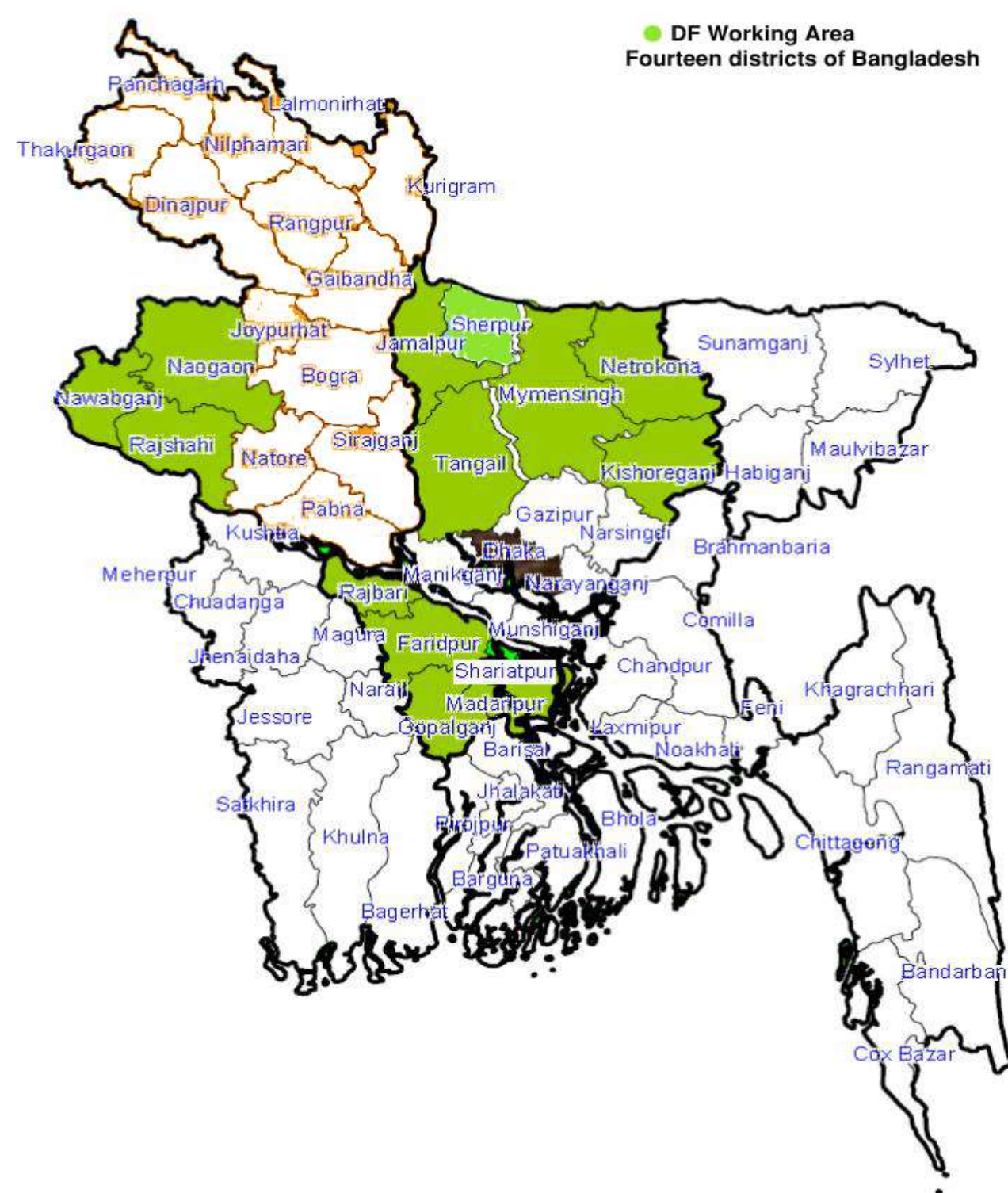




Damien Foundation – Bangladesh



ANNUAL REPORT 2022



Projects: FTLCP, MTLCP, NTLCP, RTLCP, TTLCP, DFCO together

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List of Abbreviations

ACSM	Advocacy, Communication & Social Mobilization	LTCC	Leprosy & TB Coordinating Committee
AFB	Acid - Fast Bacilli	MB	Multi- Bacillary
AIDS	Acquired Immunodeficiency Syndrome	MBDC	Mycobacterial Disease Control
ALERT	All Africa Leprosy, Tuberculosis and Rehabilitation Training Centre	MCR	Micro Cellular Rubber
AO	Accounts Officer	MC	Medical College
BDQ	Bedaquiline	MDG	Millennium Development Goal
BRAC	Bangladesh Rural Advancement Committee	MDR-TB	Multi-Drug Resistant TB
CC	Community Clinic	MDT	Multiple Drug Therapy
CCM	Country Coordinating Mechanism	M&EO	Monitoring & Evaluation Officer
CDC	Chest Disease Clinic / Communicable Disease Control	MO	Medical Officer
CDH	Chest Disease hospital	MoH&FW	Ministry of Health & Family Welfare
CDR	Case Detection Rate	MoU	Memorandum of Understanding
CS	Civil Surgeon / Culture and Sensitivity	MSH	Management Science for Health
CT	Complete Treatment	MTB	Mycobacterium Tuberculosis
CTB	Challenge TB	MTLCP	Mymensingh TB & Leprosy Control Project
DBLM	Danish Bangladesh Leprosy Mission (The Leprosy Mission Bangladesh)	NGO	Non-Governmental Organization
DEPZ	Dhaka Export Processing Zone	NKLab	Netrakona Laboratory
DF	Damien Foundation	NLP	National Leprosy Program
DFB	Damien Foundation Belgium	NTP	National Tuberculosis Control Program
DFBD	Damien Foundation Bangladesh	NTLP	National TB Control & Leprosy Program
DFCO	Damien Foundation Coordinating Office	NTLCP	Netrakona TB & Leprosy Control Project
DGDC	Directorate General of Development Cooperation	NTM	Non-Tubercular Mycobacterium
DGHS	Directorate General of Health Services	NTRL	National Tuberculosis Reference Laboratory
DPM	Deputy Program Manager	OPD	OutPatient Department
DOT	Directly Observed Treatment	PAL	Practical Approach to Lung Health / People Affected by Leprosy
DOTS	Directly Observed Treatment, Short-course	PB	Pauci-Bacillary
DST	Drug Susceptibility Testing	PBC	Pulmonary Bacteriologically Confirmed
EP	Extra-Pulmonary	PCD	Pulmonary Clinically Diagnosed
EQA	External Quality Assurance	PD	Project Director
FC	Field Coordinator	PM	Program Manager
FDA	Fluorescein Diacetate	POD	Prevention of Disabilities
FDP	Fixed DOT Provider	PPM	Public Private Mix
FHI	Family Health International	PR	Principal Recipient
FTLCP	Faridpur TB & Leprosy Control Project	PRSP	Poverty Reduction Strategic Paper
FWA	Family Welfare Assistant	PT	Physio-Technician
FWC	Family Welfare Center	PTB	Pulmonary Tuberculosis
GF	The Global Fund	QA	Quality Assurance
GFATM	Global Fund to Fight AIDS, Tuberculosis & Malaria	QMT	Quick Muscle Tests
GLC	Green Light Committee	RTLCP	Rajshahi TB & Leprosy Control Project
GNP	Gross National Product	RTRL	Regional Tuberculosis Reference Laboratory
GoB	Government of Bangladesh	SDG	Sustainable Development Goal
GP	General Practitioner	SH	Sadar Hospital
HE	Health Education	SR	Sub-Recipient
HIV	Human Immunodeficiency Virus	SRL	Supranational Reference Laboratory
HNPSP	Health, Nutrition and Population Sector Program	ST	Sensory Tests
HR	Human Resource	TB	Tuberculosis
ICDDR,B	International Center for Diarrheal Diseases Research, Bangladesh	TLCA	TB & Leprosy Control Assistant
IDU	Injecting Drug User	TLCO	TB & Leprosy Control Officer
IEC	Information Education and Communication	TLMIB	The Leprosy Mission International Bangladesh
ITM	Institute of Tropical Medicine	TTLCP	Tangail TB & Leprosy Control Project
IUATLD	International Union against Tuberculosis & Lung Diseases	UHC	Upazila Health Complex
JMM	Joint Monitoring Mission	UH&FPO	Upazila Health & Family Planning Officer
KNCV	Koninklijke Nederlandse Centrale Vereniging tot bestrijding der Tuberculose (Dutch Tuberculosis Foundation)	USAID	United States Agency for International Development
LCA	Leprosy Control Assistant	USC	Union Sub-Centre
LED-FM	Light Emitting Diode – Florescent Microscope	UT	Under Treatment
LEPRA	Leprosy Relief Association (UK)	VD	Village Doctor
LFA	Local Fund Agent	WHO	World Health Organization
LPA	Line Probe Assay	XDR	Extensively drug-resistant (TB)
L-J	Lowenstein Jensen	ZN	Ziel-Nielsen

1. Briefly Damien Foundation's Coverage and Major Achievements

1.1 Coverage and Service Facilities

Damien Foundation (a DF), Belgian International NGO formed in 1964, is dedicated to the fight against Leprosy, Tuberculosis and Leishmaniasis until these are no longer a threat to public health. DF has been implementing Leprosy, Tuberculosis and Leishmaniasis programmes in 14 countries of the world. The organization started work in Bangladesh in 1972 with leprosy and added tuberculosis in 1991. DF started its work in Bangladesh according to the request from the Bangladesh government and has been implementing the programme in close collaboration with the National Tuberculosis Control and National Leprosy Programme (NTP & NLP). The organization now covers about 34 million population in 114 upazilas (sub-districts) of 14 districts by tuberculosis and leprosy programme with comprehensive services through 150 combined TB-Leprosy clinics, 11 leprosy clinics and 3 TB-Leprosy hospitals with 255 beds.

