4. National Tuberculosis Control Program (NTP)

4.1 Vision of NTP

TB Free Bangladesh: Zero deaths, disease and suffering due to TB

4.2 Mission of NTP

The NTP aims to strengthen the effort of TB control through effective partnerships, mobilization of resources and ensuring quality diagnostic and treatment services under defined DOTS strategy. The NTP strives to make services equally available to all people in Bangladesh irrespective of age, sex, religion, ethnicity, social status or race.

4.3 Goal of NTP

Goal (related to End TB Strategy) : End the Global TB Epidemic which means 10 new cases /100 000 /year.

The overall goal of TB control is to reduce morbidity, mortality and transmission of TB until it is no longer a public health problem. (<1/million population).

4.4 Objectives of NTP

The initial objectives of NTP were:

- To sustain the global targets of achieving at least 70% case detection and 85% treatment success among smear-positive TB cases under DOTS for the country as whole;
in order to then
- Halve the TB death and TB prevalence rates towards and to have halted and "begun to reverse the incidence" as stated under target 6.c, Goal 6 of the MDGs set for 2015.
- The present objective is to achieve universal access to quality TB care for all TB patients in order to achieve the End TB targets. Linked to SDGs.

4.5 Services of the Program

The NTP introduced the DOTS strategy in 1993 and the Stop TB Strategy in 2006. Now NTP is in the process of adopting "The END TB STRATEGY". The TB diagnostic and treatment services are available free of charge all over the country. The common places where free-of-charge diagnostic and treatment services for TB are available are given below:

- ✓ All Upazilla Health Complexes
- ✓ All Chest Disease Clinics and Chest Disease Hospitals
- ✓ The National Institute of Diseases of the Chest and Hospital (NIDCH), Dhaka
- ✓ The Government Leprosy Hospital in Nilphamari
- ✓ District Sadar Hospitals.
- ✓ Urban health centers in all metropolitan cities (GO and NGOs)
- ✓ Public and private medical college hospitals
- ✓ Work places
- ✓ Prisons
- ✓ Combined Military Hospitals and other defense hospitals

4.6 Major Events /Achievements

The major events/achievements during 2016 are as follows:

- Published National Guidelines for the management of TB in children (2nd Edition)
- Published National Guidelines on TB/HIV Management and Program Collaboration and Implementation Manual (2nd Edition):
- Continue implementing Global Fund TB Grant under NFM
- Microscopy Lab extended from 1106 in 2015 to 1116 in 2016
- Observed World TB Day 2016.
- Completed National TB prevalence Survey:
- Introduced new anti-TB drugs: Bedaquiline and delamanid for selective DR-TB patents introduced child drugs with new formulation
- The seventh rGLC Mission was held in Dhaka from 16-22 January 2016
- Developed Public Private Mix Strategic Plan (2016-2020)
- Published Monitoring and Evaluation plan for NTP (2016-2020)
- Developed National TB Laboratory Strategic plan (NLSP) for NTP (2017-2020)

4.7. Major Challenges:

The main challenges of NTP are:

- i) to increase case detection through finding the missing cases. About 39% of drug susceptible TB, 80% of DR TB cases are still missing according to the estimates of incidence. The proportion of child TB out of detected TB cases is only 4% for Bangladesh while globally it is around 10%.
- ii) TB case diagnosis and management in urban areas
- iii) Case detection in hard to reach areas
- iv) Though overall HIV prevalence is low in Bangladesh yet diagnosis and management of TB/HIV co-infected cases are challenging.
- v) Scale-up shorter treatment regimen for MDR TB.
- vi) Procurement of quality assured 1st line drugs from GDF through government funding.
- vii) Scale-up new diagnostic (most sensitive) technology (GeneXpert) to improve TB case detection.
- viii) Expansion of use of new drugs (Bedaquiline and Delamanid) for the treatment of DR TB/ Pre XDR and XDR TB
- ix) Sustaining the quality DOTS
- x) Further strengthening laboratory services including expansion of culture and DST and GeneXpert
- xi) Effective engagement of private sector in TB control and operationalization of mandatory notification of TB cases.

5. Progress In TB Control

Since the introduction of DOTS in Bangladesh in 1993, remarkable progress in TB control has been made in terms of DOTS coverage, diagnosis and treatment of TB cases.

5.1 DOTS Coverage

Bangladesh adopted the internationally recommended DOTS strategy in 1993. DOTS services were made available to all upazilas by June 1998 and by 2007 NTP reached the 100% DOTS coverage.

DOTS coverage refers to the population living in areas where DOTS services are available. This does not mean that all people have equal access to diagnostic and/or treatment facilities

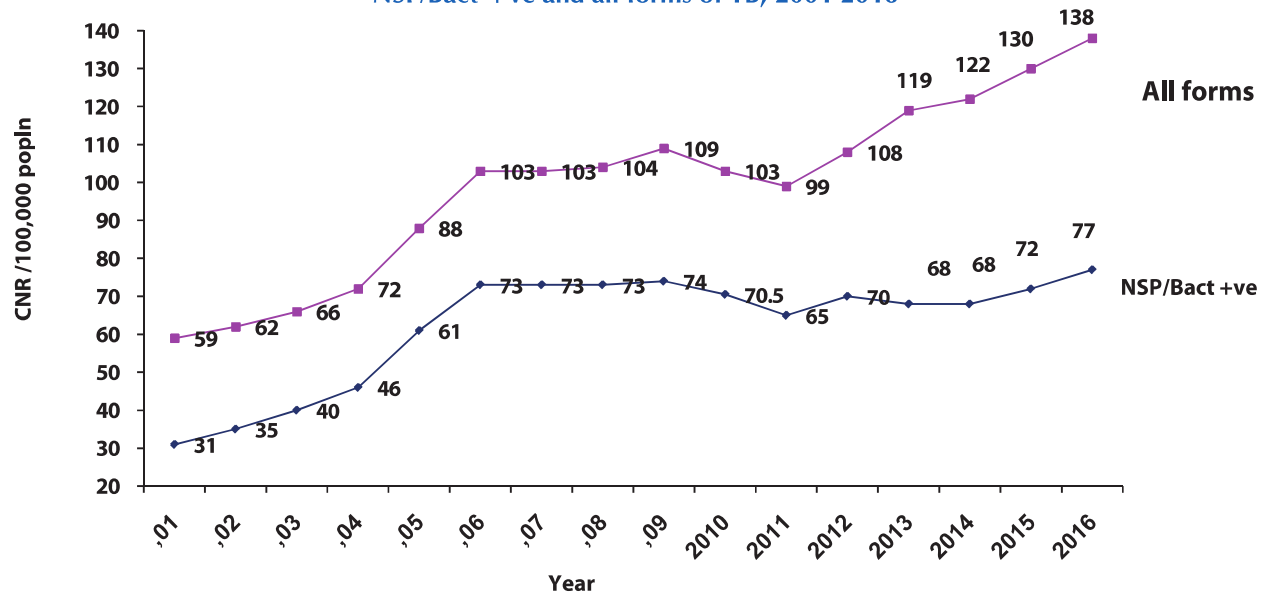
5.2 Case Notification

Case notification rate:

Case Notification rate (CNR) is defined as the number of cases registered and reported to NTP per one hundred thousand population per year.

After the introduction of the DOTS strategy in 1993, the overall progress in case finding was slow and steady until 2001 to reach case notification rate for new smear positive cases of 31/100,000 population. From 2001 onwards, case notification accelerated to reach 46/100,000 in 2004 and further increased to 61/100,000 in 2005 and 73/100,000 in 2006. In 2009, the case notification was further increased to 74/100,000. In 2010 the number of reported TB cases were lower (70.5/100,000 cases) than that in 2009, and in 2011 NSP TB case notification rate was further decreased to 65/100,000 population. As a result of additional effort addressing detection of smear negative and child TB cases with special attention to hard to reach areas through social support for ultra-poor group case notification increased to 70/100,000 population during 2012, along with overall increase in notification of all forms of TB cases; from 51/100,000 population in 2001 to 108/100,000 population in 2012. During 2013 the notification of new smear negative cases increased significantly while that of new smear positive cases decreased slightly; as a result though overall CNR increased to 119/100,000 population, the CNR of New smear positive cases slightly decreased to 68/100,000 population. However, in 2014 the case notification rate of new smear positive/bacteriologically confirmed cases remains same (to 68/100,000 population) as 2013 while case notification of smear negative and extra-pulmonary cases increased to reach the notification rate for all forms of TB cases to 122/100,000 population in 2014. During 2015 the notification of all forms of TB cases further increased to reach 130/100,000 population and bacteriologically confirmed new cases increased to 72/100,000 population. This momentum continued during 2016 to further increase the notification of all forms of TB cases to reach 138/100,000 population and bacteriologically confirmed new cases to 77/100,000 population (Fig 2).

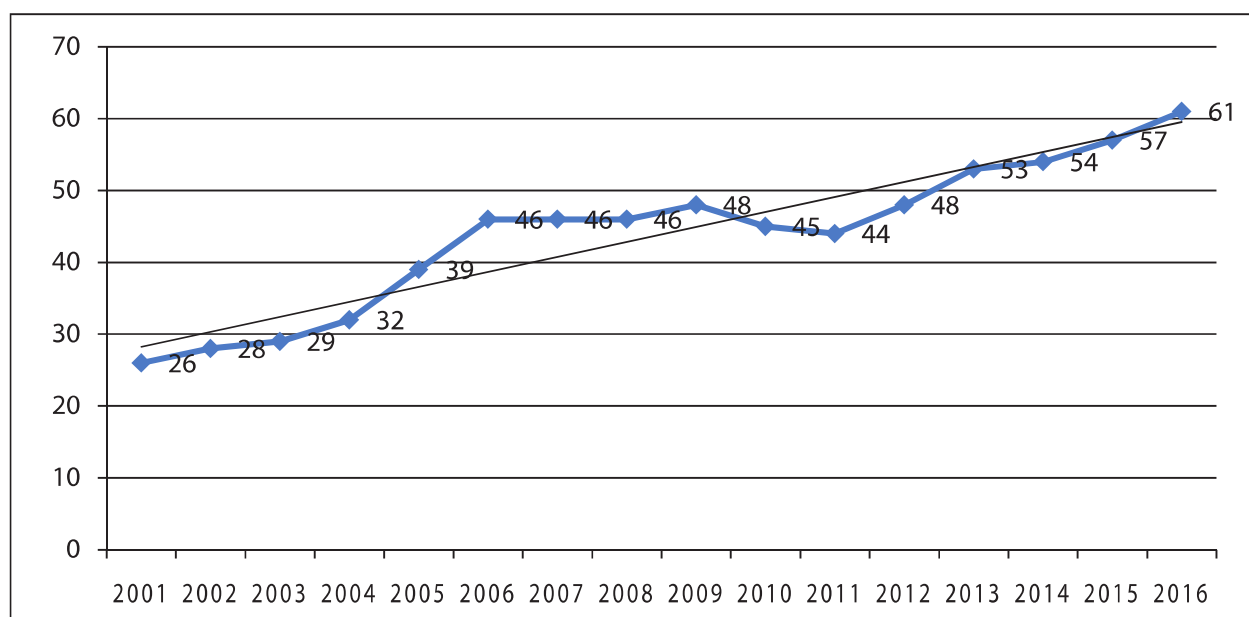
Fig. 2. Nation wide case notification rate/100,000 population: NSP/Bact +ve and all forms of TB; 2001-2016



Case detection rate (CDR):

Case detection rate is defined as the number of cases detected expressed as a percentage of cases estimated to occur during a period of one year. Now World Health Organization (WHO) is not providing any estimate for new smear positive cases, rather providing combined estimates for all new and relapse TB cases. According to this estimate the number of all forms (new and relapse) TB cases is *225/ per 100,000 population in 2015. The case detection rate was about *57% in 2015 (*Ref Global TB report 2016). At the end of 2016 the CDR increased to 61%. The trend of CDR from 2001- 2016 is shown in Figure 3.

Fig. 3. TB case detection rate (all forms): 2001-2016



5.2.1 Nationwide Case Notification

A total of 223921(222248 + 1 673) cases including 1673 combined cases of return after failure, return after default (loss to follow up) and others have been reported to NTP in 2016. So the overall case notification rate excluding those 1673cases was (138/ 100,000 population). Among the total 223,921cases, about 85.73% were reported through the upazilas. Over 55.65% of the cases were new pulmonary bacteriologically confirmed and only 4.06% were relapses. New pulmonary clinically diagnosed and extra-pulmonary cases were 20.1% and 19.45% respectively. Proportions of extra-pulmonary cases reported through metropolitan cities and CDCs were significantly higher than those reported through upazilas (Table 2).

Table 2 : Case notification by type of reporting unit, 2016

Reporting unit	Pulmonary Bacteriologically Confirmed				Pulmonary Clinically Diagnosed				Extra-Pulmonary				All Retreatment Except relapses		Total	
	New/ Treatment History Unknown		Relapses		New/ Treatment History Unknown		Relapses		New/ Treatment History Unknown		Relapses		#	Row %	#	Column %
	#	Row %	#	Row %	#	Row %	#	Row %	#	Row %	#	Row %				
Upazila	112,345	58.53	2,656	1.38	39,208	20.43	3,386	1.76	31,860	16.60	1,107	0.58	1,395	0.73	191,957	85.73
Metro. city	11,159	38.58	914	3.16	5,278	18.25	391	1.35	10,439	36.09	5	1.79	223	0.77	28,923	12.92
CDC	1,100	36.17	67	2.20	523	17.20	18	0.59	1,250	41.10	28	0.92	55	1.81	3,041	1.36
Total	124,604	55.65	3,637	1.62	45,009	20.10	3,795	1.69	43,549	19.45	1,654	0.74	1,673	0.75	223,921	100.00

Over 41.54% of the total 223 921 notified cases were female; (M:F=1.41:1). In case of both new pulmonary bacteriologically confirmed and new pulmonary clinically diagnosed cases proportions of female cases were about 39%; where as in case of new extra pulmonary cases it was 52% (Table 3).

Table 3 : Case notification by type of cases and sex, 2016

Type of cases	Male		Female		Total	M/F Ratio
	Number	(%)	Number	(%)		
New Pulmonary Bacteriologically Confirmed	75,729	60.78	48,875	39.22	124,604	1.55
New Pulmonary Clinically Diagnosed	27,488	61.07	17,521	38.93	45,009	1.57
New Extra Pulmonary	20,732	47.61	22,817	52.39	43,549	0.91
Relapses	5,782	63.64	3,304	36.36	9,086	1.75
Treatment after failure	520	69.33	230	30.67	750	2.26
Treatment after loss to follow up	162	77.51	47	22.49	209	3.45
Others	483	67.65	231	32.35	714	2.09
Total	130,896	58.46	93,025	41.54	223,921	1.41

Age sex distribution of newpulmonary bacteriologically confirmed cases

Among the notified new pulmonary bacteriologically confirmed cases the number of male patients was higher in all age groups except 0-4 and 5-14 where female cases are higher. Over 63 percent of the reported cases belong to 15-54 years age group, who are economically most active. This proportion is comparatively higher among females than that among males (71.5% vs 58%). About 16.4% of new pulmonary bacteriologically confirmed cases belong to age group ≥ 65 years and in this age group proportion is higher in males than in females (20.6% vs 9.8%). The overall male-female ratio in these notified cases is 1.55 and the ratio increases with the age. In old people (≥ 65 years), there are over 3.3 times more men notified than women (Figures 4, 7).

Age sex distribution of new Pulmonary Clinically Diagnosed

Figures 4 and 6 shows that the number of notified new pulmonary clinically diagnosed cases was almost equal in both sexes up to age 24 years. From 25 years and onwards the number of male cases was higher in all age groups and male-female ratio increases with the age to reach 3.6 in the age group ≥ 65 years (Figures 5, 7).

Age sex distribution of new extra-pulmonary cases

In the age groups ranging from 05 to 54 years the number of female cases is more than that of male cases. And in all other age groups the number of male cases is higher than that of female cases. (Figures 6, 7).

Age and sex wise case notification rate of new pulmonary and extra-pulmonary cases are also shown in the figure 8.

Nationwide case notification trend in absolute number is shown in figure 9.

Fig. 4. Notification of new pulmonary bacteriologically confirmed TB by age and sex, 2016

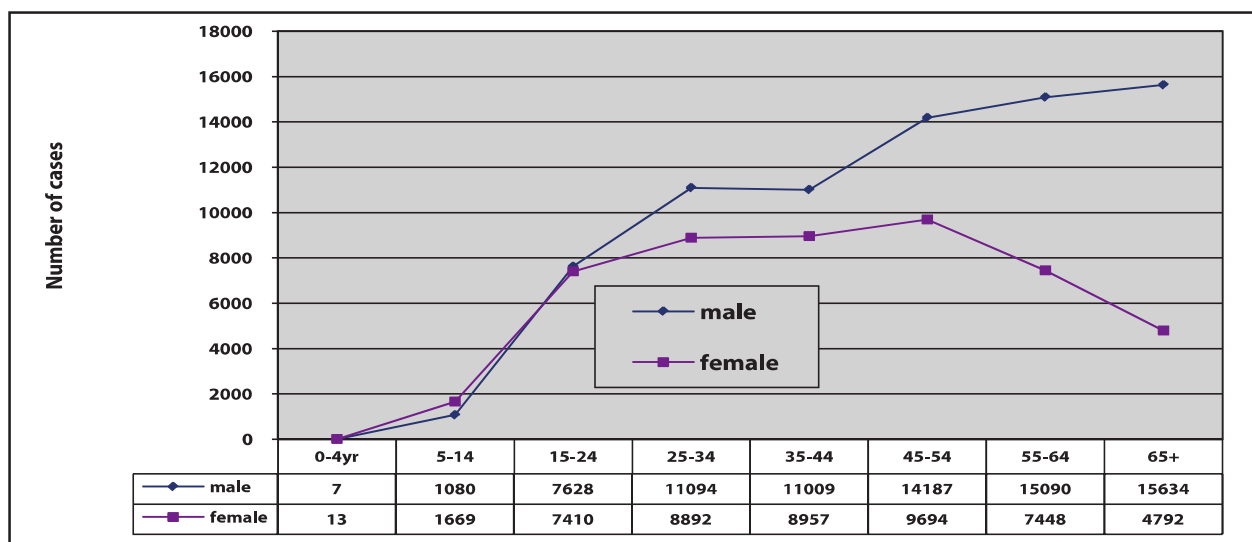


Fig. 5. Notification of new pulmonary clinically diagnosed TB by age and sex, 2016

