National Tuberculosis Control Programme
Bangladesh

Annual Report
2020

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

Published: December 2020

Contents

ABBREVIATIONS

ACSM	Advocacy, Communication and Social Mobilization
ADR	Adverse Drug Reaction
AFB	Acid-Fast Bacilli
AHI	Assistant Health Inspector
AIDS	Acquired Immune Deficiency Syndrome
CDC	Chest Diseases 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	Directly Observed Treatment, Short Course
DST	Drug Susceptibility Testing
EQA	External Quality Assessment
ESP	Essential Services Package
FDA	Fluorescent Diacetate
FDC	Fixed-Dose Combination
GFATM	Global Fund to Fight AIDS, Tuberculosis and Malaria
GLC	Green Light Committee
GoB	Government of Bangladesh
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
LAMB	Lutheran Aid to Medicine in Bangladesh
LEPRA	(British) Leprosy Relief Association
LPA	Line Probe Assay

MBDC	Mycobacterial Disease Control
MDG	Millennium Development Goal
MDR-TB	Multidrug-Resistant Tuberculosis
MO	Medical Officer
MOHFW	Ministry of Health and Family Welfare
MO (TB/Lep)	Medical Officer (Tuberculosis and Leprosy)
MoU	Memorandum of Understanding
NATAB	National Anti-Tuberculosis Association of Bangladesh
NGO	Nongovernmental Organization
NIDCH	National Institute of Diseases of the Chest and Hospital
NTP	National Tuberculosis Control Programme
NLEP	National Leprosy Elimination Programme
NTRL	National Tuberculosis Reference Laboratory
PLHIV	People Living with HIV
PO	Program Organizer
PPM	Public-Private Mix
RDRS	Rangpur Dinajpur Rural Service
RTRL	Regional Tuberculosis Reference Laboratory
SEARO	WHO South-East Asia Region
SR	Sub-Recipient
TB	Tuberculosis
TLCA	Tuberculosis & Leprosy Control Assistant
TLMI-B	The Leprosy Mission International-Bangladesh
IUATLD	The Union (International Union Against Tuberculosis and Lung Disease)
UHC	Upazila Health Complex
UH&FPO	Upazila Health and Family Planning Officer
UPHCP	Urban Primary Health Care Project
UPHCSDP	Urban Primary Health Care Services Delivery Project
USAID	United States Agency for International Development
WHO	World Health Organization

1. SUMMARY

Bangladesh, a country in South Asia, categorized as a low middle-income country by the World Bank and aspiring to become an upper middle-income country by 2021, has a double burden of diseases with a rising burden of non-communicable diseases and a persistence or even a resurgence of communicable diseases. Among the communicable diseases, Tuberculosis (TB) is the commonest cause of morbidity and mortality, and continues to be a major public health threat in Bangladesh.

Under the Mycobacterial Disease Control (MBDC) Unit of the Directorate General of Health Services (DGHS), the National Tuberculosis Control Programme (NTP) is working with a mission of eliminating TB from Bangladesh.

NTP policies and strategies to date have been informed by international standards formulated by World Health Organization (WHO), such as the Directly Observed Treatment, Short course (DOTS) strategy launched in 1993, and the Stop TB Strategy that underpinned the Global Plan to Stop TB 2006-2015. New multisectoral strategic approaches and new international targets for the post-2015 period have been approved by the Sixty-Seventh World Health Assembly in May 2014, resulted in the formulation of WHO's End TB Strategy in 2015. Under this strategy, new, ambitious yet feasible global targets are proposed for 2035. These include achieving a 95% decline in deaths due to Tuberculosis compared with 2015, and reaching an equivalent of 90% reduction in Tuberculosis incidence rate from a projected 225 cases/ 100,000 in 2015 to 10 cases/100,000 or less by 2035.

Since the introduction of DOTS in 1993, remarkable progress in TB control has been made. The programme achieved the initial target of 70% case detection rate of the new smear-positive cases in 2006 and treating successfully 85% of them since 2003. This has been maintained over 90% since 2005. The programme has successfully treated 96.4% of bacteriologically confirmed new pulmonary TB cases registered in 2018.

The case notification rates per 100,000 population in 2019 were 97 and 174 respectively for bacteriologically confirmed new pulmonary, and all forms (new and relapse) of TB cases.

As of 31st December 2019, a total of 8,810 (cumulative since 2005) MDR-TB patients were enrolled countrywide for treatment including 1,243 in 2019. Among the 1,243 patients in 2019, 223 are under longer regimen and 1,020 under shorter regimen.

The chapters of this report covers brief introduction to National Tuberculosis Control Programme; progress in TB control in 2019; case finding in 2019 and treatment outcomes of cases registered in 2018; laboratory activities; training, workshops conducted; a brief on NTP collaborative activities with description of significant achievements, lessons learned and challenges.

The report's annexes describe district wise case notification rate in 2019, district wise treatment results, new pulmonary bacteriologically confirmed TB cases registered in 2018, laboratory report of year 2019, etc.

This Annual Report of NTP is an important document for the country to review the progress in its TB response and make necessary adjustments to accelerate progress towards ending TB in Bangladesh by 2030 in line with the national and global commitments. The Annual Report 2020 represents data, information and progress made by NTP and its implementing partners, including technical and development partners, from 1st January 2019 to 31st December 2019.

2. INTRODUCTION: HISTORY OF THE NATIONAL TUBERCULOSIS CONTROL PROGRAMME

The Government of Bangladesh is committed to providing TB diagnosis and treatment services completely free of cost to all citizens of the country. It strives to make services equally available to all people of Bangladesh irrespective of age, sex, religion, ethnicity, social status or race.

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 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).

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 Ministry of Health and Family Welfare (MOHFW) has been implementing the 4th Health, Population and Nutrition Sector Development Program (HPNSDP) for a period of five years from January 2017 to June 2022. In all the sector programs, Tuberculosis control has been recognized as one of the priority programs. By 2007, TBservices were available across the country.

The overall vision of NTP is to eliminate Tuberculosis as a public health problem from Bangladesh. The Government of Bangladesh, together with its diverse partners from public and private sectors, is committed to further intensify the TB control activities in order to sustain the success achieved and to reach the TB control targets linked to the WHO End TB Strategy.

The MBDC Unit consists of two wings: National TB Control Programme (NTP) and the National Leprosy Elimination Programme (NLEP). Two Deputy Directors, one for each wing, support the Director in administrative and programme activities. The Director MBDC is also the Line Director of Tuberculosis-Leprosy and AIDS STD Programme (TB-L & ASP) and the latter programme function is linked to HPNSDP and is non-permanent. One of the two deputy directors who functions as the NTP Manager reports directly to the Line Director (TB-L & ASP). The Director MBDC reports to the Director General of Health Services. NTP coordinates all activities through the DGHS of MOH&FW. For TB control, along with the Deputy Director, there are positions of one Assistant Director, six Medical Officers and a support staff. Additionally, four functional positions of Deputy Program Managers are there to support the Programme. To cope with the extensive programme activities financed through the Global Fund support, NTP recruited some technical and administrative support staff members who are working for NTP in national and sub- national level.

At central level, NTP is responsible for policy, planning, management, coordination, training, supply, supervision, monitoring and implementation of TB services.

NTP collaborates with approximately fifty national and international health and development agencies to implement the End TB Strategy.

To assist in the overall TB programme implementation and in the monitoring and evaluation of the national strategic plan, specific technical working groups have also been formed under NTP to coordinate strategies and activities such as TB Technical Committee, Technical Working Group on Procurement and Supply Chain Management (PSM), Child TB, Laboratory, ACSM, PPM and TB/HIV. In addition, a national MDR-TB management coordination committee has been established. Coordination is also ensured through the Country Coordination Mechanism set up for Global Fund collaboration for TB, HIV and Malaria.

NTP programme management and implementation is supported by implementing partners/NGOs staff as well in different administrative tiers. They support the TB control activities at health facilities and community level.

3. TUBERCULOSIS SCENARIO

3.1 Global TB Scenario[1]

Globally, the annual number of people reported to have accessed TB treatment has grown from about 6 million in 2015, to 7 million in 2018 and 7.1 million in 2019. Access to TB preventive treatment has also increased, from 1 million in 2015, to 2.2 million in 2018 and 4.1 million in 2019. There is an urgent need to bolster these increases, to reach the 2022 targets on quality care and preventive treatment that were set in the political declaration of the UN high-level meeting. The political declaration targets are aligned with those of WHO's End TB Strategy and the WHO Director-General's flagship initiative 'Find. Treat. All. End TB', which is being implemented in collaboration with the Stop TB Partnership and the Global Fund to Fight AIDS, Tuberculosis and Malaria. We need to close gaps and reach the 2.9 million people with TB who are still not accessing quality care, including those with drug-resistant TB. We also need to intensify prevention efforts, and address funding gaps that impede progress in the TB response and in research.

Globally, an estimated 10.0 million (range, 8.9–11.0 million) 5 people fell ill with TB in 2019, a number that has been declining very slowly in recent years. There were an estimated 1.2 million (range, 1.1– 1.3 million) TB deaths among HIV-negative people in 2019 (a reduction from 1.7 million in 2000), and an additional 208,000 deaths (range, 177,000–242,000) 6 among HIV-positive people (a reduction from 678,000 in 2000). Men (aged ≥15 years) accounted for 56% of the people who developed TB in 2019; women accounted for 32% and children (aged <15 years) for 12%. Among all those affected, 8.2% were people living with HIV.

Globally, the TB incidence rate is falling, but not fast enough to reach the 2020 milestone of a 20% reduction between 2015 and 2020 . The cumulative reduction from 2015 to 2019 was 9% (from 142 to 130 new cases per 100,000 population), including a reduction of 2.3% between 2018 and 2019.

3.2 South-East Asia Regional Scenario[2]

Geographically, most people who developed TB in 2019 were in the WHO regions of South-East Asia (44%), Africa (25%) and the Western Pacific (18%), with smaller percentages in the Eastern Mediterranean (8.2%), the Americas (2.9%) and Europe (2.5%). Eight countries accounted for two thirds of the global total: India (26%), Indonesia (8.5%), China (8.4%), the Philippines (6.0%), Pakistan (5.7%), Nigeria (4.4%), Bangladesh (3.6%) and South Africa (3.6%). The other 22 other countries in WHO's list of 30 high TB burden countries accounted for 21% of the global total.

The TB incidence rate at national level varies from less than 5 to more than 500 new and relapse cases per 100,000 population per year. In 2019, 54 countries had a low incidence of TB (<10 cases per 100,000 population per year), mostly in the WHO Region of the Americas and European Region, plus a few countries in the Eastern Mediterranean and Western Pacific regions. These countries are well placed to target TB elimination.

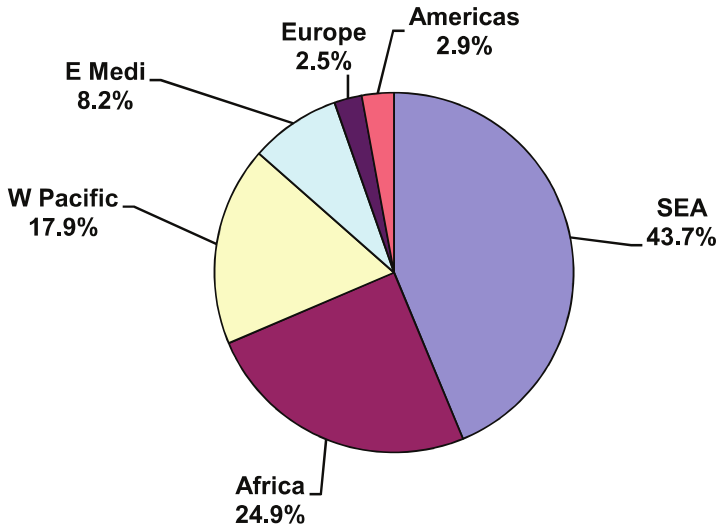
[1] Global tuberculosis report 2020. Geneva: World Health Organization; 2020

[2] Ibid

Drug-resistant TB continues to be a public health threat. Worldwide in 2019, close to half a million people developed rifampicin-resistant TB (RR-TB), of which 78% had multidrug-resistant TB (MDR-TB). The three countries with the largest share of the global burden were India (27%), China (14%) and the Russian Federation (8%). Globally in 2019, 3.3% of new TB cases and 17.7% of previously treated cases had MDR/RR-TB. The highest proportions (>50% in previously treated cases) were in countries of the former Soviet Union.

Currently, the world as a whole, most WHO regions and many high TB burden countries were not on track to reach the 2020 milestones of the End TB Strategy.

Figure 1: Proportion of estimated incidence of all forms of TB cases by WHO Region 2019[3]



W Pacific: Western Pacific
E Medi: Eastern Mediterranean
SEA: South-East Asia

3.3 Bangladesh Scenario[4]

In Bangladesh, the estimated incidence rate for all forms of TB in 2019 was 221 per 100,000 population. An estimated 24 per 100,000 people (HIV negative) died from TB in the same year. The estimated incidence rate of HIV positive TB cases decreased from 0.45/100,000 in 2018 to 0.43/100,000 in 2019. The incidence of MDR/RR-TB was 2/100,000 population, decreased from 3.7/100,000 population in 2018 (Table 1). The total number of notified case was 292,940 which is 81% of total incidence.

[3] Global tuberculosis report 2020. Geneva: World Health Organization; 2020
[4] Global tuberculosis report 2020. Geneva: World Health Organization; 2020

Table 1: Estimated population and TB Burden, Bangladesh- 2019[5]

• Population	163 million
• Mortality rate (excluding HIV+ve TB)	24 / (15-34) / 100,000 population
• Mortality rate (HIV+ve TB only)	0.09 (0.05-0.16) / 100,000 population
• Incidence rate (including HIV+ve TB)	221 (161-291)/ 100,000 population
• Incidence rate (HIV+ve TB only)	0.43 (0.21-0.72)/ 100,000 population
• Incidence of MDR/RR-TB	2 (0.98-3.4)/ 100,000 population

The End TB Strategy

NTP policies and strategies are aligned with the WHO's End TB Strategy post-2015[6] and are built on the End TB Strategy's Three Pillars:

I. Integrated, Patient-Centered Care and Prevention

II. Bold Policies and Supportive Systems

III. Intensified Research and Innovation.

Moreover, NTP adopts the key principles of government stewardship and accountability, strong coalition with civil society organizations and communities, protection and promotion of human rights, ethics and equity, and adaptation of the strategy and targets at country level. The National Strategic Plan (NSP) for TB control 2021-2025 describes key interventions and activities that will enable the NTP to achieve the End TB Strategy's Milestones for 2025 (75% reduction in Tuberculosis deaths and 50% reduction in Tuberculosis incidence rate) and targets for 2035 (95% reduction in Tuberculosis deaths and 90% reduction in Tuberculosis incidence rate). A summary of the End TB Strategy's components is provided in the table below:

END TB STRATEGY FRAMEWORK

Vision	A world free of Tuberculosis-zero deaths, disease and suffering due to Tuberculosis
Goal	End the global Tuberculosis epidemic
Milestones for 2025	75% reduction in Tuberculosis deaths (compared with 2015) 50% reduction in Tuberculosis incidence rate (less than 55 Tuberculosis cases per 100,000 population) – No affected families facing catastrophic costs due to Tuberculosis
Targets for 2035	95% reduction in Tuberculosis deaths (compared with 2015) 90% reduction in Tuberculosis incidence rate (less than 10 Tuberculosis cases per 100,000 population) – No affected families facing catastrophic costs due to Tuberculosis

[5] Ibid

[6] The End TB Strategy; Global strategy and targets for tuberculosis prevention, care and control after 2015; WHO, Geneva, 2015

Principles

1. Government stewardship and accountability, with monitoring and evaluation
2. Strong coalition with civil society organizations and communities
3. Protection and promotion of human rights, ethics and equity
4. Adaptation of the strategy and targets at country level, with global collaboration.

Pillars and Components

1. Integrated, Patient-centeredCare and Prevention

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

2. Bold Policies and Supportive Systems

A. Political commitment with adequate resources for Tuberculosis 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 Tuberculosis.

3. Intensified Research and Innovation

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

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

NTP aims to strengthen TB control efforts through effective partnerships, mobilizing necessary resources and ensuring quality diagnostics and treatment services under the defined End TB Strategy. 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 TB epidemic aiming to achieve a target of 10 new cases/100,000/year in 2035. (Projected 2015 baseline of 225 cases/100,000)

4.4 Objectives of NTP

The current objective is to achieve universal access to quality TB care for all TB patients in order to achieve the End TB targets.

- Increase annual case detection of all forms of TB to more than 90% of all incident cases by 2022 (from baseline of 57% in 2015) with childhood TB contribution of 8% by 2022 (from baseline of 4% in 2015).
- Maintain a treatment success rate of at least 90% in all forms of detected non-MDR-TB cases and ensure quality-controlled treatment services at all implementation sites.
- Increase annual case detection of MDR-TB to 4,100 cases (from baseline 800 in 2015) and child MDR case detection to 112 cases by 2022 (from baseline on 0 in 2015), and improve management of MDR-TB cases through countrywide implementation of the shorter MDR-TB treatment regimen.
- Ensure that no TB affected families facing catastrophic costs due to tuberculosis by 2022.
- Ensure that 100% of TB service facilities receive regular supervision and monitoring with appropriate feedback resulting in remedial actions by 2022.
- Ensure the long term availability of 100% of required funding for activities at all program levels through effective planning and partner co-ordination and the continuing increase of the Government of Bangladesh (GoB) contributions to the NTP budget.
- Ensure adequate support for operational research to foster innovation.

4.5 Programme Implementation

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
- District Sadar Hospitals.
- Public and private medical college hospitals
- Specialized Hospitals Urban health centre's in all metropolitan cities (government and NGOs)

4.6 Major Events/Achievements

The major events/achievements of 2019 are as follows:

- Shorter regimen being scaled up countrywide in 2019.
- The NTP has achieved and is sustaining a very high TB treatment success rates for all forms of TB especially in new and relapse TB cases (94.4% for the 2018 cohort) but also among re-treatment cases (84.5% for the 2018 cohort) and patients with drug resistant TB (73% for the 2017 cohort).
- Rapid expansion of GeneXpert – 192 sites with 223 machines.
- Completed 8th Joint Monitoring Meeting (JMM)
- Revised and updated TB National Strategic Plan 2021-2025.
- Countrywide sensitization and orientation on TB.
- Completed GeneXpert assessment to understand the utilization of GeneXpert Machines.

4.7 Major Challenges

The main challenges of NTP in 2019 are:

- To find the missing TB cases particularly from elderly population, male and child TB.
- TB case diagnosis and management in urban and hard to reach areas
- Management of TB/HIV co-infection.
- Further strengthening laboratory services including expansion of culture and DST and GeneXpert.
- Equipment maintenance at all levels is a big challenge (especially GX module replacement and calibration)
- Lack of adequate human resource for laboratory services - medical assistant/technicians, radiographers, and multipurpose workers, etc.
- Implementation of mandatory case notification in private sectors.

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

DOTS coverage, defined as the proportion of population living in administrative areas with access to DOTS services.

Increased steadily from 1995 onwards, almost the entire population of Bangladesh had access to DOTS by the end of 2007 (100% DOTS coverage).

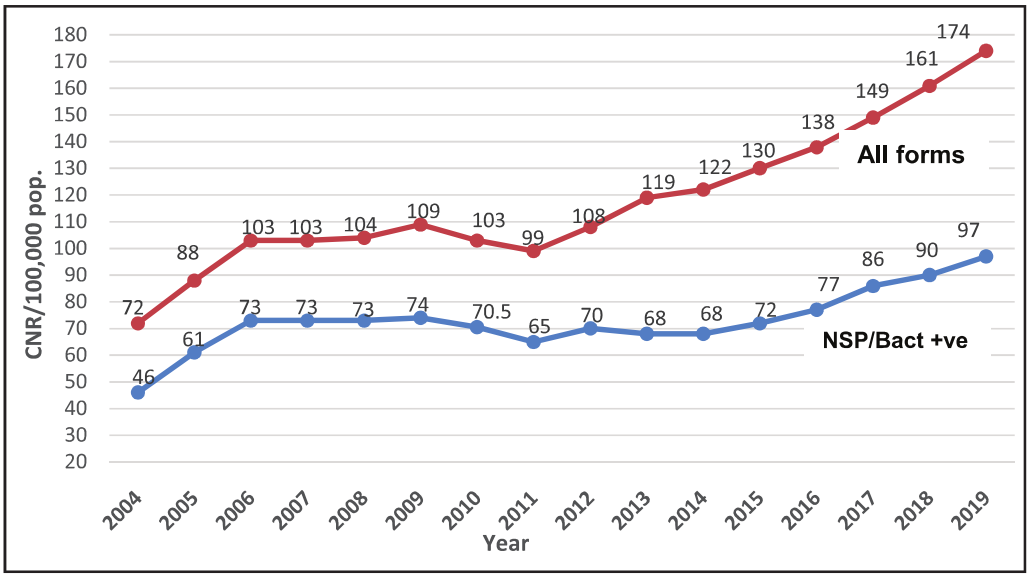
DOTS coverage refers to the population living in areas where DOTS services are available. This does not necessarily mean that all people have equal access to diagnostic and/or treatment facilities.

5.2 Case Notification

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

The number of TB cases notified in Bangladesh has steadily increased since 2004. The rapid increase of bacteriologically confirmed pulmonary TB cases between 2004 and 2006 reflect enhanced case-finding with the establishment and scale-up of the DOTS program which reached full coverage of all districts of Bangladesh in 2007. Between 2007 and 2014, bacteriologically confirmed pulmonary case notification remained relatively constant with the exception of a notable decline in 2011 that is explained by a gap in GFATM funding. The increase of bacteriological confirmed notifications beginning in 2015 to the most recent year may be attributed to the expansion of GeneXpert diagnostics and referral of samples to the GeneXpert testing hubs. In 2015 the notification of all forms of TB cases increased to reach 130/100,000 population and bacteriologically confirmed new cases increased to 71/100,000 population. This trend continued till 2019 - the notification of all forms of TB cases reached 174/100,000 population and bacteriologically confirmed new cases to 97/100,000 population as shown in the Figure 2.

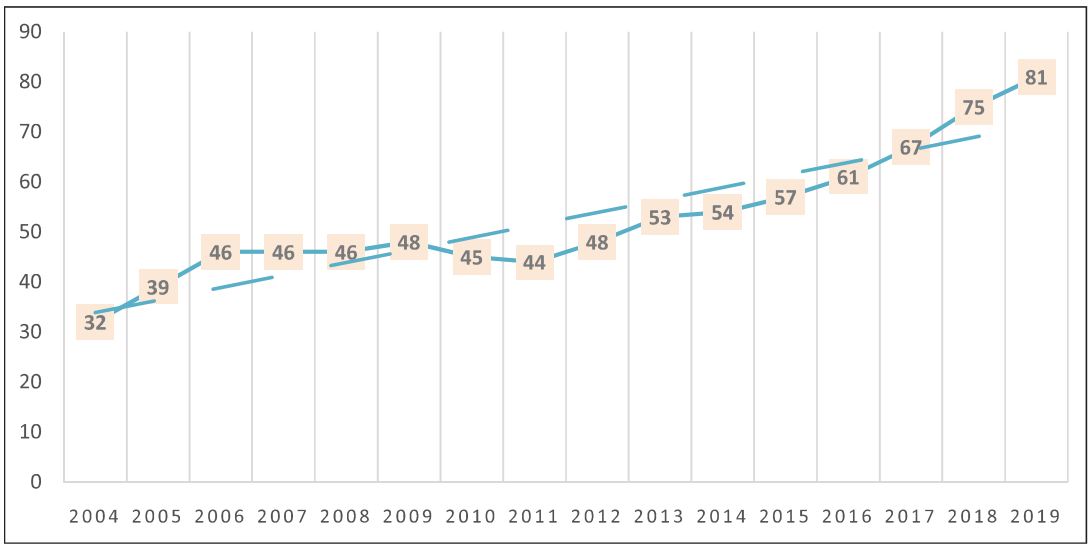
Figure 2: Nationwide case notification rate (CNR)/100,000 population: NSP/Bact+ve and all forms of TB during 2004-2019



Case Detection Rate: Case Detection Rate (CDR) is defined as the number of cases detected, expressed as a percentage of cases estimated to occur in a year.