1.2 Achievement Highlights in 2022

**New TB Patient Detected
and treated**

36,416

**New Leprosy Patient Detected
and treated**

223

Treatment success rate

TB : 93%

Leprosy : 95%

Health Education delivered to

4,327,751 people

TB Preventive Therapy

25,658 people

HIV Screening test for

12,232 TB patients

**1936 pairs of protective footwears
provided to 968 leprosy patients**

2. Damien Foundation: Background Information

Damien Foundation (DF), a Belgian non-denominational and pluralistic NGO founded in 1964, is dedicated to the fight against Leprosy and Tuberculosis until these are no longer a threat to public health. The foundation is active in 14 countries of **Asia** (Bangladesh, India & Nepal), **Africa** (DR of Congo, Burundi, Nigeria, Niger, Guinea, Comoros & Senegal), **America** (Nicaragua, Guatemala & Bolivia) and **Europe** (Belgium).

The Foundation takes its name from Father Damien, a Belgian missionary who worked in the Hawaiian archipelago in the second half of the nineteenth century. He sacrificed his life caring for leprosy-affected people abandoned on the island of Molokai.

The Foundation is a member of the International Federation of Anti-Leprosy Associations (ILEP) which coordinates the activities of organizations active in the field of leprosy control and care worldwide. Damien Foundation also conducts operational and epidemiological research projects, the scientific publications generated from these research projects contribute in national and international policy recommendations in leprosy and TB.

The Damien Foundation started its journey to serve leprosy patients in 6 districts of Bangladesh in 1972 and thus it has been almost five decades since the start of its journey in reaching the people affected by Leprosy in Bangladesh. In the beginning, DF fully concentrated on the elimination of Leprosy, and later on, since 1991 Tuberculosis (TB) Control has been included as the other major component considering the size of TB burden in Bangladesh. The organization is now involved in the control of Tuberculosis and further management of Leprosy in close collaboration with the National TB Control Program (NTP) & National Leprosy Program (NLP), Ministry of Health & Family Welfare (MoH&FW), Government of the People's Republic of Bangladesh. This collaboration is based on the Memorandum of Understanding (MoU) signed between National TB Control Program on behalf of the Government of Bangladesh (GoB) and LTCC (Leprosy & Tuberculosis Coordinating Committee). LTCC is a consortium of 10 Non-Governmental Organizations or NGOs (Damien Foundation, The Leprosy Mission International, LEPROA Bangladesh, HEED Bangladesh, RDRS, LAMB, Salvation Army, Dhanjuri Leprosy Center, PIME Sister and the Christian Leprosy Centre, Chandraghona).

As per MoU, each NGO partner is allocated to implement the Program in defined geographical areas in order to avoid duplication of services and GoB agreed to ensure the supply of essential drugs, equipment (e.g. microscopes), laboratory reagents, other consumables, recording and reporting forms, registers etc. Besides 6 existing districts, 3 new districts from the Rajshahi division were included in this collaborative agreement and daily centre from the sub-district level were started gradually since 1995. Full geographical coverage from each upazila was achieved by mid-1998 in these 9 districts. Expansion to a new area consisting of 5 districts (27 sub-districts) in the greater Faridpur region was started in October 2001 upon request of the government and full geographical coverage in this new area was achieved by mid-2003. Thus, the organization now covers 14 districts (113 sub-districts) and serves about 33 million people (20% of the total country population). The organization operates through five projects, namely Tangail, Mymensingh, Netrakona, Rajshahi & Faridpur projects. The Damien Foundation Bangladesh works as a non-political organization duly registered with the NGO Affairs Bureau, Govt. of Bangladesh, under the Foreign Donations (Voluntary Activities) Regulations Ordinance 1978.

A total of 150 daily combined (TB & Leprosy) clinics including in 7 medical college hospitals and one workplace-Dhaka Export Processing Zone and 11 leprosy (9 intermittent and 2 daily) clinics

are functional in 113 upazilas (sub-districts). Additional second microscopy centers have been running since 2005-2006 in larger upazilas or in upazilas with higher population to ensure better geographical coverage and to improve access.

The project has also established 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. At present around 10,000 Fixed DOT Providers (FDPs) are involved in providing DOT in the area covered by DF.

The Damien Foundation program provides specialized hospital care for complicated TB and Leprosy patients including MDR and XDR-TB patients by its own three referral hospitals with a total of **255** beds situated in Tangail Jalchatra hospital-95 beds, Mymensingh hospital-100 beds & Netrakona hospital-60 beds.

Shortening the duration of the treatment regimen for MDR TB was a dream. The Damien Foundation developed a 9-month shorter regimen for MDR-TB treatment was finally endorsed by the WHO in May 2016 observing the excellent results of this regimen from different countries. Many countries, including Bangladesh, started implementing this shorter regimen. Based on this concept and example, different shorter regimens are now being tried by different research organizations. The latest WHO recommended Shorter Oral Treatment Regimen (SOTR) for MDR-TB treatment is also based on the DF developed shorter regimen where only the injectable drug has been replaced by the new drug bedaquiline.

3. Tuberculosis (TB)

Tuberculosis (TB) is a major public health problem in Bangladesh where about 375,000 people fell ill with TB in 2021. Bangladesh belongs to the list of top 20 high TB and MDR-TB burden countries in the world. There were 221 new patients (all forms of TB) per 100,000 population in Bangladesh according to WHO Global Report 2022, and the estimated mortality rate was 25 per 100,000 population. MDR/RR TB incidence was 2.7 per 100,000 population, estimated total 4500 in 2021. Estimated proportion of MDR/RR TB patients among new was 1% and among previously treated cases was 4.8%¹. The overall TB burden in Bangladesh was identified through a national prevalence survey in 2015-16 but geographical variation of prevalence is not yet known. So, the implementing organizations have to follow the national target for all geographical areas. As a result, the achievement of case finding varies in different geographical areas. The first national TB prevalence survey which was conducted from October 2007 to March 2009 showed an overall adjusted prevalence of smear positive TB 79.4 per 100,000 adult population aged above 14 years², The survey found that 51.9% of sputum smear positive patients did not have any symptoms which are likely to be missed by health workers. Assuming a sensitivity of 75%, the authors estimated that the true smear positive TB rate might have been 105 per 100,000 adult population during the survey period. The most recent survey done in 2015–2016 of 98,710 participants following the latest WHO guidelines shows that the prevalence of pulmonary bacteriologically confirmed (PBC) patients among adult population (aged 15 years and above) is 278 per 100,000 adult population. This survey used modern technology like GeneXpert, LED FM microscopy, digital chest X-Ray and culture in the diagnosis of pulmonary TB and used a redefined screening questionnaire along with the digital X-Ray as screening tools. This prevalence survey also showed that only about 19% of the total Pulmonary Bacteriologically Confirmed (PBC) patients (52 out of 278) were detected through

¹[Global Tuberculosis Report 2022 \(who.int\)](https://www.who.int/publications/m/item/global-tuberculosis-report-2022)

² Health and Science Bulletin vol. 8 No. 4 December 2010; available online at <http://dSPACE.icddr.org/jspui/handle/123456789/4872>

Microscopy among symptomatic (by symptom screening) and around 20% (56 out of 278) PBC patients were from symptom negative participants (screened through chest X-Ray and subsequently diagnosed by GeneXpert). It also showed that about 90% (251 out of 278) of the total PBC patients were X-Ray positive.

The country adopted the WHO recommended DOTS strategy in 1993. The country achieved expansion of the DOTS strategy throughout the country by 1998. With financial support from GFATM, since August 2004, the NTP and its partner NGOs expanded and strengthened the overall TB control Program in the country. The service has been expanded to prisons, garments industries/workplaces, medical teaching institutes, Army hospitals etc. As a result, the national TB case notification (all forms) increased to 174 per 100,000 population in 2019³ from 58/100,000 population in 2000. DOTS services and active case finding were strengthened through financial support from GFATM and USAID (through projects like TBCAP, TBCARE II & Challenge TB) and through involving new partners in urban areas and also through introducing new technologies (i.e. LED FM system, GeneXpert, Digital X-Ray). NTP continued expansion of new GeneXpert sites and a total of 518 GeneXpert machines were installed by the end of year 2022.

The NTP national strategic plan covering the period 2021–2026 contains strategies and interventions based on the principles outlined in the WHO’s “End TB Strategy” that would 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) compared with 2015.

3.1 Progress towards case detection and treatment outcome targets:

A total of 36,416 TB patients were registered during 2021 which is about 11% more than in 2020 and about 18% more than in 2019 (the year before the COVID-19 pandemic). Out of these total TB cases, 45% were pulmonary bacteriologically confirmed TB patients, 28% were pulmonary clinically diagnosed TB and 27% Extra-Pulmonary TB patients. Comparatively proportion of PBC TB cases looks relatively less due to less detection of PBC cases because of the shortage of Gene Xpert cartridges, but diagnosis of PCD & EP cases were continued as before. The table below presents the numbers of the different forms of TB that were diagnosed annually during the period 2001-2021 in all project areas combined.