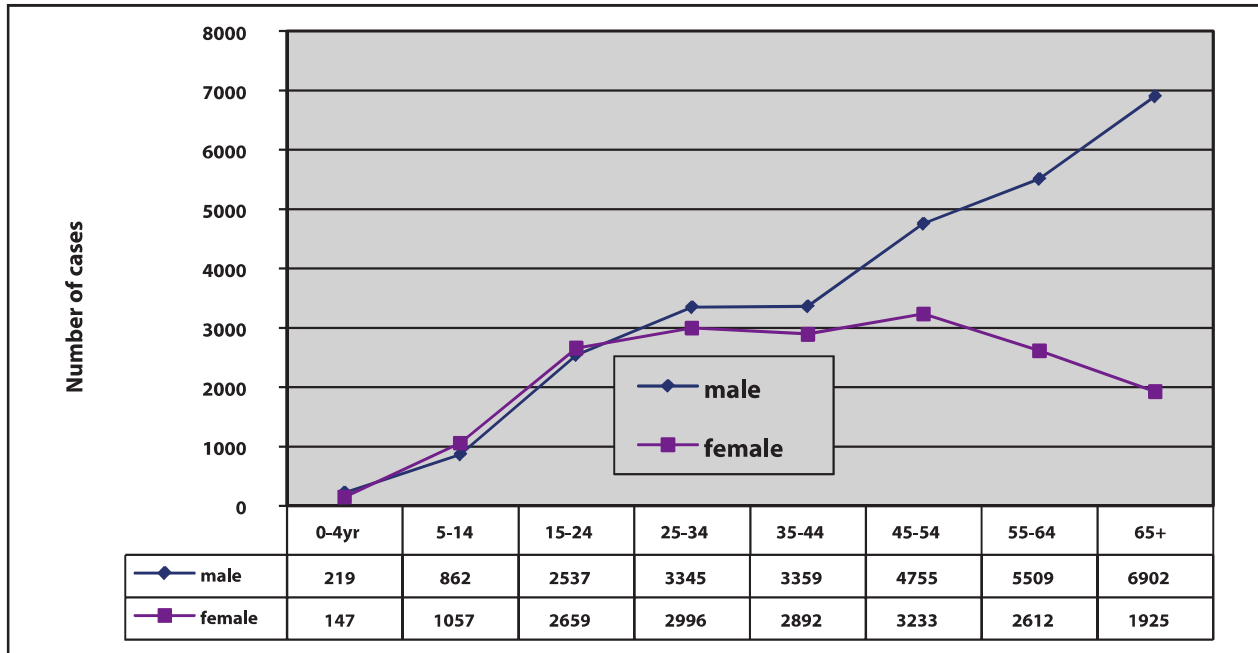


Fig. 6. Notification of new extra-pulmonary TB by age and sex, 2016

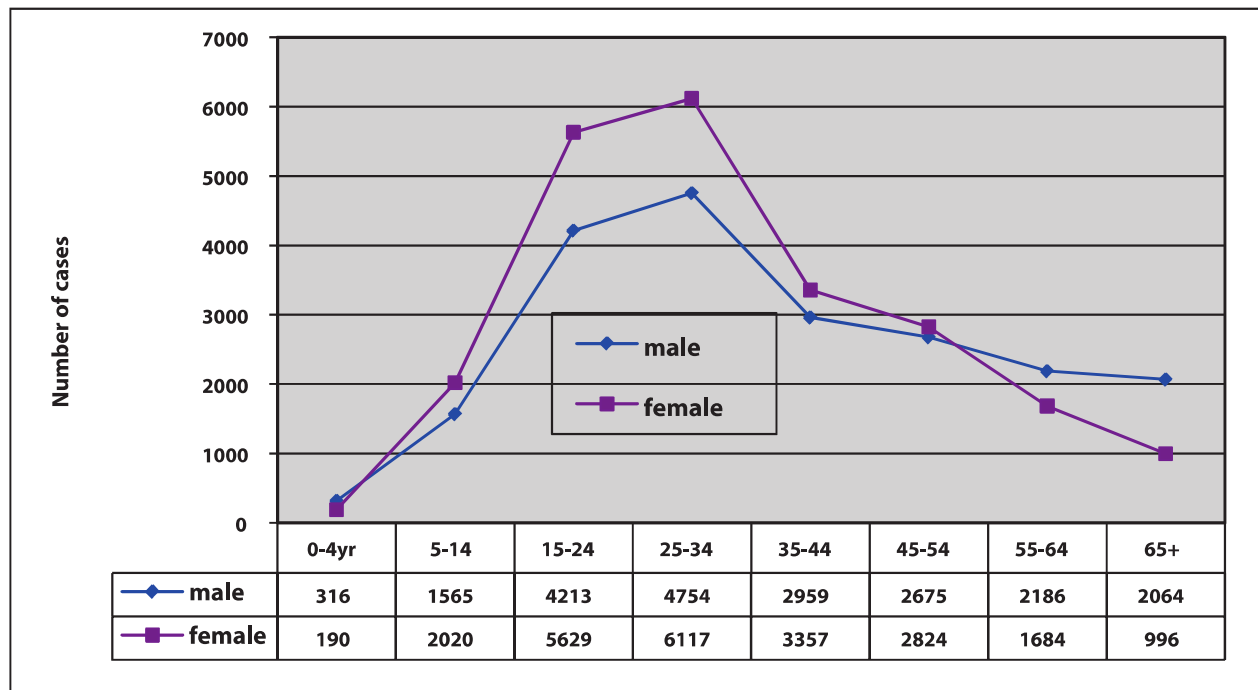


Fig. 7. Male- Female Notification Ratio by age group: new pulmonary bacteriologically confirmed, new pulmonary clinically diagnosed & new extra-pulmonary TB cases, 2016

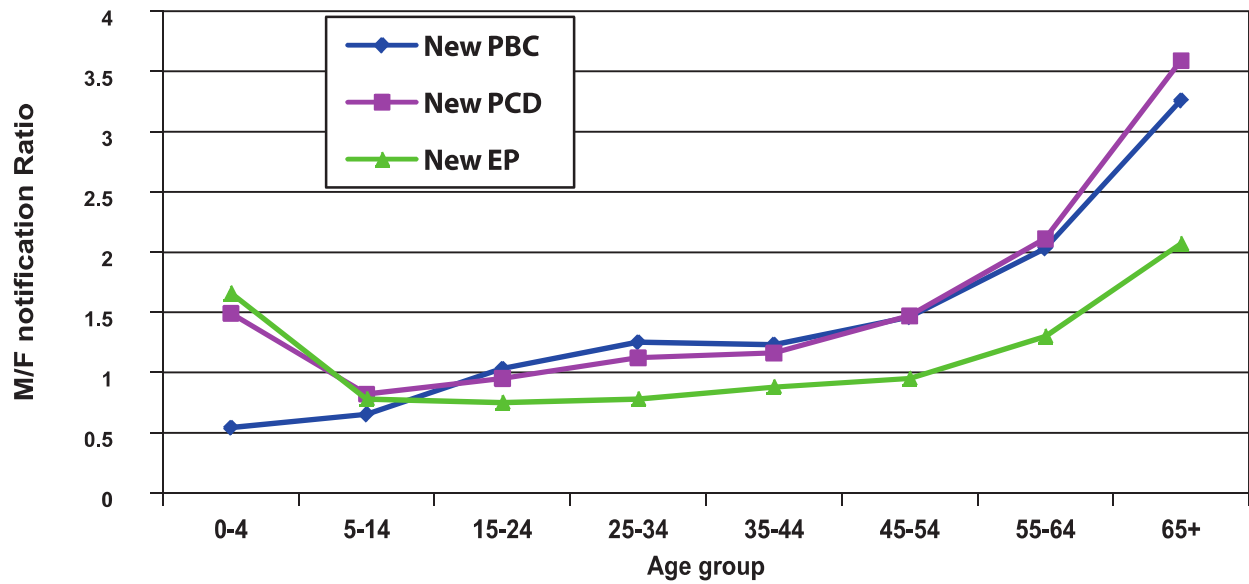


Fig. 8. Age-Sex wise CNR per 100,000 population of New Pulmonary and Extra Pulmonary TB cases, 2016

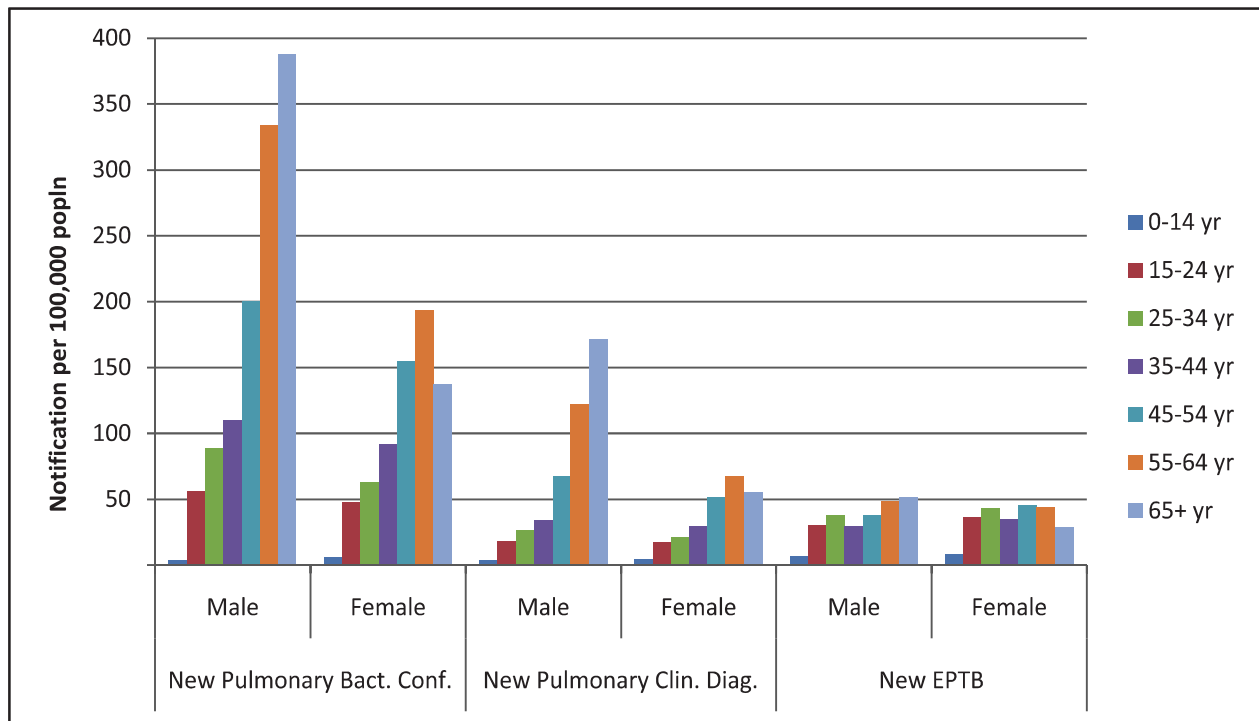
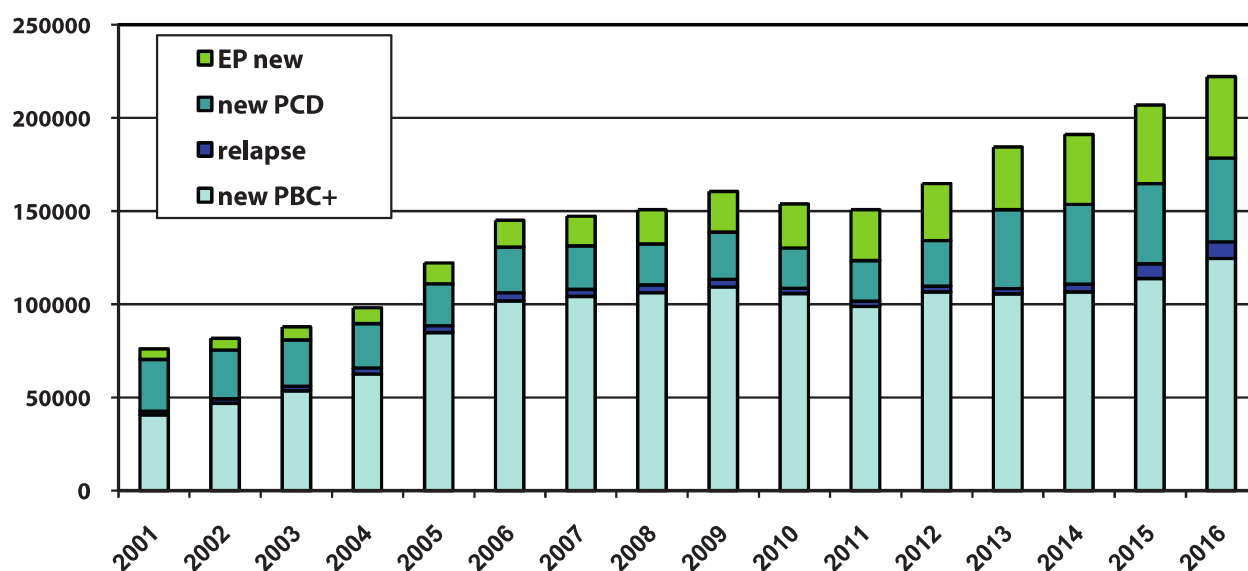


Fig. 9. Nation wide yearly case notification (all forms); absolute number; 2001-2016



5.2.2 Division-wise Case Notification; New Pulmonary Bacteriologically Confirmed Cases

Out of seven divisions, five divisions showed new pulmonary bacteriologically confirmed TB case notification rate (CNR) of more than 73 (73.7-110.5) per one hundred thousand population in 2016 while the nationwide CNR was 77 /100 000 population. For all forms of TB cases the nationwide CNR is 138/100 000 population. For all forms, Rajshahi having the lowest (96/100 000 population) and Sylhet having the highest (175/100 000 population) CNR (Table 4).

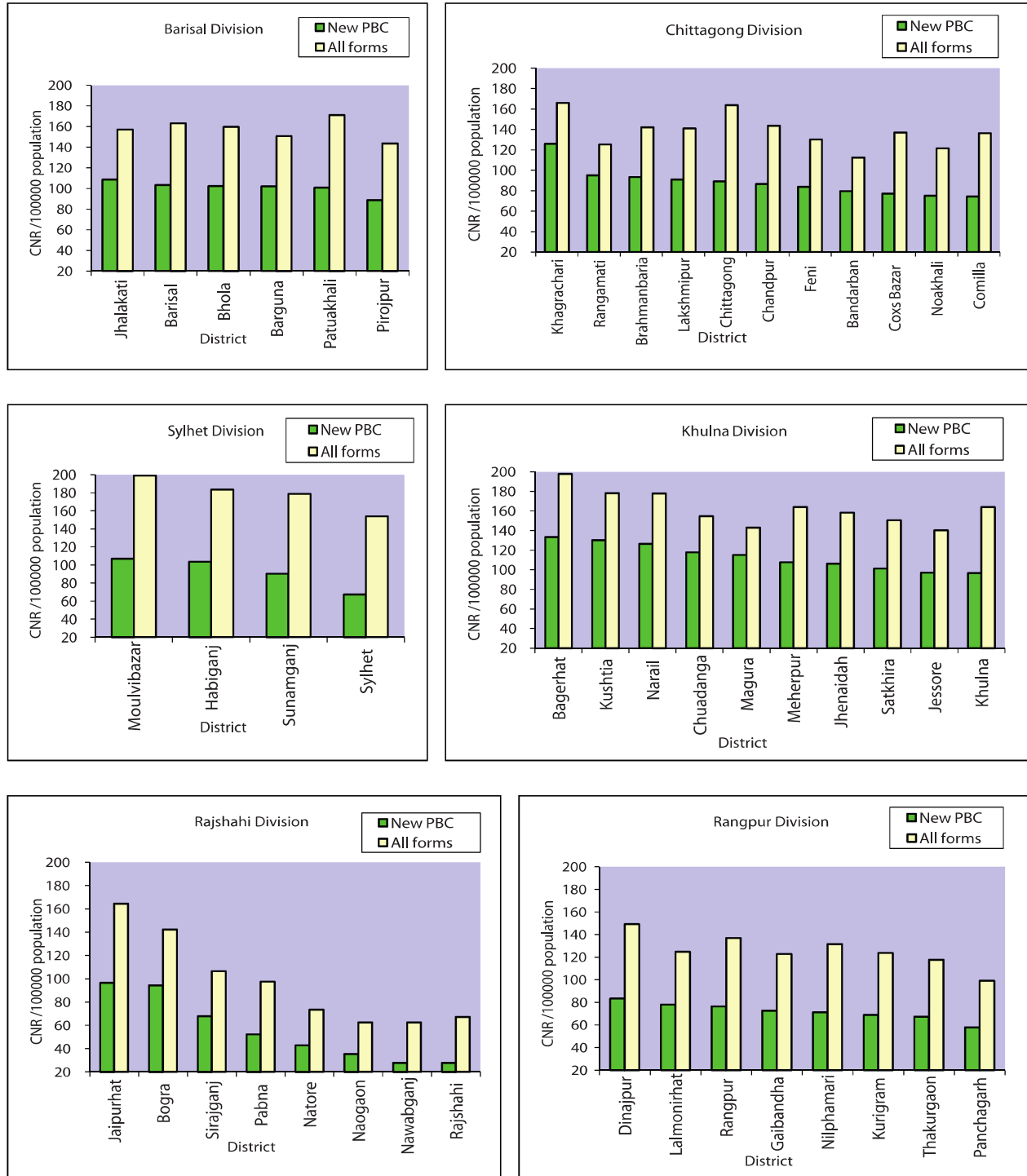
Table 4 : Division-wise new pulmonary bacteriologically confirmed (PBC) & all forms of TB cases by type of reporting unit

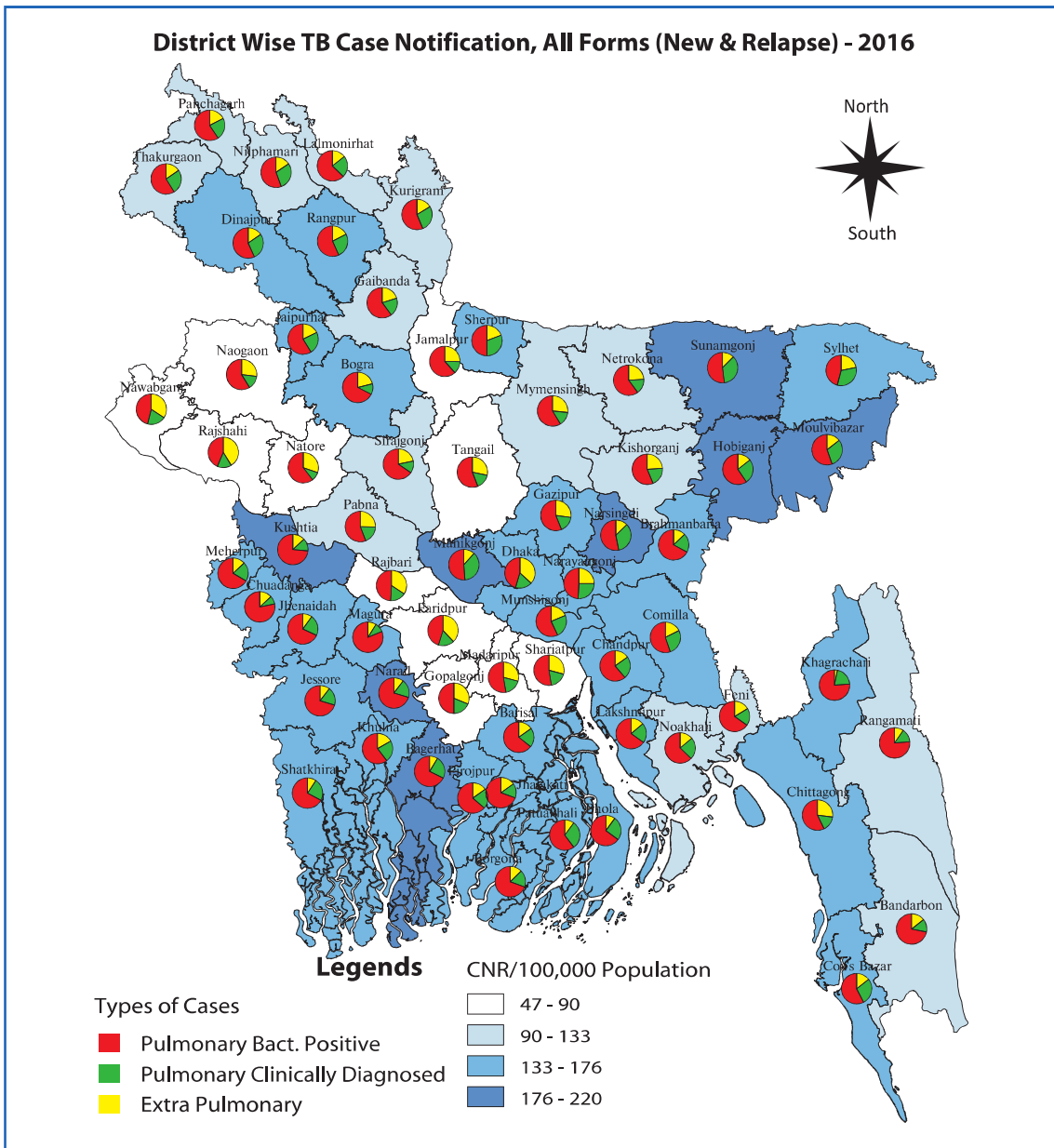
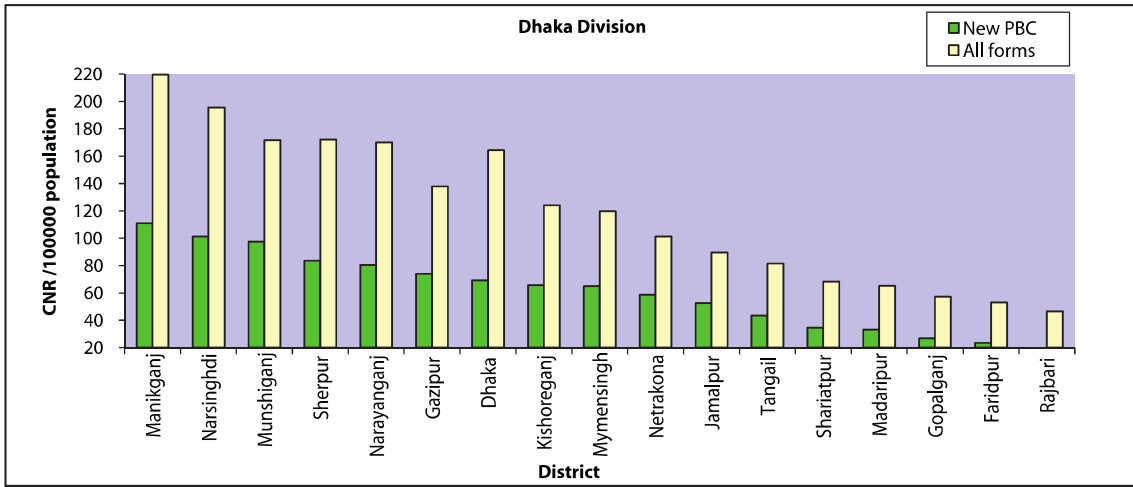
Division	Number of reported cases								Estimated Projected population of 2015	New PBC CNR /100000 population	All forms CNR /100000 population
	Upazila		Metro		CDC		Total				
	New PBC	All forms	New PBC	All forms	New PBC	All forms	New PBC	All forms			
Barisal	8,567	13,387	222	425	23	104	8,812	13,916	8,730,546	100.93	159.39
Chittagong	24,341	39,140	2,650	6,510	42	131	27,033	45,781	32,063,370	84.31	142.78
Dhaka	28,274	53,550	7,030	18,408	367	1,048	35,671	73,006	54,318,448	65.67	134.40
Khulna	17,976	25,626	468	1,104	176	395	18,620	27,125	16,839,642	110.57	161.08
Rajshahi	10,925	18,154	198	626	306	845	11,429	19,625	20,424,983	55.96	96.08
Rangpur	12,736	22,304	-	-	173	402	12,909	22,706	17,514,520	73.70	129.64
Sylhet	9,526	18,401	591	1,627	13	61	10,130	20,089	11,500,058	88.09	174.69
Total	112,345	190,562	11,159	28,700	1,100	2,986	124,604	222,248	161,109,252	77.34	137.95