World Health Organization (WHO) is not providing any estimate for new smear positive cases; rather they provide combined estimates for all new and relapse TB cases. According to this estimate, the number of all forms (new and relapse) TB cases is 221/per 100,000 populations in 2019[7]. The case detection rate increased to 81% from 75% in 2019[8]. The trend of CDR for 2004-2019 is shown in Figure 3.

Figure 3: TB case detection rate (all forms) during 2004-2019



[7] Global tuberculosis report 2020. Geneva: World Health Organization; 2020
[8] Ibid

5.2.1 Nationwide Case Notification

A total of 292,940 cases were notified in 2019. Among the total 292,940 cases, about 85.46% were reported at upazilas. Over 55.37% of the cases were new pulmonary bacteriologically confirmed and only 2.09% were relapses. New pulmonary clinically diagnosed and extra-pulmonary cases were 21.3% and 18.19% respectively. Proportions of extra-pulmonary cases reported through metropolitan cities and CDCs were significantly higher than those reported at upazilas (Table 2).

Table 2: Case notification by type of reporting unit, 2019

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 %	#	Row %	#	Row %	#	Row %	#	Row %	#	Row %	#	Row %	#	Column %
Upazila	147,076	58.75	4,495	1.80	55,688	22.25	4,891	1.95	35,723	14.27	1,342	0.54	1,120	0.45	250,335	85.46
Metro. city	13,853	35.09	1,539	3.90	6,161	15.61	545	1.38	16,439	41.64	753	1.91	190	0.48	39,480	13.48
CDC	1,265	40.48	99	3.17	537	17.18	26	0.83	1,113	35.62	48	1.54	37	1.18	3,125	1.07
Total	**162,194**	**55.37**	**6,133**	**2.09**	**62,386**	**21.30**	**5,462**	**1.86**	**53,275**	**18.19**	**2,143**	**0.73**	**1,347**	**0.46**	**292,940**	**100.00**

Over 43.26% of the total 292,940 notified cases were female; (M:F=1.31:1). In case of new pulmonary bacteriologically confirmed and new pulmonary clinically diagnosed cases proportions of female cases were 43% and 39% respectively; where as in case of new extra pulmonary cases it was 52% (Table 3).

Table 3: Case notification by type of cases and sex, 2019

	Male		Female		Total	M / F Ratio
Type of cases	Number	(%)	Number	(%)		
New Pulmonary Bacteriologically Confirmed	92,897	57.28	69,297	42.72	162,194	1.34
New Pulmonary Clinically Diagnosed	37,952	60.83	24,434	39.17	62,386	1.55
New Extra-Pulmonary	25,497	47.86	27,778	52.14	53,275	0.92
Relapses	8,918	64.91	4,820	35.09	13,738	1.85
Treatment after Failure	427	72.87	159	27.13	586	2.69
Treatment after Loss to Follow Up	129	75.00	43	25.00	172	3.00
Others	407	69.10	182	30.90	589	2.24
Total	**166,227**	**56.74**	**126,713**	**43.26**	**292,940**	**1.31**

Age-sex distribution of new pulmonary bacteriologically confirmed cases

Among the notified new pulmonary bacteriologically confirmed cases, the numbers of male patients are higher in all age groups except for 5-14 years, 15-24 years and 35-44 years where female cases are higher. About 59 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 males (67% vs 53%). Over 18% 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 (23% vs 12%). The overall male-female ratio in these notified cases is 1.34 and the ratio increases with age. Among the elderly (≥ 65 years), there are about three times more men notified than women (Figures 4 and 7).

Age-sex distribution of new pulmonary clinically diagnosed

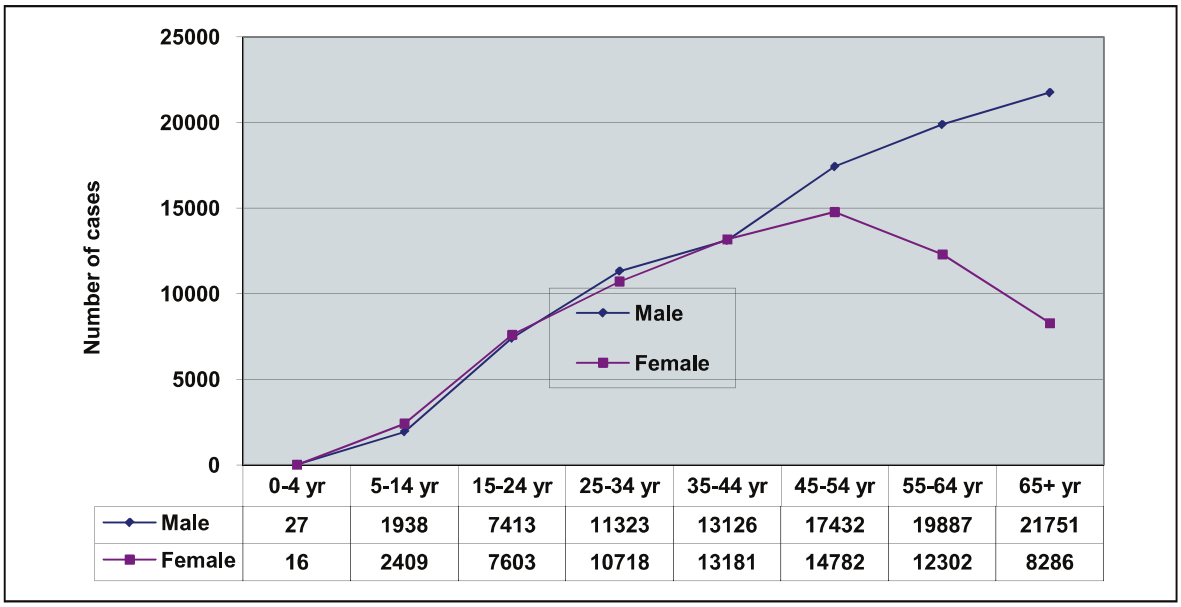
Figures 5 and 7 show that the number of notified new pulmonary clinically diagnosed cases was almost same in both sexes up to age 24 years. From 25 years onwards, the number of male cases was higher in all age groups and male-female ratio increases with age reaching 3.2 in the age group ≥ 65 years (Figures 5 and 7).

Age-sex distribution of new extra-pulmonary cases

In the age groups ranging from 5 to 54 years, the number of female cases is higher than male cases. And in all other age groups, the number of male cases is higher than female cases. (Figures 6 and 7).

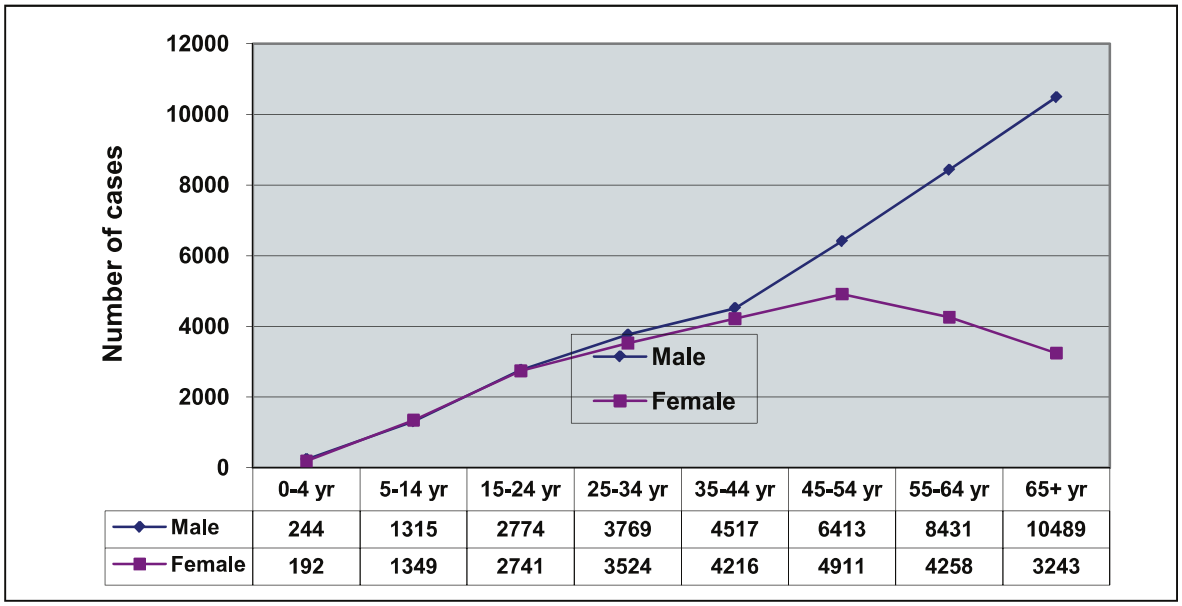
Nationwide case notification trend in absolute number is shown in Figure 8 and 9.

Figure 4: Notification of new pulmonary bacteriologically confirmed TB by age and sex, 2019



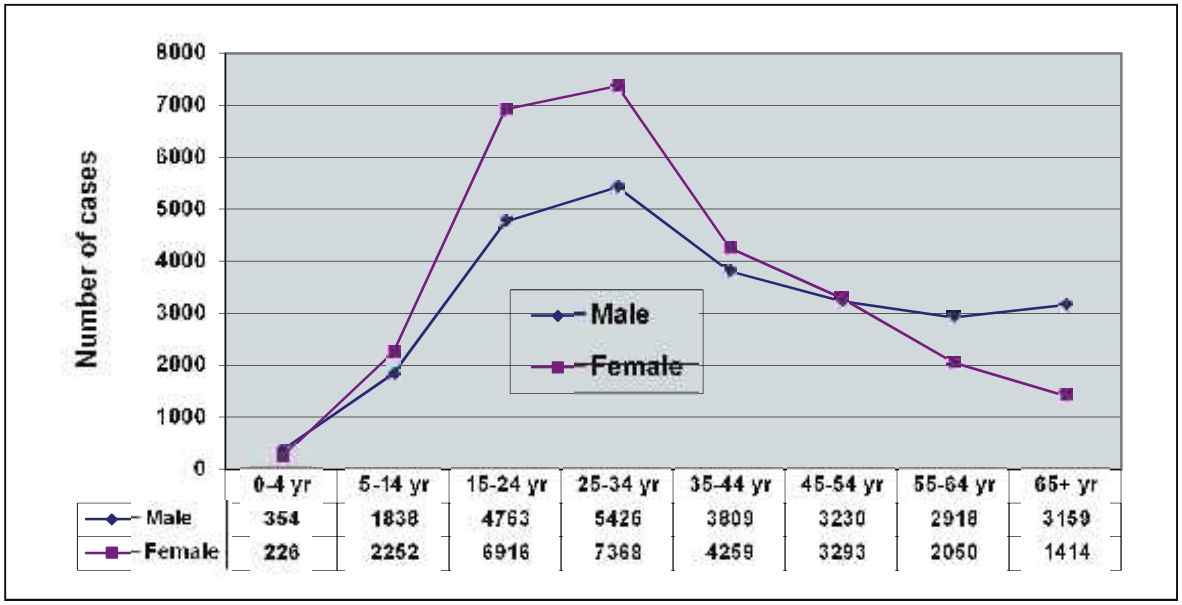
	0-4 yr	5-14 yr	15-24 yr	25-34 yr	35-44 yr	45-54 yr	55-64 yr	65+ yr
Male	27	1938	7413	11323	13126	17432	19887	21751
Female	16	2409	7603	10718	13181	14782	12302	8286

Figure 5: Notification of new pulmonary clinically diagnosed TB by age and sex, 2019



	0-4 yr	5-14 yr	15-24 yr	25-34 yr	35-44 yr	45-54 yr	55-64 yr	65+ yr
Male	244	1315	2774	3769	4517	6413	8431	10489
Female	192	1349	2741	3524	4216	4911	4258	3243

Figure 6: Notification of new extra-pulmonary TB by age and sex, 2019



	0-4 yr	5-14 yr	15-24 yr	25-34 yr	35-44 yr	45-54 yr	55-64 yr	65+ yr
Male	354	1838	4763	5426	3809	3230	2918	3159
Female	226	2252	6916	7368	4259	3293	2050	1414

Figure 7: Male-female notification ratio by age group – new pulmonary bacteriologically confirmed, new pulmonary clinically diagnosed and new extra-pulmonary TB cases, 2019

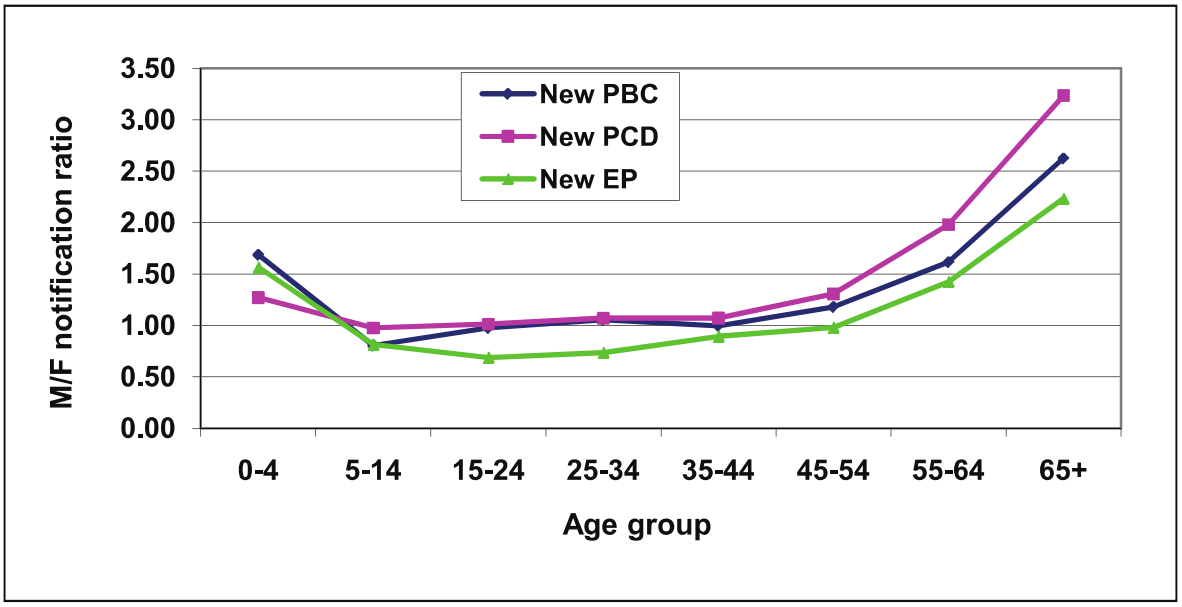


Figure 8: Age-sex-wise CNR per 100,000 population of new pulmonary and extra-pulmonary TB cases, 2019

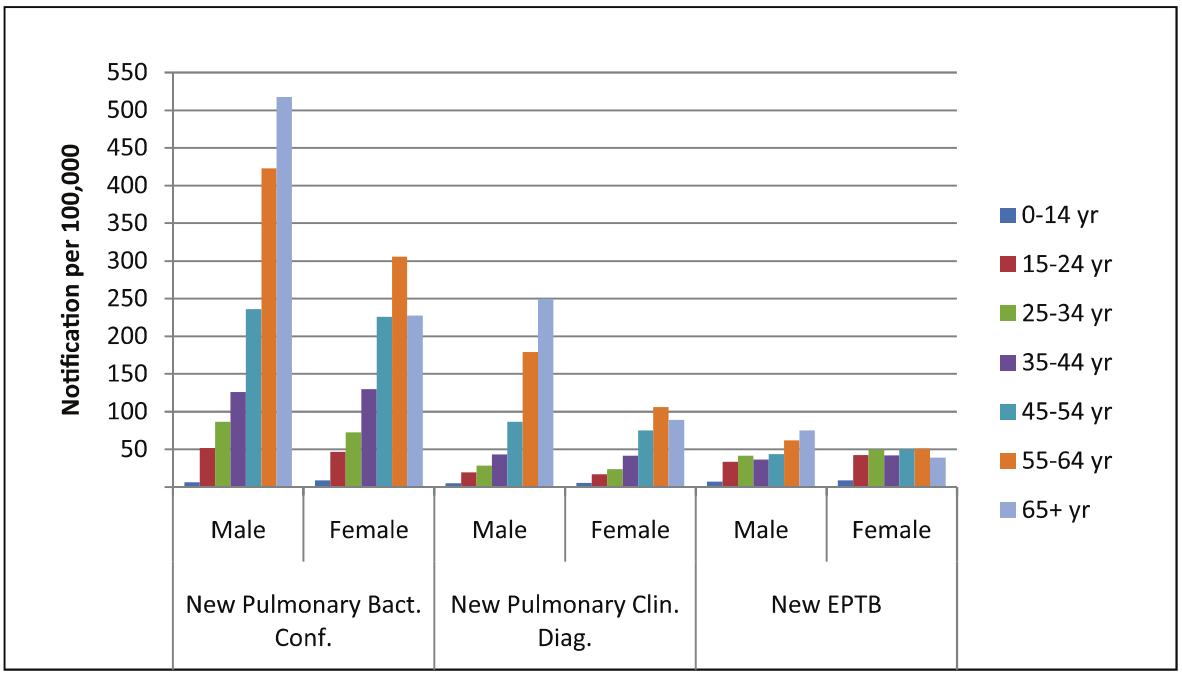
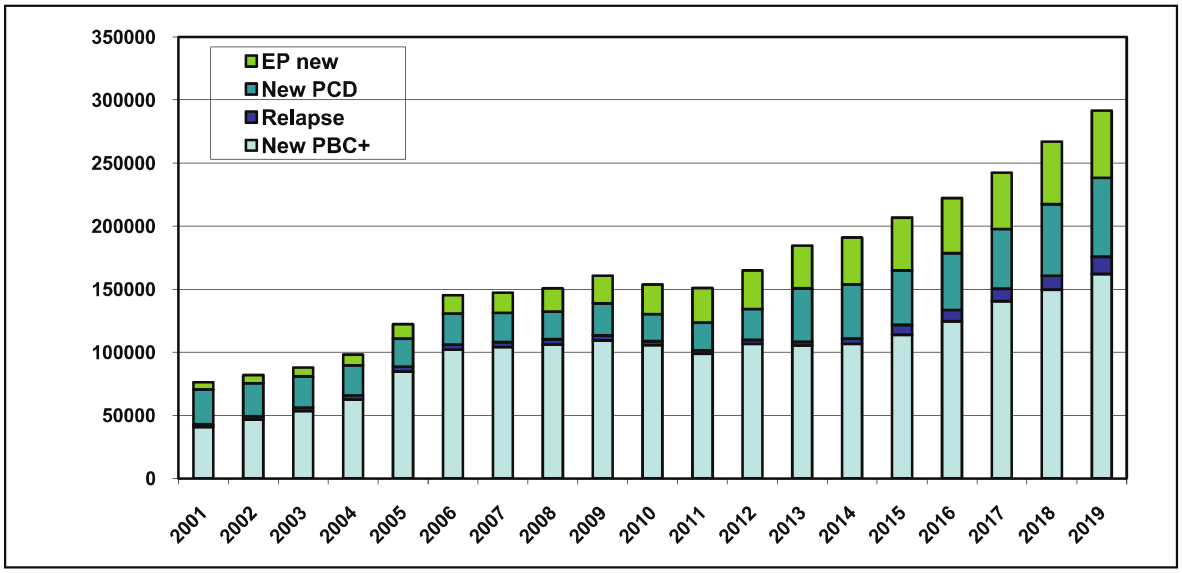


Figure 9: Nationwide yearly case notification (all forms); in absolute number; 2001-2019



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

Out of eight divisions, seven divisions showed new pulmonary bacteriologically confirmed TB case notification rate (CNR) of more than 72 (72.94-160.69) per one hundred thousand population in 2019, while the nationwide CNR was 97/100,000 population. For all forms of TB cases, the nationwide CNR is 174/100,000 population. For all forms of TB cases, Rajshahi has the lowest (126/100,000 population) and Khulna has the highest (224/100,000 population) CNR (Table 4).

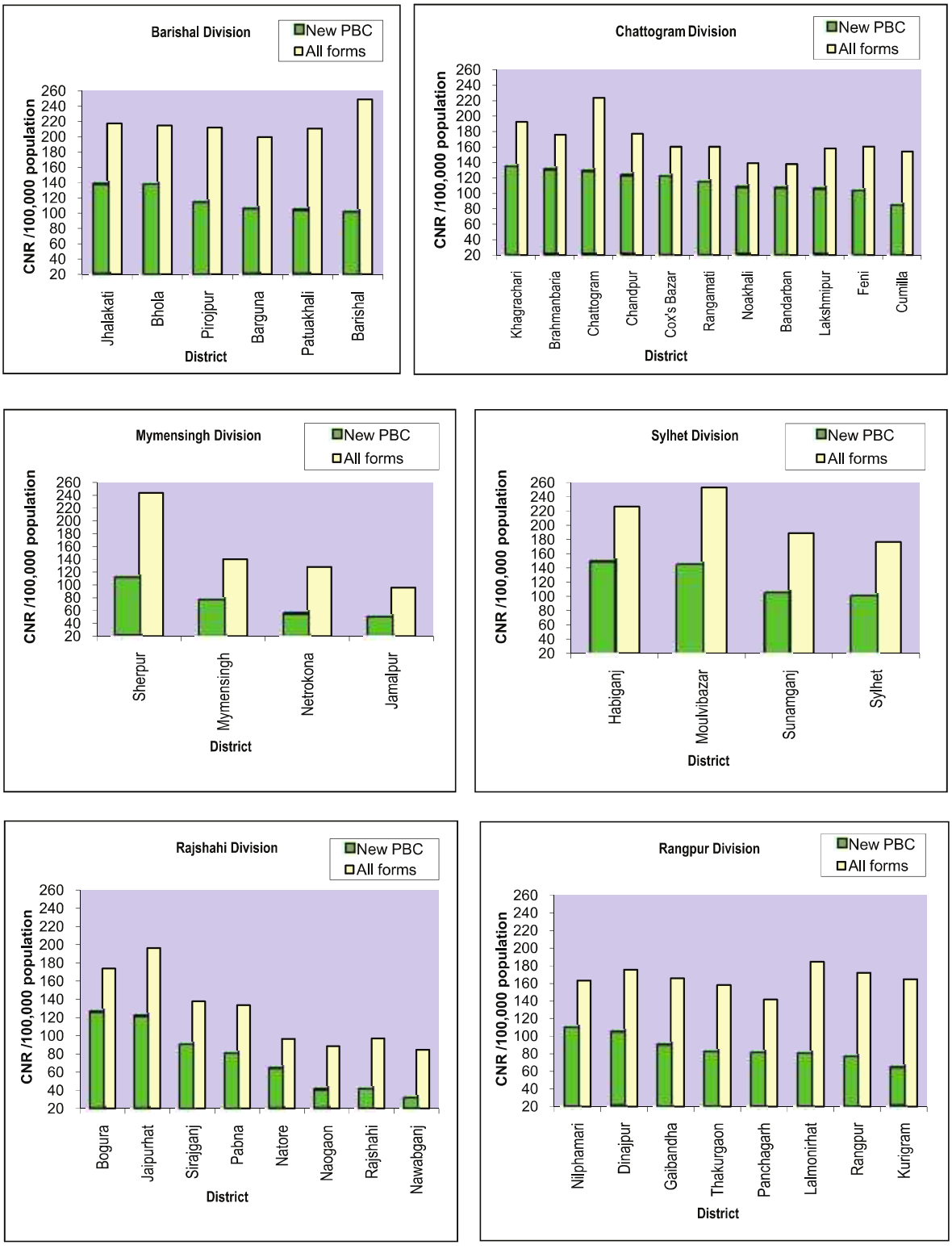
Table 4: Division-wise new pulmonary bacteriologically confirmed (PBC) and all forms of TB cases by type of reporting unit