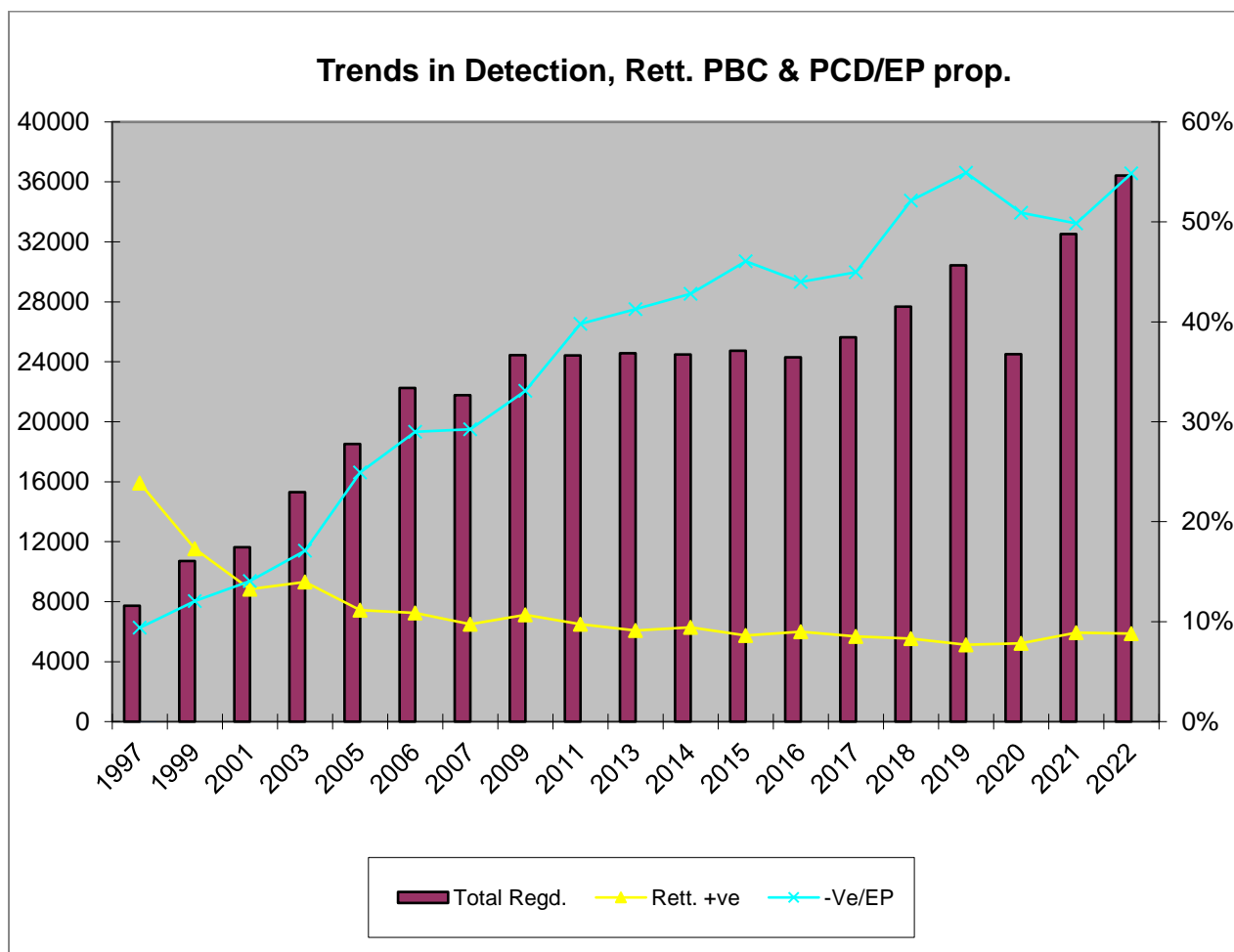
³ Tuberculosis Control in Bangladesh: Annual report 2020, National TB Control Program: <https://www.ntp.gov.bd/wp-content/uploads/2021/09/Annual-Report-2020.pdf>

Table 1: Tuberculosis patients (different types) registered since 2001

Year	New smear positive / PBC	Re-treatment	Smear negative/ PCD & EP	Total
2001	8677	1327	1637	11641
2002	9895	1607	2078	13580
2003	10912	1744	2619	15275
2004	11298	1714	3772	16784
2005	12350	1552	4616	18518
2006	14084	1717	6455	22256
2007	13899	1501	6366	21791
2008	14150	1475	6752	22377
2009	14611	1746	8096	24453
2010	13805	1566	9233	24604
2011	13268	1435	9722	24425
2012	13966	1418	9348	24732
2013	13115	1314	10145	24574
2014	12683	1321	10476	24480
2015	12194	1148	11396	24738
2016	12328	1185	10787	24300
2017	12900	1204	11529	25633
2018	12149	1102	14424	27675
2019	12665	1055	16715	30435
2020	11094	942	12479	24515
2021	14858	1452	16217	32527
2022	14992	1447	19977	36416

Registration of TB patients (all forms) has increased over time mainly due to an increase in all the forms but mainly clinically diagnosed and extra-pulmonary cases. However, due to some special efforts, like identifying the scope of increasing the clinically diagnosed patients according to a recent prevalence survey and micro planning to find out missing patients, 3889 more TB patients were identified in 2022 than in 2021 and 5981 more patients than in 2019 although 5920 cases less detected in 2020 than 2019 due to impact of COVID-19 pandemic. The proportion of re-treatment patients among the positive patients remained at 9%, as shown in graph-1. The increase in numbers of all forms, mainly pulmonary clinically diagnosed (PCD) and extra-pulmonary (EP) patients, has contributed to the overall increase in TB case detection. This increase (shown above in table-1) is mainly due to the focus given to enhancing the diagnosis and treatment of all forms of TB by active case finding process and through establishing collaboration with Chest Disease Clinics, medical colleges and specialists and by conducting training for doctors on x-ray reading. Besides training of the doctors, support to poor patients was also provided for diagnostic examinations e.g. X-Ray and biopsy costs utilizing GFATM fund. All these efforts have been contributing to the increased detection of TB patients since 2017 except in 2020 which was due to the serious negative impact of COVID-19 pandemic in 2020. As a consequence of COVID-19, a total of 5920 cases were less detected in 2020 compared to 2019 and the case notification rate (CNR) of all forms sharply dropped to 82 in 2020 compared to 103 in 2019. However, case finding increased significantly in 2021 and 2022 and returned to the consistent increasing trend, which was due to a recovery plan and more active case finding efforts by maintaining preventive & protective measures against COVID-19 (Graph 1).

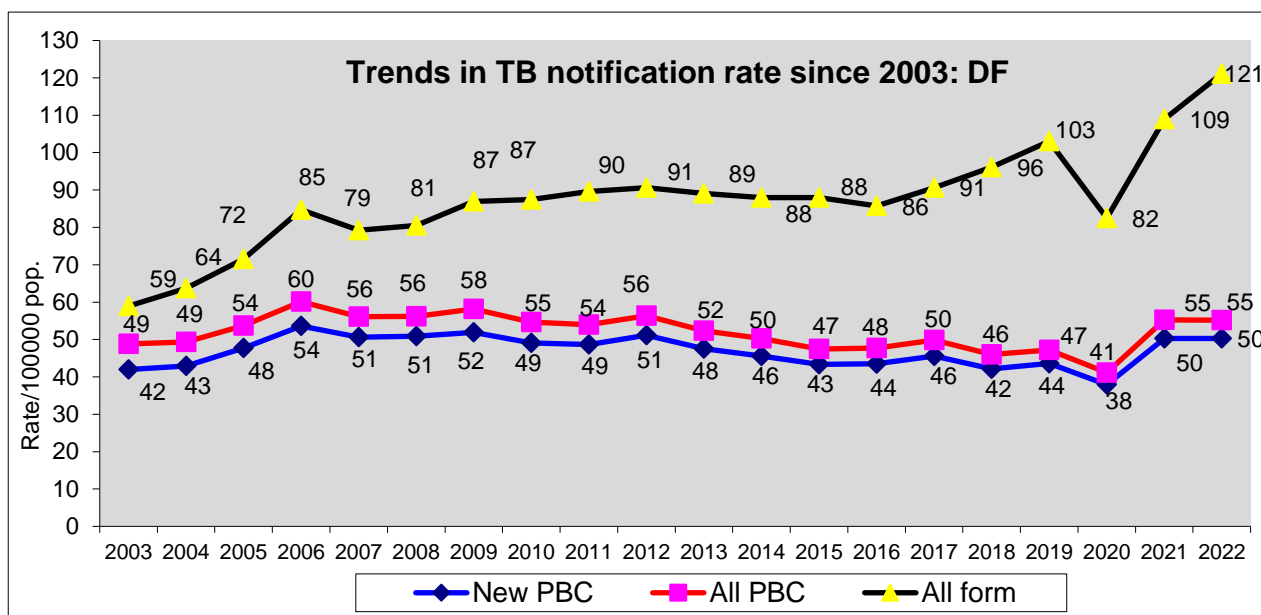
Graph 1: Trends in TB case registration, Retreatment PBC and Smear -ve (PCD/EP) proportion



The decreasing trend of re-treatment patients could be explained as a good indicator of Program performance. At the start of the project, during the year 1995, most of the re-treatment patients registered by the project were treated previously outside the NTP by the private providers, as such the proportion of re-treatment patients among all smear positives (PBC) at that time was 29%. Over the years this proportion has come down to and remained at around 8-9% which explains the good referral linkage with the private sector and better accessibility & acceptability of NTP services. Almost all of them are from NTP regimen’s failures, relapses and returns after lost to follow-up who returned for re-treatment.

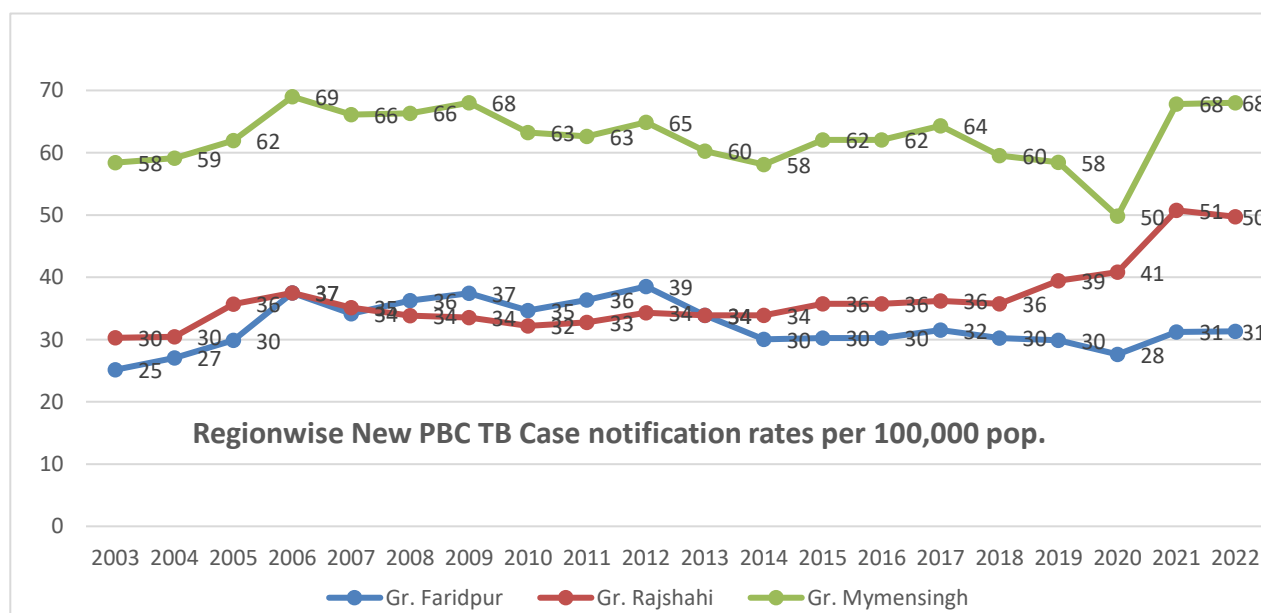
Although there was an increase in the trend of all forms notification rate from 90 per 100,000 population in 2017 to 121 per 100,000 in 2022 there was almost no change in CNR of Bacteriologically Confirmed TB Patients till 2020 and there was a slight increase in 2021 & 2022. Therefore, the overall trend of increase is not significant enough to conclude on the reflection of the real current epidemiological situation in the project area.