5.2.3 District-wise case notification rates (CNR)

The district wise case notification rates of each division in 2015 are shown in Figure 10 and details of case notification by district are shown in Annex- 1

Fig. 10. District-wise CNR of New Pulmonary Bacteriologically Confirmed (PBC) and all forms of TB cases in 2015





5.3 Treatment Outcomes

All diagnosed TB patients are regularly registered for treatment. The treatment lasts for six months (new cases) to eight months (re-treatment cases). At the end of the treatment, the patients are evaluated with regard to treatment outcomes. The possible outcomes are: cured, treatment completed, died, treatment failure, lost to follow up and transferred out. "Cured" and "treatment completed" are also grouped as "treatment success" or treatment with favourable outcome while "died", "treatment failure", "lost to follow up" and "transferred out" are considered as unfavourable outcomes. In the same way as case finding, treatment outcomes are also analyzed by the central NTP unit at three levels: national, divisional and district. This report includes the outcomes of the treatments in TB patients registered during 2015 from all sources (upazilas, metropolitan cities and CDCs).

Definitions of treatment outcomes

Cured: A pulmonary TB patient whose sputum is bacteriologically-confirmed at the beginning of treatment and who was smear or culture-negative in the last month of treatment and on at least one previous occasion

Treatment completed: A TB patient who completed treatment without evidence of failure but there is no record to show that sputum smear or culture results in the last month of treatment and on at least one previous occasion are negative, either because they were not done or because results were not available.

Died: Died due to any cause during the course of treatment

Lost to follow up: Interrupted treatment for two consecutive months or more.

Treatment failure: i) A bacteriologically confirmed TB patient whose sputum smear or culture is positive at month 5 or later during treatment. ii) A clinically diagnosed Pulmonary TB patient whose sputum smear becomes positive at month 2/3.

Transfer out: Patient moved to another registration unit and no known treatment outcome.

5.3.1 Nation-wide Treatment Outcomes

Treatment success rates under DOTS have been consistently high from the beginning and crossed the global target of 85% in 2003. After strengthening DOTS and ACSM activities the unfavourable outcomes have been remarkably reduced. As a result, this treatment success rate has improved further to reach 89% for the cases registered in 2004. The NTP has been maintaining over 91% treatment success rates since 2005 (Figure 11). In fact the NTP has successfully treated 107 788 (94.6%) of the 113946 new pulmonary bacteriologically confirmed cases registered in 2015. The lost to follow up rate was 0.93% while 3.25% of the patients have died during treatment (Figure 12).

Fig. 11. Trends in treatment success rates, 1993-2015 cohorts

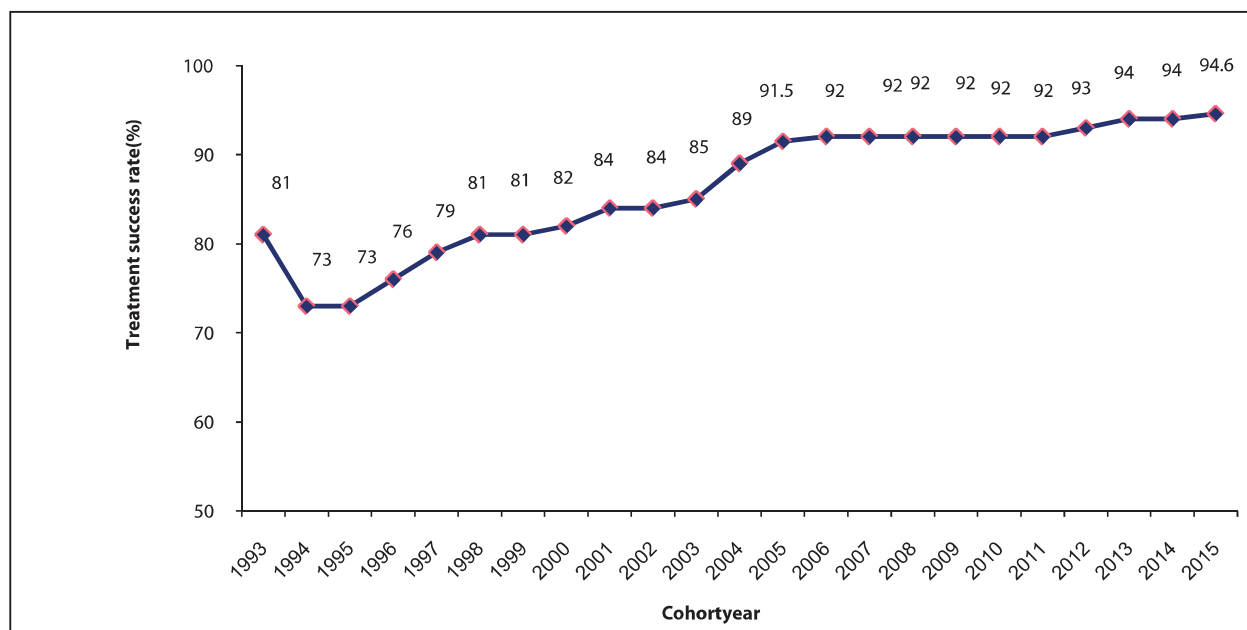
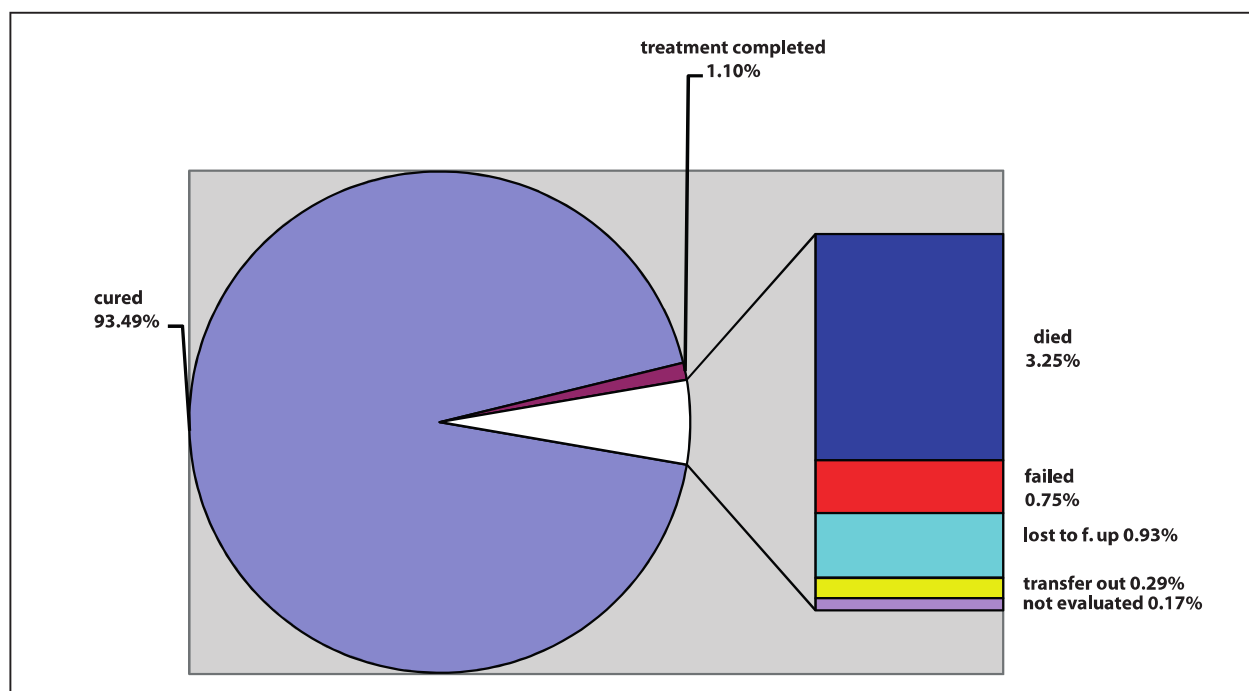


Fig.12. Treatment outcomes of new pulmonary bacteriologically confirmed cases registered in 2015

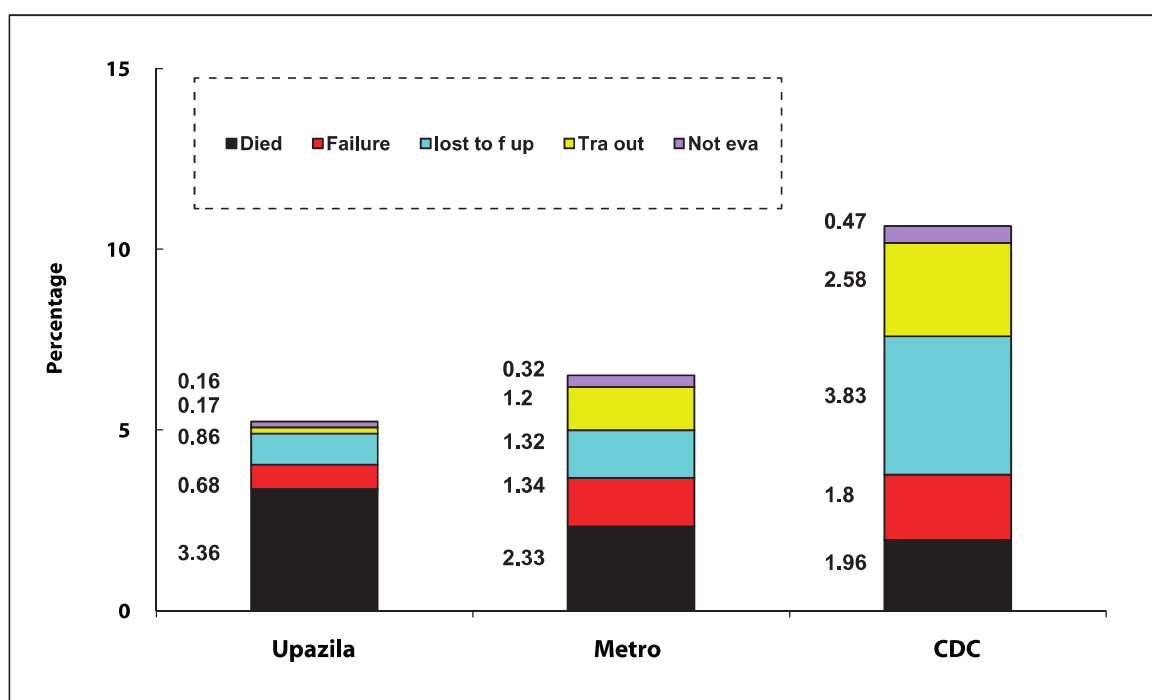


The treatment success rate of new pulmonary bacteriologically confirmed TB cases is highest (94.77%) among the cases registered in upazilas followed by among cases registered in metropolitan cities (93.5%) and the lowest is among those registered in CDCs (89.36%); (Table 5). This year the percentage of TB cases died has been reduced compared to the previous year (3.53% vs 3.25%) resulting in improving treatment success rate. The proportion of lost to follow up and transferred out cases are higher in CDCs (Figure 13) resulting in lower treatment success rate. In order to further improve the treatment success rate, emphasis is to be given on getting feedback of transferred out cases with special emphasis in urban setting.

Table 5 : Treatment success by type of registration unit (2014 cohort)

Type of registration unit	Number of cases registered	Treated successfully
Upazila	102,192	96,851 (94.77%)
Metropolitan city	10,476	9,795 (93.50%)
CDC	1,278	1,142 (89.36%)
Total country	113,946	107,788 (94.60%)

Fig. 13. Unfavourable treatment outcomes of new pulmonary bacteriologically confirmed cases by type of registration unit (2015 cohort)



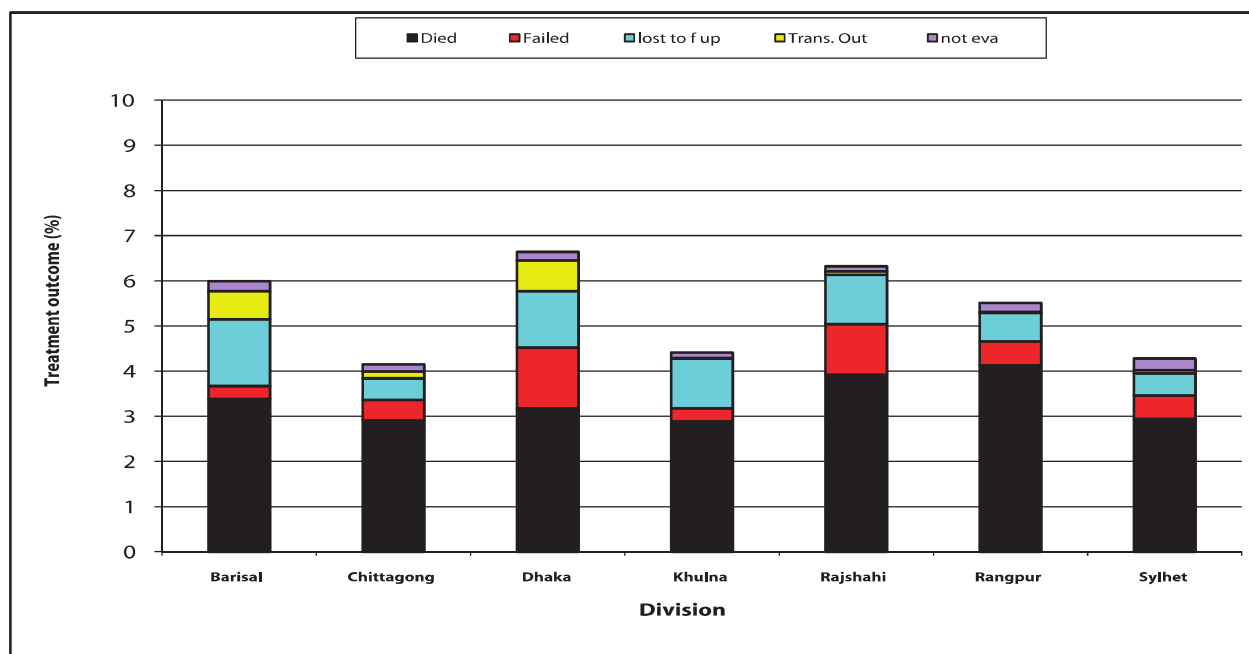
5.3.2 Division-wise Treatment Outcomes

Table 6 shows that all seven divisions have successfully treated more than 93% of the new pulmonary bacteriologically confirmed cases registered in 2015 with overall treatment success rate of over 94.6%. Division wise unfavourable outcomes are shown in fig 14. The patients died in the divisions during TB treatment varied from 2.9% to 4.1.% while the failure rate varied from 0.3% to 1.3%. The lost to follow up rate among those patients varied from 0.5% to 1.3%. Data shown in Figure 14 include also metropolitan cities and CDCs.

Table 6 : Division-wise treatment success rate of new pulmonary bacteriologically confirmed cases registered in 2015

Division	Number of case registered	Cured	Treatment completed	Successfully treated
Barisal	8,022	7,387 92.08%	154 1.92%	7,541 94.00%
Chittagong	24,984	23,744 95.04%	201 0.80%	23,945 95.84%
Dhaka	32,848	30,358 92.42%	308 0.94%	30,666 93.36%
Khulna	15,542	14,776 95.07%	81 0.52%	14,857 95.59%
Rajshahi	11,016	10,304 93.54%	16 0.15%	10,320 93.68%
Rangpur	12,357	11,644 94.23%	31 0.25%	11,675 94.48%
Sylhet	9,177	8,318 90.64%	466 5.08%	8,784 95.72%
Total country	113,946	106,531 93.49%	1,257 1.10%	107,788 94.60%

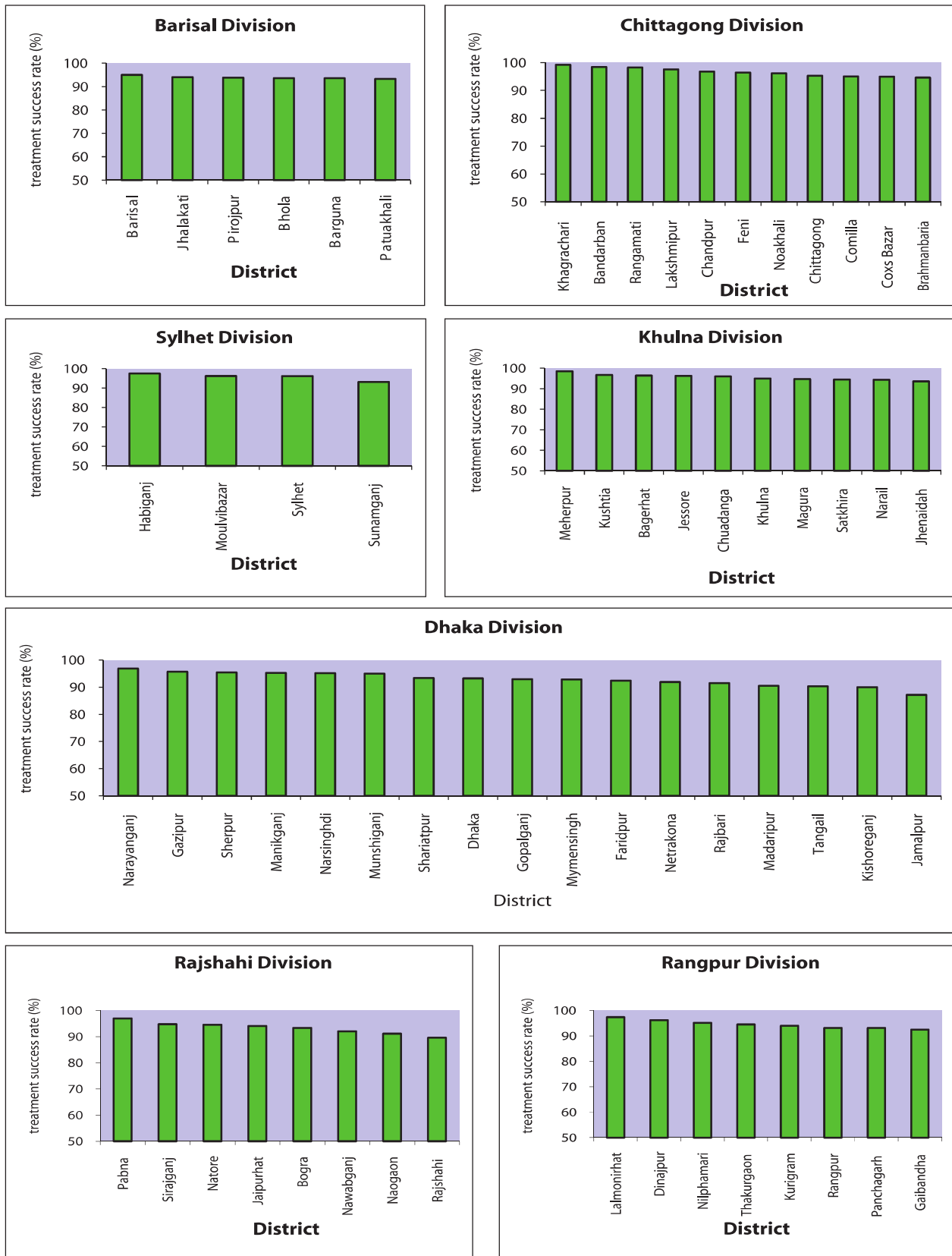
Fig. 14. Unfavourable outcomes of new pulmonary bacteriologically confirmed cases by division, 2015 cohort



5.3.3 District-wise Treatment Outcomes

The treatment success rates of new pulmonary bacteriologically confirmed cases in each district registered in 2015 are shown in Figure 15. Almost all the districts are showing over 90% treatment success rates.