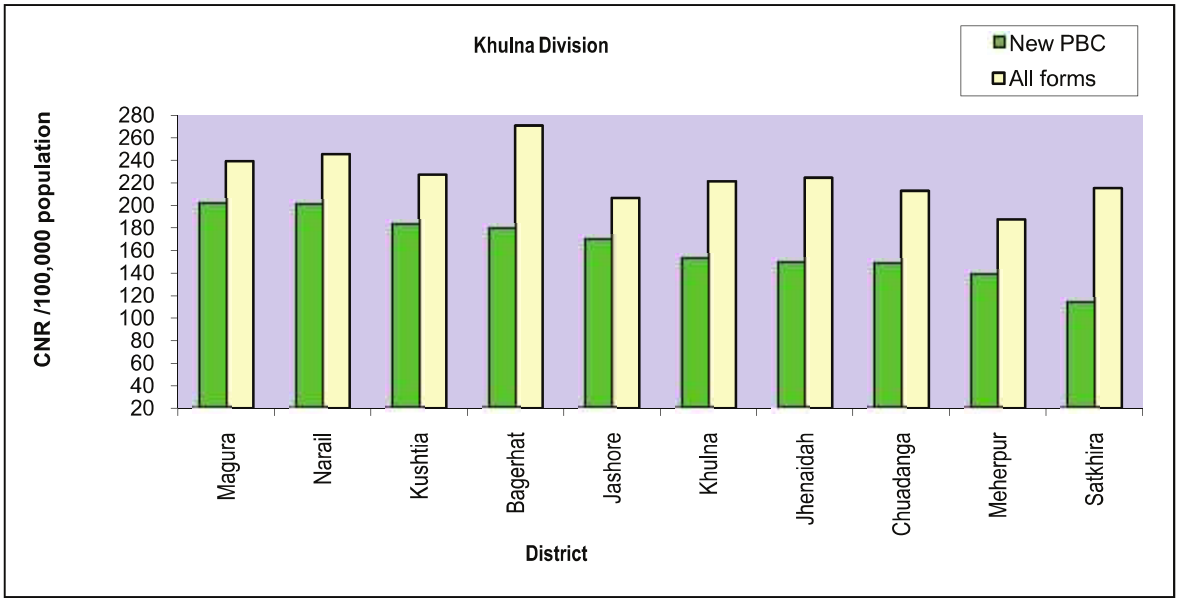
Division	Number of reported cases								Estimated projected population of 2019	New PBC CNR /100,000 population	All forms of CNR /100,000 population
	Upazila		Metro		CDC		Total				
	New PBC	All forms	New PBC	All forms	New PBC	All forms	New PBC	All forms			
Barishal	9,812	18,681	143	712	23	60	9,978	19,453	8,777,819	113.67	221.62
Chattogram	33,987	49,369	3,751	9,741	30	126	37,768	59,236	33,670,237	112.17	175.93
Dhaka	23,783	49,620	8,161	24,291	311	787	32,255	74,698	44,220,601	72.94	168.92
Khulna	26,677	36,339	571	1,487	337	618	27,585	38,444	17,166,087	160.69	223.95
Mymensingh	8,474	17,235	-	-	127	313	8,601	17,548	13,335,717	64.50	131.59
Rajshahi	15,098	24,513	389	1,204	320	884	15,807	26,601	21,180,031	74.63	125.59
Rangpur	15,568	30,323	-	-	80	197	15,648	30,520	18,211,081	85.93	167.59
Sylhet	13,677	23,135	838	1,855	37	103	14,552	25,093	12,288,355	118.42	204.20
Total	**147,076**	**249,215**	**13,853**	**39,290**	**1,265**	**3,088**	**162,194**	**291,593**	**167,868,800**	**96.62**	**173.70**

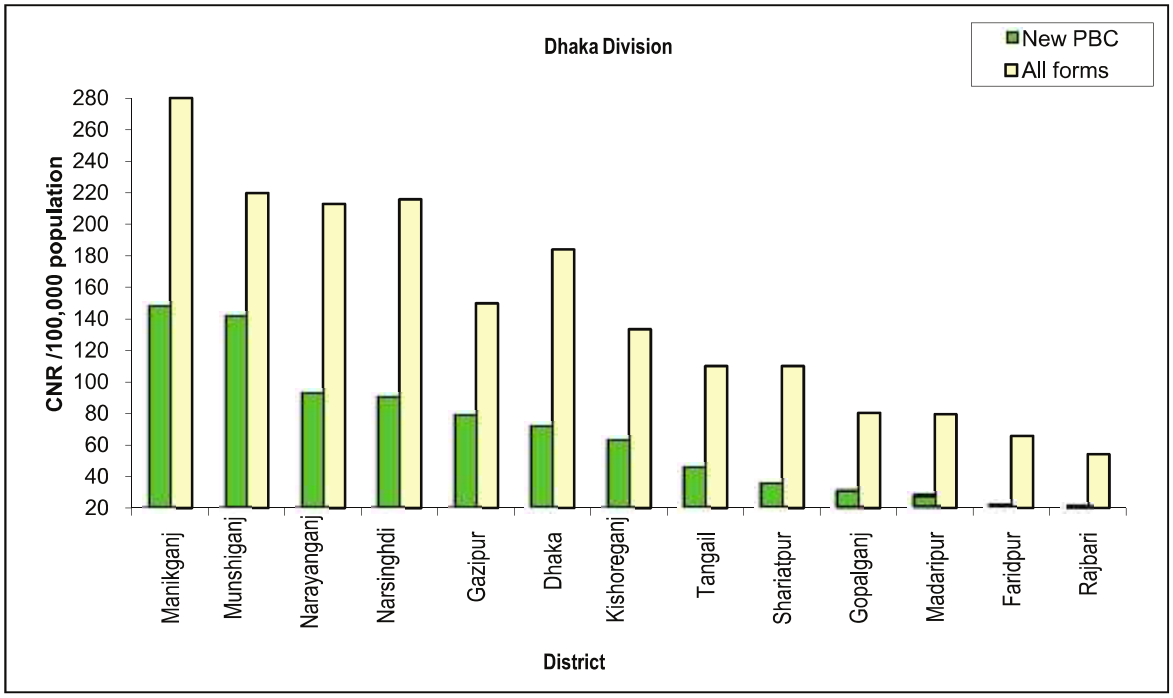
5.2.3 District-wise Case Notification Rates (CNR)

The district-wise case notification rates of each division in 2019 are shown in Figure 10 and details of case notification by district are shown in Annex-1.

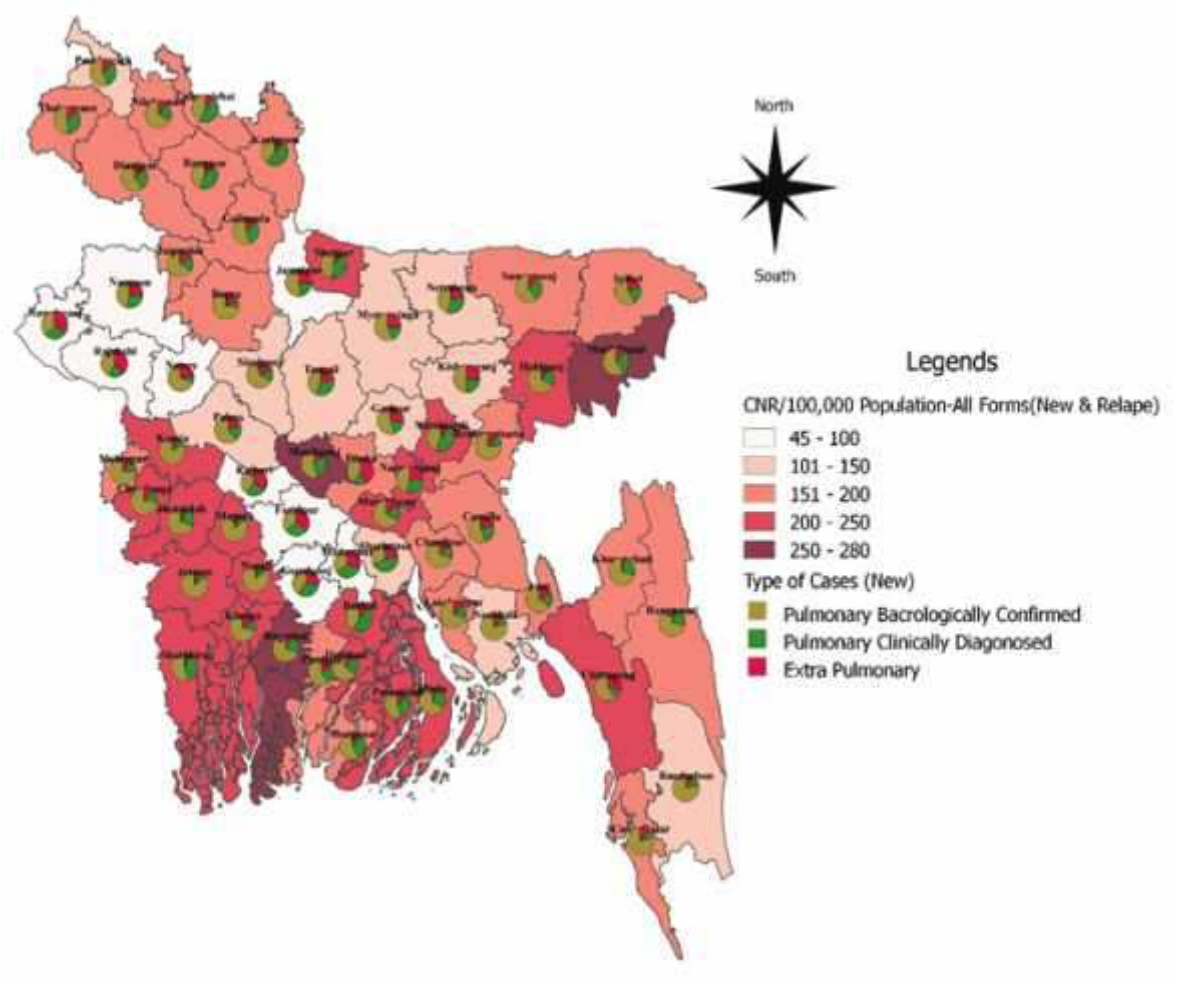
Figure 10: District-wise CNR of new pulmonary bacteriologically confirmed (PBC) and all forms of TB cases in 2019




Khulna Division
New PBC
All forms
CNR /100,000 population
280
260
240
220
200
180
160
140
120
100
80
60
40
20
Magura
Narail
Kushtia
Bagerhat
Jashore
Khulna
Jhenaidah
Chuadanga
Meherpur
Satkhira
District


Dhaka Division
New PBC
All forms
CNR /100,000 population
280
260
240
220
200
180
160
140
120
100
80
60
40
20
Manikganj
Munshiganj
Narayanganj
Narsinghdi
Gazipur
Dhaka
Kishoreganj
Tangail
Shariatpur
Gopalganj
Madaripur
Faridpur
Rajbari
District

CNR MAP



5.3 Treatment Outcomes

All diagnosed TB patients are regularly registered for treatment. The treatment continues for six months (new cases) to eight months (re-treatment cases). At the end of the treatment, the patients are evaluated for assessing 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 2018 from all sources (upazilas, metropolitan cities and CDCs).

Definitions of treatment outcomes

Cured: A pulmonary TB patient with bacteriologically confirmed TB at the beginning of treatment 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 with no record to show that sputum smear or culture results in the last month of treatment and on at least one previous occasion was negative, either because tests were not done or because results are unavailable.

Died: A TB patient who dies for any reason before starting or during the course of treatment.

Lost to follow up: A TB patient who did not start treatment or whose treatment was interrupted for 2 consecutive months or more.

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

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

5.3.1 Nationwide 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 remarkably reduced. NTP has been maintaining over 91% treatment success rates since 2005 (Figure 11). In fact, NTP has successfully treated 144,350 (96.39%) out of 149,754 new pulmonary bacteriologically confirmed cases registered in 2018. The lost to follow up rate was 0.48% while out of this 0.48%, 2.37% of the patients died during treatment (Figure 12).

Figure 11: Trends in treatment success rates 2005-2018 cohorts

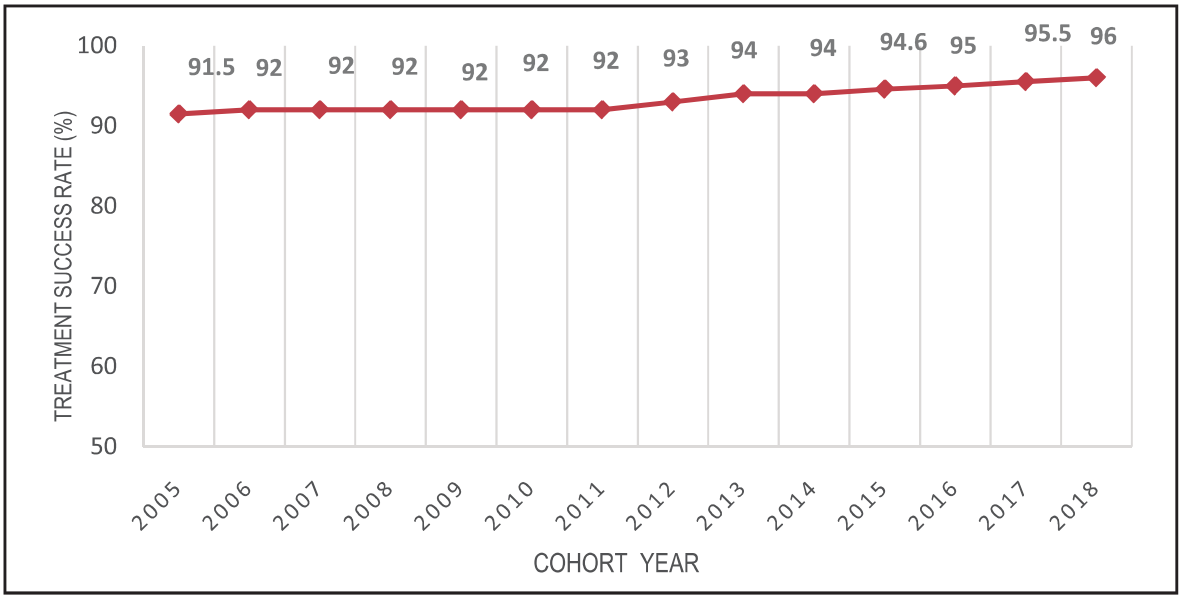
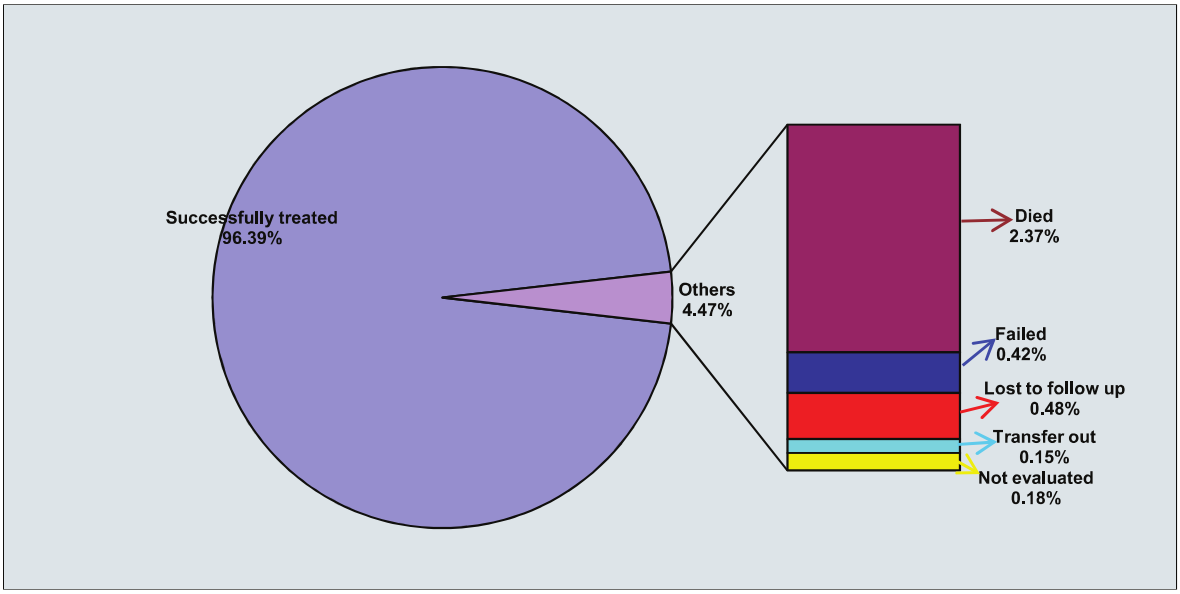


Figure 12: Treatment outcomes of new pulmonary bacteriologically confirmed cases registered in 2018

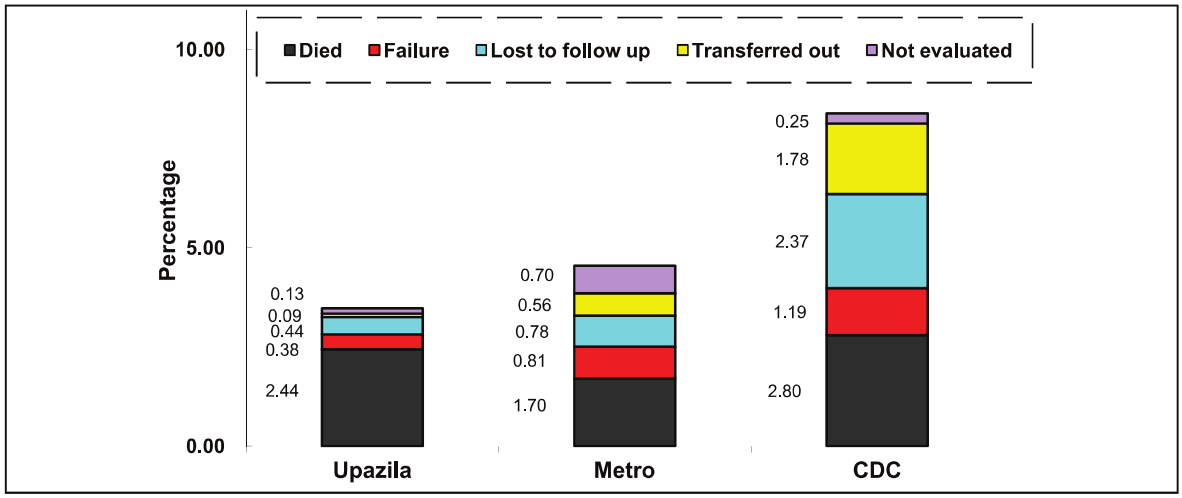


The treatment success rate of new pulmonary bacteriologically confirmed TB cases is highest (96.53%) among the cases registered in upazilas followed by among cases registered in metropolitan cities (95.45%), and the lowest is among those registered in CDCs (91.61%) (Table 5). This year the percentage of death from TB cases has reduced compared to the previous year (2.88% vs 2.37%), resulting in improved treatment success rate. The proportion of died, failure, 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, getting feedback on transferred out cases with special emphasis in urban settingneeds to be taken care of.

Table 5: Treatment success by type of registration unit (2018 cohort)

Type of registration unit	Number of cases registered	Treated successfully
Upazila	134,915	130,231 (96.53%)
Metropolitan city	13,659	13,038 (95.45%)
CDC	1,180	1,081 (91.61%)
Total country	**149,754**	**144,350 (96.39%)**

Figure 13: Unfavourable treatment outcomes of new pulmonary bacteriologically confirmed cases by type of registration unit (2018 cohort)



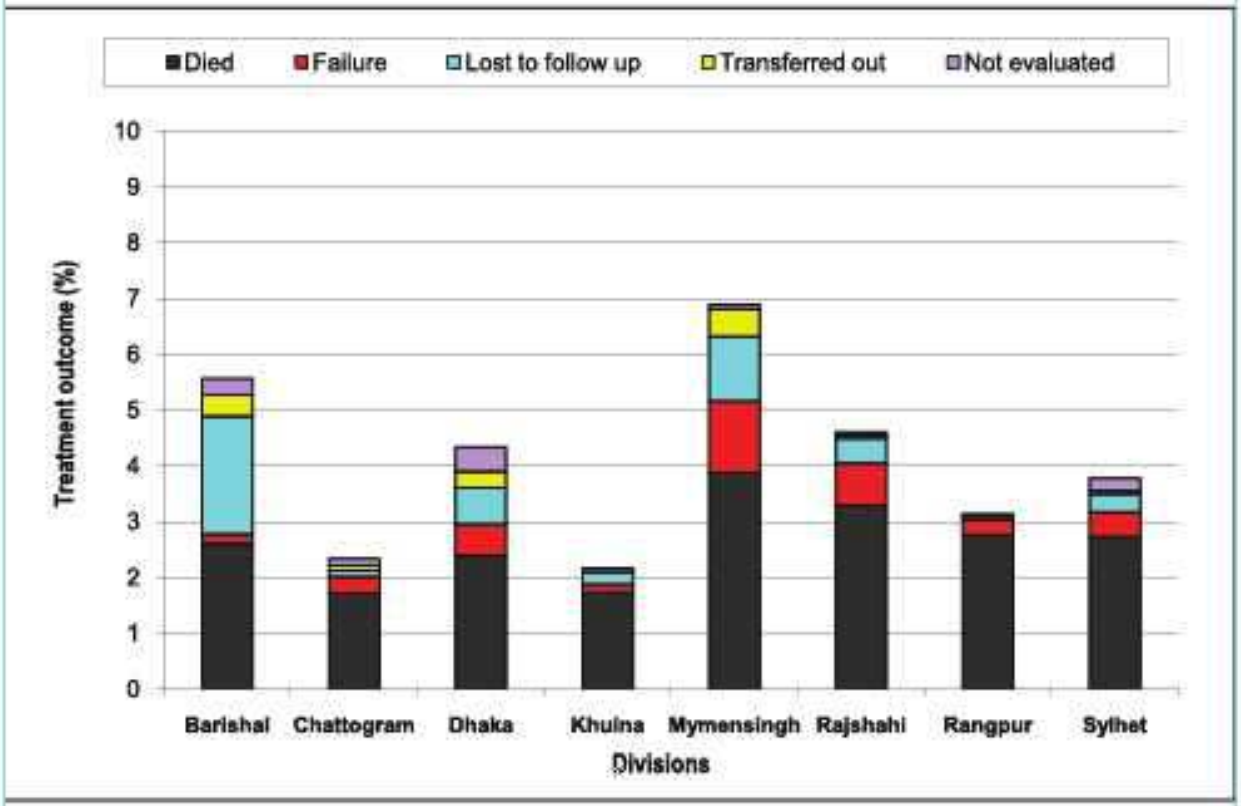
5.3.2 Division-wise Treatment Outcomes

Table 6 shows that all eight divisions have successfully treated more than 93% of the new pulmonary bacteriologically confirmed cases registered in 2018 with overall treatment success rate of over 96.39%. Division-wise unfavourable outcomes are shown in Figure 14. The patients died in the divisions during TB treatment varied from 1.72% to 3.88% while the failure rate varied from 0.14% to 1.28%. The lost to follow up rate among those patients varied from 0.06% to 2.11%. 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 2018

Division	Number of cases registered	Successfully treated
Barishal	10,460	9,878 (94.44%)
Chattogram	34,034	33,240 (97.67%)
Dhaka	31,064	29,716 (95.66%)
Khulna	24,900	24,360 (97.83%)
Mymensingh	8,142	7,581 (93.11%)
Rajshahi	14,003	13,357 (95.39%)
Rangpur	14,550	14,093 (96.86%)
Sylhet	12,601	12,125 (96.22%)
Total country	**149,754**	**144,350 (96.39%)**

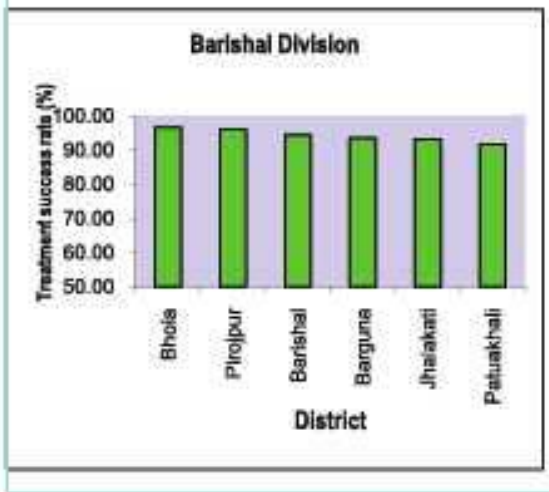
Figure 14: Unfavourable outcomes of new pulmonary bacteriologically confirmed cases by division (2018 cohort)

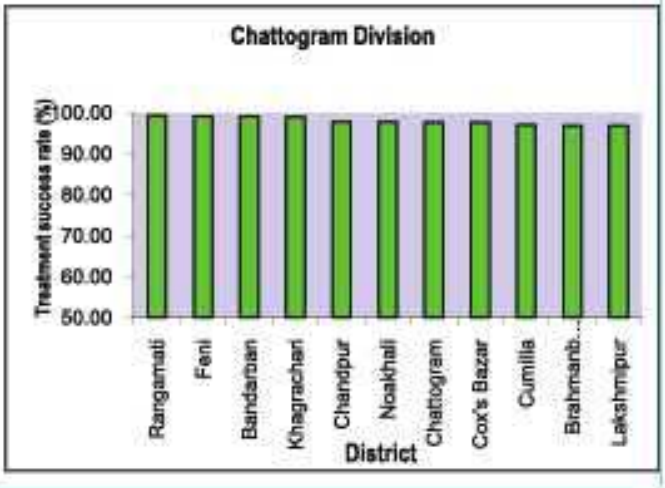


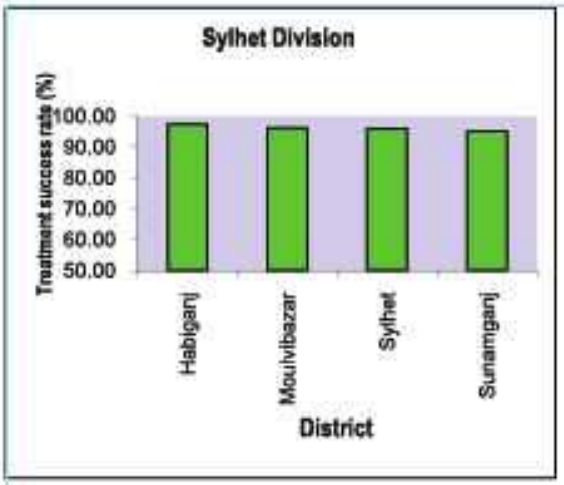
5.3.3 District-wise Treatment Outcomes

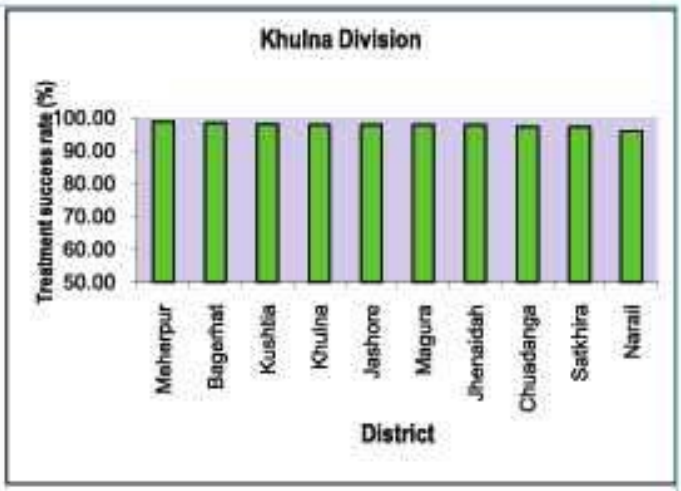
The treatment success rates of new pulmonary bacteriologically confirmed cases in each district registered in 2018 are shown in Figure 15. Almost all the districts are showing over 90% treatment success rates.