Graph 2: Trends in PBC & All Form TB CNR per 100,000 population in the DF area



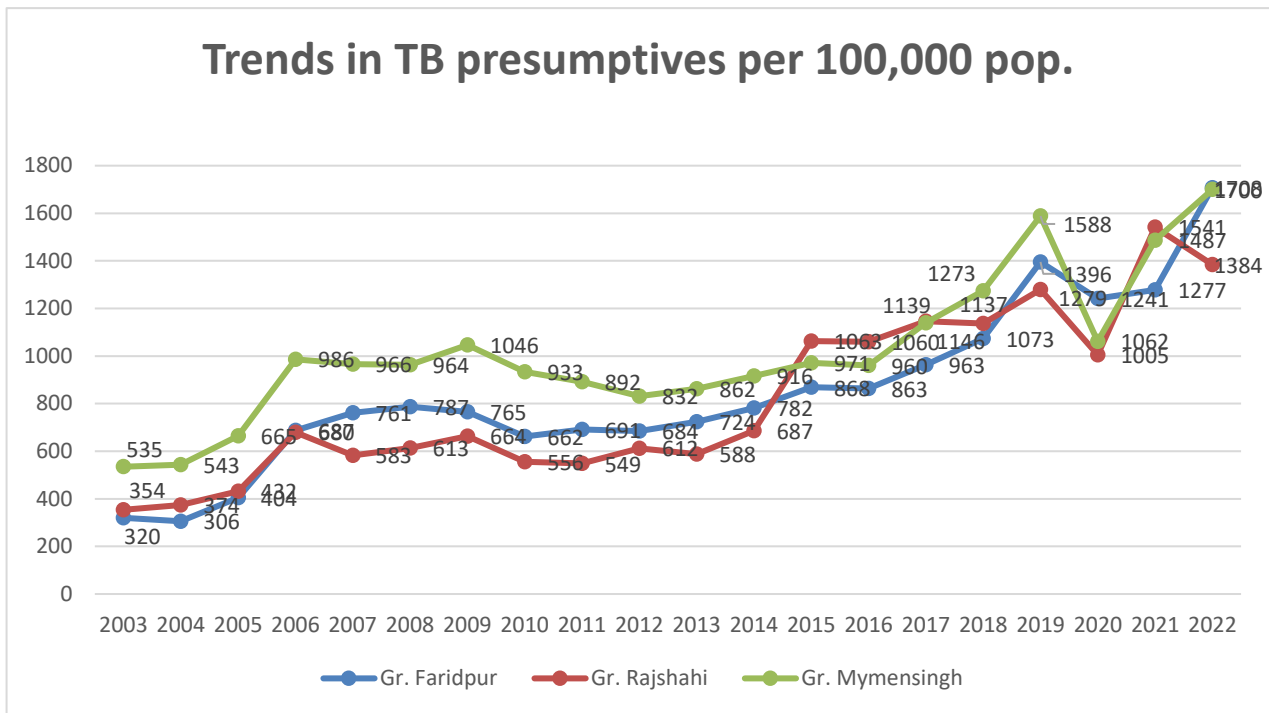
New Pulmonary Bacteriologically Confirmed (PBC) TB case notification varies significantly among the different regions. In the Northern region (greater Mymensingh) the notification rate of new PBC patients has always been higher (68 per 100,000 population) than in the other two (greater Rajshahi around 50 and greater Faridpur around 31 per 100,000 pop) regions. The same variation in notification rates for pulmonary clinically diagnosed and extra-pulmonary TB patients has been observed between these regions which might indicate low level TB prevalence in these (greater Rajshahi & Faridpur) regions.

Graph 3: DF region wise new sm+ve (PBC) TB notification rate per 100,000 populations