Fig.15. District-wise treatment success rates of new pulmonary bacteriologically confirmed cases for each division; 2015 cohort



5.3.4 Treatment outcomes of relapse, new pulmonary clinically diagnosed and extra-pulmonary (new) cases

In 2015 a total of 7890 relapse, 43 073 new pulmonary clinically diagnosed and 41 998 extra-pulmonary TB cases were registered. The treatment success rate of relapse cases was 88.4%, and treatment completion rates of new pulmonary clinically diagnosed and extra-pulmonary cases were 92.6% and 90.3% respectively. During the course of treatment 415 (5.26%) relapse, 2 141 (4.97%) pulmonary clinically diagnosed and 1 545 (3.68%) extra-pulmonary cases had died; over all death rate of these three categories was 4.41%.

6. Drug Resistant TB

Drug Resistant TB (DR-TB) poses a significant threat to control of TB worldwide. In 2015, globally, an estimated 3.9% of new cases and 21% of previously treated cases have MDR/RR-TB equivalent to an estimated absolute number of 580,000 new MDR-TB cases. In the same year approximately 250,000 patients died from MDR/RR-TB worldwide, (Ref: WHO Global TB report 2016).

NTP Bangladesh has conducted countries first nationwide drug resistance survey in 2010-2011. According to this survey report the proportion of new TB cases with RR/MDR-TB is 1.6% and that of retreatment cases with RR/MDR-TB is 29%. On this assumption the estimated total numbers of MDR-TB cases in 2011 to 2015 in the country are shown in Table-7. In 2015 the notified new pulmonary cases were 157026 and retreatment pulmonary TB cases were 8645.

Table 7. Annual estimated number of MDR-TB cases in Bangladesh (2011-2015)

Year	Among new PTB cases	Among retreated pulmonary TB cases including relapse	Total
2011	1700	2100	3800
2012	1850	2300	4150
2013	2071	2425	4496
2014	2094	2703	4797
2015	2512	2507	5019

For diagnosis and management of multidrug resistant TB (MDR-TB), a National TB Reference Laboratory (NTRL) has been established in National Institute of Diseases of the Chest and Hospital (NIDCH). The NTRL have been functioning since 27th June 2007 for culture and Drug Sensitivity Test (DST). It is linked with supranational reference laboratory (SRL) in Antwerp, Belgium. In August 2008 NIDCH started enrolment of MDRTB patients with GLC approved 24 months regimen and supported by the Global fund. By end of December 2016 a total of 2639 confirmed MDR-TB patients including 461 in 2016 have been enrolled in NIDCH. As a part of Programmatic Management of Drug resistant TB (PMDT) plan NTP established one Regional TB Reference Laboratory (RTRL) at chest disease hospital (CDH), Chittagong in 2011 and also managing MDR-TB patients from that year. In 2013 NTP has also started managing MDR-TB in CDH of Pabna and Khulna. In CDH Khulna, an RTRL has been established in 2015.

The MDR TB patients are also managed in the CDH Rajshahi and in three other hospitals of Damien Foundation at Jalchatra under Tangail District, Anantapur under Netrokona District and Shambhuganj under Mymensingh District with a shorter regimen of 9 months and supported by Damien Foundation, Bangladesh under operational research. Since May 2005 this centre has been managing MDR TB patients, and by end of December 2016 a total of 1761 patients including 168 in 2016 have been enrolled. A regional TB reference laboratory (RTRL) has been established in the CDH, Rajshahi in May 2008.

Details of MDR-TB patients' enrollment by the CDHs is shown in Table 8.

Criteria for Presumptive DR-TB cases:

- Failures of Category I and II
- Non-converters of Category I and II
- All relapses
- All return after loss to follow up
- Close contacts of MDR-TB patient with symptoms.
- All HIV infected patients
- Others: Any Smear Negative or EP TB patients clinically not improving in spite of proper treatment.

The MDR patients diagnosed and enrolled for management are shown in the Table below.

Table 8 : Summary, MDR TB Enrolment for Treatment

Year	GLC approved 20-24 months regimen						Non-GLC (DF) including CDH, Rajshahi	Grand Total
	NIDCH	CDH, CTG	CDH, Pabna	CDH, Khulna	CDH, Sylhet	Total		
2005 May-2007							(67+69+106) = 242	242
2008	107					107	129	236
2009	179					179	181	360
2010	183					183	154	337
2011	212	41				253	137	390
2012	290	86				376	129	505
2013	330	120	31	14		495	191	686
2014	447	123	31	61	54	716	230	946
2015	430	121	26	43	60	680	200	880
2016	461	113	21	60	95	750	168	918
Total	2,639	604	109	178	209	3,739	1,761	5,500

Treatment outcome of MDR-TB patients under GLC approved 24 months regimen:

Diagnosed MDR-TB patients are enrolled for treatment. The treatment lasts for 20-24 months. Initially hospital duration was 6-8 months and rest period patients were treated in the community. From 2012 management modality has been modified with initial hospitalization for 1-2 months followed by community management for the rest period. At the end of the treatment, the patients are evaluated with regard to treatment outcomes.

The overall trend of treatment success rates of MDR-TB patients is increasing. Table 9 shows the treatment outcomes of the patients enrolled during 2008- 2014 under 24 months regimen.

Table 9 : Treatment Outcomes MDR TB, 2008 - 2014 cohorts

Year	Registered	Confirmed MDR	Outcomes Abs #						Outcomes Percentage						Evaluation	
			Cured	Treat completed	Failed	Defaulted	Died	Still on treatment	Cured	Treat completed	Failed	Defaulted	Died	Still on treatment		Treatment Success
2008	107	104	61	6	1	28	8	0	58.7	5.8	1.0	26.9	7.7	0.0	64.42	After 36 months
2009	179	167	104	9	3	30	21	0	62.3	5.4	1.8	18.0	12.6	0.0	67.66	After 36 months
2010	183	175	99	24	0	25	27	0	56.6	13.7	0.0	14.3	15.4	0.0	70.29	After 36 months
2011	253	240	153	15	4	34	34	0	63.75	6.25	1.7	14.2	14.2	0	70.00	After 36 months
2012	376	372	236	35	3	50	42	5	63.4	9.4	0.8	13.4	11.3	1.3	72.85	After 30 months
2013	495	495	333	27	1	51	59	22	67.3	5.5	0.2	10.3	11.9	4.4	72.73	After 30 months
2014	716	716	233	271	0	73	109	23	32.5	37.8	0	10.2	15.2	3.2	70.39	After 24 months

Treatment outcome of MDR-TB patients under DF supported 9 months regimen:

Under an operational research NTP in collaboration with DF Bangladesh has been managing MDR-TB Patients with 9 months regimen since 2008 and showing a good success with treatment success rates of 83.5% for the cohort registered in 2015 (Table 10)

Table 10 : Treatment outcome of MDR-TB patients under 9 months regimen

Year	Registered	Confirmed MDR	Outcomes Abs #						Outcomes Percentage						Evaluation	
			Cured	Treat completed	Failed	Defaulted	Died	No result	Cured	Treat completed	Failed	Defaulted	Died	Still on treatment		Treatment Success
2008	129	129	103	0	3	12	6	5	79.84	0	2.3	9.3	4.65	3.876	79.84	after 1 year
2009	181	181	138	5	2	16	11	9	76.24	2.76	1.1	8.84	6.08	4.972	79.01	after 1 year
2010	154	154	25	2	2	17	8	0	81.17	1.3	1.3	11	5.19	0	82.47	after 1 year
2011	137	137	102	0	9	22	4	0	74.45	0	6.6	16.1	2.92	0	74.45	after 1 year
2012	129	129	91	2	2	18	16	0	70.54	1.55	1.55	13.95	12.4	0	72.09	after 1 year
2013	191	191	152	1	4	8	23	3	79.59	0.52	2.09	4.19	12.04	1.57	80.1	after 1 year
2014	230	230	195	2	7	16	10	0	84.78	0.87	3.04	6.96	4.35	0	85.65	after 1 year
2015	200	200	165	2	6	13	12	2	82.5	1.0	3.0	6.5	6.0	1.0	83.5	after 1 year

7. Laboratory Activities

7.1 Sputum Microscopy and Quality Assurance

Quality assured smear microscopy services which are essential part of TB control program are available through a large laboratory network in Bangladesh. During 2016, sputum microscopy under NTP was performed in 1116 (in 2015 it was 1106) laboratories across the country and sputum samples from a total of 18 74 473 presumptive TB cases were tested for AFB, out of which 125 776 were sputum smear positive (positivity rate 6.71%). As follow up of treatment a total number of 406 240 sputum slides were tested; out which 3.92% were found positive. (Detailed lab report for the year 2016 is shown in Annex -3)

In 2016 number of EQA lab remains same as of 2015 i.e., 40. All 1116 laboratories were brought under the quality assurance network of the EQA centers. Assessment reports had been received from these EQA centers (List of EQA centers shown in Annex -4).

Lot quality assurance sampling method is used for quantifying the number of slides to be rechecked. Each month five slides are selected from each laboratory. Slides are blindly rechecked by a first controller. In 2016, a total of 62744 slides were rechecked. This sample contained approximately the same distribution as the pool from where they were selected i.e. 4 580 (7.3%) positive, 1474 (2.35%) scanty and 56690 (90.35%) negative. For comparison the error rates(%) found in 2013, 2014 and 2015 are also shown in the same table below (Table: 11).

Table 11 : Result of blinded rechecking of AFB smears

Type of error	Number (2016)	Rate (2016)	Rate (2015)	Rate (2014)	Rate (2013)
Total False positive by MCs	59	0.97%	1.00%	0.71%	1.16%
High false positive	20	0.33%	0.26%	0.31%	0.58%
Low/scanty false positive	39	0.64%	0.74%	0.39%	0.58%
Total False negative by MCs	222	0.39%	0.50%	0.50%	0.41%
High false negative	120	0.21%	0.25%	0.28%	0.29%
Low/scanty false negative	102	0.18%	0.25%	0.21%	0.12%
Quantification error (QE) by MCs	159	2.63%	3.30%	3.15%	2.70%

7.2 National Tuberculosis Reference Laboratory (NTRL)

On 27th June 2007 the National Tuberculosis Reference Laboratory (NTRL) formally started functioning. NTRL is the WHO/The Union recommended TB reference laboratory of NTP. It is the only National level laboratory for GLC-Approved project. Along with previous microscopy (Z-N stain, Fluorescent Stain, and FDA staining), Culture and DST (conventional culture and identification, conventional DST by proportionate method and slide DST); new diagnostic techniques such as GeneXpert and LPA (line probe assay) were introduced in 2012. GeneXpert machines are used for detection of MTB and RR TB and it services assist NTP in two ways: (i) diagnosis and follow up of drug resistant forms of TB and (ii) Monitoring drug resistant trends through periodically conducting drug resistant surveys. LPA was introduced through Expand TB project at NTRL under NTP. By December 2014 this project was phased out and related activities were handed over to NTP.

Table 12 : Performance of GeneXpert Machines in detecting DR-TB

Year	Number of GenXpert Installed (Cumulative)	Presumptive-DR TB Tested	RR TB Diagnosed
2012	12	1733	388 (22.4%)
2013	26	11852	811 (6.8%)
2014	39	43360	994 (2.3%)
2015	39	3,9176	893 (2.28%)
2016	39	47,141	980 (2.08%)

Table: 13. Performance through LPA in detecting DR-TB

Year	Presumptive-TB Tested	Drug Sensitive TB	Resistant TB		
			HR	R	H
2012	705	220	213	18	32
2013	869	265	180	43	49
2014	320	154	48	12	21
2015	428	403	53	10	30
2016	105	104	12	1	10

7.3 Regional Tuberculosis Referenced Laboratory (RTRL) in Rajshahi, Chittagong and Khulna

On 10th May 2008 Regional Tuberculosis Reference Laboratory was formally inaugurated in Rajshahi Chest Disease Hospital. Damien Foundation is providing technical support for this laboratory. Culture and drug susceptibility Test (DST) for Tuberculosis are done within shortest duration by this laboratory. The RTRL in Chittagong has started its function since October 2010. After completion and renovation and installation of instrument (in 2014), Khulna RTRL has been formally inaugurated on 30 June 2015.

8.TB/HIV Co-infection

TB/HIV co-infection denotes two diseases in one body. HIV/AIDS and TB are so closely connected that the term "co-epidemic" "dual epidemic" or "twin epidemic" is often used to describe their relationship. The two diseases represent a deadly combination, since they are more destructive together than either disease alone. HIV affects the immune system and increases the likelihood of people acquiring new TB infection. It also promotes both the progression of latent TB infection to active disease and relapse of the disease in previously treated patients. On the other hand presence of TB bacteria in the body of a HIV infected people accelerate the progress of HIV infection to AIDS. TB is one of the leading causes of death in HIV-infected people.

Diagnosis of TB/HIV Co-infection

The diagnosis of TB means that a patient has symptomatic disease due to lesions caused by *M. tuberculosis*. The definitive diagnosis of HIV infection rests on a positive HIV test.

Diagnosis of TB in HIV patients

The diagnosis of tuberculosis is more difficult in HIV-positive people. Even then sputum smear examination for AFB remains the cornerstone of diagnosis to identify infectious patients so that transmission can be stopped by treating with anti-TB drugs. However according to new policy, HIV infected persons with symptoms/signs of TB should be referred for GeneXpert test. Support of X-Ray and other diagnostic methods may also be taken for diagnosis of other types of TB cases.

Practical points

- *TB is harder to diagnose in HIV-positive people.*
- *TB progresses faster in HIV-infected people.*
- *TB in HIV-positive people is almost certain to be fatal if undiagnosed or left untreated.*
- *TB is the leading cause of HIV related morbidity and mortality*
- *HIV is the most important factor fuelling the TB epidemic.*

TB/HIV Activities:

Table 14 : HIV among Diagnosed TB Patients in 2013-2016

Category of TB Patients	2013		2014		2015		2016	
	# tested for HIV before or during TB treatment	# found HIV positive before or during TB treatment	# tested for HIV before or during TB treatment	# found HIV positive before or during TB treatment	# tested for HIV before or during TB treatment	# found HIV positive before or during TB treatment	# tested for HIV before or during TB treatment	# found HIV positive before or during TB treatment
New pulmonary bacteriologically confirmed	621	0	330	1	268	15	1977	8
New pulmonary clinically diagnosed	211	2	111	2	79	1	526	3
New Extra-pulmonary	298	2	150	4	131	0	1245	3
All re-treatment	53	0	38	-	28	1	282	0
MDR	175	1	140	0	145	0	117	0
Total	1358	5	769	7	651	17	4147	14

Table 15 : TB among PLWHA in 2015-2016

# of PLWHA tested for TB		# of PLWHA diagnosed as TB	Number	
Year 2015	Year 2016	Type of TB	Year 2015	Year 2016
479	697	New pulmonary bacteriologically confirmed	17	33
		New pulmonary clinically diagnosed	22	22
		New Extra-pulmonary	28	18
		All re-treatment	7	14
		Total	74	87

9. Training Courses And Workshop

The development of skilled health staff in NTP is a prerequisite for a successful programme. NTP being primary responsible for training, plans all aspects of training and workshop with government and non-government entities to determine training content, develop materials, identify health staff to be trained, ensure training course implementation, and follow up for new hires and maintenance of training. Tables 16 and 17 give an overview of the activities related to training and workshop/meeting on TB control performed by NTP during January to December 2016. Besides these, 76 monitoring meetings in each quarter are organized at 64 districts, however from April 2016 total 77 meetings in each quarter are organized at 64 districts.

Table 16 : Tuberculosis training activities-2016

Subject	Duration (Days)	Category of Participants	Funding Source & No. of Participants	
			GFATM	GOB
Training of Lab. staff on culture and DST	14	Medical Technologist (Laboratory)	6	
TB management training of newly recruited Medical Officers	6	Medical Officers from Upazilla & District	243	
Management Training on X-Ray, EP, PMDT, IC, TB/HIV	5	UH&FPO, MO(DC), Junior Consultant (CDC), Clinic Managers from NGO	284	
Training course for mid-level staff on PMDT, IC, TB/HIV (3 Days)	3	SACMO, HI, AHI, Pharmacist, Staff Nurse, Store Keepers, Statisticians from District & Sub district	600	
Conduct orientation and training for field workers	1	HI, AHI, HA, TLCA, Counselor (NGOs), Senior Service Promotor (NGOs) and Service Promotors	3000	385
Conduct 3-day Training on Programatic Management of Drug Resistance TB (PMDT) for CDH/Upazilla/Urban DOT centre/CDC	3	UH&FPO, MO, Junior Consultant (CDC), Clinic Managers from NGO	255	

Subject	Duration (Days)	Category of Participants	Funding Source & No. of Participants	
			GFATM	GOB
Train / retrain central, divisional and district level staff on data entry and management (3 days with computer application)	3	Statistician, PO & TLCA from District & Upazilla	123	
Train and retrain HIV counselor and other staff to identify and refer TB suspects	1	HIV Counselor and other staffs providing HIV/AIDS service	30	
Training of Doctors (3 days training) on diagnosis of Child TB	3	UH&FPO, MO, Junior Consultant (CDC),	126	
Training of Paramedics (2 days training) on child TB	3	Paramedics	95	
Orientation for field level Ambulatory MDR-TB patient management team	1	UH&FPO, MO, Junior Consultant (CDC), PO, TLCA, Staff nurse, NGO personals	252	
Conduct orientation with private hospitals in Metro	1	Doctors of Private Hospitals	50	
Training and refresher training on LED microscopy (14 days)	14	Medical Technologist (Laboratory)	24	
Conduct training on TB care for CHCP	1	Community Health Care Provider (CHCP)	90	
Orientation Medical College	1	Doctors from Medical college & Hospital	150	
Conduct 3-day Training on TB management for 206 TLCAs and 40 Program Organizers	3	PO, TLCA	105	
Orientation on TB for Community clinic Management Group	1	Members of Community clinic Management Group	20000	
ZN refresher training	6	Medical Technologist(Laboratory)	154	
Conduct 3-day Training on Programatic Management of Drug Resistance TB (PMDT)	3	CDH/Upazilla/Urban DOT centre/CDC	255	
6 Day refresher Training on LED flurescence microscopy	6	Medical Technologist (Laboratory)	264	
3- day training on Personal Protective Equipment (PPE) & IC materials	3	Laboratory Staff	256	

Subject	Duration (Days)	Category of Participants	Funding Source & No. of Participants	
			GFATM	GOB
5-days Training on Data management for newly recruited TLCAs and 40 Program Organizers (PO)	5	TLCAs and Program Organizers (PO)	180	
3 days Training on Supply Chain Management for central and peripheral store related staff	3	Central and peripheral store related staff	67	
One Day training on orientation on sputum collection and transportation from peripheral laboratory to Xpert/RTRLs	1	TLCAs, Medical Technologist (Laboratory) and Lab Attendant	280	
15 Day training on liquid culture and drug susceptibility testing	15	Medical Technologist(Laboratory)	6	
3-Day Training on Gene Xpert Testing	3	Physician and Medical Technologist(Laboratory)	96	

Workshop and Meeting related to TB Control-2016

Subject	Duration (Days)	Category of Participants	Funding Source & No. of Participants	
			GFATM	GOB
Workshop with civil surgeons, chest consultants, MOs	1	Civil surgeons, Chest consultants, MOs	29	
Bi annual Coordination/Partners meeting at national level (MDR TB)	1	GO-NGO personals involved TB control program	27	
Six monthly coordination/ partners meeting at national level involving all divisional consultant	1	GO-NGO personals involved TB control program	27	

10. Collaborating Partners of NTP with Area of Collaboration

A number of nongovernmental organizations (NGOs) and institutes have been recognized as official partner of NTP. The relationship between NTP and most of these partner agencies is governed through a memorandum of understanding (MOU). Following are short profiles of each partner agency, listed in alphabetical order.