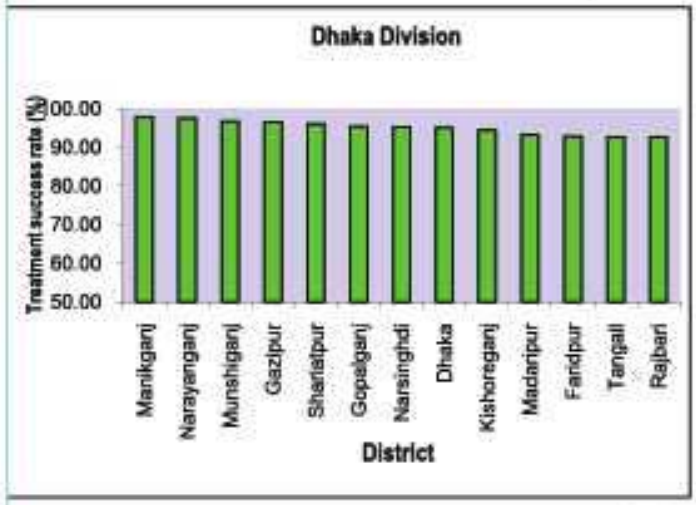
Figure 15: District-wise treatment success rates of new pulmonary bacteriologically confirmed cases for each division, 2018 cohort

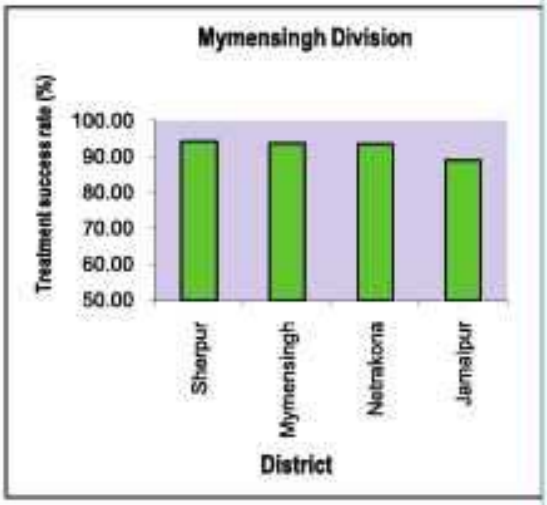


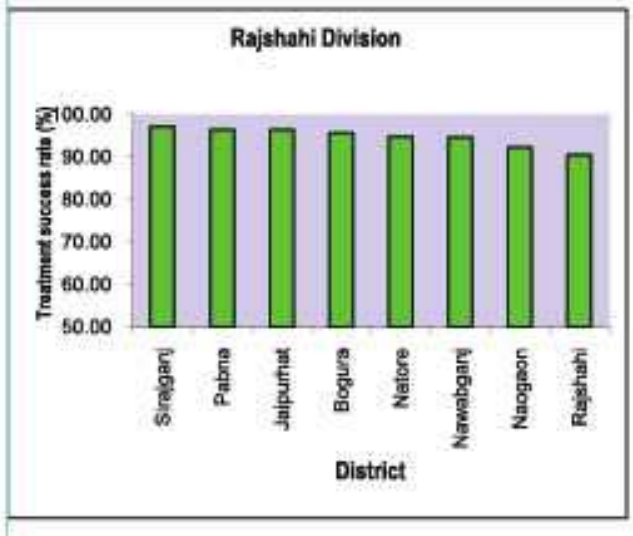


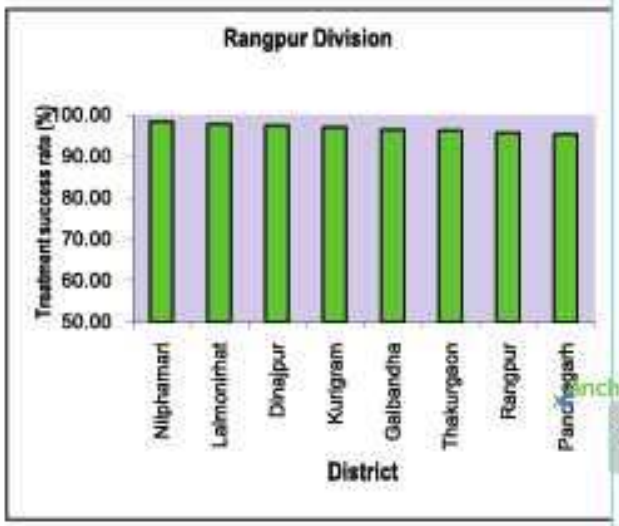












5.3.4 Treatment outcomes of Relapse, New Pulmonary Clinically Diagnosed and Extra-Pulmonary (new) Cases

In 2018, a total of 11,138 relapse, 56,477 new pulmonary clinically diagnosed and 49,774 extra-pulmonary TB cases were registered. The treatment success rate of relapse cases was 90.19%, and treatment completion rates of new pulmonary clinically diagnosed and extra-pulmonary cases were 93.58% and 90.25% respectively.

During the course of treatment 576 (5.17%) relapse, 2,412 (4.27%) pulmonary clinically diagnosed and 1,819 (3.65%) extra-pulmonary cases died; overall death rate of these three categories was 4.09%.

6. DRUG RESISTANT TB

Drug-resistant TB threatens global TB care and prevention, and it remains a major public health concern in many countries. The global number of MDR/RR–TB cases notified in 2019 was 44% of the estimated 465,000 incident cases in 2019 (Ref: WHO Global TB report 2020).

Globally in 2019, 61% of people with bacteriologically confirmed TB were tested for rifampicin resistance, up from 51% in 2018. Coverage of testing was 59% for new and 81% for previously treated TB patients. A global total of 206,030 people with MDR/RR-TB were detected and notified in 2019, a 10% increase from 186,883 in 2018, and 177,099 people were enrolled in treatment, up from 156,205 in 2018.

According to the Global TB Report, the proportion of new TB cases with RR/MDR-TB was 1.6% and that of previously treated cases with RR/MDR-TB was 29% until 2017. In 2018, that proportion changed to 1.5% and 4.9% for new TB cases and previously treated cases respectively. Finally from Drug-Resistant Survey (DRS),the proportion of new TB cases with RR/MDR-TB was found 0.7% and that of previously treated cases with RR/MDR-TB was 11%. On these assumptions the estimated total numbers of MDR-TB cases in 2011 to 2019 in the country are shown in Table 7. In 2019, the notified new pulmonary cases were 224,580 and previously treated pulmonary TB cases were 12,741.

Table 7: Annual estimated number of MDR-TB cases in Bangladesh (2011-2019)

Year	Among new PTB cases	Among previously treated pulmonary TB cases including relapse	Total
2011	1,700	2,100	3,800
2012	1,850	2,300	4150
2013	2,071	2,425	4,496
2014	2,094	2,703	4,797
2015	2,512	2,507	5,019
2016	2,714	2,571	5,285
2017	3,011	2,557	5,568
2018	3,093	521	3,614
2019	1,572	1,402	2,974

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 Chest and Hospital (NIDCH). The NTRL has been functional since 27 June 2007 for culture and Drug Sensitivity Test (DST). It is linked with Supranational Reference Laboratory (SRL) in Antwerp, Belgium. In August 2008, NIDCH, with support from the Global fund, started enrolment of MDR-TB patients with Green Light Committee (GLC) approved 24 months regimen. As part of the Programmatic Management of Drug resistant TB (PMDT) plan, NTP established one Regional TB Reference Laboratory (RTRL) in the Chest Disease Hospital (CDH), Chattogram in 2011 and has also been 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 was established in 2015.

The MDR TB patients are also managed in the CDH, Rajshahi and in three other hospitals of Damien Foundation at Jalchatra in Tangail district, Anantapur in Netrokona district and Shambhuganj in Mymensingh district. An RTRL was established in the CDH, Rajshahi in May 2008. The programme has been able to enroll

around 900 patients consistently over past four years. Following the endorsement of Shorter MDR-TB treatment regimen by WHO in May 2016, NTP Bangladesh initiated shorter regimen and scaled it up all over the country by the end of 2018.

As of 31 December 2019, countrywide a total of 8,810 MDR-TB patients enrolled for treatment including 1,243 in 2019. Among the 1,243 patients in 2019, 223 are under longer regimen and 1,020 under shorter regimen.

Criteria for presumptive DR-TB cases:

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

The MDR-TB patients diagnosed and enrolled for management are shown in the table below:

Table 8: Summary of MDR-TB enrolment for treatment

Year	Longer regimen						Short regimen							Grand Total
	NIDCH	CDH, CTG	CDH, Pabna	CDH, Khulna	CDH, Sylhet	Total	Under operational research (3 DF and Rajshahi)	NIDCH	CDH, CTG	CDH, Pabna	CDH, Khulna	CDH, Sylhet	Total	
2005 May-2007							(67+69+106) = 242						**242**	**242**
2008	107					**107**	129						**129**	**236**
2009	179					**179**	181						**181**	**360**
2010	183					**183**	154						**154**	**337**
2011	212	41				**253**	137						**137**	**390**
2012	290	86				**376**	129						**129**	**505**
2013	330	120	31	14		**495**	191						**191**	**686**
2014	447	123	31	61	54	**716**	230						**230**	**946**
2015	430	121	26	43	60	**680**	200						**200**	**880**
2016	461	113	21	60	95	**750**	168						**168**	**918**
2017	145	114	24	62	81	**426**	211	279				4	**494**	**920**
2018	102	67	13	1	4	**187**	237	489	57	13	71	93	**960**	**1,147**
2019	112	104	3	0	4	**223**	249	478	52	5	106	130	**1,020**	**1,243**
Total	**2,998**	**889**	**149**	**241**	**298**	**4,575**	**2,458**	**1,246**	**109**	**18**	**177**	**227**	**4,235**	**8,810**

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

Diagnosed MDR-TB patients are enrolled for treatment. The treatment continues for 20-24 months. Initially hospital stay duration was 6-8 months and for the rest, patients were treated in the community. Since 2012, management modality has been modified with initial hospitalisation for 1-2 months followed by community management for the rest of the time. At the end of the treatment, the patients are evaluated to assess 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- 2017 under 24 months regimen.

Table 9: Treatment outcomes of MDR TB, 2008 - 2017 cohorts

Year	Registered	Shifted from shorter regimen	Confirmed MDR	Outcomes in Absolute #						Outcomes Percentage							Evaluation
				Cured	Treat. completed	Failed	Lost to follow up	Died	No result/still on treatment	Cured	Treat. completed	Failed	Lost to follow up	Died	No result/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	14	4	34	34	01	63.3	6.3	1.7	14.2	14.2	0.4	69.58	After 30 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
2015	680		680	324	198	3	56	78	12	47.6	29.1	0.4	8.2	11.5	1.8	76.76	After 24 months
2016	750		750	467	100	19	57	93	5	62.3	13.3	2.5	7.6	12.4	0.7	75.60	After 24 months
2017	426	69	494	288	79	11	45	51	14	58.3	16.0	2.2	9.1	10.3	2.8	74.29	After 24 months

Treatment outcome of MDR-TB patients of 9 months' regimen:

Under an operational research, NTP in collaboration with Damien Foundation (DF) Bangladesh has been managing MDR-TB patients with 9 months' regimen since 2008. This shorter regimen has been showing a good result with treatment success rates of 75% for the cohort registered in 2018 (Table 10). NTP has already enrolled 1,020 MDR-TB in shorter regimen in 2019. The treatment outcome of the cohort will be known by the next year.

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

Year	Registered	Shifted to longer regimen	Confirmed MDR-TB	Outcomes in Absolute #						Outcomes Percentage							Evaluation
				Cured	Treat. completed	Failed	Lost to follow up	Death	No result/still on treatment	Cured	Treat. completed	Failed	Lost to follow up	Death	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	125	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
2016	168		168	146	0	1	7	14	0	86.9	0	0.6	4.17	8.33	0	86.9	After 1 year
2017	494	69	425	296	8	28	53	33	7	69.65	1.88	6.59	12.47	7.76	1.65	71.53	After 1 year
2018	960	33	927	622	75	35	100	67	16	67.01	8.09	3.78	10.79	7.23	1.73	75.19	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 programme are available through a large laboratory network in Bangladesh. Under NTP during 2019, sputum microscopy was performed in 1,136 laboratories across the country compared to 1,140 in 2018, and sputum samples from a total of 2,216,406 presumptive TB cases were tested for Acid-Fast Bacilli (AFB), out of which 140,058 cases were sputum smear positive (positivity rate 6.32%). As a follow-up of treatment, a total number of 538,167 sputum slides were tested; out of which 3.13% were found positive. Detailed lab report for the year 2019 is shown in Annex-3.

In 2019, the number of External Quality Assessment (EQA) lab remains same as in 2018, i.e., 40. All 1,136 laboratories were brought under the quality assurance network of the EQA centres. Assessment reports were received from these EQA centres. The list of EQA centres is shown in Annex-4.

Lot quality assurance sampling method was used for quantifying the number of slides to be rechecked. Each month five slides were selected from each laboratory. Slides were blindly rechecked by a first controller. A total of 65,823 slides were rechecked. This sample contained approximately the same distribution as in the pool they had been selected from, i.e. 3,884 (5.90%) positive, 1,291 (1.96%) scanty and 60,648 (92.14%) negative. For comparison, the error rates (%) found in 2015, 2016, 2017, 2018 and 2019 are also shown in the table below (Table 11).

Table 11: Result of blinded rechecking of AFB smears

Type of error	Number (2019)	Rate (2019)	Rate (2018)	Rate (2017)	Rate (2016)	Rate (2015)
Total False Positive by Microscopy Centres (MCs)	39	0.75%	0.79%	0.94%	0.97%	1.00%
High false positive	17	0.33%	0.07%	0.17%	0.33%	0.26%
Low/scanty false positive	22	0.43%	0.72%	0.77%	0.64%	0.74%
Total False Negative by MCs	132	0.22%	0.26%	0.34%	0.39%	0.50%
High false negative	42	0.07%	0.06%	0.13%	0.21%	0.25%
Low/scanty false negative	90	0.15%	0.20%	0.21%	0.18%	0.25%
Quantification error (QE) by MCs	122	2.36%	2.19%	2.44%	2.63%	3.30%

7.2 National Tuberculosis Reference Laboratory (NTRL)

On 27 June 2007, the National Tuberculosis Reference Laboratory (NTRL) formally started its operations. 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 (conventional culture both in solid and liquid media and identification) and DST (conventional DST in solid media, AST in liquid media by proportionate method); new diagnostic techniques such as GeneXpert and Line Probe Assay (LPA) were introduced in 2012. GeneXpertma-chinesare used for detection of MTB and RR-TB and this testing method empowers 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, the 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 GeneXpert installed (cumulative)	PresumptiveDR-TB tested	PresumptiveDS-TB tested	RR-TB diagnosed
2012	12	1,733		388 (22.4%)
2013	26	11,852		811 (6.8%)
2014	39	43,360		994 (2.3%)
2015	39	3,9176		893 (2.28%)
2016	39	47,141		980 (2.08%)
2017	96	77,560		944 (1.22%)
2018	192	69,329	135,695	1,228 (0.60%)
2019	223	78,977	214,555	1,373 (0.47%)

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

YEAR	Presumptive TB tested	MTB positive	Resistant TB				
			1ST LINE			2ND LINE	
			HR	R	H	Pre-XDR	XDR
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		
2017	315	255				56	1
2018	853	548				108	10
2019	1248	764				97	8

7.3 Regional Tuberculosis Reference Laboratory (RTRL) in Rajshahi, Chattogram and Khulna

On 10 May 2008, an RTRL was 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 Chattogram started its operations in October 2010. After completing, the renovation and installation of equipment in 2014, Khulna RTRL was inaugurated on 30 June 2015.

8. TB/HIV CO-INFECTION

TB/HIV co-infection denotes two diseases inhabiting in one human 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 accelerates the progress of HIV infection to AIDS. TB is one of the leading causes of death in people living with HIV.

Diagnosis of TB/HIV co-infection

The diagnosis of TB means a patient has symptomatic disease due to lesions caused by Mycobacterium. Tuberculosis (MTB).The definitive diagnosis of HIV infection rests on a positive HIV test.

Diagnosis of TB in PLWHA

The diagnosis of tuberculosis is more difficult in HIV-positive people. However, sputum smear examination for AFB remains the cornerstone of diagnosis to identify infectious patients in order to stop trans¬mission by treating with anti-TB drugs. Moreover, according to the new policy, HIV-positive persons with symptoms/ signs of TB should be referred for GeneXpert test. X-ray and other diagnostic methods may also be used for diagnosis of other types of TB cases.

Remember:

- TB is harder to diagnose in HIV-positive people.
- TB progresses faster in HIV-positive 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 2014-2019

Category of TB patients	2015		2016		2017		2018		2019	
	# 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	# tested for HIV before or during TB treatment	# found HIV-positive before or during TB treatment
New pulmonary bacteriologically confirmed	268	15	1,977	8	2,001	8	1,421	4	5,013	9
New pulmonary clinically diagnosed	79	1	526	3	479	0	306	0	1,403	0
New extra-pulmonary	131	0	1,245	3	1,123	6	716	4	1,851	4
All re-treatment	28	1	282	0	285	0	276	0	866	1
MDR-TB	145	0	117	0	29	0	112	1	439	0
Total	**651**	**17**	**4,147**	**14**	**3,917**	**14**	**2,831**	**9**	**9,572**	**14**

Table 15: TB among PLWHA in 2015-2019

# of PLWHA tested for TB					# of PLWHA diagnosed as TB	Number				
Year 2015	Year 2016	Year 2017	Year 2018 (AAS)	Year 2019	Type of TB	Year 2015	Year 2016	Year 2017	Year 2018 (AAS)	Year 2019
479	**697**	**559**	**295**	**478**	New pulmonary bacteriologically confirmed	17	33	17	9	44
					New pulmonary clinically diagnosed	22	22	28	26	30
					New extra-pulmonary	28	18	30	16	25
					All re-treatment	7	14	14	13	21
					Total	**74**	**87**	**89**	**64**	**120**

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 management of training. Tables 16 and 17 give an overview of the activities related to training and workshop/meeting on TB control activities performed by NTP during January to December 2019. Besides these, 77 monitoring meetings in each quarter were organized in 64 districts.

Table 16: Tuberculosis Training Activities 2019

Subject	Duration (day)	Category of participants	Funding source and number of participants	
			GFATM	GOB
3-day Training on GeneXpert Testing	14	MT/ TA Lab, TLCA	154	-
6-day Refresher Training on LED Fluorescence Microscopy (Shyamoly)	2	MT/TA Lab, TLCA	286	-
Training of Lab Staffon Culture and DST	2	Microbiologist/Medical Technologist	6	-
2-day Training on EQA for EQA Lab	5	MT Lab/EQA-FC	72	-
2-dayTraining on Procurement and Supply Chain Management and Logistics for Storekeepers and TLCA	1	Storekeepers/TLCA	244	-
2-day Training for Mid-level Staff on DRTB & IC	2	Senior Staff Nurse	163	-
1 day Training/Refresher for HIV Counselor and Other Staff to Identify and Refer TB suspects	3	Senior Staff Nurse/Medical Assistant	39	-
Training on X-Ray, EP, PMDT, IC, TB/HIV for Medical Doctors	1	UH&FPO/MO/ MODC/JC (CDC)	180	-
2-Day Training on Field-level Ambulatory MDR-TB Patient Management	3	UH&FPO/MO/ MODC/JC (CDC) P.O./TLCA/ Staff Nurse, NGO Partners	494	-
3-Day Training/Retraining on Programmatic Management ofDrug-Resistant TB (PMDT) for Doctors	6	CDH/CDC/Upazila/ Urban DOT Centre	59	-
Training of Doctors on Diagnosis of Child TB	3	UH&FPO/MO/ MODC/JC (CDC)	108	-
1 day Orientation on Sputum Collection and Transportation from Peripheral Laboratory to GeneXpert Centre (NTRL/RTRL)	1	P.O./Upazila Manager/ TLCA	121	-
1 day Orientation and Training for Field Workers on Presumptive TB Identification, Referral and DOT	1	Health Worker	72	-
1 day Training on TB Care for Community Clinic Health Care Provider (CHCP)	1	CHCP	120	-

10. COLLABORATING PARTNERS OF NTP AND AREA OF COLLABORATION

A number of non-governmental organisations (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). Moreover, there is sustained collaboration with some development partners like USAID, IRD, IOM and technical partners such as WHO.

10.1 Ashar Alo Society (AAS)

Ashar Alo Society (AAS) is the pioneer and largest peer support group for people living with HIV (PLHIV). AAS has been providing care and support for PLHIV with a vision and mission to ensuring quality of life and a discrimination free society for the PLHIV in Bangladesh. They also work for capacity enhancement of PLHIV group and contribute to HIV prevention in Bangladesh. AAS has been implementing TB and HIV co-infection programme solely since 2010 under Global Fund, with technical support from BRAC and NTP. They report to NTP, NASP and BRAC as part of the national reporting.

Orientation on TB/HIV co-infection with NGO staff working with high risk group

Primary activities of AAS are HIV testing ensuring confidentiality; providing different types of counselling to PLHIV and their family members; training PLHIV and affected people about care giving, leadership development, advocacy, peer education, positive living, human rights; creating awareness; removing barriers, stigma and discrimination about HIV and AIDS through advocacy initiatives and community programmes. In 2019, 120 TB and HIV co-infected patients received TB treatment from AAS, and antiretroviral therapy (ART) from different government centres. Among them 44 were bacteriologically confirmed, 30 were identified through clinical diagnosis, EPTB: 25 and all retreatment cases: 21. A total of 103 patients received nutritional support including 04 child patients. In 2019 the number of death was 29.