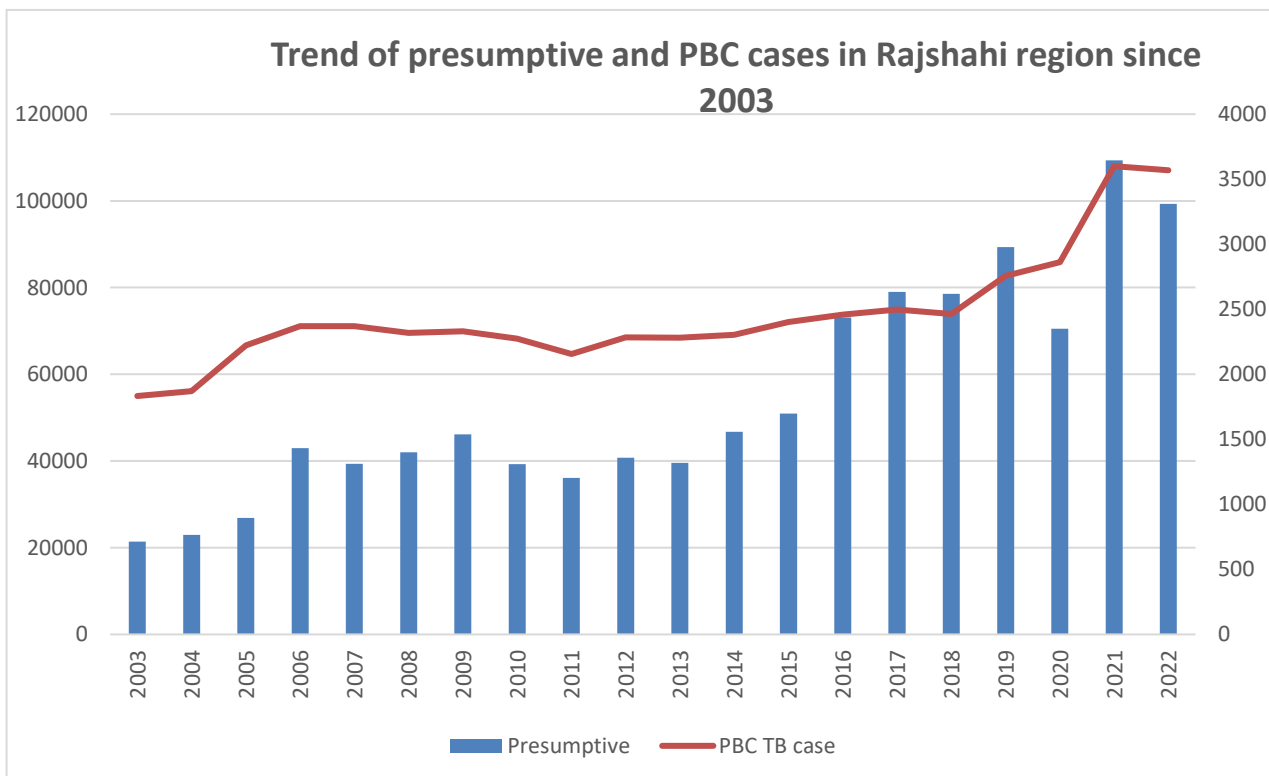


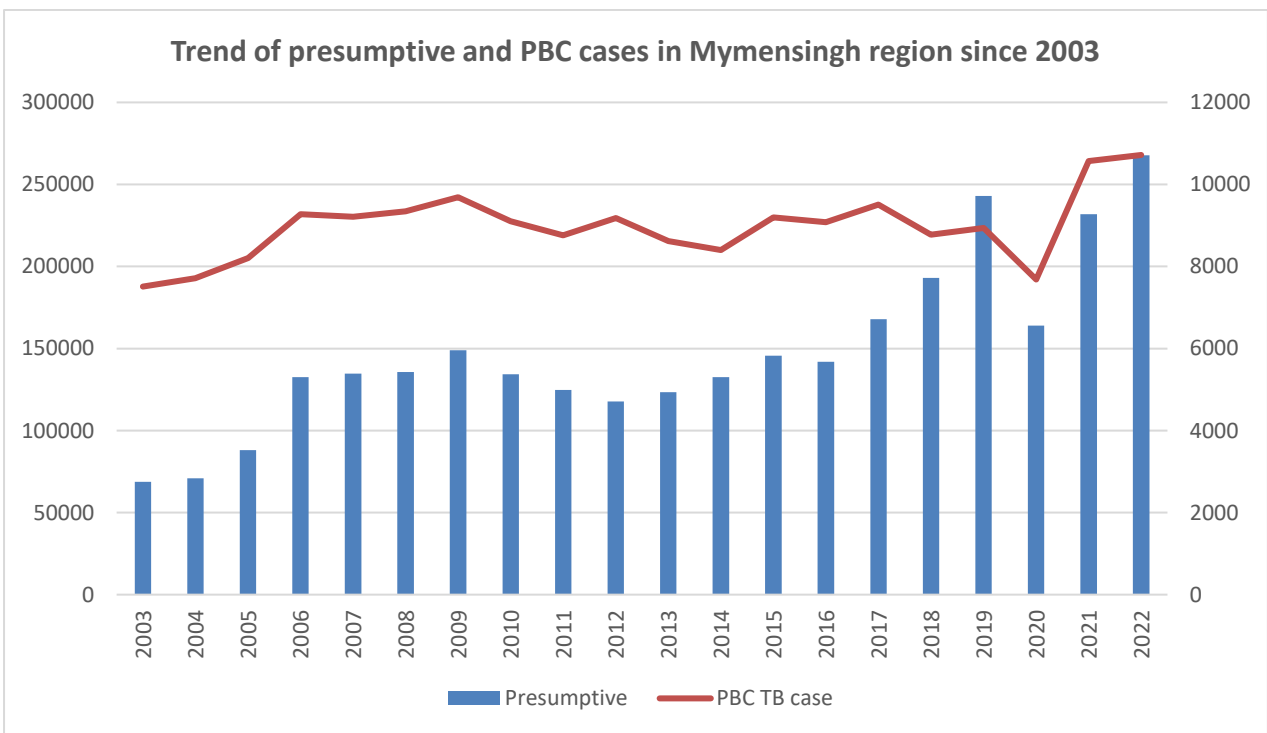
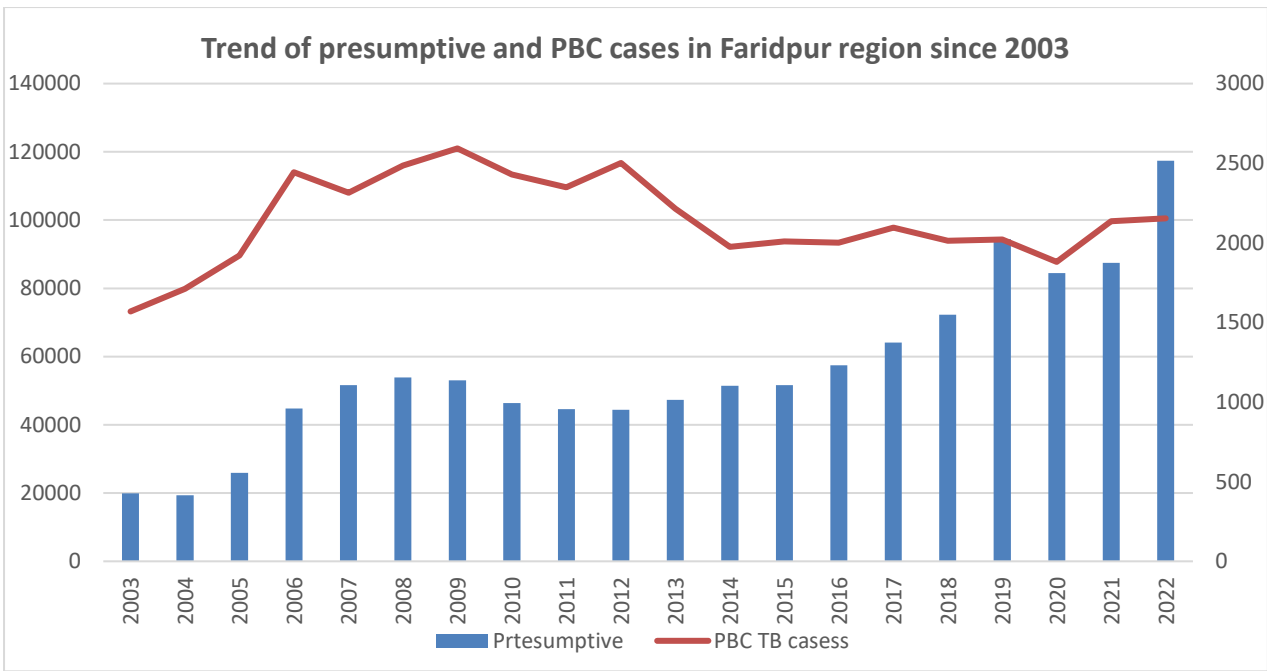
Analysis of data also shows that despite significant increase in presumptive TB cases except Rajshahi, the PBC case notification did not increase much as shown in graphs 4 and 5-7.

Graph 4: DF region-wise trends in TB presumptive per 100,000 populations



Graph 5 - 7: Trends in presumptive and new PBC TB patients per 100,000 populations in 3 different DF regions





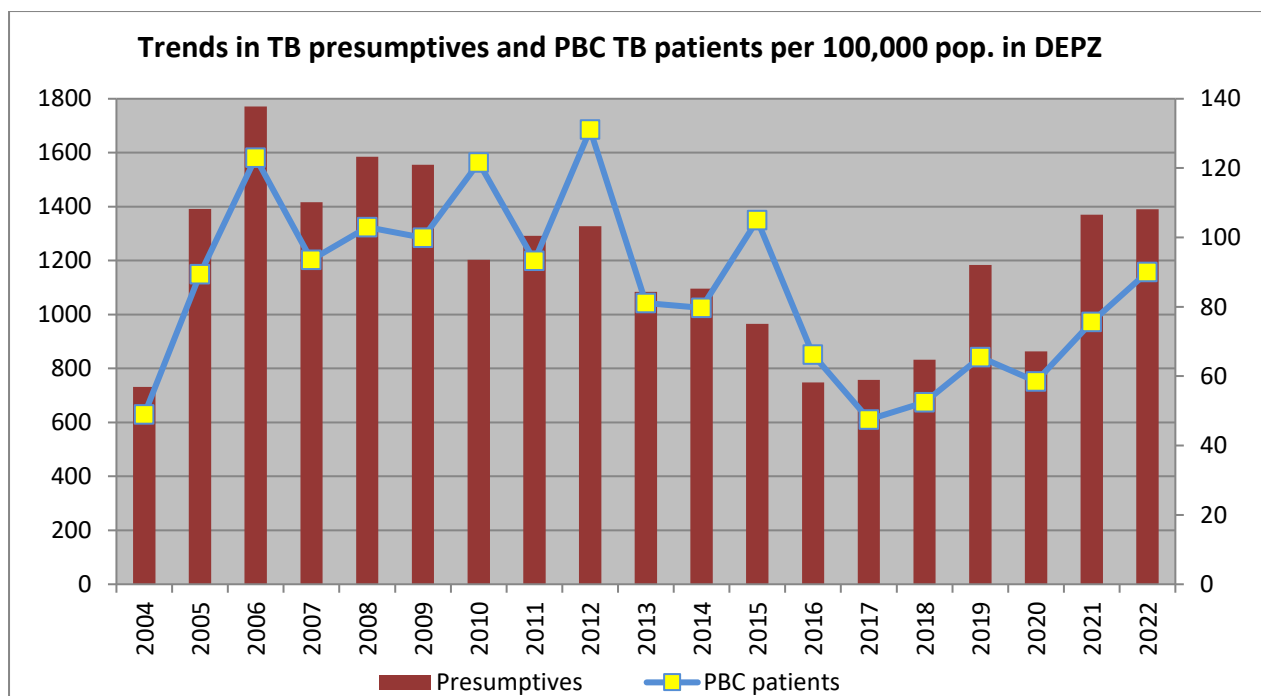
Taking into account the good quality of microscopy services along with the expansion of GeneXpert machines up to upazila levels in the project area and the standardized screening system of presumptive, it could be concluded that TB is not equally distributed all over the country. The WHO thus recommends the use of notification trends to assess the performances of TB control Programs and does no longer recommend using national estimates for the sub-national level.

3.2 TB control activities in the workplace (Dhaka Export Processing Zone)

There has been a rapid urbanization trend in Bangladesh leading to the development of several factories in urban and peri-urban areas both in organized and non-organized ways. Poor people from

rural areas migrate to work in those factories where the working condition is often unhealthy with overcrowding and poor ventilation. These poor workers are often paid low and several workers also share a small room for their living. Such living and working conditions are the most favourable environment for easy transmission of highly communicable tuberculosis disease. Considering the situation DF started TB control activities in 2004 in Dhaka Export Processing Zone (DEPZ), a government-controlled workplace, located near Dhaka where more than 100,000 workers are engaged in processing export goods and most of them are young female workers. However, DF has access to the garments where there are around 76,000 workers. Since the start of the Program in DEPZ, DF has observed a higher TB incidence among the workers compared to the general population. The female ratio among detected TB patients in this workplace is almost three times compared of the general population. The graphs below show the trends in presumptive and TB patients per 100,000 workers:

Graph 8: Trends in presumptive TB patients and new PBC TB patients per 100,000 population in DEPZ

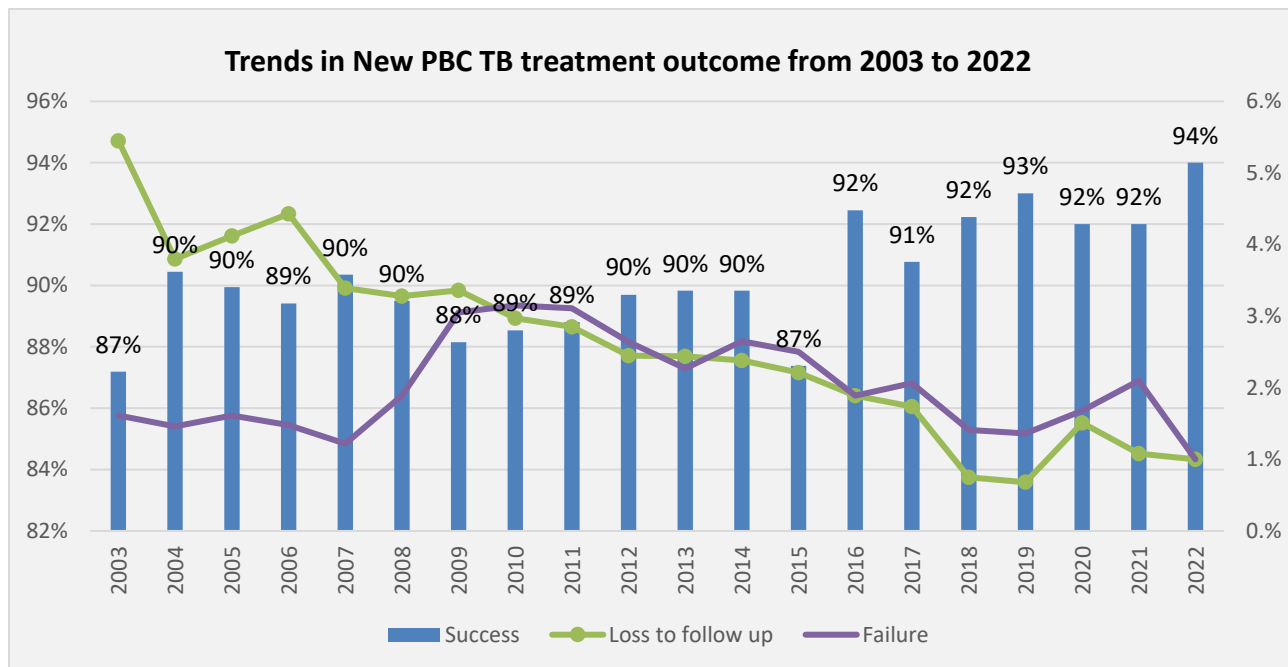


Considering the growing expansion of industrial factories, DF planned to strengthen TB activities in newly industrialized DF border districts involving the private sector. Situation analysis involving the workers who were admitted to DF hospitals indicated their unawareness of the availability of TB services near their workplaces. As a result, they first seek care from private pharmacies and return home when they do not improve. In order to increase awareness of TB among factory workers and the factory owners and managers, DF organized orientation and advocacy sessions for them. Moreover, DF also organized outreach sputum collection centres near the factories and improved the record keeping and reporting at existing TB clinics in industrial areas for the factory workers. As a result, in 2022 a total of 1278 TB patients were diagnosed among workers of different factories in the DF area (including 196 from DEPZ) and put them on treatment. It has been observed that the notification rates are higher among these worker populations compared to the general population.