10.1 Ashar Alo Society (AAS):

Ashar Alo Society (AAS) with other 02 organizations (CAAP & MAB) provide TB and HIV co infection treatment in Bangladesh. In 2016 Infectious Disease Hospital (IDH) and CARE -Bangladesh also joined with AAS.

Total number of registered HIV positive members (PLHIV) of AAS is 2566 till 31st March 2017. Of them in Dhaka: 1300, Sylhet: 807 and Chittagong: 459, Total adult male: 1577, adult female: 816, children: 149 and TG (Hijra): 24.

In 2016 total 87 patients received TB and HIV co infection treatment. Of them from AAS: 68, MAB: 13, CAAP: 03, IDH: 01 and from CARE-B: 02. Out of 87 patients 73 are from general population and 14 from high risk group, 65 male and 22 female, 33 new smear positive, 22 clinically diagnosed, 18 EPTB and 14 retreatment cases. Total 22 TB patients referred from different TB DOTS center and 65 patients diagnosed as HIV associated TB. In 2016 total 04 patients diagnosed as MDR TB, 02 from Sylhet, 01 from Benapole and 01 from Dhaka, 01 died and 03 patients are continuing treatment. In 2016 total 02 children received TB treatment. Out of total 87 patients 82 received CPT, 78 patients received ART and 15 patients already died.

10.2 BRAC



BRAC is the largest non-governmental development organization in the world with a mission to empower people and communities in situation of poverty, illiteracy, diseases and social injustice. BRAC started TB Control Programme in 1984 as a pilot project in Manikgonj upazila (sub-district) and was extended to 10 other upazilas in 1992 in order to test the potential of scaling it up. Along with the government, BRAC is the principal recipient of The Global Fund to strengthen health system and signed an MoU with the Government of Bangladesh (GoB) in 1994 to expand DOTS services nationwide.

To address the requirements for increasing population access to diagnostic and treatment services, and to improve the quality of microscopy services BRAC are providing 445 laboratories, 26 external quality assurance (EQA) laboratories for assuring the quality of these peripheral microscopy centres, 41 prisons, 48 academic institutions/medical college hospital, 2 port authority hospitals, EPZ (Chittagong, Karnofuly, Comilla), 11 city corporations in TB control services. Currently BRAC and 27 NGOs are working under the stewardship of the National Tuberculosis Control Programme (NTP) in Bangladesh.

In order to end the TB epidemic, there is a need to strengthen health and social sectors by achieving universal health coverage and social protection, which are emphasized within the framework of the new SDG agenda. The government of Bangladesh along with BRAC and partner NGOs are striving hard to achieve SDG targets.

BRAC's approach for TB diagnosis and treatment focuses on community level education and engagement. BRAC conducts orientation with different stakeholders of the community to engage them in efforts to identify patients, ensure treatment adherence. The stakeholders include: cured TB patients, local opinion and religious leaders, other NGO health workers, village doctors, pharmacists and graduate private practitioners. The ShasthyaShebika (SS), the first frontline community health worker, plays a pivotal role of connecting individuals with TB control services during household visits and health forums.

PPM activity has been initiated by BRAC with a goal to reduce the disease burden of the country by increasing early case detection through private sectors and ensure successful treatment of those cases. BRAC is providing financial support to poor presumptive specially smear negative, extra pulmonary, child TB and MDR-TB as well as strengthening laboratory services, diagnosis, treatment, follow-up, training and ACSM activities. Moreover nutritional support is given to MDR-TB and TB-HIV co-infected patients. BRAC also providing patient centered approach in TB care for early case detection and prompt treatment.

ACSM activities are regular parts of TB projects that increase community awareness and reduce stigma regarding TB. BRAC is conducting different types of advocacy workshops, round table discussion, press conference and talk show on TV with policy makers, media personnel, implementers and civil society representatives to enhance awareness and knowledge about TB and organize outreach cough collection/smearing center in hard to reach areas and organize miking at the community level about TB information and cough collection/smearing center.

10.3 Damien Foundation



Damien Foundation, a Belgian NGO, has been active in Bangladesh since 1972 and meaningfully contributing to tuberculosis control and leprosy elimination in Bangladesh. The organization was engaged primarily in leprosy elimination in 6 districts. Later, considering the disease burden included Tuberculosis in its agenda and expanded its working area. In collaboration with National TB Control and Leprosy Elimination Programme the organization now covers a total of about 32 million people in 14 districts (111 upazilas) of Bangladesh, of which 13 districts (102 upazilas) are for combined TB and leprosy. The organization has set up 150 combined TB-Leprosy centres in rural areas including 7 in medical colleges and 1 in workplace (DEPZ) and 261 sputum collection centers at the remote areas of the Upazilas to increase the accessibility and effective coverage. Besides, 3 daily & 7 intermittent centres are engaged in leprosy service only.

The organization also runs three own hospitals with a total 255 beds to guarantee quality services for complicated TB (including MDR TB) and leprosy patients. A total of 580 national staffs including 12 doctors are engaged with DF in providing service in Bangladesh. A total of 24,300 TB cases including 168 MDR TB and 304 new leprosy cases were detected and treated by the organization during 2016. The organization conducts several operational researches which contribute in making the national and international policy decisions. The shortest 9-month MDR TB treatment regimen was developed by Damien Foundation Bangladesh and has been successfully implementing in Bangladesh since 2005 with encouraging results. This shorter regimen, known as 'Bangladesh Regimen', is now being implemented in many other countries. World Health Organization (WHO) endorsed this regimen in May 2016 and immediately after that the government of Bangladesh has decided to scale up this shorter regimen under National Tuberculosis control Programme (NTP).



Orientation of Cured TB patients on TB



Orientation of Non-graduate private practitioners on TB

10.4 HEED Bangladesh

HEED's Background

HEED Bangladesh (Health, Education and Economic Development) is a non-profit, non-political and non-governmental organization (NGO) committed to participate and promote national development through upgrading the socio-economic condition of the disadvantaged and underprivileged people in the society. The organization, as a national non-governmental organization (NGO), was formed in 1974, by national Christian leaders and several western partner organizations in response to the post war needs in Bangladesh. Since 1974, HEED Bangladesh has been working in the fields of health, education, agriculture, aquaculture, livestock, forestry, environment & natural resource management, bio-diversity conservation, disaster management, socio-economic development of marginalized and under privileged people, micro finance, nutrition & Hygiene education, water and sanitation, HIV/AIDS, rural development, awareness raising, arsenic, women, street children, etc.

HEED's Mission

Ensure basic Health and Medicare services for the target (agreed) communities in need, within the specific operation locations, delivered through awareness raising, demand creation, institutional development, building of community capacity, linking with GO-NGO service delivery points.

HEED's Coverage

HEED Bangladesh is working at 120 Upazilas under 32 Districts with 132 offices.

For TB it is working on 24 Upazillas under Moulovibazar District

10.5 icddr,b



icddr,b is an international health research institution located in Dhaka, Bangladesh. With unique proximity to the health challenges of the developing world, both urban and rural, icddr,b provides cutting-edge research that is relevant, rigorously tested, and scalable in resource-limited settings. From discovery of oral rehydration solution to innovative methods for treating severe malnutrition, icddr,b's researchers have developed some of the most important health interventions of the past century. Its scientists, one of the largest multi-disciplinary cohorts in the developing world, collaborate with dozens of international academic, research, and development partners to develop and share knowledge about global lifesaving solutions.

The centre has established a comprehensive programme of research, with particular strengths in infectious disease and vaccinology, reproductive health, neonatal and child health, malnutrition and food security, and other areas. Its scientific workforce comprising of nearly 200 scientifically trained staff is organized into ten Centres focusing on key health issues.

Tuberculosis, an important health problem in Bangladesh remained a focused area of research in icddr,b. icddr,b respects and values all national guidelines and policies and maintains a very highly esteemed partnership with NTP.

The current research focus areas are: Improving TB situation in selected urban areas of Bangladesh, effect of nutrition education and micronutrient supplementation on the biochemical and immunological markers and quality of life of pulmonary TB patients, documentation of DOTS delivery strategies in selected urban clinics in Dhaka city, scaling up management of childhood tuberculosis in Bangladesh, strategies to increase TB case detection by addressing the inequities in TB service utilization and reducing delays in TB diagnosis in rural Bangladesh, scaling up screening, detection and management of tuberculosis in prisons of Bangladesh, feasibility, usefulness and cost effectiveness of GeneXpert in MDR-TB surveillance, pulmonary and extra-pulmonary case detection in selected regional and specialized hospitals, identification of risk factors of TB and its transmission, operational research-a sustainable social enterprise model for increased tuberculosis case detection and treatment in the private sector using mass screening, X-ray and GeneXpert MTB/RIF scale-up approach in Bangladesh, and surveillance of MDR and XDR Tuberculosis. icddr,b's Mycobacteriology Laboratories (BSL 2 and 3) have been used in a variety of programs and studies and also working as a key resource in diagnosis of TB in the private sector.

Additional activities (2016):

icddr,b has established enhanced case-finding activities in the private sector, which includes the extensive use of the Xpert MTB/RIF assay (GeneXpert) and true digital radiology system integrated with Computer Aided Detection for Tuberculosis (CAD4TB) software at three TB screening centers under a sustainable Social Enterprise Model (SEM). This SEM aims to increase early TB case detection and to strengthen TB management in the private sector. icddr,b focuses on engaging graduate private practitioners (PPs), pharmacists, deploying 360 degree communication materials including newspaper advertisements, orientation programs, community outreach campaigns and contact tracing to identify patients. icddr,b has established a network of more than 5000 PPs (Pulmonologist, Internist, General Physicians and other specialists) by 2016 and more than 200 pharmacists in Dhaka metropolitan area in 2016. A total of 24,232 presumptive TB cases were tested under icddr,b SEM and 3,545 TB cases including 214 Rifampicin Resistant (RR) detected in 2016. All Rifampicin Resistant (RR) patients were referred to the National Institute of Diseases of the Chest and Hospital (NIDCH) for further confirmatory testing, clinical evaluation and second-line treatment initiation. Other TB activities include identification of risk factors of TB and its transmission in rural Bangladesh as well as in urban slums, developing a sustainable model TB control in prisons of Bangladesh, nationwide drug resistant TB surveillance, studies on TB transmission dynamics, childhood TB diagnosis and management, TB infection control interventions in health care settings, a prevalence study of HIV in TB cases and other operational research. icddr,b has initiated research activities to investigate the epidemiology of extra-pulmonary tuberculosis in some large hospitals of Dhaka and initiated the external quality assurance of recently rolled out GeneXpert machines as pilot basis all over the country. Another study to investigate the pharmacokinetics of anti-TB drugs and their role in predicting treatment outcomes in severe forms of TB is going on at the NIDCH. A survey to understand the perspective of the private sector physicians for operationalization of mandatory TB notification has been completed in 2016.

10.6 IOM



IOM Bangladesh Providing Migration Health Assessments since 2006

In this century of globalization, people are increasingly on the move within and across borders to meet their social, economic and environmental challenges. Population mobility has health implication both for migrants and for those they leave behind. Migration often makes migrants more vulnerable to health risks.

Within its Migration Health Division (MHD), the International Organization for Migration (IOM), in its role of United Nations Migration Agency, delivers and promotes comprehensive, preventive and curative health programmes which are beneficial, accessible, and equitable for migrants and mobile populations. Bridging the needs of both migrants and IOM's member states, MHD, in close collaboration with partners, contributes towards the physical, mental and social well-being of migrants, enabling them and host communities to achieve social and economic development. In Bangladesh, IOM's Migration Health Division (MHD) has been providing prospective migrants with health assessment services since 2005. It conducts Migration Health Assessments for prospective Bangladeshi migrants travelling to United Kingdom (UK), United States of America (USA), Australia, Canada and New Zealand.

The division also provides a package of services that includes vaccination for prospective US immigrants and students, DNA sampling service, chest physician clinic for prospective immigrants with abnormal Chest X-Ray and or clinical findings travelling to Australia, New Zealand and Canada for IOM cases as well as cases referred by other panel sites, TB diagnosis and Directly Observed treatment Short course(DOTS), which is affiliated by the National TB Control Programme (NTP) of Bangladesh, in Dhaka and Sylhet. In addition, IOM Bangladesh has recently started TB laboratory enabled to process sputum sample for Acid fast Bacilli smear and Mycobacterium Tuberculosis (MTB) culture along with Drug Susceptibility Test.

In last 12 years, IOM conducted health assessment for more than 225,000 people, identified over 259 TB cases, and cured 47 TB patients successfully. Following is a detail overview of TB cases diagnosed and treated at IOM clinics (Dhaka and Sylhet) in 2013, 2014, 2015 and 2016.

Year	Total Number of TB cases Diagnosed in IOM Clinics	Total TB cases Registered for Treatment in IOM Clinics	Number of Cases Successfully Treated	Success Rate	Remarks
2013	23	13	13	100%	
2014	26	12	11	91.6%	1 (one) patient passed away.
2015	20	06	6	100%	
2016	34	11	----	----	
Total (in last 4 years)	103	42	30	97.2%	

10.7 LAMB Hospital

Lutheran Aid to Medicine in Bangladesh (LAMB) works to improve the health of the poor in North-west Bangladesh for a population of over 5 million people. The main site is 2 km west of the town of Parbatipur, about 24 km east of the district city of Dinajpur.

LAMB was started in the early 1970s by missionaries of the World Mission Prayer League who saw the absence of skilled medical care in the area. Initially LAMB provided mobile clinics and healthcare teaching. LAMB has grown to include;

- A 150 bed capacity general hospital fully equipped with modern diagnostic facilities and maternal and child health focused. Besides it runs integrated programs that includes obstetric fistula, disability program, club foot and cleft lip repair.
- Nursing Institute, where government approved Diploma in Nursing Science and Midwifery course is offered.
- Community Health and Development Program working in Dinajpur, Rangpur and Nilphamari districts in the health field focusing mother and child. The major activities include; Adolescent Reproductive Health, TB Control Program, Disability services, Disaster Risk Reduction, Community Based Organization development, Women And Their Children's Health (WATCH), Reliable Health Services(RHS), Non Communicable Disease(NCD), Women's Healthcare through Community Mobilization(WHCM), Community Managed Health Care (CMHC), Reliable Reproductive Health Service (RRHS). Working in collaboration with Bangladesh Government and PLAN Bangladesh.
- A large health focused Training Center with residential accommodation for trainees offer courses for different levels of community health workers, health volunteers, community midwives, nurses, paramedics from LAMB and other national and international organizations.
- LAMB English-Medium School with experienced teachers - national and expatriate. They follow the English National Curriculum. O-levels are certified by Cambridge International Examinations through the British Council. The school has a multicultural environment, thus both national and foreign students broaden their understanding and skills, learning from each other.
- MIS-R collects and processes data from the hospital and community areas for research purposes, and for provision of information to management, government and donors.

LAMB TB Control Program is working in 4 Upazillas. Parbatipur (one pourosova & one union), Chirirbandar and Khansama upazilla under Dinajpur district and Saidpur upazilla under Nilphamari districts covering approximately 788,529 people.

10.8 LEpra Bangladesh

Lepra Bangladesh is an UK based medical development organization began its activities in Bangladesh in year 2000, and works directly with the Government health department through Upazila Health Complexes in four districts; Sirajgonj, Pabna, Bogra and Natore. The main objectives of the program are Control Tuberculosis, and eliminate Leprosy.

Lepra is covering 7,512,080 populations for TB control program in three districts (Sirajgonj, Pabna, and Natore) and funding support is mainly from GFATM NFM (New Funding Model) with additional support also from Lepra UK. Government health department of Bangladesh provides logistics support such as anti-TB medicine and laboratory reagents.

10.9 NATAB

National Anti-tuberculosis Association of Bangladesh (NATAB) oldest of the TB organizations that was established in 1948 in Sylhet as an extension of the Assam Bengal TB Association of British India, During Pakistan era it was East Pakistan TB Association. NATAB primarily provided support for TB patients when TB services were non-existent in the then East Pakistan. Under the ever changing demands of times, NATAB took the present day identity of a major TB organization.

NATAB was the constituent member of The Union (International Union against TB and Lung Disease). In 2010 NATAB was elected as the Chairman of south East Asian Region of The Union. NATAB continued and maintained this honorable position with utmost commitment and sincere service till 2014.

To execute and conduct the field level activities nationwide, at national level NATAB has one (1) central executive committee, sixty four (64) district committees and thus thousands of volunteers from all walks of socio-economic strata and civil society groups that makes the base of NATAB.

In 2004, NATAB signed the memorandum of understanding with the Ministry of Health and Family Welfare and BRAC and became a partner of the National TB Control program funded by GFATM. Since then, NATAB has been working as a civil society advocacy agency to identify different groups by vocation, profession, religion, ethnicity and other possible classification and to turn the variations into strength.

Each quarter, NATAB organizes district level advocacy meetings in all 64 districts of the country with civil society members. At the same time, NATAB also organizes upazila (sub-district) level advocacy meetings in 64 upazilas.

Since 2005, NATAB has been conducting "Annual Conference on TB" that has become a very revered event for the TB workers where specialists, general physicians, health workers, NATAB volunteers and media persons engage in the mutual learning process in the daylong event. The last such annual conference was held on 19 March 2016 with a theme "Zero death, disease and suffering from TB".

10.10 NGO Health Service Delivery Project (NHSDP)



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সূর্যের হাসি
বাড়িরোমের আত্মিকতা



UKaid
from the British people

The NGO Health Service Delivery Project (NHSDP) is an USAID and DFID funded project implemented by Pathfinder International in Bangladesh. The NHSDP supports the delivery of primary health care by providing Essential Service Package (ESP) through nationwide 'Smiling Sun' or 'Surjer Hashi' (SH) network of 25 national NGOs, 399 static clinics, 10,750 satellite clinics and more than 8000 community service providers (CSPs). NHSDP has approximately 25 million service contacts, in 64 districts of Bangladesh through SH NGO network. SH network covers 16% of total population of the country. The project is designed to complement the Government of Bangladesh's (GOB) efforts to maximize the reach to poor and underserved populations in the country with quality health services at low or no cost with that initiative SH has been expanded their service in all 3 Hilly districts.

NHSDP contributes to National Tuberculosis Control Program through Surjer Hashi clinics in Dhaka, Chittagong, Rajshahi and Khulna City Corporations. Eight SH NGOs- BAMANEH, CWFD, PSTC, Swanirvar Bangladesh, Image, Nishkriti, PKS and Tilottoma implements DOTS through 58 SH clinics, 33 of which have microscopy centers and one with External Quality Assurance (EQA) services.

In addition to diagnosing TB and MDR TB cases and ensuring treatment under directly observed treatment, SH network NGOs organize Advocacy, Communication and Social Mobilization (ACSM) activities, implements DOTS in workplace and industries, engage graduate and non graduate private practitioners for referral and diagnosis and treatment, work with cured TB patients and empower community by engaging community, opinion and religious leaders, teachers and private hospitals doctors. Smiling Sun network has been strengthening contact investigation in the community and total case registration is in upward trend for the last 06 years. NHSDP has been making very good liaison with CTB, MSH and NTP, BRAC all the time.