Orientation on TB/HIV with PLHIV/caregivers

Visit of Joint Monitoring Mission at Sylhet AAS project office in 2019

AAS works with referral linkage with different ART, DOTS and different high risk group Drop-In Centres (DICs) to manage TB and HIV co-infected patients. They also provide support for admitted patients and pay home visit to bedridden patients.

Challenges: There is still referral linkage gap between DOTS and HIV Testing and Counseling (HTC) centres.

10.2 BRAC

BRAC, the largest non-governmental development organisation in the world, is also the largest implementing partner of the National Tuberculosis Control Programme (NTP) in terms of geographical coverage and scale of operations. Utilising an innovative approach of community engagement from the Shasthya Shebika (SS), BRAC started TB Control Programme in 1984 as a pilot project in Manikganj Sadar Upazila (sub-district) and eventually signed a memorandum of understanding with the GoB in 1994 to expand DOTS services nationwide. Along with the Government, BRAC has been the principal recipient (PR) of the Global Fund since 2004. Besides implementing large scale Global Fund grant on its own as a PR, BRAC has also been responsible for management, supervision, guidance and technical assistance of 24 other partner NGOs (sub-recipients) to ensure quality of services delivered under the unified umbrella of NTP.

Testing through GeneXpert in a TDC

In 2019, BRAC covered an area comprising of 322 sub-districts of 45 districts, covering more than 101 million populations, 12 city corporations, 49 medical institutions, 41 prisons, three Export Processing Zones and two port hospitals. A high standard of diagnostic services was maintained through 484 peripheral laboratories including 15 in Forcibly Displaced Myanmar National (FDMN) camp areas, 28 external quality assurance centres, 23 X-ray with GeneXpert centres and 39 X-ray centres.

Key Activities in 2019:

- Operationalised 62 TB Diagnostic Centres (TDC) in cities and district towns throughout the country, where NTP's revised algorithm was successfully implemented.

- Organised outreach cough collection/smearing centres routinely in unions of BRAC covered upazilas (including FDMN areas), and additionally in hard-to-reach areas, and among key affected populations such as slums, workplaces, transport workers, prisons, etc.
- Conducted orientation and networking meeting, advocacy workshop, roundtable discussion with different stakeholders: cured TB patients, local opinion leaders, print and electronic media personnel, graduate and non-graduate private practitioners.

Outreach smearing centre organised by BRAC

- Continued social support (diagnostic and in some cases, nutritional and transportation support) to DR-TB cases, smear negative cases, extra-pulmonary cases, child TB presumptive, HIV/TB co-infected cases and poor presumptive. A total of 67,063 poor presumptive TB cases received social support in 2019.
- Conducted training sessions of field staff for technical capacity building, and acquisition of updated knowledge and skill towards screening for TB, prompt notification and provision of standardized DOTS and follow-up.

Significant Achievements in 2019:

- In BRAC supported areas, 211,164 cases were diagnosed (72.42% of national TB cases) with a case notification rate of 207 per 100,000 population.
- Case notification of smear negative, extra-pulmonary and child TB increased: 41,841 clinically diagnosed cases, 32,111 EPTB and 8,467 child TB cases were diagnosed in BRAC supported areas.
- In FDMN camp areas, 41,783 presumptive were tested, and 3,463 TB cases were detected, with a case notification rate of 379 per 100,000 population. One MDR-TB and 56 child TB and 17 HIV/TB co-infected cases were diagnosed.
- From January to December 2019, a total of 99,036 presumptive TB cases were examined from 4,968 outreach sputum collection camps in hard-to-reach areas, among key populations such as workplaces, slums, brickfield, refugee, mine, pregnant women, elderly, under 15, transport workers. Of them, 8,224 smear positive cases were identified.

Daily DOT to a TB Patient by a BRAC's shasthya shebika
(frontline community health worker)

Challenges:

- Further engagement of private sector for proper referral linkage of presumptive to TDCs
- Accessibility of TB services in pocket areas (urban slums, high-rises, prisons)
- Increasing further case notification rates of extra-pulmonary and child TB
- Scaling-up further modern diagnostic facilities.

Annual review and planning meeting with partners, 2019

Best Practice/Success Story:

To enhance missing cases and to improve the national case detection rate, BRAC functionalised 62 TDCs across the country since January 2018. Among them, 23 have both X-ray and GeneXpert facilities and 39 have X-ray facilities. NTP's revised algorithm were the mode of operation in these centres. For enhancing referral linkage with graduate private practitioners for increased presumptive referral and for increased notification of clinically diagnosed cases, BRAC conducted different orientation activities for graduate private practitioners under the guidance of NTP. After timely diagnosis, referral to their nearby DOTS centres and adherence to NTP recommended treatment protocol were ensured to maintain a high treatment success rate. Individual presumptive records were entered and stored on dedicated online server, marking a new milestone towards digitalisation of the TB programme. In 2019, 722,107 TB presumptive were tested by X-ray and/or GeneXpert; 45,562 TB cases were diagnosed and 448 RR-TB cases were detected.

10.3 Damien Foundation Bangladesh

Damien Foundation (DF), a Belgian non-denominational and pluralistic NGO founded in 1964, has been working in Bangladesh since 1972. Since 1991, the fight against leprosy and tuberculosis was placed into its agenda. The organisation covers about 32 million people residing in 14 districts of the country, and provides diagnostic and treatment services through government health infrastructure. DF has three hospitals with a total of 255 bed capacity. A network of patient-friendly directly observed treatment (DOT) services at the community level through voluntary involvement of village doctors, cured patients, religious leaders, school teachers etc. has been established by DF in the project area. In addition to providing routine care services, the organisation also contributes to the national and international policy decisions through operational researches. The Damien Foundation developed shorter treatment regimen for MDR-TB has been endorsed by the WHO and has been adopted by national TB programmes globally.

Field workers' orientation

Active case finding (ACF) involving field workers, engagement of all care providers such as village doctors, cured patients, field health staff, etc., and utilization of all available tools including the WHO recommended rapid diagnostics in the project area resulted in the constant increase in total number of TB cases during past years. Regular supervision monitoring visits along with analysis of programmatic data ensured quality laboratory services, patients care and improved performances in the project area. A total of 30,435 TB and 249 MDR/RR-TB cases were detected in 2019, and high treatment success rates were also maintained at 92% for TB and 84% for MDR/RR-TB in the same year.

Community-based health education

10.4 HEED Bangladesh

HEED BANGLADESH

HEED Bangladesh is the sub-recipient (SR) of NTP since 1980 and SR of BRAC since 2005.HEED Bangladesh isThey have been covering implementing of TB programme in twenty seven (27) upazilas (Sub District) underof Habigonj, Sylhet, and Moulvibazar three districts, (Habigonj, Sylhet, and Moulvibazar) of Sylhet Ddivision.

World TB Day discussion programme

Key Activities in 2019:

HEED Bangladesh carried out the following activities:

a. TB campaign at upazila level
b. Meeting with community leaders, opinion leaders, religious leaders, teachers
c. Networking meeting with graduate private practitioners (PPs).
d. Orientation for non-graduate PPs such as drug sellers, medical representatives, village doctors.
e. Orientation/refresher meeting of DOTS/tea garden volunteers
f. Quarterly meeting with SRs
g. Observing World TB Day
h. Outreach sputum collection in special circumstances.

Significant Achievements in 2019: In 2019, HEED Bangladesh detected 17,567 new TB cases among 112,639 TB presumptive persons. They could maintain the treatment success rate at 96%. Thebacteriologically positivity rate was 8.41 and GeneXpert positivity rate was 20.84%.Moreover, 4.3% child TB cases were detected among the total TB cases and 2,256 children were registered under the isoniazid preventive therapy (IPT).87 MDR-TB patients were identified too.

World TB Day rally

Challenges:

- Most of the upazila health complexes (UHCs) are located in the main city of upazillas. Therefore, the long distance from the tea, punji and village areas remains a challenge to access services.
- Nutritious diet is very essential for TB patient but families cannot afford it due to financial constraints. Most of the people working in tea gardens as labourers get health services but these services are not available for others members of the family.
- It was very challenging for project to detect the negative and EP cases due to insufficient social support budget.
- They have some activities for which there is no budget for photography and banner printing.

10.5 icddr,b

icddr,b has been working as an SR of NTP through GFATM since 2016. In 2019, TB diagnosis, treatment and prevention service delivery by icddr,b continued in ten urban sites in Dhaka, Chattogram and Sylhet through its Social Enterprise Model (SEM) intervention as a part of an innovative pPublic-pPrivate Mix (PPM) approach. The Tuberculosis Screening & Treatment Centres (TBSTCs) serving in Dhaka are located at Mohakhali, Golapbag, Dhanmondi, Uttara, Rampura, Mirpur and& Old Dhaka. The other three TBSTCs are operated at Golpahar and& Bandartila in Chattogram, and Rikabi Bazar in Sylhet.

TB Diagnostic Facility: All the icddr,b TBSTCs offer GeneXpert MTB/RIF testing and digital chest X-ray for the TB presumptive patients. In aAdditionally, glucometry and HbA1c testing for the attending participating visitors were available in the facilities. AFB microscopy for follow- up of TB treatment-enrolled patients is also performed at Mohakhali centere

Doctors' and pharmacy orientation

Key Activities in 2019:

a. In 2019, icddr,b continued its TB case finding activity as well as referral, follow-up and reporting of newly identified cases to the NTP from the private sector by its ten TBSTCs in Dhaka, Chattogram and Sylhet.

b. To help increase early TB case detection and strengthen TB management in the private sector, icddr,b engaged graduate private practitioners (PPs) as well as pharmacy owners, drug sellers, and chemists by 360-degree communication approaches: distribution of communication materials, newspaper advertisements, orientation and sensitisation programmes, community outreach campaigns, and contact tracing. In 2019, icddr,b's network reached around 13,000 PPs (pulmonologist, internist, general physicians and other specialists), and more than 1,900 pharmacies across the three cities in Bangladesh.

c. To establish the mandatory notification system for TB in the country, under overall guidance of NTP and with funding from USAID, icddr,b piloted a digital TB notification platform Janao app in 2019 among selected private providers in Dhaka city. This was developed in the previous year for android, iOS and web interface as an intervention to help NTP initiatives in reducing the estimated number of missing TB cases from the private sector.

Significant Achievements in 2019:

Achievements under icddr,b PPM initiative in 2019 are:

- A total of 51,299 presumptive TB cases were tested.
- 6,226 TB cases including 134 Rifampicin Resistant (RR) TB cases were detected, and referred to NTP endorsed facilities for appropriate management.
- 792 TB patients enrolled for treatment at six TBSTCs (Mohakhali, Golapbag, Dhanmondi, Uttara, Rampura and Golpahar) where DOTS services are provided.
- Enrollments of 119 children for isoniazid preventive therapy (IPT) were done.

- Identified 750 cases with high blood sugar were counselled and referred to for further evaluation.
- 17 orientation sessions were conducted including 1,977 PPs on advanced TB diagnostic and recent modalities in DR-TB management.
- 51 orientation sessions including 1,262 pharmacy personnel on the basics of TB disease and diagnostic options.

Drug sellers' orientation

Challenges:

- Sustainability due to lack of continuity of fund, constraints to maintain the full range of services – one of the icddr,b TBSTCs, situated at Bandartila, Chattogram was closed at the end of December 2019 due to lack of funding.
- Coordination among different partners of NTP in urban areas.
- Retention of skilled service providers due to lower salary.

10.6 International Organization for Migration (IOM)

International Organization for Migration (IOM)
The UN Migration Agency

NTP designated International Organization for Migration's (IOM) Migration Health Assessment Centre (MHAC) the status of Directly Observed Treatment (DOT) centres in Dhaka in 2010 and in Sylhet in 2012.IOM Migration Health Assessment Centers in Dhaka and Sylhet provide screening and treatment of TB.

Key Activities in 2019:

1. 686 sputum tests (Smear and Culture for AFB) were completed.
2. GeneXpert was done for 121 suspected cases.
3. 21 cases of TB were detected.
4. 11 TB patients were treated in IOM DOTS centre and rest of the cases was referred to the nearby NTP DOTS centres.

Challenge:

- IOM was not able to follow up cases referred to NTP.

10.7 National Anti-Tuberculosis Association of Bangladesh (NATAB)

NATAB

NATAB is an SR of BRAC since 2004.

They implementsTB programme in all 64 districts at district level.

Key Activities in 2019:

NATAB conducted 256 advocacy events engaging 7,680 participants. They also observed the World TB Day and organised an annual conference on TB.

ATAB's annual conference on TB

10.8 PIME Sisters

In 2006, PIME Sisters started TB control programme as a partner of NTP through BRAC.They are implementing activities in 19 wards of KCC Khulna City Corporation with a populationreach of 355,221 people.

Key Activities in 2019:

PIME Sisters carried on information and educational programme through Advocacy, Communication and Social Mobilization (ACSM) activities such as advocacy with graduate private practitioner (GPP), non-graduate private practitioner (NGPP), community leaders, cured TB patients and household contact. PIME Sisters operates a 33-bed hospital, 10 DOTS centres and laboratory service for sputum examination.

Significant Achievements in 2019:

Among the 2,649 TB presumptive cases in 2019, 147 were bacteriologically confirmed, 16 were clinically diagnosed, 109 were identified with EPTB, 19 were relapse cases. Moreover, the number of child TB patient was 10.

Out of the 162 registered in 2018, the treatment outcome of new bacteriologically confirmed cases includes 146 persons cured of TB, eight persons died and eight failure cases. As a result the treatment success rate was 90%.

Information session on TB with female group

Challenge:

- There was low case detection in children and among floating people. Therefore, PIME Sisters suggests more collaboration among relevant stakeholders through PPM activities.

10.9 Rangpur Dinajpur Rural Services (RDRS)

আরডিআরএস বাংলাদেশ
RDRS Bangladesh

Since 2003, RDRS Bangladesh has been implementing TB programmes as one of the partners of NTP and BRAC in Lalmonirhat and Kurigram districts.

Key Activities in 2019:

- 28 TB club meetings and 12 village doctors' orientations on TB conducted
- Four opinion leader orientations on TB held

- Four networking meeting with graduate PPs/paediatricians conducted
- Observed World TB Day in 14 upazilas
- 56 TB campaigns and 292 incentive of outreach sputum collection done

Significant Achievements in 2019:

- Total presumptive tested: 62,784
- The case notification rate: 178
- Total case diagnosed: 6,642 (all forms of TB)
- Total positive case diagnosed: 2,659
- Child TB diagnosed: 162

World TB Day Rally

Challenges:

- Presumptive patients from hard-to-reach areas had to travel to GeneXpert sites located at distance
- Ensuring optimum utilisation of GeneXpert
- Some areas and populations could not be reached
- Child TB diagnosis and paediatricians' unavailability.

10.10 The Leprosy Mission International, Bangladesh (TLMI-B)

The Leprosy Mission International-Bangladesh (TLMI-B) has been working in partnership with BRAC since 2004. TLMI-B started TB control programme in 1994 in 10 upazilas of Panchagarh and Thakurgaon districts reaching 2,551,245 population in the northern part of Bangladesh.

Key Activities in 2019:

- Conducted 20 orientations for cured TB patients/TB club meeting
- Conducted four opinion leaders' orientation
- Conducted 12 non-graduate private practitioners' orientation
- Organised 3,969 outreach smearing centre campaigns
- Held four networking meetings with graduate private practitioners
- Organised 40 TB campaigns.

Significant Achievements in 2019:

- Total 4,200 TB cases including 84 child cases were registered in Thakurgaon and Panchagarh districts.
- The success rate was quite satisfactory (95.00% success rate and 96.0 % cure rate).
- 4,329 outreach smearing centre campaigns were organised and 28,465 presumptive were reported with support from community volunteers, government and TLMI-B field staff.
- Total 35.87% presumptive and 16.05 cases increased compared to 2018.
- Total 62.52% presumptive were reported through the TLMI-B field staff and 10.76% of presumptive were referred by GoB staff.

World TB Day rally in Thakurgaon district

Challenges:

- Address for all negative presumptive for X-ray
- Functionality of GeneXpert
- Less involvement and referral of GoB field staff
- Reaching the unreached and missing cases due to low number of field staff
- Case finding of negative, MDR-TB and child TB cases.

10.11 LAMB

LAMB had started treating TB patients in 1985 but the partnership with NTP started since 1994 and with BRAC since 2004. LAMB TB control programme is working in four upazilas: Parbatipur (one paurashava and one union), Chirirbandar and Khansama upazilas in Dinajpur district and Saidpur upazila in Nilphamari district, covering approximately a total of 811,088 people.

Key Activities in 2019:

LAMB conducted meetings with opinion leaders, teachers, religious leader, and imams. They had also TB club meeting with cured TB patients and networking meeting with GPPs. Moreover, they orgainsed orientation workshop for factory workers, continued orientation for village doctors. Additionally, quarterly staff meetings were also organised. 2,459 people were reached through outreach sputum collection in hard-to-reach area and TB campaign.

DOTS from community volunteer

Significant Achievements in 2019:

In 2019, a total of 1,580 were tested among whom new sputum positive patients were 867. The CNR for TB-positive patients was 107 and all forms CNR were 195. The TB treatment cure rate was 97%.

Challenge:

Paediatricianswere not available; therefore, child TB screening/detection was very low compared to ratio/estimated cases.

10.12 IRD Bangladesh

IRD Bangladesh is a sub-recipient of BRAC for TB research and has been implementing USAID, UnitAid and Stop TB Partnership supported projects directly in collaboration with NTP.

IRD Bangladesh implementedthe following TB projects:

- With MSH, IRD and KNCV in partnership with the NTP, IRD Bangladesh implemented USAID's Challenge TB Project in Dhaka and Sylhet districts
- UnitAid's endTB Project inNIDCH, Dhaka
- Stop TB Partnership TB REACH and TB REACH Scale-Up Grants in four districts in Mymensingh division.

Sputum collection at community/village level

Key Activities in 2019:

Challenge TB Project: MSH and IRD jointly implemented urban focused TB activities:

- Feasibility testing of FAST/ACF in adults and children in 12 high-volume hospitals
- TB transmission modelling for Dhaka city
- TB preventive treatment demonstration study using 3HP
- A few digital solutions for TB
- Capacity development of institutions and providers on TB infection prevention and control
- Psychosocial support for MDR-TB patients
- ACSM materials development and distribution
- High-level policy advocacy.

Youth engagement activity at Mymensingh Medical College involving NTP and professional associations' leaders - organized jointly by NTP and IRD

endTB project:

- Provided training of providers at NIDCH on MDR-TB and psychosocial support
- Organised monthly TB club meeting: orientation of MDR-TB patients involving cured MDR-TB patient
- Provided support for baseline and monitoring investigations, social support, and transport allowances for all newly enrolled DR-TB patients as per current policy of PMDT
- Provided technical assistance to the NTP and WHO to revise and finalise the National PMDT and MDR-TB guidelines.

Workshop on multi-disciplinary approach to diagnosis of extra-pulmonary TB in children –organised jointly by NTP and IRD

TB REACH Project

- Organised training and capacity building workshops for physicians from both public and private sectors in four districts on child TB diagnosis and management
- Introduced assisted decision making through video consultation in collaboration with Dhaka Shishu Hospital
- Conducted community and youth engagement activities
- Organised sensitisation workshops with stakeholders and professional bodies
- Implemented child TB focused ACF activities involving public and private facilities in four districts
- Conducted community-based contact investigation and reverse contact investigation
- TB preventive treatment using 3HP and INH

Significant Achievements in 2019:

Challenge TB Project: Accomplishments were reported separately.

endTB Project:

- New drugs procurement and programmatic management successfully transitioned to NTP
- A total of 78 patients were enrolled on treatment with Bedaquiline and Delamanid containing regimens and 114 previously enrolled patients were followed-up for adherence
- Provided refresher training on MDR-TB new drugs to 40 doctors and 35 Nurses
- Provided psychosocial support to 192 MDR-TB patients
- Clinicians and partners/implementers on new drugs and regimen were able to independently treat all eligible patients on optimal regimens.

National debate on Tuberculosis involving medical college students – organised jointly by NTP and IRD

TB REACH Project

- Child TB cases notification rate in Mymensingh division increased from 4% at baseline to 7.3% after 12 months of intervention
- 472 household contacts (below 5 years and more than 5 years) were placed under TPT with INH/3HP, and 463 (98%) successfully completed the regimen without any adverse effect
- With active engagement and support from NTP, the project trained 183 physicians from both public and private sectors and 245 health care workers from public and NGO sectors
- Established one outpatient department-based child-friendly TB centre in Mymensingh Medical College Hospital.

Challenges:

EndTB Project:

- Management of TB pharmacovigilance/ADSM within routine PMDT programme
- Expansion of treatment with new drugs to other PMDT sites outside Dhaka
- Post-endTB handover of responsibilitiesto NIDCH for clinical management and community-level follow-up of new drugs patients.

TB REACH Project:

- Changing the mind-set of the physicians and aligning them with NTP approved approach to child TB diagnosis
- Unavailability of all recommended tests like MT, FNAC at the upazila and district level hospitals
- CBNAAT machine module non-functionality in a few health care facilities.

Inauguration ceremony of National Youth Movement against TB - organised jointly by NTP and IRD

10.13 World Health Organization (WHO)

World Health Organization

World Health Organization (WHO) is the technical partner of NTP. In view of further accelerating the country's effort, WHO provide technical assistance to the Government of Bangladesh (GoB) for implementation of TB component of the new funding request (NFR), GFATM grant for the period of 2018-2020. Through this grant, WHO's continuing technical assistance to NTP in following areas-

A. Regional Green Light Committee (RGLC) monitoring mission

Reference to the agreement between RGLC's Agreement with WHO South-East Asia Regional Office (SEARO) and NTP and WHO, WHO Country Office Bangladesh arranged an annual monitoring mission of Programmatic Management of Drug-Resistant TB (PMDT). As part of the technical assistance, the RGLC Mission visited Bangladesh in February 2019. The mission has had a productive meeting with the NTP team, partners (BRAC, IRD, Challenge TB) and visited MDR TB ward in the national institute of diseases of chest and hospital (NIDCH) and the national TB reference laboratory (NTRL). The mission reviewed the progress

of previous mission's recommendation and status of expansion of PMDT services. They also discussed about the current national guideline and operation manual for PDMT, laboratories expansion plan and support of revision of 2nd edition of PMDT and STR Guidelines.

Nevertheless, strengthening capacity of NTRL and reporting of aDSM remain as challenges and were identified as room for improvement. Recommendations included workload assessment of GenXpert sites, update of national PMDT guideline, development of training manual for all health workers, expansion of second line drug susceptibility testing and increased domestic financial support for PMDT services.

Active screening for child TB at MMCH Paediatric OPD

B. National Guideline and Operational Manual for Programmatic Management of Drug Resistant TB

The operational Manual for the Management of MDR TB is updated upon the most recent WHO consolidate guidelines on DR TB treatment and recommendations addressing critical issues concerning the programmatic management of PMDT. The updated guideline focused on case-finding, treatment regimens, monitoring response to treatment, selection of models of care and extensive use of rapid drug-susceptibility testing for detection of Rifampicin and or Isoniazid resistance. Document provides practical step-by-step guidance on how to treat DR TB patients and to organize, implement, and monitor DR TB patients at community-based care for DR TB as well as implementation of aDSM on routine DR TB program.

C . Epidemiology Analysis

WHO supported the TB epidemiological review. This review assessed the current national TB surveillance, assessed the level and trends in TB disease burden using available surveillance, survey, programmatic and other data and defined key populations for further improvement on TB diagnosis and treatment. Moreover, the review identified the gaps in TB surveillance system in Bangladesh. The top recommendations provided are- eTB manager and DHIS-2 coverages, introduction of new reporting and recording tools, specimen transportation, childhood TB and overall capacity improvement of the national and state level M&E staff to ensure data quality and utilization to inform practice and program performance.

D. 8th Joint Monitoring Mission

The 8th Joint Monitoring Mission (8th JMM) evaluated the progress, identified key challenges and recommended feasible solutions. The following thematic areas were identified as the most critical for the achievement of the objectives of the program review:

1. Procurement and Supply Chain Management (PSM).
2. Laboratory/TB diagnostics.
3. Programmatic Management of Drug Resistant TB (PMDT)).
4. The Health Care System.
5. Engaging all care providers through PPM
6. Child and adolescent TB.