The TB treatment success rate has been maintained above 85% since 1995 and 90% or above since 2012 with a low rate of unfavorable outcomes (death at around 4%, lost to follow up and failure at

around 1%). The treatment success rate for PBC cases reported in 2022 (registered in 2021) was 94% and for all cases, it was 93%. The graph below shows the trends in TB treatment success, lost to follow up and failure rates for PBC TB cases since 2003.

Graph 9: Treatment outcome in new PBC patients since 2003



3.3 Tuberculosis in children:

Child TB diagnosis is a global concern given the continued under-detection of TB among the child population. Children remain the most vulnerable to contracting TB from adults. Diagnosis of TB in children remains very challenging, especially in Bangladesh where there are inadequate diagnostic facilities and specialists for detecting Child TB patients. The presentation of symptoms of childhood TB is different compared to adult TB. Young children cannot produce good sputum. Microscopy of sputum smear often cannot detect the bacilli as the number of bacilli is few in the sputum of children.

Estimating the incidence of TB among children is difficult and the published estimates vary^{4/5}. The study conducted in one DF upazila in 2009 in collaboration with ICDDR, B showed a child TB prevalence of 52 per 100,000 children. This study seems to have provided important evidence on the under-detection of child TB patients in Bangladesh which helped the NTP Bangladesh to adopt strategies to increase child TB patients throughout the country. In order to improve child TB case detection, the Damien Foundation in collaboration with the Centre for Women and Child Health (CWCH) conducted a study to evaluate the effectiveness of the algorithm for the detection of child TB and the effectiveness of community awareness in enhancing the diagnosis of child TB which also support the above findings⁶. An increase in child TB detection in the study clinics was also observed.

Efforts at improving the diagnosis of TB among children were continued in 2022 through coordinating with government doctors on the diagnosis of childhood TB. A total of 198 doctors were oriented through 10 sessions in 2022. The proportion of child TB detection has remained more in the DF area for the last few years compared to the national average. In 2022 around 5% of the total TB cases in the DF area were children which is the same as last year but in absolute number 136 children TB cases were detected in 2022 than

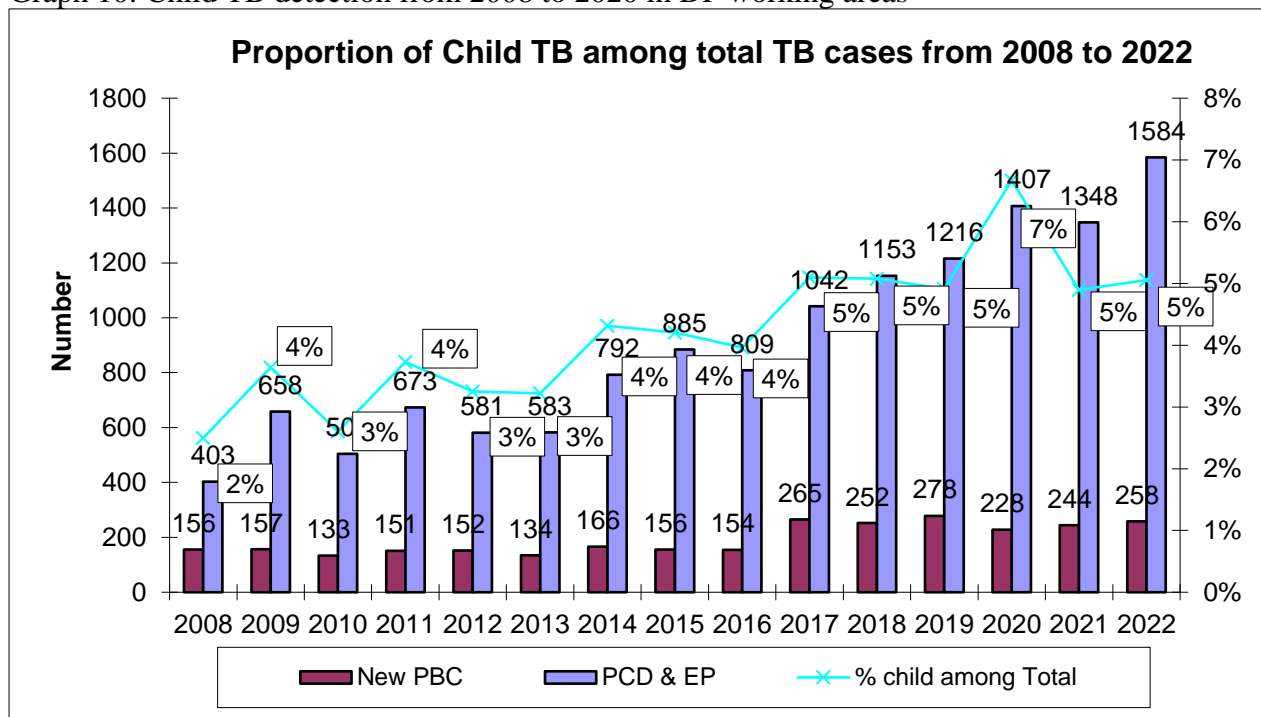
⁴ Epidemiology and disease burden of tuberculosis in children: a global perspective. *Infect Drug Resist*, 7:153–65, null 2014.

⁵ World Health Organization. *Global tuberculosis report 2014*. World Health Organization, Geneva; 2014. (WHO/HTM/TB/2014.08).

⁶ Intervention to increase detection of childhood tuberculosis in Bangladesh; *INT J TUBERC LUNG DIS* 16(1):70–75

2021. Although slow but an overall increasing trend in absolute number of child TB cases has been observed since 2008. The graph below shows the year-wise child TB patient detection in the DF project area since 2008.

Graph 10: Child TB detection from 2008 to 2020 in DF working areas



This year, TB Preventive Therapy (TPT) has been introduced for all age groups by the National Tuberculosis Control Programme stopping IPT (Isoniazid Preventive Therapy) for children only. 3HR (Isoniazid + Rifampicin) combination tablets daily dose and 3HP (Isoniazid + Rifapentine weekly dose for 3 months) weekly dose are used for three months under TPT activities. In 2022, a total of 43,882 eligible clients for TPT (contact of PBC TB cases who did not have active TB) were identified through contact tracing and among them, 25,658 (58%) were enrolled under TPT in 2022. Among the total enrolled clients, 58% were female and 33% were children. The outcome (completion rate) of the enrollment of TPT in 2022 will be available in 2023.

3.4 TB in prisoners in the DF area

It was found from several surveys that the prevalence of TB is higher in prison compared to the general population. The reason of this higher prevalence is due to the fast spread of TB in poorly ventilated, densely crowded living conditions in the prisons. Prisoners often have limited access to health care services and the health care service providers also have limited access to the prisons as the prisons are restricted places. For this reason, very little is known about the severity of TB in the prisons of Bangladesh. The foundation in collaboration with the NTP Bangladesh organized a survey in the 4 jails of Rajshahi, Naogaon, Nawabganj and Tangail districts in 2003. The findings were that the TB prevalence in the surveyed jails is 152/100,000 population compared to 79.4/100,000 population among the general population. Since then, DF has established a referral linkage with the local jail authorities and health personnel. DF staff are informed if TB presumptive are identified among the prisoners and sputum samples are collected by prison health staff. In 2022, out of a total of 12 prisons in the DF working area only 05 prisons reported 31 TB patients among those 30 cases were pulmonary bacteriologically confirmed TB patients and 01 was extra-pulmonary TB patient. The prison health staff are engaged in providing DOT inside the prison and DF staff is informed when a prisoner is released for further arrangement of treatment engaging a DOT provider

from the resident upazila. However, this arrangement was not always easy for all cases, that is why more proportion of loss to follow-up (around 12%) was observed among prisoners in 2022.

3.5 TB HIV co-infection

TB remains the most common opportunistic infection among HIV-infected people in TB high-burden countries like Bangladesh. TB-HIV co-infection leads to rapid progression to TB disease and earlier deaths. Fortunately, HIV prevalence among the Bangladeshi adult population and TB patients is still low (<0.1%) but there are risk factors existing in the society for which HIV can spread and increase at any time. The prevalence is higher in high-risk groups such as intravenous drug users located in some hot spots (in 23 districts). Up to 2021, HIV testing services were limited to those district spots only and DF has been referring TB patients with high-risk behavior (if any) to the available nearest HIV Counseling and testing centres. In 2022, it was decided to cover all the diagnosed TB patients under HIV and till December 2022 a total of 12,232 HIV screening tests were done through Determine test kits.

3.6 MDR/RR – TB

Since 1997 DF started to treat MDR-TB patients using a succession of standardized regimens under operational research conditions, which led to the identification of a highly effective, safe, short and relatively cheap regimen initially resulting in close to 90% cure with minimal bacteriological failure or relapse, and without amplification of second-line drug resistance. This regimen was known as “Bangladesh Regimen” worldwide. Treatment success of this regimen has been maintained at above 85% during recent years because of earlier detection of fluoroquinolones resistance through slide DST and enrolling them on appropriate treatment though the potent fluoroquinolone (gatifloxacin) had to be replaced by a weaker one (levofloxacin) because of its unavailability in the market.

DF has developed locally appropriate, low-cost, simple and safe laboratory screening and drug susceptibility testing methods (FDA vital staining; slide DST) which has led to an increasingly early screening, diagnosis and treatment of such patients. Currently, GeneXpert technology is used in detecting RR TB cases and 2nd line LPA (Line Probe Assay) for 2nd line drug resistance or slide DST for detecting levofloxacin resistance among RR TB cases. This year, NTP has taken the initiative to introduce and expand Gene-Xpert XDR (10 colour machine) to its TB diagnostic centres at Upazila Health Complexes and other TB hospitals which will be a great help for early detection of 2nd line drug resistance at all levels.