To Intensifying smear negative, child TB and EPTB cases and improving quality DOTs services, NGOs also provide social support to TB patients and their families.

10.11 PIME Sisters

Dhanjuri TB and Leprosy Control Program - Khulna Branch is a Project run by PIME Sisters, a Catholic Religious Congregation. However, we are extremely proud of our being an international and inter-religious team, where everybody is committed in the service towards the people suffering from Leprosy and Tuberculosis. Since 1986 our Project is present in the Metropolitan area of Khulna. At the beginning, in close collaboration with NLEP, our activities were concentrated in the prevention and care of Hansen's disease that, at the time and till 1998, was one of the major health problems for the country. Then, thinking to have achieved the goal of elimination of Leprosy, we decided to take up the challenge of TB. In 2001, we joined the NTP which started to implement its activity in Khulna City Corporation, in that year.

Along with the field activities we run 15 DOTS Centers, plus one Clinic only for Leprosy and a 33 beds Hospital. The Hospital was opened in 1990 with 15 beds and then enlarged in 2004. In it there is our central laboratory. Besides, we offer physiotherapy service and we have a shoe workshop for leprosy patients.

In 28 years of activity we have treated 4697 Leprosy Patients coming from Khulna Metropolitan area and from Khulna District or other area mainly of Khulna and Barisal Divisions. The epidemiological situation of Leprosy is under control. However, we continue to find highly positive cases among the newly detected. This demands a constant commitment from our part. Moreover, we still serve a good number of ex-patients in need of care for recurrent ulcers.

Since 2001 we have treated 5475 TB patients in Khulna City Corporation. 5356 were new cases. In 2016 we registered 310 patients. Among them 50% were smear-positive, 7% smear-negative and 42% EP. The re-treatment cases were 14. In 2016 we found a less number of patients on all the groups: smear positive, smear negative and EP Tuberculosis. We are trying to improve our awareness information on the field to be able to find new cases.

We are grateful to those who, through their help and commitment, have allowed us to continue to carry on our service to the patients suffering from Hansen's disease, Tuberculosis and HIV/AIDS. Without all of them nothing of what we have done could have been possible. The help, support and the co-operation of the local and central authorities have been, as usual, very precious. I would like to underline the commitment and spirit of service of our staff. Their efforts and the passion of some of them in carrying on our activities is the vital strength of our Project who many appreciate.

10.12 Rangpur-Dinajpur Rural Service

Rangpur-Dinajpur Rural Service (RDRS) Bangladesh, a leading development NGO, has been working in the northwest region of Bangladesh for over three decades. It was formally established in 1972 as the Bangladesh field Programme of Lutheran World Federation/Department for World Service (LWF/DWS), Geneva to provide relief, rehabilitation and development assistance to the poor. At the same time, there was a shift in the focus of RDRS development endeavors so that community-level organization and groups, women, and micro-finance and skills training for livelihood activities gained in importance. The RDRS Covers 57 Upazilas (sub-district) of 11 Districts (Panchagarh, Thakurgaon, Dinajpur, Nilphamari, Rangpur, Gaibandha, Lalmonirhat, Kurigram & Jamalpur-are in the north-west & Hobiganj and Moulvibazar in the north-east).

The importance of proper nutrition, clean water, latrines and family planning are among the issues RDRS discuss with its clients and among the wider community to raise living standards. In the Community Health Programme, RDRS also provides preventive and curative care to supplements health, leprosy and TB, STD and HIV/AIDS and eye care.

From 1996, RDRS as a collaborating partner of the National Tuberculosis and Leprosy Control program took the responsibility for the care of TB patients in 5 Upazilas of Lalmonirhat and 9 Upazilas of Kurigram District through 47 clinics.

10.13 Salvation Army

The Salvation Army Urban Health and Development Project is a part of the organization- integrated Community Health Development Project, Mirpur. In 1972 a mobile Medical Relief Team was established. The development programme was added to the health programmes in 1980. Agreements were signed with The Leprosy Mission in 1992 and in 2001 to conduct leprosy activities. The Salvation Army was a signatory of the MoU between NTP and the Leprosy-TB Coordinating Committee and was made responsible for supporting TB control activities in Mirpur, Dhaka. The project area is mostly inhabited by Bihari (Urdu speaking) refugees living in unhygienic slum conditions with scarcity of water supply. The Salvation Army's integrated approach of services delivery along with leprosy and TB control is striving hard to uplift the quality of life to the people.

10.14 SIAPS



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SIAPS
Systems for Improved Access
to Pharmaceuticals and Services

Systems for Improved Access to Pharmaceuticals and Services (SIAPS) program implemented by Management Sciences for Health (MSH); funded by USAID supports to the MOHFW, DGFP, DGDA and DGHS including other key entities to strengthen the ability of policy makers, health care providers and institutions to improve commodity management, with an emphasis on governance, procurement, institutional capacity building, management information system and other system strengthening initiatives, aimed at ensuring continuous availability of commodities required to support healthcare delivery and the timely availability of reliable data to support evidence based decision making.

SIAPS have been mandated by USAID under a cooperative agreement to work with NTP to strengthen pharmaceutical management system of Tuberculosis. The agreement has been started since 23 September, 2011. SIAPS is working with NTP with the following two main objectives-

1. Improve TB program performance through strengthening management information systems in collaboration with WHO, URC and other key stakeholders.
2. Provide support to the TB program to develop a comprehensive supply chain management system to support, forecasting, quantification, supply planning, procurement management and distribution of TB commodities.

10.15 Challenge TB Bangladesh (CTB) Project



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CHALLENGE TB

Challenge TB Bangladesh (CTB) Project

Challenge TB is the flagship global mechanism for implementing USAID's TB strategy as well as contributing to TB/HIV activities under the U.S. President's Emergency Plan for AIDS Relief (PEPFAR). Challenge TB is implemented in 22 countries including Bangladesh by a unique coalition of nine international organizations in TB control it is implemented by a unique coalition of nine international organizations in TB control: KNCV Tuberculosis Foundation (Lead Partner), American Thoracic Society (ATS), FHI 360, Interactive Research & Development (IRD), Japanese Anti Tuberculosis Foundation (JATA), and Management Sciences for Health (MSH), PATH, The International Union against Tuberculosis and Lung Disease (The Union), and the World Health Organization. Challenge TB collaborates with other national and international initiatives in providing global leadership and support for national TB control efforts.

Challenge TB contributes to the WHO End TB Strategy to achieving 2020 milestones with 35% fall in TB mortality, 20% reduction in TB incidence and 0% of affected families facing catastrophic costs due to TB. The overall goal of the project is support national tuberculosis control program to end the epidemic of TB by 2035.

Challenge TB Bangladesh is part of a 5 year cooperative agreement funded by USAID. It supports the National TB Program of Bangladesh to achieve the goals of its National Strategic Plan for TB. MSH is the implementing partner while KNCV & IRD provide technical guidance to the project. CTB provides Technical Assistance (TA) to the National Tuberculosis Control programme (NTP) with a countrywide coverage.

The project serves the following objectives:

- Improved Access to quality patient centered care for TB, MDR-TB, Co-morbid conditions (e.g. TB/HIV, TB/Diabetes etc.);
- Prevention of transmission and disease progression; and
- Strengthened TB Platforms

The array of interventions which the project covers include: upgrading TB laboratory network, strengthening Public Private Mix for TB control, ACSM and PMDT, addressing co-morbid conditions such as TB-HIV, TB-Diabetes and introducing, introducing mHealth in TB program and Improving M&E and surveillance.

In 2016, CTB implemented its activities through eight sub-awardees: Bangladesh Pediatric Association (BPA); Bangladesh Diabetes Association (BADAS); Centre for Woman and Child Health (CWCH); Damien Foundation Bangladesh; Health Education, Environment and Development (HEED) Bangladesh; World Mission Prayer League (LAMB); Nari Maitree and Rangpur Dinajpur Rural Service (RDRS). Among the eight sub awardees, Nari Maitree focused purely on urban slums while some other NGOs covered the high risk groups and vulnerable populations. BADAS worked with diabetic population vulnerable for TB and HEED covered the tea garden and rubber garden workers and ethnic population in Sylhet district. These organizations implemented Community Based DOTS (CB-DOTS) through active case finding, especially in a under performing areas among the targeted high risk populations including urban slums.

In the reporting year, CTB partners detected a total 24,746 cases. Among which total 1,566 cases were diabetic patients with TB.

The project provided community based PMDT (cPMDT) support to DR-TB patients in nineteen districts and four City Corporations. CTB also provided social support to more than 800 DR TB patients. The social support package includes reimbursement of required transportation costs, a monthly stipend to the care provider, and funds for the patients to enable them to purchase food.

To enhance the capability of diagnosis and follow up of the Multi-Drug Resistant TB (MDR-TB), CTB increased functionality of the GeneXpert network by formulating inventory of Xpert facilities, assessment and fixing the problems through engaging Cepheid central office and local agent. The project extended support to establish local Cepheid office in the country which is expected to operate in 2017.

Through BPA, CTB trained 1235 pediatricians, paramedical staff and other health care workers in Sylhet to improve screening, diagnosis and management of TB in Children.

CTB helped the NTP develop a new Public Private Mix Strategic Plan (PPM SP) for 4 years (2016-2020) involving all relevant stakeholders and supported by an external consultant agency.

The CTB-supported sputum transport mechanisms, allowed samples to sent to NTRL/RTRL for follow-up cultures from all over the country. In addition, the seamless follow up of mHealth initiatives has sustained electronic monitoring of DOT, better identification and prompt management of ADRs through video conferencing with clinicians. CTB supported to formulate the National TB Laboratory Strategic plan (NLS) for NTP. CTB has also provide support to develop and print the Monitoring and Evaluation plan for NTP for 2016-2020.

10.16 The Leprosy Mission Bangladesh

The Leprosy Mission Bangladesh (TLMB) is part of The Leprosy Mission International, a Christian service organization founded in 1874. TLM started working in Bangladesh in June 1991 initially for leprosy and since 1994 also for TB. TLM is supporting to the National Leprosy Elimination Programme through working in Dhaka, Chittagong, Chittagong Hill Tracts, Gaibandha, Jaypurhat, Rangpur, Nilphamari, Thakurgaon and Panchagarh districts. TLM is supporting NTP in TB control implementation in ten upazilas of Thakurgaon and Panchagarh districts. This international NGO is strengthening the health system by integrating its Leprosy & TB control services in Government Health facilities. In addition, TLMB foster networking between the Government service providers and community-based supporters including private practitioners, village doctors, local elite, NGO workers, non-graduated private practitioners and cured TB patient.

10.17 The World Health Organization (WHO)



WHO collaborative activities for TB control programme in 2015

WHO is providing support to increase efforts for detection of TB cases; diagnostics and laboratory strengthening; maintain high cure rates; improve the quality of the TB control services and strengthen major critical components of the service delivery system; address the issue of drug resistance; setting up norms and standards; assisting to take evidence based policy decisions; mobilizing partnerships for TB control and supporting research, monitoring and development.

Major activities performed in 2016 with the technical support of WHO were:

I. TB prevalence survey :

The Government of Bangladesh decided to conduct a national TB prevalence survey in order to acquire a comprehensive understanding of the burden of disease caused by pulmonary mycobacterium tuberculosis, along with ways to improve TB control. The survey has been completed and the preliminary report shows the prevalence of bacteriologically confirmed pulmonary TB cases in Bangladesh among the population aged 15 years and above is 287 (95% CI: 244-330) and the prevalence of smear positive pulmonary TB cases among these population is 113 (95%CI:87-139) per 100000 population. The prevalence was higher among men compared to women, higher in urban compared to rural population. Higher prevalence was also found among older population.

The survey used a cross-sectional design. The sample size was determined by stratified cluster sampling, and was calculated to be 100,000, with a total of 125 clusters, each targeting 800±80 eligible invitees. The sampling units were mouza/village/para in rural areas, and moholla/para in urban areas. In total, the field operations were planned for one year (census and survey examinations).

Each participant was interviewed for TB symptoms and underwent a chest X-ray for screening in the field. Those with a positive screening result - either by interview or X-ray - were requested to provide spot sputum followed by next morning sputum. The two sputum samples were collected and transported to the National TB Reference Laboratory (NTRL) at Mohakhali, Dhaka, while maintaining the cold chain. Direct smear examination with LED fluorescent microscope (FM), Gene Xpert MTB/RIF, and culture by concentrated method in LJ media were conducted. The chest X-rays were reviewed by a central panel of experts.

II. Besides TB prevalence survey WHO also provided support to NTP in the form of

- a) Technical assistance to develop guidelines and SOP
- b) Printing of NTP Guidelines, SOP and Recording/ reporting forms
- c) Capacity Building
- d) **Monitoring and evaluation:** WHO technical staff conducted visits to oversee the field activities and provided on-site technical support to ensure quality of services in different areas of Stop TB strategy.
- e) **TB data and report:** WHO Country Office for Bangladesh, in coordination with WHO Regional Office for South-East Asia, provided technical support to collect, validate and finalize data to send to WHO HQ for the global TB report, donors and support for preparation and finalization of different donor reports, annual report of national, global and regional level.

District-wise case notification rate, 2016

Annex 1
Contd.

SL.	District	Upazila						Metro						CDC						Total						Grand Total	Projected Population	New PBC ChR as per 1,00,000 pop.	All Forms ChR as per 1,00,000 pop.									
		Pulmonary Bacteriologically Confirmed		Pulmonary Clinically Diagnosed		Extra-Pulmonary		Pulmonary Bacteriologically Confirmed		Pulmonary Clinically Diagnosed		Extra-Pulmonary		Pulmonary Bacteriologically Confirmed		Pulmonary Clinically Diagnosed		Extra-Pulmonary		Pulmonary Bacteriologically Confirmed		Pulmonary Clinically Diagnosed		Extra-Pulmonary														
		New/ Treatment	Relapses	New/ Treatment	Relapses	New/ Treatment	Relapses	New/ Treatment	Relapses	New/ Treatment	Relapses	New/ Treatment	Relapses	New/ Treatment	Relapses	New/ Treatment	Relapses	New/ Treatment	Relapses	New/ Treatment	Relapses	New/ Treatment	Relapses	New/ Treatment	Relapses					New/ Treatment	Relapses							
1	Bangura	970	18	223	43	173	6	6																			951380	10196	15062									
2	Bansal	2244	21	661	90	401	18	14	222	3	46	8	141	5	1	2	20	2	15	1	0	2477	26	727	100	557	24	15	3926	2399085	10325	16302						
3	Bhola	1926	24	722	26	295	6	6																			1865555	10220	15964									
4	Jhalakati	764	7	146	26	155	6	6																			764	7	146	26	155	6	6	1110	703906	10854	15684	
5	Patuakhali	1637	31	701	128	252	9	4																			1647	31	717	130	261	9	4	2799	1655872	10068	17086	
6	Pirojpur	1026	31	303	49	239	10	32																				1027	31	307	49	239	10	32	1695	1158373	8866	14556
Barisal Div		8567	132	2756	362	1515	55	68	222	3	46	8	141	5	1	23	3	42	4	31	1	0	8812	138	2844	374	1687	61	69	13985	8730546	10093	15939					
7	Bandarban	367	4	69	7	67	4	4																			367	4	69	7	67	4	4	522	46114	7959	11234	
8	Baizambania	2994	84	845	76	535	22	16																			2997	84	846	76	536	22	16	4577	3211995	9331	14200	
9	Chandpur	2231	47	842	30	526	11	9																			2243	46	848	30	540	11	9	3779	2391690	8655	14554	
10	Chittagong	4902	80	879	156	1284	59	21	2650	185	1133	166	2247	129	98	8	2	0	0	9	1	2	7560	267	2012	322	3540	189	121	14011	8487149	8908	16266					
11	Comilla	4301	90	2113	131	1385	49	40																			4501	90	2113	131	1385	49	40	8309	6063185	7423	13638	
12	Cox Bazar	2076	35	888	142	496	20	18																			2076	35	888	142	496	20	18	3725	2705707	7717	13697	
13	Feni	1347	20	329	56	330	7																				1348	20	329	56	335	7	0	2095	1609441	8376	13017	
14	Khagrachari	869	7	212	21	35	1	1																			869	7	212	21	35	1	1	1146	690111	12592	16592	
15	Lakshmipur	1761	28	468	124	337	9	6																			1761	28	468	124	337	9	6	2733	1935841	9037	14087	
16	Noakhali	2656	40	932	123	529	18	14																			2661	40	935	123	532	18	14	4323	3546812	7503	12149	
17	Rangamati	637	5	106	17	66	3	1																			638	5	108	17	70	3	1	842	671198	9505	12530	
Chittagong Div		24341	440	7683	883	5590	203	130	2650	185	1133	166	2247	129	98	42	4	18	2	64	1	3	27033	629	8834	1051	7901	333	231	46012	32063370	8431	14278					
18	Dhaka	3201	107	893	62	1400	70	45	7030	656	3106	189	7077	350	106	77	8	66	1	204	3	0	10388	771	4665	252	8681	423	151	24651	14896355	6920	16447					
19	Fardpur	482	22	169	9	391	9	39																			485	22	169	9	406	9	39	1139	27074001	2338	5504	
20	Gaipur	3404	157	1026	101	1575	84	40																			3404	157	1026	101	1575	84	40	6387	4603958	7394	13786	
21	Gopalganj	314	17	124	5	197	8	23																			327	18	130	5	212	8	24	724	121979	2676	5728	
22	Jamapur	1230	54	266	13	478	13	88																			1304	59	284	14	552	14	98	2325	2485862	5246	8959	
23	Kishoreganj	2095	127	689	51	888	33	132																			2103	128	717	52	944	34	136	4114	3206357	6559	12407	
24	Madaripur	388	13	138	1	208	7	23																			405	14	140	1	229	7	25	821	1222546	3313	6511	
25	Manikganj	1670	19	1238	22	350	8	5																			1670	19	1238	22	350	8	5	3312	1506363	11086	21954	
26	Munshiganj	1547	23	630	48	461	18																				1547	23	630	48	461	18	0	2727	1587398	9746	17179	
27	Myerensingh	3621	257	844	176	1686	79	180																			3676	258	856	176	1730	80	180	6956	5664323	6490	11963	
28	Narayanganj	2878	79	1386	167	1498	79	2																			2878	79	1386	167	1498	79	2	6089	3580509	8038	17000	
29	Narsingdi	2535	37	1648	106	565	9	11																			2535	37	1648	106	565	9	11	4911	2506456	10114	19550	
30	Netrokona	1406	66	350	54	555	23	101																			1436	66	350	54	555	23	101	2585	2451881	5857	10131	
31	Rajbari	246	12	89	3	177	6	17																			246	12	89	3	177	6	17	550	1145494	2148	4653	
32	Shariatpur	429	21	150	6	241	1	23																			429	21	150	6	241	1	23	871	1241153	3456	6823	
33	Shepur	1215	40	660	138	433	19	2																			1215	40	660	138	433	19	2	2507	1454893	8351	17218	
34	Tangail	1633	79	468	22	812	23	98																			1703	85	482	22	875	24	105	3296	3921648	4343	8137	
Dhaka Div		28274	1130	10758	984	11915	489	829	7030	656	3106	189	7077	350	106	367	23	156	3	492	7	24	35671	1809	14020	1176	19484	846	959	73965	54318448	6567	13440					

Quarter	Diagnosis Examinations (Case Finding)						Follow-up Examinations			
	Presumptive TB tested	AFB positive cases	Positivity Rate among presumptive	Smears tested	Positive smears		Smears tested	Positive smears		Positivity Rate
					(1+, 2+ & 3+)	Scanty		(1+, 2+ & 3+)	Scanty	
1st	496,648	30,871	6.22	983,603	49,775	10,385	96,997	1,268	2,462	3.85
2nd	475,010	31,608	6.65	939,867	51,423	10,228	103,278	1,452	2,757	4.08
3rd	419,515	31,563	7.52	832,383	50,440	11,021	101,842	1,326	2,518	3.77
4th	483,300	31,734	6.57	957,923	50,291	11,416	104,123	1,337	2,793	3.97
Total	1,874,473	125,776	6.71	3,713,776	201,929	43,050	406,240	5,383	10,530	3.92