After the field visits, mission participants reviewed the findings of the mission and formulated recommendations in each thematical area. For each thematical area, programmatic strengths, weaknesses and constraint were identified, and recommendations were made to address implementation bottleneck.

The mission recommended improving multi-sectoral coordination and accountability and addressing health system bottlenecks such as procurement and supplies, service delivery as well as human resources. Moreover, the recommendations included enhancement of early diagnosis of TB, infection control and expansion of GeneXpert, timely procurement of anti-TB medicines, strengthen engagement with private sector and scaling up of TB preventive therapy.

With respect to public-private mix, quality of care, outcome of treatment, analysis of available data, scaling up of successful PPM models, expansion of TB care corners, increased human resource capacity, awareness of free diagnostic facility, treatment regimens and appropriate financing for PPM.

E. Dissemination meeting for TB JMM

The dissemination meeting was held in 10 September 2019 in Dhaka. It shared the findings of 8th JMM to policy makers, government high officials, technical and implementing partners, stakeholders, donor and development partners. This action created better understanding of progress of national response on TB control. Recommendations will be incorporated in the updated national strategic plan for TB control in Bangladesh.

F. National Strategic Plan for TB control (2021-2025)

Based on the epidemiological analysis findings and 8th JMM, the existing national strategy plan (NSP) was updated for the period of 2021-2025 in November 2019. The updated NSP aims to cover the three pillars of End TB strategy. The interventions focus on increasing annual case detection for drug sensitive and drug resistant cases, strengthening diagnosis and treatment services for children, addressing health system bottlenecks and implementing multisectoral accountability framework. Collectively, these interventions will accelerate national response for TB control and meet the End TB Strategy's Milestones for 2025 (75% reduction in tuberculosis deaths and 50% reduction in tuberculosis incidence rate) and targets for 2035 (95% reduction in tuberculosis deaths and 90% reduction in tuberculosis incidence rate).

G. Protocol for the Patient cost survey

The outline of protocol for the TB patient costs survey was drafted in July 2019. NTP led the process and WHO provided technical assistance. Both WHO HQ and regional office were involved extensively in the drafting of the document. The survey has the following objectives.

i. To document the magnitude and main drivers of different types of costs incurred by TB patients (and their households) to guide policies that reduce financial access barriers and minimize adverse socioeconomic impact of TB.

ii. To determine the baseline and periodically measure the percentage of TB patients (and their households) treated in the NTP network and incurring catastrophic total costs due to TB.

The protocol defined the study design, study population, sample methodology, sample size calculation, inclusion and exclusion criteria. The survey will be a cross-sectional and a nationally representative sample of TB patients will be used. Both drug sensitive and drug resistant TB patients (regardless of age, sex and types of TB), who are attending a sampled health facility and who are a minimum of 14 days into the present intensive and continuation treatment phase, will be included. Newly diagnosed patients, not having started treatment, will be excluded. Additionally, the TB patients who are taking treatment in private sector not reporting to NTP, inmates and institutionalized patients will not be included.

Moreover, the protocol defined the patient enrolment for each stratum, survey instrument, required budget and tentative timeline. The information will be collected through a standard questionnaire. The limitation of this survey is that the findings can be generalized to the subset of population with TB who receive care under the NTP network.

H. Workshop on Latent Tuberculosis Infection (LTBI):

The UN high level meeting set the targets for TB preventive treatment. In line with this priority action, WHO assisted NTP to organize a workshop and draft the concept note for scaling up of TB preventive treatment in Bangladesh. The concept note follows the WHO recommendations for systematic screening, testing and treatment of latent TB infected individuals. In addition, the workshop identified the risk groups together with clinicians, implementing and technical partners.

I. TB Sondalo Training course on implementing the WHO End TB strategy and the new vision of TB Elimination

WHO provided technical assistance to conduct TB Sondalo Training course on implementing the WHO End TB strategy and the new vision of TB Elimination in Bangladesh. A total number of 30 participants from NTP, partners and clinicians participated the ten-day training course from 31 march to 09 April 2019. Two international consultants conducted the training in Dhaka. The training helped the participants to understand the END TB strategy in country aspect and developed their capacity for better program understanding and evaluation.

J. Data quality review:

The Global Fund has committed to supporting a nationally-representative Data Quality Review (DQR) in Bangladesh in 2018 which extended up to 2019. With the objective of supporting nationally-representative

and country-led reviews of data and service quality, WHO provides technical assistance to NTP and the National Institute of Population, Research and Training (NIPORT) to finalize the questionnaire/tools for data collection from field level for maternal health, immunization, and Tuberculosis and Malaria services. The data collection tool for this review is adapted from the global harmonized tools supported by WHO and partners.

K. TB Data and Reporting

Providing technical supports to collect, validate and finalize data for the Global TB report 2020. Additionally, technical supports were provided for the preparation and finalization of different donor reports, annual report at national, regional and global levels.

L. Supporting the Implementation of NTP activities

- Provide technical support on expansion of Xpert MTB/RIF services up to district and some upazila level and scale up of shorter regimen for the management of MDR TB patients;
- Participated in The World TB Day.

In addition to GF supported activities, WHO provides technical assistance to other TB activities.

M. Second nationwide TB drug-resistance survey:

Bangladesh carried out its first anti-TB drug resistance survey in 2010-2011. The survey showed that MDR rate 1.4% and 28.5% among new and previously treated cases respectively. NTP renewed its effort and repeated the similar survey from 2018-2019 with technical assistance from WHO. Under the leadership of NTP, the national TB reference laboratory (NTRL) at NIDCH served as a principal investigator. It is a cross-sectional survey which collected a national representative sample from 52 clusters. The clusters were stratified into urban (46) and rural (79) and selected according to probability proportional to size (PPS).

NTP, NTRL and WHO monitored the field activities. In the cluster sites and chest disease clinics (CDC), patient related information including sample and data collection is regularly monitored by trained UH&FPO, MODC and CDC consultants. At NTRL, the samples, the documents and rest of the lab activities were checked by Principal Investigator and Chief Medical Technologist (Lab). Each survey cluster was visited by the pre-survey visit team. Following pre-survey visit report, feedback was being provided to the data collectors of the cluster site during the training held at NTRL. A total of 2,356 patients enrolled. The preliminary report indicates indicated that 0.9% and 12% among newly notified and previously treated patients have MDR/RR-TB. SRL, Antwerp Belgium provided technical assistance for quality assurance of laboratory procedures.

After data collection and cleaning, the data set has been sent to WHO head quarter for analysis. Results of the survey will be used for the planning of TB control. The prevalence of DR-TB in the year 2018-19 will also serve as a baseline measurement for comparison with future surveys, which is recommended to be carried out periodically every 5 or 10 years to determine the trend of DR-TB. It is also required to monitor the attainment of national and global targets related to MDGs and SDGs.

N. TB Response among The Rohingya Refugees or Forcibly Displaced Myanmar Nationals (FDMNs):

WHO continue to support NTP and partners for strengthening TB response in Ukhiya and Teknaf in Cox's Bazar. Both WHO regional office and HQ visited Cox's Bazar in September 2019 to monitor the field activities in Teknaf. WHO support the installation of a new digital X-ray machine in Ukhiya. Additionally, WHO supported human resources for both Ukhiya and Teknaf upazila health complexes. This workforce includes one district medical officer, two medical technologists (lab) and one radiographer who contributed to the TB diagnostics service. Two field supervisors and ten field assistants are assigned to supplement the TB screening service and community education sessions in the camps and host community. The field team is working together with BRAC and other NGO field teams.

O. Printing and delivery of TB laboratory request form

Printing and delivery of the TB laboratory request form (DR TB 06) was done in 2019. NTP took the lead in distribution of these printed materials to all DOTS centers in Bangladesh. This activity will contribute strengthening recording system of laboratory services.

P. International Training/Meeting:

Supported NTP personnel to attend below mentioned meeting/training:

1. 14th Global Meeting on Public-Private Mix (PPM) for TB Prevention and Care, was held in Jakarta, Indonesia, 16-18 July 2019. The general objective of the meeting was to review global progress and problems in prioritizing PPM to close gaps in care in high TB burden countries; to discuss the progress in rolling out the PPM Roadmap and key steps to strengthen its implementation; and to examine, help improve, and explore resource mobilization for PPM.The National TB programme (NTP) Manager and the PPM Focal person of NTP participated in this meeting.

2. Regional Meeting of National Tuberculosis Control Programme Managers and Partners was held in New Delhi, India, 13-15 May 2019. The general objective of the meeting was to review progress and challenges towards the achievements of Delhi END TB summit and UNHLM targets; to discuss implementation of END TB strategy in the context of commitments made during the recent high-level meetings; identify modalities for achieving full funding for TB programmes within the line UHC framework and socio-economic protection of TB patients and to update NTP managers and stakeholders on new technical guidance, innovation and tools.

10.14 United States Agency for International Development (USAID)

In fiscal year 2019, USAID Bangladesh continued its support to NTP to strengthen the active case finding and diagnostics system.

In 2019, USAID supported NTP to develop an electronic Mandatory Notification (MN) application called "Janao" (http://notifytb.icddrb.org/) that would improve TB case notification from the private sector. The application enables private practitioners to notify and link TB patients with the NTP-supported DOTS centres. A total of 714 providers were oriented on the MN web-based application including 88 DOTS staff,

292 doctors' assistants and 334 doctors in Dhaka. Between February 1, 2019 and June 29, 2019, a total of 265TB patients were notified through the app.

Moreover, USAID supported two social enterprise models in Dhaka city for TB case diagnosis and referral. The two centres were equipped with GeneXpert machines and digital X-rays, and they provided quality TB diagnostic and treatment services to clients mostly referred by private doctors and drug sellers. This model linked private doctors with DOTS centres, and improved notification of TB patients who would normally remain "un-notified". In 16 months, 14,508presumptivepatients were screened, 1,334 were diagnosed with TB, and 1,188 were referred for treatment.

To increase TB case detection among children, USAID provided technical support to NTP to establish four specialised centres for diagnosis and treatment of childhood TB. Between December 2018 and June 2019, 80 children with possible TB underwent evaluation at the centres. GeneXpert confirmed six children to be bacteriologically positive with TB and seven children were clinically diagnosed with TB. To strengthen the specialized child TB centres, USAID trained 80 frontline paediatriciansand established a referral system from 18 paediatric outpatient departments (OPDs), 10 NGO clinics and 65 informal providers.

USAID also supported the scaling up of the e-TB manager throughout the country. The e-TB manager is an individual patient tracking system that captures data at the facility level. Out of 877 sites, 331 sites were trained on e-TB manager and they started reporting data through the system.

Additionally, USAID organised one policy dialogue involving major stakeholders in TB on World TB Day. USAID also organised a series of events on World TB Day that included OP-ed by the Ambassador on paediatric TB, TB site visits by the Mission Director and the Ambassador, and Facebook live chat with a TB survivor. These events helped to build commitment on TB at the national level. Following the events, there was also a signing ceremony of the Statement of Partnership between USAID Bangladesh and MOHFW to work together to achieve the targets of TB by 2022.

District-wise case notification rate, 2019

Annex 1

SL.	District	Upazila							Metro							CDC							Total							Grand Total	P. Population	New PBC CNR as per 1,00,000 pop.	All Forms CNR as per 1,00,000 pop.
		Pulmonary Bacteriologically Confirmed		Pulmonary Clinically Diagnosed		Extra-Pulmonary		All Retreatment	Pulmonary Bacteriologically Confirmed		Pulmonary Clinically Diagnosed		Extra-Pulmonary		All Retreatment	Pulmonary Bacteriologically Confirmed		Pulmonary Clinically Diagnosed		Extra-Pulmonary		All Retreatment	Pulmonary Bacteriologically Confirmed		Pulmonary Clinically Diagnosed		Extra-Pulmonary		All Retreatment				
		New/ Treatment History Unknown	Relapses	New/ Treatment History Unknown	Relapses	New/ Treatment History Unknown	Relapses		New/ Treatment History Unknown	Relapses	New/ Treatment History Unknown	Relapses	New/ Treatment History Unknown	Relapses		New/ Treatment History Unknown	Relapses	New/ Treatment History Unknown	Relapses	New/ Treatment History Unknown	Relapses		New/ Treatment History Unknown	Relapses	New/ Treatment History Unknown	Relapses	New/ Treatment History Unknown	Relapses					
1	Barguna	1004	32	565	152	167	6	3															1004	32	565	152	167	6	3	1929	965,758	103.96	199.43
2	Barishal	2244	44	2319	147	434	21	4	143	19	325	15	206	4	3	9	0	8	0	8	0	0	2396	63	2652	162	648	25	7	5953	2,389,747	100.26	248.81
3	Bhola	2599	66	1042	112	261	13									3	0	1	0	2	0	0	2602	66	1043	112	263	13	0	4099	1,909,443	136.27	214.67
4	Jhalakati	959	18	332	44	161	8																959	18	332	44	161	8	0	1522	700,326	136.94	217.33
5	Patuakhali	1699	41	1049	321	346	17	1								11	0	4	0	14	0	0	1710	41	1053	321	360	17	1	3503	1,660,036	103.01	210.96
6	Pirojpur	1307	20	719	104	298	10									0	0	0	0	0	0	0	1307	20	719	104	298	10	0	2458	1,159,068	112.76	212.07
	Barishal Div	**9812**	**221**	**6026**	**880**	**1667**	**75**	**8**	**143**	**19**	**325**	**15**	**206**	**4**	**3**	**23**	**0**	**13**	**0**	**24**	**0**	**0**	**9978**	**240**	**6364**	**895**	**1897**	**79**	**11**	**19464**	**8,777,819**	**113.67**	**221.62**
7	Bandarban	525	8	87	5	61	3																525	8	87	5	61	3	0	689	499,119	105.19	138.04
8	Brahmanbaria	4375	91	697	94	664	23	25								1	0	2	0	1	0	0	4376	91	699	94	665	23	25	5973	3,378,029	129.54	176.08
9	Chandpur	3209	68	740	25	576	25	8								4	0	8	1	19	0	0	3213	68	748	26	595	25	8	4683	2,639,555	121.73	177.11
10	Chattogram	7532	149	914	115	1292	43	22	3751	391	1437	154	3879	129	46	7	1	1	0	6	0	0	11290	541	2352	269	5177	172	68	19869	8,851,201	127.55	223.71
11	Cumilla	5266	166	2310	162	1835	59	27								0	0	0	0	0	0	0	5266	166	2310	162	1835	59	27	9825	6,357,500	82.83	154.12
12	Coxs Bazar	3509	103	440	78	476	15	15								15	4	9	1	34	3	1	3524	107	449	79	510	18	16	4703	2,920,817	120.65	160.47
13	Feni	1707	38	452	28	464	7	2								0	0	0	0	4	0	0	1707	38	452	28	468	7	2	2702	1,681,501	101.52	160.57
14	Khagrachari	961	11	355	9	53	2																961	11	355	9	53	2	0	1391	722,742	132.97	192.46
15	Lakshmipur	2121	106	471	96	392	17	9															2121	106	471	96	392	17	9	3212	2,023,729	104.81	158.27
16	Noakhali	3994	79	500	62	566	14	2								0	0	0	0	0	0	0	3994	79	500	62	566	14	2	5217	3,750,350	106.50	139.05
17	Rangamati	788	10	257	15	54	0									3	0	1	0	1	0	0	791	10	258	15	55	0	0	1129	703,779	112.39	160.42
	Chattogram Div	**33987**	**829**	**7223**	**689**	**6433**	**208**	**110**	**3751**	**391**	**1437**	**154**	**3879**	**129**	**46**	**30**	**5**	**21**	**2**	**65**	**3**	**1**	**37768**	**1225**	**8681**	**845**	**10377**	**340**	**157**	**59393**	**33,670,237**	**112.17**	**175.93**
18	Dhaka	3485	187	637	62	1505	90	46	8161	1002	3374	303	10888	563	106	88	7	13	2	56	2	2	11734	1196	4024	367	12449	655	154	30579	16,535,615	70.96	184.00
19	Faridpur	450	34	415	23	437	12	22								15	0	0	0	12	0	2	465	34	415	23	449	12	24	1422	2,126,930	21.86	65.73
20	Gazipur	4199	216	1414	138	1991	108	48								0	0	0	0	0	0	0	4199	216	1414	138	1991	108	48	8114	5,382,842	78.01	149.85
21	Gopalganj	355	28	294	18	226	7	17								15	0	14	1	26	0	2	370	28	308	19	252	7	19	1003	1,224,181	30.22	80.38
22	Kishoreganj	2024	110	989	100	985	46	91								52	6	29	1	79	4	0	2076	116	1018	101	1064	50	91	4516	3,317,911	62.57	133.37
23	Madaripur	316	28	303	19	251	10	15								12	0	15	3	20	0	0	328	28	318	22	271	10	15	992	1,228,797	26.69	79.51
24	Manikganj	2277	75	1465	50	435	21	2															2277	75	1465	50	435	21	2	4325	1,542,953	147.57	280.18
25	Munshiganj	2316	48	654	87	479	23	3								0	0	0	0	0	0	0	2316	48	654	87	479	23	3	3610	1,640,656	141.16	219.85
26	Narayanganj	3621	201	2327	213	1907	83	10															3621	201	2327	213	1907	83	10	8362	3,923,582	92.29	212.87
27	Narsinghdi	2356	96	2402	210	584	24	1															2356	96	2402	210	584	24	1	5673	2,628,890	89.62	215.76
28	Rajbari	238	16	156	22	196	10	16															238	16	156	22	196	10	16	654	1,179,317	20.18	54.10
29	Shariatpur	444	20	602	15	301	12	20															444	20	602	15	301	12	20	1414	1,265,593	35.08	110.15
30	Tangail	1702	78	1279	103	924	36	90								129	4	125	2	54	1	3	1831	82	1404	105	978	37	93	4530	4,028,975	45.45	110.13
	Dhaka Div	**23783**	**1137**	**12937**	**1060**	**10221**	**482**	**381**	**8161**	**1002**	**3374**	**303**	**10888**	**563**	**106**	**311**	**17**	**196**	**9**	**247**	**7**	**9**	**32255**	**2156**	**16507**	**1372**	**21356**	**1052**	**496**	**75194**	**44,220,601**	**72.94**	**168.92**
31	Jamalpur	1124	54	458	37	532	19	87								93	6	42	5	64	8	4	1217	60	500	42	596	27	91	2533	2,548,537	47.75	95.82
32	Mymensingh	4371	265	1436	150	1846	91	153								34	4	12	1	41	3	0	4405	269	1448	151	1887	94	153	8407	5,886,063	74.84	140.23
33	Netrakona	1357	86	969	188	620	25	63															1357	86	969	188	620	25	63	3308	2,536,425	53.50	127.94
34	Sherpur	1622	63	1254	245	401	22	3															1622	63	1254	245	401	22	3	3610	1,480,874	109.53	243.57
	Mymensingh Div	**8474**	**468**	**4117**	**620**	**3399**	**157**	**306**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**127**	**10**	**54**	**6**	**105**	**11**	**4**	**8601**	**478**	**4171**	**626**	**3504**	**168**	**310**	**17858**	**13,335,717**	**64.50**	**131.59**

District-wise case notification rate, 2019

Annex 1 Contd.

SL.	District	Upazila							Metro							CDC							Total							Grand Total	P. Population	New PBC CNR as per 1,00,000 pop.	All Forms CNR as per 1,00,000 pop.
		Pulmonary Bacteriologically Confirmed		Pulmonary Clinically Diagnosed		Extra-Pulmonary		All Retreatment	Pulmonary Bacteriologically Confirmed		Pulmonary Clinically Diagnosed		Extra-Pulmonary		All Retreatment	Pulmonary Bacteriologically Confirmed		Pulmonary Clinically Diagnosed		Extra-Pulmonary		All Retreatment	Pulmonary Bacteriologically Confirmed		Pulmonary Clinically Diagnosed		Extra-Pulmonary		All Retreatment				
		New/ Treatment History Unknown	Relapses	New/ Treatment History Unknown	Relapses	New/ Treatment History Unknown	Relapses		New/ Treatment History Unknown	Relapses	New/ Treatment History Unknown	Relapses	New/ Treatment History Unknown	Relapses		New/ Treatment History Unknown	Relapses	New/ Treatment History Unknown	Relapses	New/ Treatment History Unknown	Relapses		New/ Treatment History Unknown	Relapses	New/ Treatment History Unknown	Relapses	New/ Treatment History Unknown	Relapses					
35	Bagerhat	2618	30	895	131	280	8	10								21	2	1	0	15	1	0	2639	32	896	131	295	9	10	4012	1,477,404	178.62	270.88
36	Chuadanga	1880	112	372	56	243	11									20	7	8	1	28	0	0	1900	119	380	57	271	11	0	2738	1,285,989	147.75	212.91
37	Jashore	5257	64	539	32	458	12	16								56	6	25	1	43	3	2	5313	70	564	33	501	15	18	6514	3,143,488	169.02	206.65
38	Jhenaidah	2994	54	1021	117	323	19	12															2994	54	1021	117	323	19	12	4540	2,016,900	148.45	224.50
39	Khulna	3016	69	329	48	255	14	6	571	28	312	38	525	13	14	2	0	0	0	1	0	0	3589	97	641	86	781	27	20	5241	2,360,005	152.08	221.23
40	Kushtia	4011	48	394	44	428	18	5								26	3	6	0	45	2	3	4037	51	400	44	473	20	8	5033	2,211,578	182.54	227.21
41	Magura	1917	24	220	4	118	8	2								173	3	15	0	5	0	2	2090	27	235	4	123	8	4	2491	1,040,133	200.94	239.10
42	Meherpur	1010	8	194	4	138	4									15	1	2	0	11	0	1	1025	9	196	4	149	4	1	1388	739,260	138.65	187.62
43	Narail	1542	35	186	19	104	4	10															1542	35	186	19	104	4	10	1900	769,883	200.29	245.49
44	Satkhira	2432	54	1673	160	270	11	2								24	2	16	1	27	0	0	2456	56	1689	161	297	11	2	4672	2,168,546	113.26	215.35
	Khulna Div	**26677**	**498**	**5823**	**615**	**2617**	**109**	**63**	**571**	**28**	**312**	**38**	**525**	**13**	**14**	**337**	**24**	**73**	**3**	**175**	**6**	**8**	**27585**	**550**	**6208**	**656**	**3317**	**128**	**85**	**38529**	**17,166,087**	**160.69**	**223.95**
45	Bogura	4880	91	548	25	1187	31	56								1	0	0	0	4	0	1	4881	91	548	25	1191	31	57	6824	3,895,910	125.29	173.69
46	Jaipurhat	1221	32	368	48	306	6	1															1221	32	368	48	306	6	1	1982	1,009,213	120.99	196.29
47	Naogaon	1158	57	639	32	650	13	37															1158	57	639	32	650	13	37	2586	2,887,404	40.11	88.28
48	Natore	1190	57	141	4	373	18	15								45	4	4	0	44	0	1	1235	61	145	4	417	18	16	1896	1,944,307	63.52	96.69
49	Nawabganj	501	37	391	13	430	18	3								76	7	45	4	101	5	4	577	44	436	17	531	23	7	1635	1,923,555	30.00	84.63
50	Pabna	2265	70	717	27	645	22	14								71	7	20	0	94	5	0	2336	77	737	27	739	27	14	3957	2,952,229	79.13	133.56
51	Rajshahi	782	38	210	6	555	18	14	389	47	268	9	466	25	6	18	0	11	1	52	2	0	1189	85	489	16	1073	45	20	2917	2,983,617	39.85	97.10
52	Sirajganj	3101	93	683	22	774	20	17								109	19	27	1	100	7	1	3210	112	710	23	874	27	18	4974	3,596,762	89.25	137.79
	Rajshahi Div	**15098**	**475**	**3697**	**177**	**4920**	**146**	**157**	**389**	**47**	**268**	**9**	**466**	**25**	**6**	**320**	**37**	**107**	**6**	**395**	**19**	**7**	**15807**	**559**	**4072**	**192**	**5781**	**190**	**170**	**26771**	**21,180,031**	**74.63**	**125.59**
53	Dinajpur	3548	63	1507	67	802	23	8								7	0	0	0	3	0	0	3555	63	1507	67	805	23	8	6028	3,428,432	103.69	175.59
54	Gaibandha	2399	65	1310	52	611	12	7								4	0	2	0	4	0	0	2403	65	1312	52	615	12	7	4466	2,690,423	89.32	165.74
55	Kurigram	1499	10	1935	10	444	7	5								25	1	15	0	26	0	0	1524	11	1950	10	470	7	5	3977	2,411,673	63.19	164.70
56	Lalmonirhat	1135	14	1191	21	290	7	7															1135	14	1191	21	290	7	7	2665	1,440,216	78.81	184.56
57	Nilphamari	2328	32	742	30	379	8	1								0	0	0	0	0	0	0	2328	32	742	30	379	8	1	3520	2,155,865	107.98	163.23
58	Panchagarh	927	17	490	8	214	2	7															927	17	490	8	214	2	7	1665	1,170,938	79.17	141.60
59	Rangpur	2475	63	2238	81	784	31	22								11	1	6	0	2	0	2	2486	64	2244	81	786	31	24	5716	3,308,815	75.13	172.03
60	Thakurgaon	1257	23	861	16	293	2	6								33	1	26	0	29	1	4	1290	24	887	16	322	3	10	2552	1,608,269	80.21	158.06
	Rangpur Div	**15568**	**287**	**10274**	**285**	**3817**	**92**	**63**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**80**	**3**	**49**	**0**	**64**	**1**	**6**	**15648**	**290**	**10323**	**285**	**3881**	**93**	**69**	**30589**	**18,211,081**	**85.93**	**167.59**
61	Habiganj	3666	152	1178	49	579	11	5															3666	152	1178	49	579	11	5	5640	2,491,332	147.15	226.18
62	Moulvibazar	3278	100	1630	200	570	18	6								1	0	3	0	0	0	0	3279	100	1633	200	570	18	6	5806	2,290,268	143.17	253.25
63	Sunamganj	3109	163	1531	293	551	27	15								9	0	4	0	3	0	0	3118	163	1535	293	554	27	15	5705	3,014,336	103.44	188.76
64	Sylhet	3624	165	1252	23	949	17	6	838	52	445	26	475	19	15	27	3	17	0	35	1	2	4489	220	1714	49	1459	37	23	7991	4,516,618	99.39	176.42
	Sylhet Div	**13677**	**580**	**5591**	**565**	**2649**	**73**	**32**	**838**	**52**	**445**	**26**	**475**	**19**	**15**	**37**	**3**	**24**	**0**	**38**	**1**	**2**	**14552**	**635**	**6060**	**591**	**3162**	**93**	**49**	**25142**	**12,288,355**	**118.42**	**204.20**
	Grand Total :	**147076**	**4495**	**55688**	**4891**	**35723**	**1342**	**1120**	**13853**	**1539**	**6161**	**545**	**16439**	**753**	**190**	**1265**	**99**	**537**	**26**	**1113**	**48**	**37**	**162194**	**6133**	**62386**	**5462**	**53275**	**2143**	**1347**	**292940**	**167,868,800**	**96.62**	**173.70**