The “Bangladesh MDR regimen” was tested by The Union through a clinical trial named STREAM (Standardized Treatment Regimen of anti-Tuberculosis Drugs for patients with MDR TB), a randomized controlled clinical trial, in South Africa, Vietnam, Mongolia and Ethiopia. This regimen was also formally evaluated in two trials, one in 9 francophone African countries. In the Union STREAM stage 2, two new regimens were included with stage 1: one of them is a 40-week regimen with bedaquiline, clofazimine, ethambutol, levofloxacin & pyrazinamide supplemented by isoniazid and prothionamide for the first 16 weeks and the other is 28-week regimen with bedaquiline, clofazimine, levofloxacin & pyrazinamide supplemented by isoniazid & kanamycin for the first 8 weeks⁷. Following an expert review of available observational study findings on shorter regimens, the WHO updated its guidelines⁸ in 2019 including the shorter regimen for use under certain programmatic conditions.

Observing the excellent results obtained by DF Bangladesh and following the WHO endorsement, several countries including NTP Bangladesh adopted and expanded this short course regimen. NTP

⁷ Accessed online at: <http://www.newtbdrugs.org/pipeline/trials/stream-trial-stage-2>

⁸ Available at: <https://www.who.int/tb/publications/2019/consolidated-guidelines-drug-resistant-TB-treatment/en/>

Bangladesh adopted and started expansion of this regimen throughout the country in 2018 using moxifloxacin as the core drug and continued strengthening the services for MDR TB patients. However, in the meantime, WHO recommended an oral shorter regimen which is basically similar to that of DF innovated 9-month shorter regimen where injectable has been replaced by the new oral drug “bedaquiline”. NTP, Bangladesh introduced the Shorter Oral Treatment Regimen (SOTR) in 2021 and expanded throughout the country in 2022. Following the NTP guideline, DF enrolled 299 MDR/DR TB patients in 2022.

3.7 Infection Control (IC) for tuberculosis

Infection Control (IC) aiming at protecting healthy people from the sick remains an important step in the TB control Program especially when M/XDR TB is posing a threat to the achievements made so far in this disease Program. Moreover, strengthening the IC has become more important for preventing COVID-19 infection from patient to other people, not only protecting the healthy people and staff but also TB patients from COVID-19. Infection control measures were established in DF hospitals since its inception by ensuring separate rooms for MDR TB patients from non-MDR TB patients, Pulmonary Bacteriologically Confirmed (PBC) patients from Pulmonary Clinically Diagnosed and Extra-pulmonary TB patients. Adequate ventilation and fresh air circulation in hospital ward rooms (removing the TB droplet-containing air) have been ensured in all the DF hospitals by keeping the doors and windows open and installing adequate fans. Health education among hospitalized patients on safe sputum collection (in 2-5% phenol solution containing buckets), cough hygiene and cough etiquette are being continued routinely. Masks are routinely supplied to all hospitalized patients in DF and Rajshahi Chest disease hospitals and their regular use has been ensured by the nurses. In the clinics, the infection control measures have been ensured by arranging the different assets (cupboard, tables, chairs etc.) and modifying the sitting arrangements taking the airflow into account. The infection control measures that have been strengthened due to the COVID-19 pandemic situation in 2020 and 2021 has been continuing as per developed guidelines. The practice of ensuring infection control measures has already been incorporated into routine supervision visit checklists, however, the virtual monitoring system that was introduced during the COVID-19 pandemic has been continuing.

3.8 Continuing special efforts for finding missing TB patients:

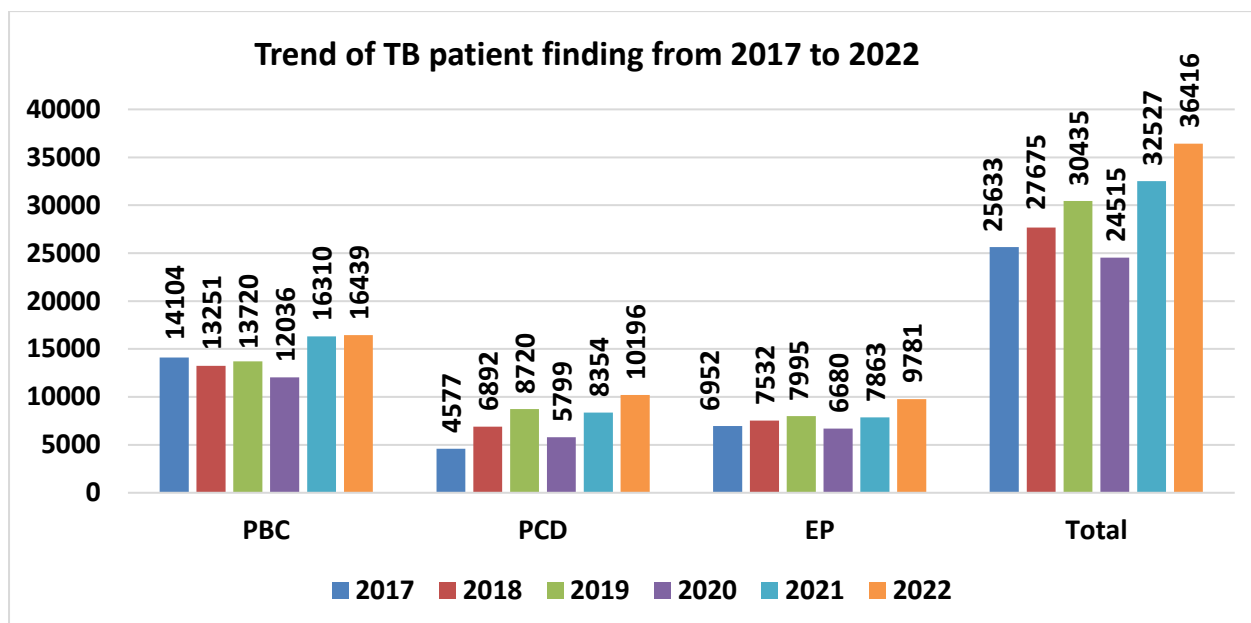
The latest Global TB Report 2022 (WHO)⁹ shows that there are about 18% of missing TB patients in Bangladesh although there is no clear picture of the volume of local/district-level missing patients as the prevalence survey did not show any local-level prevalence. The Micro-planning initiative was first designed and implemented in the last two quarters of 2017 by analyzing the information from a recent TB prevalence survey in 2015-2016 in Bangladesh. The prevalence survey indicates that more use of Gene Xpert and digital X-Ray technology can be helpful for finding missing TB patients. Accordingly, all projects of DF Bangladesh prepared their own plan up to upazila and union level to find out the missing presumptive TB patients and bring them to microscopy, GeneXpert, X-Ray and other tests with the help of GFATM-supported social/diagnostic support activities. Active case finding was emphasized through more contact tracing and outreach smearing centres focused on hard-to-reach, underserved/unserved areas, and older and vulnerable populations. As a result, the detection of TB patients continued to increase each year since 2017, except in 2020, when there was a fall due to the COVID-19 pandemic. From 2017 to 2022 the increase of TB cases has been observed in Pulmonary Bacteriologically Confirmed (PBC), Pulmonary Clinically Diagnosed (PCD) and Extra-Pulmonary (EP) cases while an increase in PBC cases was initially less than PCD and EP TB cases, however, upon expansion of Gene Xpert

⁹ Global TB Report 2022_WHO:

https://worldhealthorg.shinyapps.io/tb_profiles/?_inputs_&entity_type=%22country%22&lan=%22EN%22&iso2=%22AF%22;

machines increasing trend of PBC cases was also observed. The following graph shows the comparison of TB case finding from 2017 to 2022

Graph 11: The following graph shows the trend of TB case finding from 2017 to 2022



4. Leprosy

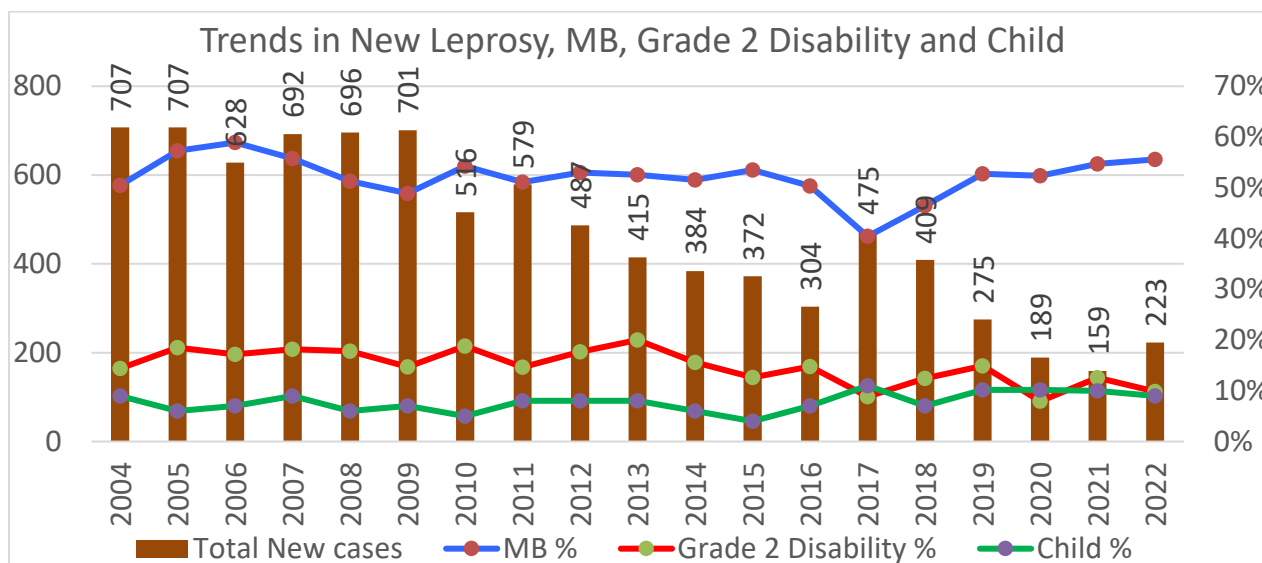
Following the achievement of the elimination status¹⁰ in 1998 at the national level, leprosy has no longer been considered a major public health problem in Bangladesh. Since then, the interest in leprosy by health care providers decreased significantly resulting in a sharp decline in leprosy case detection in the country, e.g. a decrease of about 72% in 2021 (2746 patients) compared to 2002 (9844 patients). It is to be mentioned here that there were less leprosy case finding in 2020 and 2021 compared to the previous year because of the COVID-19 pandemic situation.