List of EQA Centre: 2016

Division	EQA ID	Location of EQA 1st Control Centre	Organization	Coverage (district)	# of MCs Coverage
Rajshahi	1	CDC Bogra	BRAC	Bogra	30
	2	CDC Dinajpur	BRAC	Jaipurhat	8
	6	LEPRA Sirajganj	LEPRA	Natore	11
				Pabna	16
				Sirajganj	16
	7	CDH/DF Rajshahi	DF	Naogaon	12
				Nawabganj	7
Rajshahi				19	
Rangpur	1	CDC Bogra	BRAC	Gaibandha	20
	2	CDC Dinajpur	BRAC	Dinajpur	28
	3	CDC Rangpur	BRAC	Nilphamari	15
				Rangpur	21
	4	TLMB Thakurgaon	TLMB	Panchagarh	8
				Thakurgaon	10
	5	RDRS Lalmonirhat	RDRS	Kurigram	15
Lalmonirhat				7	
Khulna	8	CDC Jessore	BRAC	Jessore	20
				Narail	7
	36	CDC Bagerhat	BRAC	Bagerhat	17
	9	CDC Khulna	BRAC	Khulna	25
	40	CDC Satkhira	BRAC	Satkhira	15
	10	CDC Magura	BRAC	Jhenaidah	12
				Magura	9
				Chuadanga	9
11	CDC Meherpur	BRAC	Kushtia	13	
			Meherpur	6	
Barisal	12	CDC Barisal	BRAC	Barisal	25
	38	CDC Bhola	BRAC	Bhola	15
	13	CDC Patuakhali	BRAC	Barguna	10
				Patuakhali	16
	14	CDC Pirojpur	BRAC	Jhalakati	9
Pirojpur				12	
Sylhet	15	CDC Sylhet	BRAC	Sunamganj	15
				Sylhet (urban)	8
	16	HEED Kamlganj/Moulvibazar	HEED	Sylhet (rural)	15
	17	CDC Moulvibazar	HEED	Habiganj	12
Moulvibazar				12	

List of EQA Centre: 2016

Division	EQA ID	Location of EQA 1st Control Centre	Organization	Coverage (district)	# of MCs Coverage
Dhaka	18	BRAC, Dakinkhan	BRAC	Dhaka (Peri-urban) (Urban)	20 36
	19	KMSS Pallabi Extention	UPHCSDP	Dhaka-urban, UPHCSDP area	16
	20	CWFD Tejgaon	NHSDP	Dhaka-urban, NHSDP area	21
	21	TB Control & Training Institute	GoB	Dhaka-urban	9
	22	CDC Shyamoli	GoB	Dhaka-urban	
	23	CDC Munshiganj	BRAC	Munshiganj	11
				Narayanganj	15
	24	CDC Mymensingh	BRAC	Gazipur	15
				Manikganj	10
				Sherpur	10
				Mymensingh (urban)	12
	25	DF Mymensingh	DF	Mymensingh (rural)	15
				Kishoreganj	20
	26	DF Faridpur	DF	Faridpur	12
				Gopalganj	8
				Madaripur	6
				Rajbari	5
	27	DF Tangail	DF	Shariatpur	7
				Jamalpur	15
28	DF Netrakona	DF	Tangail	20	
			Netrakona	12	
29	DF Netrakona	DF	Netrakona	12	
29	CDC Brahmanbaria	BRAC	Narsinghdi	12	
Chittagong	29	CDC Brahmanbaria	BRAC	Brahmanbaria	16
	30	CDC Comilla	BRAC	Comilla	34
	31	CDC Cox's Bazar	BRAC	Cox's Bazar	18
	39	CS Office Bandarban	BRAC	Bandarban	25
	32	CDC Chandpur	BRAC	Chandpur	17
				Lakshmipur	12
	33	CDC Chittagong	BRAC	Chittagong-rural	34
				Chittagong-urban	27
	34	CDC Noakhali	BRAC	Feni	11
Noakhali				20	
35	CDC Rangamati	BRAC	Rangamati	42	
37	CDC Khagrachari	BRAC	Khagrachari	28	
Total					1116

TB diagnostic and treatment services affiliated to NTP in metropolitan cities

SL	Ward No.	Agency	Address	Service facility	Remark
Dhaka Metropolitan Area					
1	1 (North)	DAM	Sector No. 4, House No. 241, Jalal Uddin Ahmed Saroni Road, Jamtola,(New Rail Line) Uttara, Dhaka.	Microscopy & DOT	
2	4 (North)	NHSDP-PSTC	Surjer Hashi Clinic, House# A/1, Section-13, Mirpur, Dhaka-1216, Tel: 9005279, Mobile: 01911-220103	Microscopy & DOT	
3	5 (North)	NHSDP-PSTC	Surjer Hashi Clinic, Berybadh Bazar, Lalmatia, Bawniabadh, Block- E, Mirpur-11, Dhaka-1221, Mobile: 01714-240609	Microscopy & DOT	
4	6 (North)	KMSS	House No. 27, Extended Pallabi G, Sare Egaro Mirpur, Dhaka	Microscopy & DOT	
5	8 (North)	KMSS	House No. 32, Road No. 6, Mirpur-1, Dhaka	Microscopy & DOT	
6	9 (North)	NHSDP Swanirvar	Surjer Hashi Clinic, City Corporation Building, Golartek (near Shahid Buddijibi Kabarsthan), Mirpur-1, Dhaka, Mobile: 01819-838988	Microscopy & DOT	
7	10 (North)	UTPS	Second Colony, Horirampur Bazar(South Community Centre) Mirpur, Dhaka	Microscopy	
8	11 (North)	UTPS	House No. 490, Dakkhin Paikpara (Near New Bazar), Dhaka	Microscopy & DOT	
9	12 (North)	NHSDP Swanirvar	Surjer Hashi Clinic, 26/A, Ahammad Nagar (Near Kasem's Shop), Mirpur-1, Dhaka, Mobile: 01712-895371	DOT	
10	13 (North)	NHSDP Swanirvar	Surjer Hashi Clinic, 277/1, Madhya Pierbagh (Near Paka Mosque), Dhaka, Mobile: 01716-094233	Microscopy & DOT	
11	14 (North)	NHSDP-Swanirvar	Surjer Hashi Clinic, 674, West Shewrapara, Kacha Bazar Goli, Mirpur, Dhaka, Mobile: 01716-402933	Microscopy & DOT	
12	16 (North)	UTPS	House No. 422, Near Nagar Shasthya Kandra, Ibrahimpur, Dhaka	Microscopy & DOT	
13	17 (North)	DAM	Kheya Villa, House No. Kha 32/1, Khilkhet, Modhyapara, Dhaka.	Microscopy & DOT	
14	20 (North)	Nari Maitree	House No. G-188/3, Mohakhali School Road, (Wireless Gate) Gulshan, Dhaka-1212	Microscopy & DOT	
15	22 (North)	NHSDP-PSTC	Surjer Hashi Clinic, Plot-5, Block-B, Main Road, Aftab Nogar, Dhaka-1219, Tel: 9860471, Mobile: 01687-299483	Microscopy & DOT	
16	23 (North)	NHSDP-PSTC	Surjer Hashi Clinic, B/346, Khilgaon, Taltola, Dhaka-1219 Tel: 7251169, Mobile: 01729-705179	DOT	
17	25 (North)	NHSDP-Bamaneh	Smiling Sun Clinic, House- 466/1 Shahinbagh, Nakhhalpara, Tejgaon, Dhaka-1215	DOT	
18	27 (North)	NHSDP-Swanirvar	Surjer Hashi Clinic, 52/2, West Raja Bazar, Indira Road, Farmgate, Near Ronoda Pharmacy, Dhaka, Mobile: 01716-527301	Microscopy & DOT	
19	29 (North)	NHSDP-Swanirvar	Surjer Hashi Clinic, ADB Clinic Building, Block- F Babar Road, Chader Hat Khaler Math, Johurimohalla, Dhaka, Mobile: 01190-799294	Microscopy & DOT	
20	30 (North)	NHSDP-Swanirvar	Surjer Hashi Clinic, House# 324, Road# 3, Baitul Aman Housing Society, Near Adabor, Mohammadpur, Mobile: 01725-248990	DOT	
21	31 (North)	Nari Maitree	House No. W/3, Noorjahan Road, (Behind of Mohammadpur Girls' High School), Mohammadpur, Dhaka-1207	Microscopy & DOT	
22	34 (North)	Nari Maitree	House No. 98/1, West Jafrabad Pulpar, (Near Pulpar Jame Masjid), Mohammadpur, Dhaka-1207	Microscopy & DOT	
23	35 (North)	Nari Maitree	House No. 177, Noyatola (Opposite site of RAB Camp), Maghbazar, Dhaka-1212	Microscopy & DOT	
24	1 (South)	BRAC	House No: 331, Road No:13, Block- A, Khilgaon (Near at Tempu Stand) Dhaka-1219	Microscopy & DOT	
25	2 (South)	NHSDP- CWFD	Surjer Hashi Clinic, House# 1, Road# 9, Block D, Section-12, Pallabi, Mobile: 01190-697342	Microscopy & DOT	

SL	Ward No.	Agency	Address	Service facility	Remark
Dhaka Metropolitan Area					
26	2 (South)	BRAC	House No: 400, Dokkin Goran, (Near Taz Pharmacy), Khilgoan, Dhaka-1219	Microscopy & DOT	
27	4 (South)	NHSDP- PSTC	Surjer Hashi Clinic, 43, Madhya Bashabo, Dhaka-1214, Tel:-7210608, Mobile: 01816-210953	DOT	
28	6 (South)	BRAC	House No:103/B, Poschim Uttar Mugda, (Sardar Bari), Dhaka-1214.	Microscopy & DOT	
29	7 (South)	NHSDP- PSTC	Surjer Hashi Clinic, 63, Maniknagar, Dhaka-1203, Tel: 7542914, Mobile: 01818-987884	DOT	
30	11 (South)	BRAC	House- 486/1, North Shahjahanpur (West side of Amtola Mosque) Dhaka	Microscopy & DOT	
31	8 (South)	BRAC	House No.: 121, Dokhin Kamalapur, (Baten Saheb Bari) Motijheel, Dhaka-1217	DOT	
32	13 (South)	NHSDP-PSTC	Surjer Hashi Clinic, 124, Pir Saheber Goli, Shantinagar, Dhaka-1217 Tel:-8362162, Mobile: 01738-245478	DOT	
33	14 (South)	NHSDP- CWFD	Surjer Hashi Clinic, 113 Gozmohal, Hazaribagh , Rayerbazar. Tel: 8611886, Mobile: 01731-909951	Microscopy & DOT	
34	15 (South)	NHSDP-CWFD	Surjer Hashi Clinic, 640 Manikdi Bazar, Dhaka Cantonment Mobile: 01715-283036	Microscopy & DOT	
35	16 (South)	NHSDP- PSTC	Surjer Hashi Clinic, 233/A, Free School Street, Kathalbagan, Dhaka-1205, Tel: 9669896, Mobile: 01913-842800	DOT	
36	17 (South)	NHSDP-PSTC	Surjer Hashi Clinic, 183, Green Road, Dhaka-1205 Tel: 9134091, Mobile: 01716-787405	Microscopy & DOT	
37	18 (South)	NHSDP-CWFD	Surjer Hashi Clinic, Palash Villa, Ga-19 Shahjadpur, Gulshan Mobile: 01719-052262	Microscopy & DOT	
38	19 (South)	NHSDP-PSTC	Surjer Hashi Clinic, 30, Shahid Sangbadik Selina Parveen Sarak (Old 103, New Circular Road), Dhaka-1217, Tel: 9351472	Microscopy & DOT	
39	22 (South)	BAPSA	House No. 65, Nilambar Saha Road (Beside Saleh School) Hazaribagh, Dhaka-1205	Microscopy & DOT	
40	24 (South)	BAPSA	House No. 42/1, KA,R N D Road, Shahidnagor Boubazar (Killar Moor), Dhaka	Microscopy & DOT	
41	25 & 26 (South)	NHSDP-CWFD	Surjer Hashi Clinic, 36, Sheikh Shaheb Bazar Lalbagh Road, Tel: 8618533	Microscopy & DOT	
42	29 (South)	BAPSA	House No. 38/3b/2 Alierghat (Lal Khan Bari) Islambagh, Dhaka-1211	Microscopy & DOT	
43	31 (South)	KMSS	47, Nelgola, Immamganj, Nagar Shasthya Kandra Chalk Bazar, Dhaka	Microscopy & DOT	
44	31 (South)	KMSS	15 Becharam Dewri Chairman bari, (Near Nagar Shasto kendra) Moulibazar, Dhaka.	DOT	
45	33 (South)	KMSS	26, Mazed Sardar Road, Nagar Shasthya Kandra (old Pakistan Maath) Aga Sadaque Road, Bangshal, Dhaka	Microscopy & DOT	
46	34 (South)	KMSS	22 Malitola, North South Road, (Near Bank Asia) Bongshal, Dhaka.	DOT	
47	38 & 41 (South)	NHSDP-CWFD	Surjer Hashi Clinic, 4, Joy Kali Mandir Road, Wari Tel: 7123463	Microscopy & DOT	
48	39 (South)	NHSDP-PSTC	Surjer Hashi Clinic, 12 K.M.Das Lane,Tikatuli, Dhaka-1203 Mobile: 01967-920461	DOT	
49	40 (South)	NHSDP-CWFD	Surjer Hashi Clinic, 45, Doyagonj More, Doyagonj Mobile: 01556-305871	Microscopy & DOT	
50	42 & 44 (South)	NHSDP-CWFD	Surjer Hashi Clinic, 33, Begumgonj Lane Begumgonj, Mobile: 01913-399545	DOT	

SL	Ward No.	Agency	Address	Service facility	Remark
Dhaka Metropolitan Area					
51	43 (South)	KMSS	Farashganj, Lalkuthi truc stand, Nager Shasthya Kandra Farashganj, Dhaka	Microscopy & DOT	
52	45 (South)	NHSDP-CWFD	Surjer Hashi Clinic, 114/1, Distillery Road (Dhupkhola Math) Gandaria, Tel: 7448272	Microscopy & DOT	
53	48 (South)	NHSDP-PSTC	Surjer Hashi Clinic, Jatrabari (North corner park) City corporation building Dhaka-1203, Tel: 75462235, Mobile: 01718-085599	DOT	
54	49 (South)	NHSDP-PSTC	Surjer Hashi Clinic, Ground floor of Dhalpur Maternity Dhalpur, Dhaka-1203, Tel: 7544061, Mobile: 01771-027378	Microscopy & DOT	
55	49 (South)	FOB	Saidabad Clinic, Saidabad Ph: 7546402	Microscopy & DOT	
56	50 (South)	BRAC	House No: 205/B, Dokkhin Jatrabari, Abbasuddin Road (Near Dholaipar Toll Box), Dhaka-1204	Microscopy & DOT	
57	52 (South)	BRAC	House No: 342/5, Jurain Khendoker Road (Peace School Goli) Shayampur, Dhaka-1204	Microscopy & DOT	
58	53 (South)	NHSDP-CWFD	Surjer Hashi Clinic, College Road East Jurain, Tel: 7440293	Microscopy & DOT	
59	Peri-urban	BRAC	House 7,Road 16,Sector 10, Uttara (near Kamarpara bus stand)	Microscopy & DOT	
60	Peri-urban	BRAC	House 3, Road 7, Uttarkhan Capital Housing Society Uttara	Microscopy & DOT	
61	Peri-urban	BRAC	Near Dakkhin Khan Bazaar Dakkhin Khan, Uttara	Microscopy & DOT	
62	Peri-urban	BRAC	29/A/B, 2nd Colony, Sector 1, Mirpur	Microscopy & DOT	
63	Peri-urban	BRAC	206/A/1 Old Kachukhet, Cantonment	Microscopy & DOT	
64	Peri-urban	BRAC	150/2 Kuril Bisho Road, Kazi Bari Mosque Lane, Jagonnathpur	Microscopy & DOT	
65	Peri-urban	BRAC	House # 89/2/1, Hasenuddin Road, (Puraton Thana Road), North Badda	Microscopy & DOT	
66	Peri-urban	BRAC	31/C, Road -4 Bonosri Project, Block-C, Goran, Madartek	Microscopy & DOT	
67	Peri-urban	BRAC	27, Zigatola, Near Bitol Mohram Masjid, Dhanmondi	Microscopy & DOT	
68	Peri-urban	BRAC	36 Badda Nagar (near Hazaribagh Park), Bhagolpur	Microscopy & DOT	
69	Peri-urban	BRAC	House 77, Ashrafabad (Near thana), Kamrangirchar	Microscopy & DOT	
70	Peri-urban	BRAC	622, Khan Manjil, Chairmanbari, (Near WAPDA Mosque), Rasulpur	Microscopy & DOT	
71	Peri-urban	BRAC	81/1 Sabujbag (Near Sabujbag Jame Mosque)	Microscopy & DOT	
72	Peri-urban	BRAC	16/B/01 Dino Nath Sen Road (Near Sadhana Owshadhaloy), Gandaria, Sutrapur	Microscopy & DOT	
73	Peri-urban	BRAC	76/2/A/5 Bibi Bagicha, North Jatrabari	Microscopy & DOT	
74	Peri-urban	BRAC	Muradpur (Near Muradpur Bus Stand), Shampur.	Microscopy & DOT	
75	Peri-urban	BRAC	Paity Bottala Demra Road, Matuail	Microscopy & DOT	