Annex 2

District-wise Treatment Results, new pulmonary bacteriologically confirmed cases registered in 2018

SL.	District	Absolute numbers							Percentage					
		Res. Case	Succ. Treated	Died	Fail	Def.	T. Out	Not Eva.	Succ. Treated	Died	Fail	Def.	T. Out	Not Eva.
1	Barguna	**1012**	946	29	1	33	2	1	93.48%	2.87%	0.10%	3.26%	0.20%	0.10%
2	Barishal	**2538**	2396	62	8	45	14	13	94.41%	2.44%	0.32%	1.77%	0.55%	0.51%
3	Bhola	**2432**	2352	45	8	17	9	1	96.71%	1.85%	0.33%	0.70%	0.37%	0.04%
4	Jhalakati	**957**	892	36	0	19	0	10	93.21%	3.76%	0.00%	1.99%	0.00%	1.04%
5	Patuakhali	**2055**	1884	64	0	97	8	2	91.68%	3.11%	0.00%	4.72%	0.39%	0.10%
6	Pirojpur	**1466**	1408	37	1	10	6	4	96.04%	2.52%	0.07%	0.68%	0.41%	0.27%
	Barishal Div	**10460**	**9878**	**273**	**18**	**221**	**39**	**31**	**94.44%**	**2.61%**	**0.17%**	**2.11%**	**0.37%**	**0.30%**
7	Bandarban	**473**	469	2	0	0	1	1	99.15%	0.42%	0.00%	0.00%	0.21%	0.21%
8	Brahmanbaria	**3703**	3591	86	11	14	0	1	96.98%	2.32%	0.30%	0.38%	0.00%	0.03%
9	Chandpur	**2848**	2785	50	7	2	0	4	97.79%	1.76%	0.25%	0.07%	0.00%	0.14%
10	Chattogram	**10155**	9923	146	38	13	21	14	97.72%	1.44%	0.37%	0.13%	0.21%	0.14%
11	Cumilla	**4945**	4803	112	19	5	1	5	97.13%	2.26%	0.38%	0.10%	0.02%	0.10%
12	Coxs Bazar	**3232**	3156	58	12	1	2	3	97.65%	1.79%	0.37%	0.03%	0.06%	0.09%
13	Feni	**1454**	1443	9	2	0	0	0	99.24%	0.62%	0.14%	0.00%	0.00%	0.00%
14	Khagrachari	**949**	940	7	0	0	2	0	99.05%	0.74%	0.00%	0.00%	0.21%	0.00%
15	Lakshmipur	**1899**	1840	50	6	2	1	0	96.89%	2.63%	0.32%	0.11%	0.05%	0.00%
16	Noakhali	**3669**	3587	61	5	2	0	14	97.77%	1.66%	0.14%	0.05%	0.00%	0.38%
17	Rangamati	**707**	703	4	0	0	0	0	99.43%	0.57%	0.00%	0.00%	0.00%	0.00%
	Chattogram Div	**34034**	**33240**	**585**	**100**	**39**	**28**	**42**	**97.67%**	**1.72%**	**0.29%**	**0.11%**	**0.08%**	**0.12%**
18	Dhaka	**11872**	11296	219	86	115	63	93	95.15%	1.84%	0.72%	0.97%	0.53%	0.78%
19	Faridpur	**446**	414	26	4	2	0	0	92.83%	5.83%	0.90%	0.45%	0.00%	0.00%
20	Gazipur	**3836**	3704	84	17	7	6	18	96.56%	2.19%	0.44%	0.18%	0.16%	0.47%
21	Gopalganj	**323**	308	9	4	2	0	0	95.36%	2.79%	1.24%	0.62%	0.00%	0.00%
22	Kishoreganj	**2102**	1985	70	23	13	11	0	94.43%	3.33%	1.09%	0.62%	0.52%	0.00%
23	Madaripur	**362**	338	17	2	5	0	0	93.37%	4.70%	0.55%	1.38%	0.00%	0.00%
24	Manikganj	**1947**	1907	36	2	0	0	2	97.95%	1.85%	0.10%	0.00%	0.00%	0.10%
25	Munshiganj	**2077**	2010	47	3	3	5	9	96.77%	2.26%	0.14%	0.14%	0.24%	0.43%
26	Narayanganj	**3587**	3500	60	9	6	1	11	97.57%	1.67%	0.25%	0.17%	0.03%	0.31%
27	Narsinghdi	**2173**	2071	80	3	19	0	0	95.31%	3.68%	0.14%	0.87%	0.00%	0.00%
28	Rajbari	**244**	226	14	2	1	1	0	92.62%	5.74%	0.82%	0.41%	0.41%	0.00%
29	Shariatpur	**441**	424	12	5	0	0	0	96.15%	2.72%	1.13%	0.00%	0.00%	0.00%
30	Tangail	**1654**	1533	70	14	29	5	3	92.68%	4.23%	0.85%	1.75%	0.30%	0.18%
	Dhaka Div	**31064**	**29716**	**744**	**174**	**202**	**92**	**136**	**95.66%**	**2.40%**	**0.56%**	**0.65%**	**0.30%**	**0.44%**
31	Jamalpur	**1155**	1027	47	18	50	12	1	88.92%	4.07%	1.56%	4.33%	1.04%	0.09%
32	Mymensingh	**4164**	3902	149	59	24	27	3	93.71%	3.58%	1.42%	0.58%	0.65%	0.07%
33	Netrakona	**1436**	1344	56	22	13	1	0	93.59%	3.90%	1.53%	0.91%	0.07%	0.00%
34	Sherpur	**1387**	1308	64	5	7	1	2	94.30%	4.61%	0.36%	0.50%	0.07%	0.14%
	Mymensingh Div	**8142**	**7581**	**316**	**104**	**94**	**41**	**6**	**93.11%**	**3.88%**	**1.28%**	**1.15%**	**0.50%**	**0.07%**
35	Bagerhat	**2638**	2597	38	3	0	0	0	98.45%	1.44%	0.11%	0.00%	0.00%	0.00%
36	Chuadanga	**1721**	1676	39	1	3	1	1	97.39%	2.27%	0.06%	0.17%	0.06%	0.06%
37	Jashore	**4435**	4342	73	5	11	0	4	97.90%	1.65%	0.11%	0.25%	0.00%	0.09%
38	Jhenaidah	**2857**	2796	49	2	8	1	1	97.86%	1.72%	0.07%	0.28%	0.04%	0.04%
39	Khulna	**3104**	3039	47	14	2	0	2	97.91%	1.51%	0.45%	0.06%	0.00%	0.06%
40	Kushtia	**3596**	3529	57	5	5	0	0	98.14%	1.59%	0.14%	0.14%	0.00%	0.00%
41	Magura	**1859**	1820	35	2	1	0	1	97.90%	1.88%	0.11%	0.05%	0.00%	0.05%
42	Meherpur	**873**	864	7	1	0	0	1	98.97%	0.80%	0.11%	0.00%	0.00%	0.11%
43	Narail	**1247**	1197	21	2	21	0	6	95.99%	1.68%	0.16%	1.68%	0.00%	0.48%
44	Satkhira	**2570**	2500	64	1	4	0	1	97.28%	2.49%	0.04%	0.16%	0.00%	0.04%
	Khulna Div	**24900**	**24360**	**430**	**36**	**55**	**2**	**17**	**97.83%**	**1.73%**	**0.14%**	**0.22%**	**0.01%**	**0.07%**
45	Bogura	**4526**	4329	153	16	25	0	3	95.65%	3.38%	0.35%	0.55%	0.00%	0.07%
46	Jaipurhat	**1187**	1144	40	3	0	0	0	96.38%	3.37%	0.25%	0.00%	0.00%	0.00%
47	Naogaon	**1133**	1045	56	21	10	0	1	92.23%	4.94%	1.85%	0.88%	0.00%	0.09%
48	Natore	**976**	925	31	11	8	0	1	94.77%	3.18%	1.13%	0.82%	0.00%	0.10%
49	Nawabganj	**522**	494	20	6	2	0	0	94.64%	3.83%	1.15%	0.38%	0.00%	0.00%
50	Pabna	**2025**	1952	56	10	3	2	2	96.40%	2.77%	0.49%	0.15%	0.10%	0.10%
51	Rajshahi	**942**	853	49	19	15	5	1	90.55%	5.20%	2.02%	1.59%	0.53%	0.11%
52	Sirajganj	**2692**	2615	57	19	0	0	1	97.14%	2.12%	0.71%	0.00%	0.00%	0.04%
	Rajshahi Div	**14003**	**13357**	**462**	**105**	**63**	**7**	**9**	**95.39%**	**3.30%**	**0.75%**	**0.45%**	**0.05%**	**0.06%**
53	Dinajpur	**3222**	3138	80	3	0	1	0	97.39%	2.48%	0.09%	0.00%	0.03%	0.00%
54	Gaibandha	**2221**	2141	75	5	0	0	0	96.40%	3.38%	0.23%	0.00%	0.00%	0.00%
55	Kurigram	**1506**	1461	39	3	2	0	1	97.01%	2.59%	0.20%	0.13%	0.00%	0.07%
56	Lalmonirhat	**1206**	1178	23	4	0	0	1	97.68%	1.91%	0.33%	0.00%	0.00%	0.08%
57	Nilphamari	**2098**	2062	31	3	0	0	2	98.28%	1.48%	0.14%	0.00%	0.00%	0.10%
58	Panchagarh	**811**	773	32	6	0	0	0	95.31%	3.95%	0.74%	0.00%	0.00%	0.00%
59	Rangpur	**2198**	2101	81	10	5	0	1	95.59%	3.69%	0.45%	0.23%	0.00%	0.05%
60	Thakurgaon	**1288**	1239	41	6	2	0	0	96.20%	3.18%	0.47%	0.16%	0.00%	0.00%
	Rangpur Div	**14550**	**14093**	**402**	**40**	**9**	**1**	**5**	**96.86%**	**2.76%**	**0.27%**	**0.06%**	**0.01%**	**0.03%**
61	Habiganj	**3012**	2936	54	18	3	0	1	97.48%	1.79%	0.60%	0.10%	0.00%	0.03%
62	Moulvibazar	**2716**	2614	89	6	2	1	4	96.24%	3.28%	0.22%	0.07%	0.04%	0.15%
63	Sunamganj	**3038**	2891	84	16	30	0	17	95.16%	2.76%	0.53%	0.99%	0.00%	0.56%
64	Sylhet	**3835**	3684	117	16	5	7	6	96.06%	3.05%	0.42%	0.13%	0.18%	0.16%
	Sylhet Div	**12601**	**12125**	**344**	**56**	**40**	**8**	**28**	**96.22%**	**2.73%**	**0.44%**	**0.32%**	**0.06%**	**0.22%**
	Grand Total :	**149754**	**144350**	**3556**	**633**	**723**	**218**	**274**	**96.39%**	**2.37%**	**0.42%**	**0.48%**	**0.15%**	**0.18%**

Annex 3

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	586,432	33,906	5.78	1,165,937	51,195	15,238	127,423	1,049	3,061	3.23
2nd	540,557	34,709	6.42	1,074,260	51,598	16,605	131,122	995	3,078	3.11
3rd	535,901	35,045	6.54	1,064,983	51,757	17,218	138,027	1,031	3,181	3.05
4th	553,516	36,398	6.58	1,100,261	53,152	18,458	141,595	1,033	3,414	3.14
Total	**2,216,406**	**140,058**	**6.32**	**4,405,441**	**207,702**	**67,519**	**538,167**	**4,108**	**12,734**	**3.13**

List of EQA Centre: 2019

Annex 4

Division	EQA ID	Location of EQA 1st Control Centre	Organization	Coverage (district)	# of MCs Coverage
Rajshahi	1	CDC Bogura	BRAC	Bogura	31
	2	CDC Dinajpur	BRAC	Jaipurhat	8
	6	CDC Sirajganj	BRAC	Natore	11
				Pabna	16
				Sirajganj	16
	7	CDH/DF Rajshahi	DF	Naogaon	12
				Nawabganj	7
				Rajshahi	19
Rangpur	1	CDC Bogura	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	16
				Lalmonirhat	7
Khulna	8	CDC Jashore	BRAC	Jashore	20
				Narail	7
	36	CDC Bagerhat	BRAC	Bagerhat	17
	9	CDC Khulna	BRAC	Khulna	25
	40	CDC Satkhira	BRAC	Satkhira	16
	10	CDC Magura	BRAC	Jhenaidah	12
				Magura	10
	11	CDC Meherpur	BRAC	Chuadanga	10
				Kushtia	13
				Meherpur	6
Barishal	12	CDC Barishal	BRAC	Barishal	25
	38	CDC Bhola	BRAC	Bhola	16
	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)	9
	16	HEED Kamlgonj/Moulvibazar	HEED	Sylhet (rural)	15
	17	CDC Moulvibazar	HEED	Habiganj	12
				Moulvibazar	12

List of EQA Centre: 2019

Annex 4
Contd.

Division	EQA ID	Location of EQA 1st Control Centre	Organization	Coverage (district)	# of MCs Coverage
Dhaka	18	BRAC, Dakkinkhan	BRAC	Dhaka (Peri-urban)	20
				(Urban)	59
	19	KMSS Pallabi Extention	UPHCSDP	Dhaka-urban, UPHCSDP area	16
	20	CWFD Tejgaon	NHSDP	Dhaka-urban, NHSDP area	6
	21	TB Control & Training Institute	GOB	Dhaka-urban	9
	22	CDC Shyamoli	GOB	Dhaka-urban	
	23	CDC Munshiganj	BRAC	Munshiganj	11
				Narayanganj	16
	24	CDC Mymensingh	BRAC	Gazipur	17
	24	CDC Mymensingh	BRAC	Manikganj	11
	25	DF Mymensingh	DF	Kishoregarnj	20
	26	DF Faridpur	DF	Faridpur	12
				Gopalganj	8
				Madaripur	6
				Rajbari	6
				Shariatpur	7
	29	CDC Brahmanbaria	BRAC	Narsinghdi	12
	27	DF Tangail	DF	Tangail	20
Mymensingh	27	DF Tangail	DF	Jamalpur	15
	24	CDC Mymensingh	BRAC	Mymensingh (urban)	12
	25	DF Mymensingh	DF	Mymensingh (rural)	15
	28	DF Netrakona	DF	Netrakona	12
	24	CDC Mymensingh	BRAC	Sherpur	10
Chattogram	29	CDC Brahmanbaria	BRAC	Brahmanbaria	16
	30	CDC Cumilla	BRAC	Cumilla	34
	31	CDC Cox's Bazar	BRAC	Cox's Bazar	18
	39	CS Office Bandarban	BRAC	Bandarban	25
	32	CDC Chandpur	BRAC	Chandpur	17
				Lakahmipur	12
	33	CDC Chattogram	BRAC	Chattogram-rural	34
				Chattogram-urban	27
	34	CDC Noakhali	BRAC	Feni	11
				Noakhali	20
	35	CDC Rangamati	BRAC	Rangamati	42
	37	CDC Khagrachari	BRAC	Khagrachari	28
Total					**1136**

TB diagnostic and treatment services affiliated to NTP in metropolitan cities

Annex 5

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.	2 (North)	CWFD	Surjer Hashi Clinic, House# 1, Road# 9, Block D, Section-12, Pallabi, Mobile: 01190-697342	Microscopy & DOT	
3.	4 (North)	BRAC	House 324, Avenue 2, Block-A, Mirpur-13, Dhaka. Mobile: 01764-834751	Microscopy & DOT	
4.	5 (North)	BRAC	House 1, Road 8, Block- A, Nannu Market, Mirpur 11, Dhaka. Mobile: 01737-899661	Microscopy & DOT	
5.	5 (North)	The Salvation Army	Avenue 2, House 35,Section 11, Block A, Mirpur, Dhaka 1221 Mobile:01711591236	Microscopy & DOT	
6.	6 (North)	KMSS	House No. 27, Extended Pallabi G, Sare Egaro Mirpur, Dhaka	Microscopy & DOT	
7.	8 (North)	KMSS	House No. 32, Road No. 6, Mirpur-1, Dhaka	Microscopy & DOT	
8.	9 (North)	BRAC	House # 18, Shotto diabari, ward #-09, Darus salam, Dhaka Mobile No-01921-563881	DOT	
9.	9 (North)	BRAC	6/B/A, 2nd Colony, Majar Road,Sector 1, Mirpur-1, Dhaka. Mobile: 01622-988827	Microscopy & DOT	
10.	10 (North)	UTPS	House No 2/8/A/2 Second Colony Mazar Road, Horirampur Bazar(South Community Centre) Mirpur, Dhaka , Mobile No:- 01646336218	DOT	
11.	11 (North)	UTPS	House No. 490, Dakkhin Paikpara (Near New Bazar), Dhaka. Mobile: 01780-302956	Microscopy & DOT	
12.	12 & 13 (North)	BRAC	House #-186, Poshim Monipur, Mirpur Model Thana, Dhaka Urban, Dhaka, Mobile- 01920-052150	Microscopy & DOT	
13.	14,28 (North)	BRAC	781/3, Pashim Shaorapara, Mirpur Model Thana, Dhaka-1216. Mobile- 01745-087804	Microscopy & DOT	
14.	15 (North)	CWFD	Surjer Hashi Clinic, 640 Manikdi Bazar, Dhaka Cantonment, Mobile:01715-283036	Microscopy & DOT	
15.	15 (North)	BRAC	203/2 Old Kachukhet, Cantonment, Dhaka. Mobile: 01757-274053	Microscopy & DOT	
16.	16 (North)	UTPS	House# 422, Near Nagar Shasthya Kandra, Ibrahimpur, Dhaka, Mobile: 01719-852327	Microscopy & DOT	
17.	17 (North)	DAM	House No-K 147/3 A,Khilkhet, Noyanagar,Dhaka.Mobile No:,01732433573	Microscopy & DOT	
18.	17 & 40 (North)	BRAC	150/2 Kuril Bisho Road, Kazi Bari Mosque Lane, Jagonnathpur, Dhaka. Mobile: 01731-424811	Microscopy & DOT	
19.	18 (North)	CWFD	Surjer Hashi Clinic, Ga-6, Shahjadpur, Gulshan, Dhaka-1212. Mobile: 01719-052262	Microscopy & DOT	
20.	20 (North)	Nari Maitree	House# G-188/3, Mohakhali School Road, (Wireless Gate), Gulshan, Dhaka-1212	Microscopy & DOT	
21.	21 & 22 (North) Partially	BRAC	House# 5, Road# 1, Merul Badda, Dhaka. Mobile: 01721-537046	Microscopy & DOT	
22.	22 (North) Partially	BRAC	258 DIT WAPDA, Poschim Rampura, Rampura, Dhaka. Mobile: 01646-935456	DOT	
23.	24 (North)	CWFD	23/4F, Abir Manzil, Konipara Happy Homes, Tejgaon, Dhaka-1208	Microscopy & DOT	
24.	25 (North)	BAMANEH	House# 466/1, Shaheenbagh, Nakhalpara, Tejgaon, Dhaka-1215, Mobile: 01745-531778	DOT	
25.	26,27 (North)	BRAC	Pashim Raja Bazar, House # 60/4, Dhaka- 1215, Mobile: 01735-017663	Microscopy & DOT	
26.	29 & 30 (North)	BRAC	House # -01, Roar #-297/E, Baitul Aman Housing Limited, Adabor , Dhaka -1207 Mobile: 01721537046	Microscopy & DOT	
27.	31 (North)	Nari Maitree	House# W/3, Noorjahan Road, (Behind of Mohammadpur Girls' High School), Mohammadpur, Dhaka-1207	Microscopy & DOT	
28.	34 (North)	Nari Maitree	97/5-A, North Jafarabad, Pulpar, Mohammadpur, Dhaka-1207	Microscopy & DOT	
29.	35 (North)	Nari Maitree	House# 177, Noyatola (Opposite site of RAB Camp), Maghbazar, Dhaka-1217	Microscopy & DOT	
30.	21, 40, 41 & 42 (North)	BRAC	House # Cha 89/2/1, Hasenuddin Road (Puraton Thana Road), North Badda, Dhaka. Mobile: 01718-975488	Microscopy & DOT	
31.	45 & 46 (North)	BRAC	156/A, Atipara Bazar, Uttarkhan, Dhaka. Mobile: 01924-463628	Microscopy & DOT	
32.	47, 48 & 49 (North)	BRAC	Near DakkhinKhan Bazaar, DakkhinKhan, Uttara, Dhaka. Mobile: 01797-909366	Microscopy & DOT	
33.	54 (North)	BRAC	House# 6, Dhour main Road, Kamarpara, Hanif Ali Mor,Batulia, Turag, Uttara, Dhaka. Mobile: 01731-415667	Microscopy & DOT	
34.	1 (South) & 23 (North)	BRAC	House# 331,Road # 13, Tilpapara, Khilgaon, Dhaka-1219. Mobile:01821-935963	Microscopy & DOT	
35.	2 & 3 (South)	BRAC	House No: 400, Dokkin Goran, (Near Taz Pharmachy), Khilgoan, Dhaka-1219. Mobile: o1775-970242	Microscopy & DOT	
36.	4 & 5 (South)	BRAC	House #7, Dakkhin Basabo, (Beside of Belal Masjid), Dhaka-1214, Mobile: 01718-646232	Microscopy & DOT	
37.	6, 71 & 72 (South)	BRAC	House#111/B, Uttar Mugdapara, Mugda, Dhaka-1214. Mobile: 01711-731947	Microscopy & DOT	

SL	Ward No.	Agency	Address	Service facility	Remark
38.	7 & 49 (South)	BRAC	House 12, South side of Dholpur Community Centre, Dholpur, Dhaka. Mobile: 01712-407724	Microscopy & DOT	
39.	8 (South)	BRAC	House# 171, Dokhin Kamalapur, Motijhil, Dhaka-1217. Mobile: 01746-067210	DOT	
40.	11 & 13 (South)	BRAC	House# 486/1, North Shahjahanpur, Dhaka-1217. Mobile: 01751-457863	Microscopy & DOT	
41.	14 (South)	CWFD	Surjer Hashi Clinic, 113 Gozmohal, Opposite of Hazaribagh Thana, Rayerbazar. Dhaka-1207. Tel: 8611886, Mobile: 01731-909951	Microscopy & DOT	
42.	14 & 33 (South)	BRAC	68/Kha, Zigatola, Near Baitul Moharam Mosjid, Dhanmondi, Dhaka Mobile: 01719574457.	Microscopy & DOT	
43.	16 & 17 (South)	BRAC	House 183, Green Road, Dhaka-1207. Mobile: 01738814529	Microscopy & DOT	
44.	19 (South)	BRAC	House#72/Kha, Circular Road, Siddeswari, Dhaka. Mobile: 01747-024173	Microscopy & DOT	
45.	20 (South)	BRAC	House# 9, Block# C, Main Road South Banosri, Madartek, Dhaka. Mobile: 01721-095452	Microscopy & DOT	
46.	22 (South)	BRAC	36 Badda Nagar (Near Hazaribagh Park), Bhagolpur, Dhaka. Mobile: 01750955846	Microscopy & DOT	
47.	22 & 23 (South)	BAPSA	House# 48, Nilambar Saha Road (Beside Saleh School), Hazaribagh, Dhaka-1205, Mobile: 01712-147258	Microscopy & DOT	
48.	24 (South)	BAPSA	House# 42/1,KA,R N D Road, Shahidnagor Boubazar, (Killar Moor), Dhaka, Mobile: 01734-860344	Microscopy & DOT	
49.	25 & 26 (South)	CWFD	Surjer Hashi Clinic, 36, Sheikh Shaheb Bazar, Lalbagh Road, Dhaka-1205. Tel: 8618533	Microscopy & DOT	
50.	27, 28 & 29 (South)	BAPSA	House# 38/3b/2 Alierghat (Lal Khan Bari), Islambagh, Dhaka-1211	Microscopy & DOT	
51.	30 (South)	KMSS	47, Nelgola, Immamganj, Nagar Shasthya Kandra, Chalk Bazar, Dhaka	Microscopy	
52.	33 (South)	KMSS	90/1, Aga Sadaque Road, Nazira Bazar, Dhaka.	DOT	Coverage ward# 30, 31, 32, 33 & 34
53.	33 (South)	KMSS	26 No. Majed Sorder Road, Nagar Shasthya Kendra (Old Pakisthan Maath) Aga Sadaque Road, Bongshal, Dhaka.	Microscopy	
54.	35 (South)	KMSS	56, Goal Nagor (Bandar Goli), English Road, Bongshal, Dhaka	DOT	Coverage ward# 35, 36, 37 & 43
55.	38 & 41 (South)	CWFD	Surjer Hashi Clinic, 72, BCC Road, JoyKali Mandir, Wari, Dhaka-1203.	Microscopy & DOT	
56.	39 (South)	BRAC	House# 63/3,B/1, K M Das Lane, Tikatuli, Dhaka-1203, Mobile: 01744-761631	DOT	
57.	40 (South)	CWFD	Surjer Hashi Clinic, 45, Doyagonj More, Doyagonj, Dhaka-1203. Mobile: 01556-305871	Microscopy & DOT	
58.	42 & 44 (South)	CWFD	Surjer Hashi Clinic, 33, Begumgonj Lane, Begumgonj, Dhaka-1203. Mobile: 01913-399545	Microscopy & DOT	
59.	43 (South)	KMSS	Farashganj, Lalkuthi truc stand, Nager Shasthya Kandra, Farashganj, Dhaka	Microscopy	
60.	45 (South)	CWFD	Surjer Hashi Clinic , 114/A, Distillery Road (Dhupkhola Math), Gandaria, Dhaka-1204. Tel: 7448272	Microscopy & DOT	
61.	46 (South)	BRAC	16/D/03, Dino Nath Sen Lane (Near Sadhana Owshadhaloy), Gandaria, Sutrapur, Dhaka. Mobile: 01769-931890	Microscopy & DOT	
62.	48(South	BRAC	69/1/F, Bibir Bagicha, 3 no Gate, North Jatrabari, Dhaka. Mobile:01744-462499	Microscopy & DOT	
63.	49 (South)	FOB	Saidabad Clinic, Saidabad, Ph: 7546402	Microscopy & DOT	
64.	50 & 51 (South)	BRAC	255/B, Abbasuddin Road, South Jatrabari, Dhaka. Mobile: 01746-723395	Microscopy & DOT	
65.	52 & 54 (South)	BRAC	House#342/5, Jurain Mazar gate, London school goli, Shampur, Dhaka. Mobile: 01734-645728	Microscopy & DOT	
66.	53 (South)	CWFD	Abdul Majid Sarkar Nagar Shasthya Kendra, Commissioner Road (College Road) Muradpur (East Jurain), Dhaka. Tel: 7440293	Microscopy & DOT	
67.	55 & 56 (South)	BRAC	BRAC Office, Khalipa Ghat Kazi bari Goli. Rasulpur, Dhaka. Mobile: 01768734516	Microscopy & DOT	
68.	56 & 57 (South)	BRAC	House # 77, Sangbadik Goli, Ashrafabad (Near thana), Kamrangirchor, Dhaka. Mobile: 01718-908531	Microscopy & DOT	
69.	58 & 61 (South)	BRAC	449 Shohid Zakir Hossain Lane, Muradpur (Near Muradpur Bus Stand), Shampur, Dhaka. Mobile: 01769-931449	Microscopy & DOT	
70.	63,64,65, 66,67&68 (South)	BRAC	Paity Bottala,(BRAC Nursery) Demra Road, Matuail, Dhaka. Mobile: 01728-943216	Microscopy & DOT	
71.	DOTS Corner	BRAC	Shaheed Monsur Ali Medical College Hospital, Sector #11, Road # 10, Uttara,Dhaka (TB DOTS Corner,Room#16,Outdoor), Mobile:01705-616547	Microscopy & DOT	
72.	DOTS Corner	BRAC	Women Medical College and Hospital, Sector-01, Road # 8,9 Plot-04, Uttara, Dhaka (TB DOTS Corner, Room#132, Gynae Outdoor), Mobile:01687-637225	Microscopy & DOT	
73.	DOTS Corner	BRAC	East West Medical College Hospital, Taltola, Ashulia Road, Turag, Dhaka, (Room# 26, Outdoor), Mobile: 01920-811205	Microscopy & DOT	

SL	Ward No.	Agency	Address	Service facility	Remark
74.	DOTS Corner	BRAC	Shaheed Sharowardi Hospital, Dhaka (TB DOTS Corner, Room-20, Block - 2, Outdoor), Mobile: 01858-772435	Microscopy & DOT	
75.	DOTS Corner	BRAC	Shishu Hospital, Dhaka, Mobile: 01912-152032	Microscopy & DOT	
76.	DOTS Corner	BRAC	Bangladesh Medical College Hospital, Dhanmondi, Dhaka-1209. (TB DOTS Corner, Room# 118, Outdoor), Mobile: 01947-981273	DOT	
77.	DOTS Corner	BRAC	Dhaka Medical College Hospital, Dhaka (TB DOTS Corner, Room# 10, Outdoor), Mobile: 01724-010220	Microscopy & DOT	
78.	DOTS Corner	BRAC	Bangabandhu Sheikh Mujib Medical University, Shahbagh, Dhaka-1100. (3No Gate, front of cabin Block), Mobile: 01913-797874	Microscopy & DOT	
79.	DOTS Corner	BRAC	BIRDEM Hospital, Shahbagh, Dhaka-1000. (TB DOTS Corner, Near Room# 127, Medicine Outdoor), Mobile: 01790-325499	Microscopy & DOT	
80.	DOTS Corner	BRAC	Sir Salimullah Medical College Hospital, Dhaka. (TB DOTS Corner, Room# 115, Medicine Outdoor), Mobile: 01916-601326	Microscopy & DOT	
81.	DOTS Corner	BRAC	Dhaka National Medical College Hospital, 53/2 Janson Road, Dhaka. (TB DOTS Corner, Room# 133, Outdoor), Mobile: 01725-753257	Microscopy & DOT	
82.	DOTS corner	BRAC	Institute of Child and Maternal Health, (ICMH), Matuail, Dhaka. (TB DOTS Corner, Near Record Room, Outdoor), Mobile: 01675-296547	Microscopy & DOT	
83.	DOTS corner	BRAC	Kurmitola General Hospital, Dhaka Cantonment, Room # 327, 3rd Floor (Out Door), Mobile: 01720-275143	Microscopy & DOT	
84.	DOTS corner	BRAC	Holy Family Red Crescent Medical College Hospital, Mogbazar, Room # 24, 1st Floor (Out Door), Mobile: 01718-109501	DOT	
85.	DOTS corner	BRAC	Uttara Adhunik Medical College Hospital, House # 34, Road # 4, Scetor # 9, Sonargaon Janapath, Uttara Model Town, Uttara, Mobile: 01737-214995	Microscopy & DOT	
86.	DOTS corner	BRAC	Mugda General Hospital, Mugda, Dhaka, Mobile: 01747-238439	Microscopy & DOT	
87.	DOTS corner	BRAC	Sarkari Karmachari Hospital, Fulbaria, Dhaka, Mobile: 01736-718245	Microscopy & DOT	
88.	DOTS Corner	GoB	NIDCH, TB Gate, Mohakhali	Microscopy & DOT	
89.	DOTS Corner	GoB	Shyamoli 250 bed TB Hospital, Shyamoli, Ph.-9111892	Microscopy & DOT	
90.	DOTS Corner	GoB	Kuwait Bangladesh Friendship Govt. Hospital, Sector # 6, Uttara, Dhaka, (Room # 206 & 217), Mobile: 01818-765930	Microscopy & DOT	
91.	DOTS Corner	GoB	DOTS Corner, Isolation Ward, Medical Unit, Combined Military Hospital, Cantonment	Microscopy & DOT	
92.	DOTS Corner	GoB	Dhaka Central Jail Hospital, Nazimuddin Road	Microscopy & DOT	
93.	DOTS Corner	GoB	DOTS Corner, Police Hospital, Razarbagh Police Line	Microscopy & DOT	
94.	DCC (North)	IOM	House # 13/A, Road # 136, Gulshan-1, Dhaka- 1212, Tel: 55044811-13.	Microscopy & DOT	
95.	DOTS Corner		DOTS Corner, Dhaka Community Hospital, 190/1, Baro Moghbazar, Wireless Rail Gate, Ph.-9351190-1, 8314887	Microscopy & DOT	
96.	DCC (South)	BGMEA	30/B, Malibagh, Chowdhurypara, Dhaka, Tel: 8311124	Microscopy & DOT	
97.	DCC (North)	BGMEA	Plot # 5, Road # 5, Milkvita Road, Mirpur-7, Dhaka, Mobile: 01712-677667	Microscopy & DOT	
98.	DCC (North)	BGMEA	Road # 6, Block # B, House # 5 (2nd floor), Nabodoy Housing Society, Mohammadpur, Dhaka-1200, Tel: 9120832, Mobile: 01716-159076	Microscopy & DOT	
99.	DCC (North)	BGMEA	Saru Kunja, House # 64, Block # G, Niketan Eastern Housing Ltd., Gulshan-1, Dhaka, Tel: 9858549	Microscopy & DOT	
100.	DCC (North)	BGMEA	House # 16/A, Road # 16, Sector # 4, Uttara, Dhaka, Tel: 8950208	Microscopy & DOT	
101.	DCC (North)	icddr,b	68 Shaheed Tajuddin Ahmed Sarani, Mohakhali, Dhaka-1212. Mobile: 01779-100100	GeneXpert & DOT	
102.	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	
103.	DCC (South)	icddr,b	House# 15, Road# 07, Dhanmondi (near to orchard point centre), Dhaka-1205. Mobile: 01779-600600	GeneXpert & DOT	
104.	DCC (South)	icddr,b	1 no. West Hazipara, Rampura, DIT Road, P.O: Khilgaon, Dhaka-1219 (Opposite to Appex showroom). Mobile: 01766-667628	GeneXpert & DOT	
105.	DCC (North)	icddr,b	House# 31 (1st Floor), Sector# 11, Gareeb-e-Nawaz Avenue, Uttara, Dhaka-1230. (opposite to Milestone College main campus) Mobile: 01766-667629	GeneXpert & DOT	
106.	DCC (North)	icddr,b	House# 03, Main Road, Bloack# A, Road# 11 Pallabi, Mirpur, Dhaka-1216. Mobile: 01766-667617	GeneXpert	
107.	DCC (South)	icddr,b	32 Lalmohon Shah Road, Dholaikhal Mor, Old Dhaka-1203. Mobile: 0176 6-667618	GeneXpert	
108.	DCC (South)	DCC	Dhaka Mohanagar General Hospital, Nayabazar, Dhaka-1100, Tel: 7390860	Microscopy & DOT	
109.	DCC (North)	BRAC	TB Diagnostic Center: House no. 4/B/B, Mazar Road, Daru salam, Mirpur-1, Dhaka. Mobile: 01313-048418	GeneXpert	
110.	DCC (North)	BRAC	TB Diagnostic Center: House no.18/6, Mohammadia housing, Modammadpur, Dhaka. Mobile: 01313-048417	GeneXpert	
111.	DCC (North)	BRAC	TB Diagnostic Center: House no. 2502, Madani Avinue, 100 fit road, Vatra, Gulshan, Dhaka. Mobile: 01313-048407	GeneXpert	
112.	DCC (South)	BRAC	TB Diagnostic Center: Ward no. 9, North Rayerbag, Gas Road, Dania, Jattrabari, Dhaka. Mobile: 01313-048405	GeneXpert	
113.	DCC (South)	BRAC	TB Diagnostic Center: Nazir Shoping mol, 69/R.N.D road, Kella more, Lalbag, Dhaka. Mobile: 01313-048416	GeneXpert	
114.	DCC (South)	BRAC	TB Diagnostic Center: House no.272/1/A, Khilgaon Chourasta (Comilla hotel more), Khilgaon, Dhaka. Mobile: 01313-048406	GeneXpert	

SL	Ward No.	Agency	Address	Service facility	Remark
Chittagong Metropolitan Area					
1	1	Image	Kashem Mansion (1st floor) Hathazari Road, Aman Bazar, South Pahartali, Phone # 031-2581799	DOT	
2	2	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	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	Nishkrity	Rafique Chowdhury Bhaban, New Monsurabad, Pahartoli	Microscopy & DOT	
14	10	BRAC	DOTS Centre, Fouzdarhat I/A	DOT	
15	10	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	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	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	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	Nishkrity	217, North Agrabad (Mollapara more), Rongipara	DOT	
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 Halishahar	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	

SL	Ward No.	Agency	Address	Service facility	Remark
47	33	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	Nishkrity	Borapole, North Middle Halishahar	DOT	
51	40	BRAC	DOTS Corner, CEPZ Hospital, South Halishahar	Microscopy & DOT	
52	39	BRAC	DOTS Corner, Port Hospital, South Halishahar	Microscopy & DOT	
53	39	GoB	Government Urban Dispensary, Seamen Hostel, South Halishahar	DOT	
54	39	MAMATA	Mamata Clinic, Baitush Sharaf Bhaban, Taltala, Bandartila, South Halishahar,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 Halishahar, 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	
65		icddr,b	1306, OR Nizam Road, Golpahar Mor, P.O: Chittagong Medical College, Chittagong-4203. (opposite to Shwapno super store) Mobile: 01766 667630	GeneXpert & DOT	
66		BRAC	TB Diagnostic Center: Holding no-1161/D/1739, Jahan Tower, Bakulia, Chittagong. Mobile: 01313-048432	GeneXpert	
67		BRAC	TB Diagnostic Center: House no.126, Bismilla Tower, Oxizen more, Chittagong. Mobile: 01313-048435	GeneXpert	
68		BRAC	TB Diagnostic Center: House no. 2950, A.M. Tower, South Halisahar, Bandar, Chittagong. Mobile: 01920-141296	GeneXpert	
Khulna Metropolitan Area					
1	01	PKS	Nagarshasto Kendro , Kalibaribazar, Maheshwarpasha , Khulna	DOT	
2	02	PKS	Nagarshasto Kendro, TB Hospital Road,Fulbarigate,Mirerdanga., Khulna	DOT	
3	03	PIME Sisters	PIME Sisters DALIT. 37/1, Kedarnath Road, Ralligate, Maheshwarpasha, Daulatpur. Khulna	DOT	
4	04	PKS	Nagarshasto Kendro , Hospital Road, Deyana Purbopara, Daulatpur., Khulna	DOT	
5	05	PIME Sisters	Muhsin Upa Sasthya Kendra. Daulatpur Bazar. Daulatpur, Khulna.	DOT	
6	06	PKS	125 Pabla Sabuj Sangho Cross Road Daulatpur,Khulna	Microscopy & DOT	
7	12	PKS	103, Central Block, Eidgah road, Khalishpur, Khulna	DOT	
8	7,8,10,11	PIME Sisters	PIME Sisters. Lal Hospital. Khalishpur. Khulna	DOT	
9	7,8,9,10. 11,13,14,15	KMSS, KCC	Fire Service Road, (Near 11 No. Ward Counselor's office), Khalishpur,Khulna ,Khulna City Corporation, Khulna	Microscopy & DOT	
10	9,14	PIME Sisters	Damien Clinic, PIME Sisters.9/11, Daspara Road, Boyra. Khulna. Tel. # 761782	Microscopy & DOT	
11	13,15	PIME Sisters	PIME Sisters. Missionaries of Charity. Duttapara, Khalishpur, Khulna.	DOT	
12	16	PIME Sisters	DOTS Corner Dibetic Hospital, Khulna.	DOT	
13	17	BRAC	BRAC DOTS Corner. Khulna Medical College Hospital.	Microscopy & DOT	
14	17	GoB	Chest Clinic , Lower Jessore Road, Khulna,Te # 1731105	Microscopy & DOT	
15	18,25,26	PIME Sisters	Nazirghat urban clinic, Borobari, Khulna	DOT	Closed
16	19	PKS	Nagarshasto Kendro, Islamabad (Poipara) Community Centre, Near of Eidgah, Khulna	Microscopy & DOT	
17	20	PKS	Nagarshasto Kendro Shaikhpara Bazar, Shaikhpara, Khulna	DOT	
18	21	PIME Sisters	Khulna Prison.	DOT	
19	21,23	PIME Sisters	Sadar Hospital DOT Corner, Khulna	DOT	
20	22	PIME Sisters	Blue Sister DOTS Center, Tootpara zoracall bazar	DOT	
21	24	PKS	Nagarshasto Kendro, Road #.21, Dighirpar, Nirala R/A., , Khulna	DOT	
22	31	PIME Sisters	Khanjahan Ali Datobo Health Center, Lobonchara, Khulna	DOT	
23	22, 29	PKS	47, South Central Road, Khulna.	Microscopy & DOT	
24	30	PIME Sisters	PIME Sisters. Taltola Hospital, Tootpara, Khulna.	DOT	

SL	Ward No.	Agency	Address	Service facility	Remark
25	DOTS Corner	BRAC	BRAC DOTS Corner. Ad-din Akij Medical College, Boikali,Dhaka Highway, Khulna	Microscopy & DOT	
26	Pre Urban	BRAC	DOTS Center for Industrial Center. Khulna. (Located at BRAC office at Fulbarigate area)	Microscopy & DOT	
27	27,28	PKS	Nagarshasto Kendro. Islampur road, Tarererpukur, Khulna	Microscopy & DOT	
28		BRAC	TB Diagnostic Center: 18/B, Majid Avenue, (Opposite of Gazi Medical College Hospital), Sonadanga, Khulna. Mobile: 01313-048386	GeneXpert	
Rajshahi Metropolitan Area					
1	4,5,6,7, 8, 9, 10, 11	Tilottama	Tilottama Bulunpur, Rajpara, Rajshahi	Microscopy & DOT	
2	6	GoB	Rajshahi Chest Disease Hospital, Laxmipur	Microscopy & DOT	
3	7	Damien Foundation	Rajshahi Jail	DOT	
4	9	GoB	Chest Disease Clinic, Hossenigonj	Microscopy & DOT	
5	10	Damien Foundation	DOTS Corner, Rajshahi Medical College Hospital, Laxmipur	Microscopy & DOT	
6	1, 2, 3, 12, 13, 14, 15, 18, 19, 20	RIC, RCC	Jahan Ara Monjil, House No -355, Dorikhorbona, Behind of Barnalir More (Near passport office), Rajshahi,	Microscopy & DOT	
7	16,17	Tilottama	Tilottama, North Naodapara, Bypass More,Naodapara,Rajshahi, Organization's own building	Microscopy & DOT	
8	21, 22, 23, 24,25, 26, 27,28,29, 30	BRAC	House No: 109/1, Shakopara, (North side of Grave), Baze Kazla,(East side of Shakopara Jame Mosque), Motihar, Rajshahi-6204.	Microscopy & DOT	
		BRAC	TB Diagnostic Center: Holding No: 14, Hetem Khan, Ghoshpara Mor, Rajshahi Medical College Road, Rajshahi. Mobile: 01313-048393	GeneXpert	
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	
5		BRAC	TB Diagnostic Center: Ruma Nir, Holding No: 205, Torab Ali khan Road, Amtoli Bijoy Bihongo Mor, Near Water Tank, South Alakanda, Barisal. Mobile: 01313-048382	GeneXpert	
Sylhet Metropolitan Area					
1	1, 3, 9, 10, 11, 16	BRAC	DOTS Corner, M.A.G. Osmani Medical College Hospital, Mobile: 01712-788367	Microscopy & DOT	
2	4, 5, 6, 7, 8, 17	BRAC	DOTS Corner, Jalalabad Ragib Rabeya Medical College Hospital, Pathantula, Mobile: 01742-025151	Microscopy & DOT	
3	25, 26, 27	BRAC	DOTS Corner, North-East Medical College Hospital, Sekhghat, Telihaor, Mobile: 01739-725112	Microscopy & DOT	
4	14	BRAC	DOTS Corner, Sylhet Prison, Mobile: 01722-303890	Microscopy & DOT	
5	18, 19, 20, 21	GoB	Chest Disease Clinic, Baluchar, Sahi Eidgah, Mobile: 01710-712673	Microscopy & DOT	
6	15, 22, 23, 24	BRAC	DOTS Corner, BRAC Urban Office, Shahjalal Upashahar, Mobile: 01728-122283	Microscopy & DOT	
7	2, 12, 13	BRAC	DOTS Corner, Park View Medical College Hospital, Telihaor Road, Mobile: 01779-676523	Microscopy & DOT	
8		IOM	Medi-Aid Heart Centre, South Dorgah Gate (Near Minar), Dorgah Mohalla, Sylhet 3100	Microscopy & DOT	
9		icddr,b	Rikabi bazar point, VIP Road, Sylhet-3100 Mobile: 01766 667621	GeneXpert	
10		BRAC	TB Diagnostic Center: Niamah Tower, Vill-Selam, South Surma, Sylhet. Mobile: 01864-408713	GeneXpert	

List of the Sub-Recipients (SR)

Annex 6

SL No.	Name of the Sub-Recipients	Remarks
1	Damien Foundation	
2	TLMI-B	
3	RDRS Bangladesh	
4	LAMB	
5	HEED Bangladesh	
6	PIME Sisters	
7	CWFD	
8	BAMANEH	
9	Tilottama	
10	IMAGE	
11	Nishkriti	
12	PKS Khulna	
13	KMSS	
14	BAPSA	
15	Nari Maitree	
16	UTPS	
17	Dhaka Ahsania Mission (DAM)	
18	Resource Integration Centre (RIC)	
19	MAMATA	
20	Ashar Alo Society (AAS)	
21	ICDDR,B	
22	NATAB	
23	BGMEA	
24	BKMEA	