SL	Ward No.	Agency	Address	Service facility	Remark
Dhaka Metropolitan Area					
76	DOTS Comer	BRAC	Shaheed Monsur Ali Medical College Hospital, Sector #11, Road # 10, Uttara, Dhaka (TB DOTS Corner, Room#16, Outdoor)	Microscopy & DOT	
77	DOTS Comer	BRAC	Women Medical College and Hospital, Sector-01, Road # 8,9 Plot-04, Uttara, Dhaka . (TB DOTS Corner, Room#132, Gynae Outdoor)	Microscopy & DOT	
78	DOTS Comer	BRAC	East West Medical College Hospital, Taltola, Ashulia Road, Turag, Dhaka, Room # 26, Outdoor)	Microscopy & DOT	
79	DOTS Comer	BRAC	Shaheed Sharowardi Hospital, Dhaka (TB DOTS Corner, Room-20, Block -2, Outdoor)	Microscopy & DOT	
80	DOTS Comer	BRAC	Shishu Hospital, Dhaka	Microscopy & DOT	
81	DOTS Comer	BRAC	Bangladesh Medical College Hospital, Dhanmondi, Dhaka-1209. (TB DOTS Corner, Room# 118, Outdoor)	DOT	
82	DOTS Comer	BRAC	Dhaka Medical College Hospital, Dhaka (TB DOTS Corner, Room# 10, Outdoor)	Microscopy & DOT	
83	DOTS Comer	BRAC	Bangabandhu Sheikh Mujib Medical University, Shahbagh, Dhaka-1100. (TB DOTS Corner, C-block, Outdoor)	Microscopy & DOT	
84	DOTS Comer	BRAC	BIRDEM Hospital, Shahbagh, Dhaka-1000. (TB DOTS Corner, Near Room# 127, Medicine Outdoor)	Microscopy & DOT	
85	DOTS Comer	BRAC	Sir Salimullah Medical College Hospital, Dhaka. (TB DOTS Corner, Room# 120, Medicine Outdoor)	Microscopy & DOT	
86	DOTS Comer	BRAC	Dhaka National Medical College Hospital, 53/2 Janson Road, Dhaka. (TB DOTS Corner, Room# 130, Outdoor)	Microscopy & DOT	
87	DOTS Comer	BRAC	Institute of Child and Maternal Health, (ICMH), Matuail, Dhaka. (TB DOTS Corner, Near Record Room, Outdoor)	Microscopy & DOT	
88	DOTS Comer	BRAC	Kurmitola General Hospital, Dhaka Cantonment, Room # 327, 3rd Floor (Out Door)	Microscopy & DOT	
89	DOTS Comer	BRAC	Holy Family Red Crescent Medical College Hospital, Mogbazar, Room # 24, 1st Floor (Out Door)	DOT	
90	DOTS Comer	BRAC	Uttara Adhunik Medical College Hospital, House # 34, Road # 4, Scetor # 9, Sonargaon Janapath, Uttara Model Town, Uttara	Microscopy & DOT	
91	DOTS Comer	BRAC	Mugda General Hospital, Mugda, Dhaka, Mobile: 01716-280659	Microscopy & DOT	
92	DOTS Comer	BRAC	Sarkari Karmachari Hospital, Fulbaria, Dhaka, Mobile: 01724-732310	Microscopy & DOT	
93	DOTS Comer	GoB	NIDCH, TB Gate, Mohakhali	Microscopy & DOT	
94	DOTS Comer	GoB	Shyamoli 250 bed TB Hospital, Shyamoli, Ph.-9111892	Microscopy & DOT	
95	DOTS Comer	GoB	Kuwait Bangladesh Friendship Govt. Hospital, Sector # 6, Uttara, Dhaka, (Room # 206 & 217), Mobile: 01818-765930	Microscopy & DOT	
96	DOTS Comer	GoB	DOTS Corner, Dhaka Community Hospital, 190/1, Baro Moghbazar, Wireless Rail Gate, Ph.-9351190-1, 8314887	Microscopy & DOT	
97	DOTS Comer	GoB	DOTS Corner, Isolation Ward, Medical Unit, Combined Military Hospital, Cantonment	Microscopy & DOT	
98	DOTS Comer	GoB	Dhaka Central Jail Hospital, Nazimuddin Road	Microscopy & DOT	
99	DOTS Comer	GoB	DOTS Corner, Police Hospital, Razarbagh Police Line	Microscopy & DOT	
100	DCC (North)	IOM	House # 13/A, Road # 136, Gulshan-1, Dhaka- 1212, Tel: 55044811-13.	Microscopy & DOT	
101	DCC (South)	BGMEA	30/B, Malibagh, Chowdhurypara, Dhaka, Tel: 8311124	Microscopy & DOT	
102	DCC (North)	BGMEA	Plot # 5, Road # 5, Milkvita Road, Mirpur-7, Dhaka, Mobile: 01712-677667	Microscopy & DOT	
103	DCC (North)	BGMEA	Road # 6, Block # B, House # 5 (2nd floor), Nabodoy Housing Society, Mohammadpur, Dhaka-1200, Tel: 9120832, Mobile: 01716-159076	Microscopy & DOT	
104	DCC (North)	BGMEA	Saru Kunja, House # 64, Block # G, Niketan Eastern Housing Ltd., Gulshan-1, Dhaka, Tel: 9858549	Microscopy & DOT	
105	DCC (North)	BGMEA	House # 16/A, Road # 16, Sector # 4, Uttara, Dhaka, Tel: 8950208	Microscopy & DOT	
106	DCC (North)	CPHD	65/D, Zigatala, Dhaka-1209.	Microscopy & DOT	
107	DCC (North)	icddr'b	68 Shaheed Tajuddin Ahmed Sarani, Mohakhali, Dhaka-1212. Mobile: 01779-100100	GeneXpert & DOT	
108	DCC (South)	icddr'b	House#11/A, Golapbagh Bishwa Road (near to Golgotha baptist church & Golapbagh CNG station), Dhaka-1213. Mobile: 01779-700700	GeneXpert & DOT	
109	DCC (South)	icddr'b	House# 15, Road# 07, Dhanmondi (near to orchard point centre) Dhaka-1205. Mobile: 01779-600600	GeneXpert & DOT	
110	DCC (South)	DCC	Dhaka Mohanagar General Hospital, Nayabazar, Dhaka-1100, Tel: 7390860	Microscopy & DOT	

SL	Ward No.	Agency	Address	Service facility	Remark
Chittagong Metropolitan Area					
1	1	NHSDP -Image	Kashem Mansion (1st floor) Hathazari Road, Aman Bazar, South Pahartali, Phone # 031-2581799	DOT	
2	2	NHSDP -Image	16 Baizid Bostami R/A, Jalalabad, Phone # 031-681906, 2581726	Microscopy & DOT	
3	2	GoB	Government Urban Dispensary, Shersha Colony, Jalalabad	DOT	
4	3	CCC	City Corporation dispensary, Panchlaish	DOT	
5	3	GoB	Government Urban Dispensary, Rowfabad, Panchlaish	DOT	
6	4	GoB	Government Urban Dispensary, Gausul Azam, Chandgaon	DOT	
7	4	NHSDP -Image	Marium Vila, Mouluvi Pukur Par, Chandgaon, Phone # 031-672552	Microscopy & DOT	
8	5	BRAC	DOTS Centre, Kalurghat I/A, Hazi Dulamiah Road, Nazumiah Hat, Mohara	DOT	
9	8	BRAC	DOTS Corner, Chittagong Medical College Hospital	Microscopy & DOT	
10	8	NATAB	NATAB Bhaban, 62 Katalganj, Panchlaish	Microscopy & DOT	
11	9	GoB	Government Urban Dispensary, North Pahartoli, Colonelhat	DOT	
12	9	GoB	Government Urban Dispensary, North Pahartoli, Ferozshah	DOT	
13	9	NHSDP-Nishkrity	Rafique Chowdhury Bhaban, New Monsurabad, Pahartoli	Microscopy & DOT	
14	10	BRAC	DOTS Centre, Fouzdarhat I/A	DOT	
15	10	NHSDP -Image	Bashar Champa Bhaban, Hazrat AmanUllah road, North Kattali, Pahartali, Phone # 031-2770943	DOT	
16	11	GoB	Government Urban Dispensary, Halishar, South Kattali	DOT	
17	11	CCC	Chadu chowdhury Primary Health Care Centre, Chadu Chowdhury Road, Custom Academy, South Kattali	DOT	
18	12	CCC	City Corporation dispensary (CCD), Saraipara	DOT	
19	13	MAMATA	380/A, Flora Pass Road, Ambagan, Pahartoli, Chittagong, Mobile: 01711-903395	DOT	
20	13	NHSDP -Image	Saleh Mansion, 22/A Zakir hossain Road, East Nasirabad, Phone # 031-615125.	Microscopy & DOT	
21	14	CCC	City Corporation dispensary (CCD), Lalkhan Bazar	DOT	
22	14	MAMATA	Nagar Matree Shadan, Salam Building, 61, Chandmari Road, Lalkhan Bazar, Chittagong, Phone: 031-625804	Microscopy & DOT	
23	14	BRAC	DOTS Corner, Railway Hospital	Microscopy & DOT	
24	15	MAMATA	27 Betari Goli, Bagmoniram, Chittagong, Mobile: 01711-903395	DOT	
25	16	CCC	City Corporation dispensary (CCD), Ward Commissioner's Office, Chawkbazar	DOT	
26	17	NHSDP-Nishkrity	Rahman Manson, Rahattarpool, West Bakalia	Microscopy & DOT	
27	17	GoB	Government Urban Dispensary, West Bakalia, Panchlaish	DOT	
28	18	CCC	City Corporation dispensary, Ward Commissioner's Office, Kala Meah Bazar, East Bakalia	DOT	
29	19	CCC	City Corporation dispensary, Nurul Islam Maternity Hospital, South Bakalia	DOT	
30	20	CCC	City Corporation dispensary, Ward Commissioner's Office, Dewan Bazar	DOT	
31	21	NHSDP-Nishkrity	129, Jamal Khan by lane (north side of DC Hill)	Microscopy & DOT	
32	22	MAMATA	Amin Mansion, Plot No-582/605, Batali Road, Enayet Bazar, Chittagong, Mobile: 01817-757939	DOT	
33	23	CCC	City Corporation dispensary, Ward Commissioner's Office, Dewanhat, Uttar Pathantoly	DOT	
34	24	NHSDP-Nishkrity	217, North Agrabad (Mollapara more), Rongipara	DOT	

SL	Ward No.	Agency	Address	Service facility	Remark
Chittagong Metropolitan Area					
35	24	MAMATA	Panwala Para, Haddi Companir Moor, North Agrabad, Chittagong, Mobile: 01913-618282	DOT	
36	26	GoB	Government Urban Dispensary, Agrabad (Masjid Colony), North Haliashahar	DOT	
37	27	CCC	City Corporation Dispensary, South Agrabad (Doublemooring)	DOT	
38	27	GoB	Skin & V.D. Hospital, South Agrabad	Microscopy & DOT	
39	27	BRAC	DOTS Corner, Ma O Shishu General Hospital	Microscopy & DOT	
40	28	BRAC	DOTS Centre, Ward Commissioner's Office, Pathantoly	DOT	
41	29	CCC	City Corporation dispensary, Ward Commissioner's Office, West Madarbari	Microscopy & DOT	
42	29	MAMATA	81, Mogoltoli By Lane # 1, West Madarbari, Chittagong, Phone # 031-2514481	Microscopy & DOT	
43	30	CCC	City Corporation dispensary, Younus mia, Ward Commissioner's Office, East Madarbari	DOT	
44	31	BRAC	Khelaghor Ashor, Alkaran	DOT	
45	32	GoB	Chest Disease Clinic, Andarkilla	Microscopy & DOT	
46	33	CCC	City Corporation dispensary, Ward Commissioner's Office, Firingee Bazar	DOT	
47	33	NHSDP-Nishkrity	62/63, Poet Kazi Nazrul Islam Road, Firingee Bazar, Kotowali	DOT	
48	34	BRAC	DOTS Centre, Patharghata	DOT	
49	35	BRAC	DOTS Centre, Jail Hospital, Government Urban Dispensary, Baxirhat	Microscopy & DOT	
50	37	NHSDP-Nishkrity	Borapole, North Middle Haliashahar	DOT	
51	40	BRAC	DOTS Corner, CEPZ Hospital, South Haliashahar	Microscopy & DOT	
52	39	BRAC	DOTS Corner, Port Hospital, South Haliashahar	Microscopy & DOT	
53	39	GoB	Government Urban Dispensary, Seamen Hostel, South Haliashahar	DOT	
54	39	MAMATA	Mamata Clinic, Baitush Sharaf Bhaban, Taltala, Bandartilta, South Haliashahar, Chittagong, Phone: 031-740476, Mobile: 01920-470753	Microscopy & DOT	
55	40	Youngone Ltd.	Youngone Ltd. Hospital, CEPZ, North Patenga	Microscopy & DOT	
56		BRAC	DOTS Corner, Chest Disease Hospital, Fauzderhat	Microscopy & DOT	
57		BRAC	DOTS Centre, Karnaphuli I/A	DOT	
58		GoB	DOTS Corner, CMH Cantonment	Microscopy & DOT	
59		GoB	DOTS Corner, CMH BNS Patenga	Microscopy & DOT	
60		GoB	Government urban Dispensary, Marine Academy	DOT	
61		BRAC	DOTS Corner, KEPZ Hospital	Microscopy & DOT	
62		BGMEA	BGMEA Hospital, Saltgola Rail Crossing, Seamens Hostel Gate, South Haliashahar, Bandar, Chittagong, Tel: 031-740814, Mobile: 01813-277530	Microscopy & DOT	
63		BRAC	DOTS Corner, Chattagram International Medical College Hospital	Microscopy & DOT	
64		BRAC	DOTS Corner, Bangabandhu Memorial Hospital (USTC)	Microscopy & DOT	
Khulna Metropolitan Area					
1	01	NHSDP-PKS	Maheshwarpasha, Daulatpur. UPHCP Bhaban, Khulna	DOT	
2	02	NHSDP -PKS	TB Hospital Road, Mirerdanga. UPHCP Bhaban, Khulna	DOT	
3	02	BRAC	DOTS Center for Industrial Center. Khulna. (Located at BRAC office at Fulbarigate area)	Microscopy & DOT	
4	03	PIME Sisters	PIME Sisters DALIT. 37/1, Kedarnath Road, Ralligate, Maheshwarpasha, Daulatpur. Khulna	DOT	
5	04	NHSDP PKS	Deyana, Daulatpur. UPHCP Bhaban, Khulna	DOT	
6	05	PIME Sisters	Muhsin Upa Sasthya Kendra, Daulatpur Bazar. Daulatpur, Khulna.	DOT	
7	06	NHSDP -PKS	02, Cross Road, Pabla, Daulatpur. UPHCP Bhaban, Khulna	Microscopy & DOT	

SL	Ward No.	Agency	Address	Service facility	Remark
Khulna Metropolitan Area					
8	07	PIME Sisters	Nazirghat urban clinic, Borobari, Khulna	DOT	
9	08	PIME Sisters	Sadar Hospital DOT Corner, Khulna	DOT	
10	08	KMSS, KCC	Fire Brigade Road (Near 11 No. Ward Counselor's office), Khulna City Corporation, Khulna	DOT	
11	09	PIME Sisters	Blue Sister DOTS Center, Tootpara zoracall bazar	DOT	
12	10	PIME Sisters	PIME Sisters. Lal Hospital. Khalishpur. Khulna	DOT	
13	11	PIME Sisters	Khanjahan Ali Datobo Health Center, Lobonchara, Khulna	DOT	
14	11	KMSS, KCC	Fire Brigade Road (Near 11 No. Ward Counselor's office), Khulna City Corporation, Khulna.	Microscopy & DOT	
15	12	NHSDP -PKS	103, Central Block, Eidgah Road Khalishpur. Tel. # 763518. Khulna	Microscopy & DOT	
16	13	PIME Sisters	PIME Sisters. Missionaries of Charity. Duttapara, Khalishpur, Khulna.	DOT	
17	14	PIME Sisters	PIME Sisters. Daspara Road, Boyra. Khulna. Tel. # 761782	Microscopy & DOT	
18	16	PIME Sisters	Demien Clinic, 9/1 Daspara Road, Bayra, Khulna	DOT	
19	17	BRAC	BRAC DOTS Corner, Khulna Medical College Hospital.	Microscopy & DOT	
20	DOTS Corner	GoB	BRAC DOTS Corner. Ad-din Akij Medical College, Boikali, Dhaka Highway, Khulna	Microscopy & DOT	
21	17	PIME Sisters	Chest Clinic, Lower Jessore Road, Khulna, Te # 1731105	Microscopy & DOT	
22	18	NHSDP -PKS	PIME Sisters. KHUDA House. South of Bus Terminal, Sonadanga, Khulna.	DOT	
23	19	NHSDP -PKS	Islamabad (Paipara) Community Center. Infront of Eidgah. UPHCP Bhaban, Khulna	DOT	
24	20	PIME Sisters	Shaikhpara Bazar, Shaikhpara UPHCP Bhaban, Khulna	DOT	
25	21	PIME Sisters	Khulna Prison.	DOT	
26	21	NHSDP -PKS	PIME Sisters. DOTS Corner, 150 Bedded General Hospital, Khulna.	DOT	
27	22	PIME Sisters	Mushipara, Custo M 6 Grat, Nuton Bazar, Rupsha	DOT	
28	23	NHSDP -PKS	Sadar Hospital, Khulna	DOT	
29	24	PIME Sisters	Dighirpar, Nirala R/A, Road #.01, UPHCP Bhaban, Khulna	DOT	
30	25, 26	PIME Sisters	Majirghat Arban Dispensary, West Baniya Mor, Sonadanga, Khulna	DOT	
31	26	NHSDP -PKS	Olibagan, Nazirghat Barobari, Nazirghat Road. Khulna	DOT	
32	27	NHSDP -PKS	Islampur Road, Tarer Pukur. UPHCP Bhaban. Khulna	Microscopy & DOT	
33	28	NHSDP -PKS	Surjer Hashi Clinic, Tootpara	DOT	
34	29	PIME Sisters	47, South Central Road, Khulna. Tel. # 730024	Microscopy & DOT	
35	30	PIME Sisters	BLUE SISTERS. Sisters Ashram Charles De Foucauld. 29/A, East Link Road, Tootpara Khulna	DOT	
36	31	PIME Sisters	PIME Sisters. Taltola Hospital, Tootpara, Khulna.	DOT	
37	31	PIME Sisters	Khan Jahan Ali Charitable Dispensary. Labon Chara Main Road, Khulna	DOT	

SL	Ward No.	Agency	Address	Service facility	Remark
Rajshahi Metropolitan Area					
1	4, 5, 6	NHSDP-Tilottama	Surjer Hashi Clinic, Bulunpur, Rajshahi Court	Microscopy & DOT	
2	6	GoB	Rajshahi Chest Disease Hospital, Laxmipur	Microscopy & DOT	
3	7	NHSDP-Tilottama	Surjer Hashi Clinic, Shreerampur T-badh, Rajshahi	DOT	
4	8	Damien Foundation	Rajshahi Jail	DOT	
5	9	GoB	Chest Disease Clinic, Hossenigonj	Microscopy & DOT	
6	10	Damien Foundation	DOTS Corner, Rajshahi Medical College Hospital, Laxmipur	Microscopy & DOT	
7	11	NHSDP-Tilottama	Surjer Hashi Clinic, Hetemkhan, Rajshahi	DOT	
8	16	NHSDP-Tilottama	Surjer Hashi Clinic, Koyerdara, Rajshahi	DOT	
9	13	RIC, RCC	Jahan Ara Monjil, House No -355, Dorikhorbona, Behind of Barnalir More (Near passportoffice), Rajshahi,	& DOT	
10	17, 19	NHSDP-Tilottama	Surjer Hashi Clinic, North Naodapara, Bypass More, Naodapara, Rajshahi, Organization's own building	Microscopy & DOT	
11	28	BRAC	House No: 109/1, Shakopara, (North side of Grave), Baze Kazla, (East side of Mosque), Motihar, Rajshahi-6204	Microscopy & DOT	
Barisal Metropolitan Area					
1	4, 5, 6, 18, 19	GoB	Chest Disease Clinic, Amanatganj	Microscopy & DOT	
2	10, 11, 12, 13, 14, 15, 16, 17, 23, 24, 25, 28	BRAC	DOTS Corner, Sher-e-Bangla Medical College Hospital	Microscopy & DOT	
3	9, 20, 21, 22	BRAC	General Hospital	Microscopy & DOT	
4	1, 2, 3, 26, 27, 29, 30	BRAC	DOTS Centre, BRAC Sadar Office, Kashipur	Microscopy & DOT	
Sylhet Metropolitan Area					
1	1, 2, 3, 10, 11, 12, 13, 16, 17	BRAC	DOTS Corner, M.A.G. Osmani Medical College Hospital	Microscopy & DOT	
2	4, 5, 6, 7, 8, 9	BRAC	DOTS Corner, Jalalabad Ragib Rabeya Medical College Hospital, Pathantula	Microscopy & DOT	
3	25, 26	BRAC	DOTS Corner, North-East Medical College Hospital, Sekhghat, Telihaor	Microscopy & DOT	
4	14	BRAC	DOTS Corner, Sylhet Prison	Microscopy & DOT	
5	18, 19, 20, 21	GoB	Chest Disease Clinic, Baluchar, Sahi Eidgah	Microscopy & DOT	
6	15, 22, 23, 24, 27	BRAC	DOTS Corner, BRAC Urban Office, Shahjalal Upashahar	Microscopy & DOT	
7	DOTS Corner	BRAC	Park View Medical College Hospital, Telihaor Road, Sylhet	Microscopy & DOT	
8		IOM	Medi-Aid Heart Centre, South Dorgah Gate (Near Minar), Dorgah Mohalla, Sylhet 3100	Microscopy & DOT	

List of the SRs under New Funding Model (Total SRs working-28)

Group	Name of the Sub-Recipients	Remarks
LTCC Partners	<ol style="list-style-type: none"> 1. Damien Foundation 2. TLMI-B 3. RDRS Bangladesh 4. LAMB 5. HEED Bangladesh 6. Lepra Bangladesh 7. PIME Sisters 	Total SR-7
NHSDP Partners	<ol style="list-style-type: none"> 1. CWFD 2. BAMANEH 3. Swanirvar Bangladesh 4. PSTC-NHSDP 5. Tilottama 6. IMAGE 7. Nishkriti 8. PKS Khulna 	Total SR-8
Other urban NGOs	<ol style="list-style-type: none"> 1. PSTC (Till September 2016) 2. KMSS 3. BAPSA 4. Nari Maitree 5. UTPS 6. Dhaka Ahsania Mission (DAM) 7. Resource Integration Centre (RIC) 	Total SR-7
PPM NGOs	<ol style="list-style-type: none"> 1. MAMATA 	Total SR-1
TB-HIV NGOs	<ol style="list-style-type: none"> 1. Ashar Alo Society (AAS) 	Total SR-1
Others (research, civil society movement, and corporate sector)	<ol style="list-style-type: none"> 1. ICDDR,B 2. NATAB 3. BGMEA 4. BKMEA 	Total SR-4

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