Despite the elimination status, Bangladesh remains one of the countries worldwide detecting >2500 new leprosy patients annually. About 40% of the geographical area in Bangladesh is covered by leprosy NGOs whereas the government provides services for the remaining 60%. It has been observed that among the total new patients detected in Bangladesh more than 70% patients are detected in the NGO-covered area. It thus seems that there is a serious under-detection in the area covered by the government.

A total of 223 new leprosy patients were detected, in 2022 in the DF area, out of which around 56% were MB leprosy and 25% of MB patients were skin smear positive. The proportion of children among new patients was 9% in 2022 which is lower than in 2021. Among all new leprosy patients, 82 (37%) were female. Overall disability G2D rate in 2022 in the DF area was around 10%. This rate of G2D is lower than in 2021 (12%). The following graph (Graph 12) shows the new leprosy cases, and the proportion of MB, Child and Grade 2 disability among newly diagnosed leprosy patients in 2022.

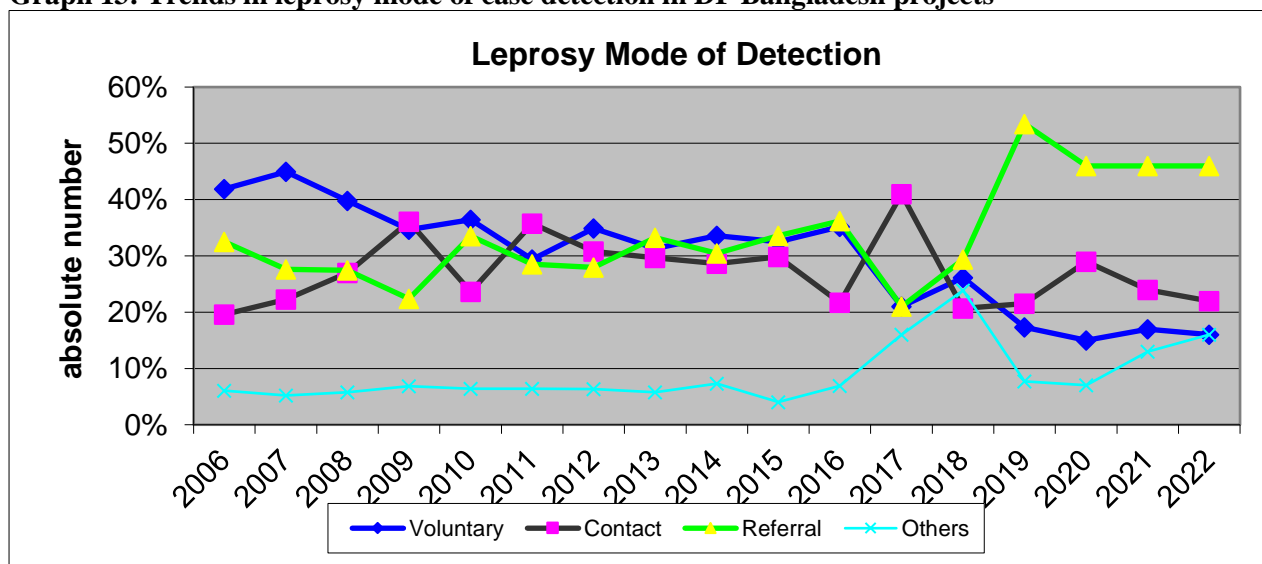
¹⁰ Defined as <1 prevalent case per 10,000 population.

Graph 12: New Leprosy Detection, Proportion of MB & disability grade 2 in DF Bangladesh, 2004 – 2022



The COVID-19 pandemic had a negative impact on leprosy case finding, both on active and passive case finding during 2020 and 2021. Due to the rarity of the disease and low number of cases, contact checking (active case finding) remains an important part of sustaining leprosy case detection in situations where the leprosy endemicity is low. However, in recent years the proportion of referrals has been increasing which may indicate an increasing role of local health care providers and other community stakeholders. The graph below shows the trends in leprosy case reporting indicating the sources.

Graph 13: Trends in leprosy mode of case detection in DF Bangladesh projects



A high treatment completion rate of >90% has been maintained for both PB and MB leprosy patients in the DF Bangladesh project during the last several years. This rate for all leprosy patients was 95%, PB was 99% who registered in 2021 and for MB also 93% who registered in 2020.

However, the high proportion (56%) of multi-bacillary infectious patients among the newly detected Leprosy patients, higher (9%) child proportion and high (12.11%) grade-2 disability indicate the late diagnosis and continued spread of diseases in the community. This situation along with the need

for lifelong care for deformed leprosy patients indicates the importance of the DF project of continuous and intensified support and care for the leprosy component.

4.1 Care of Leprosy patients (Prevention of Disabilities - POD)

Leprosy, being a disabling neurological disease, leaves affected persons with permanent disabilities if not detected early and treated properly. Disabilities and deformities require lifelong care to prevent further deformities and disabilities. Hence prevention and care of deformities and disabilities are the most important aspects of leprosy management. This could be achieved by early diagnosis and judicious treatment both of the disease and of any reaction/neuritis that occurs. Every step is taken to prevent further development of new disabilities through routine follow-up, early diagnosis and prompt management of nerve-function-impairment (NFI), supply of protective foot-wears, teaching on self-care, etc.

The main objective of POD activities is to minimize additional disabilities apart from that which was present at diagnosis through teaching patients with disabilities about self-care and through providing protective footwear and ulcer care. Since the beginning (1972), DF has been providing passive care to limit further disability and deformity by asking them to report voluntarily or any problem after completion of MDT. Additionally, from the year 2008 to 2017, DF took the special initiative for the prevention of disability and deformity by active surveillance of all patients whether new or completed MDT by means of observing 'POD DAY' in every clinic once a year. The main objectives of POD DAY were to promote self-care by the patients and to optimize the skills of all field staff to limit the disability due to leprosy. To organize a successful POD Day, all clinic staff were informed about their presence in the clinic about the Pre-POD visit by the physio-technician (PT), and a visit by PT one month prior to the POD Day. For POD visits to a clinic, the clinic staff including the TLCO are informed so that they can make good planning and arrange effective POD activities including the listing of patients under care and informing them, checking the stock of POD materials, preparing a list of patients for reconstructive surgery and other supports needed. TLCAs also gain more confidence and improve their skill in patient management through this POD activity. General counseling on self-care to limit further disability through Peer Education by the selective patient is performed on the POD Day. Individuals are taught self-care, ulcer care, and active and passive exercises. Protective footwear is distributed based on the needs of patients.

Since 2017, POD Day has been integrated into the regular field visit program of the physio-technician, where leprosy patients are informed to attend the clinic on the day of the physio-technician's visit to the clinic. The clinic staff and physio-technician jointly provide necessary support services to the patients who attend the clinic. For the care of leprosy patients having anesthetic feet, a total of 1101 pairs of MCR shoes were supplied in 2022.

During the year 2022, a total of 285 leprosy patients were hospitalized for the management of different types of complications in the three DF hospitals, 72% of them were hospitalized for ulcer management and for special types of shoes. Around 21% of the admitted leprosy patients had reaction/neuritis and 7% had other complications.

5. DF Reference laboratory and Quality Control of laboratories

The Damien Foundation culture laboratory located at Netrakona started L-J culture in 2002 under close supervision of the mycobacteriology laboratory of the Institute of Tropical Medicine (ITM), Antwerp, Belgium. As a rapid tool, FDA staining was used as the screening tool for the identification of MDR TB presumptive patients and slide culture DST (which gives results in 2 weeks) for detection of MDR TB. This laboratory procedure (slide DST) requires very minimal

equipment and infra-structure which was also established in other project laboratories afterward. Later on, since 2012, the game changer revolutionary technology, Gene Xpert machine was made available in all DF hospital-based laboratories. This technology can detect the presence of MTB in sputum specimens and the presence of rifampicin resistance only in about 2 hours. Since then, GeneXpert has been used as a screening tool for the detection of rifampicin resistance and FDA staining was phased out. Slide DST has been used for GeneXpert RR samples to detect SLD resistance. L-J culture DST has been performed if X-pert MTB/RIF test shows RR and for routine monitoring of MDR TB treatment and other extensive DST for diagnosis of pre/XDR TB in the DF area. This Netrakona laboratory (NK-Lab) has been serving as the central role for laboratory aspects of all research in Dathemien Foundation in Bangladesh.

Netrakona laboratory provides technical support to the DF project laboratories located at the project offices and the project laboratories provide support to all field laboratories located at the district, sub-district and below levels. Sputum samples from all previously treated (for at least 1 month) cases including non-converters and failure cases and contacts of DR TB cases are first tested using GeneXpert technology to detect rifampicin resistant (RR) cases. RR cases detected through GeneXpert are then referred to DF hospitals for slide DST for 2nd line drugs (mainly levofloxacin) and for enrollment on DR TB regimen. Slide DST (mainly for levofloxacin) is routinely performed besides L-J culture DST for all sputum samples collected from all RR TB patients at the start of treatment and the initial strains are also routinely sent to the Antwerp lab for first- and second-line DST through Netrakona lab. All follow-up sputum samples during treatment of DR TB are also sent to NK-Lab for solid culture and DST if found culture positive.

The Quality Assurance (QA) system for all other laboratories of DFBD has been developed through a regular monitoring mechanism by this DF- Reference lab at Netrakona, which is working with the full technical support of SRL, Antwerp, Belgium. Netrakona lab is also providing full assistance for DF clinical and lab-related research, e.g. currently supporting the lab aspects of MDR TB management. Different trainings on (LED) microscopy as well as on slide-DST and Liquid-DST (LJ-DST) are performed in Netrakona.

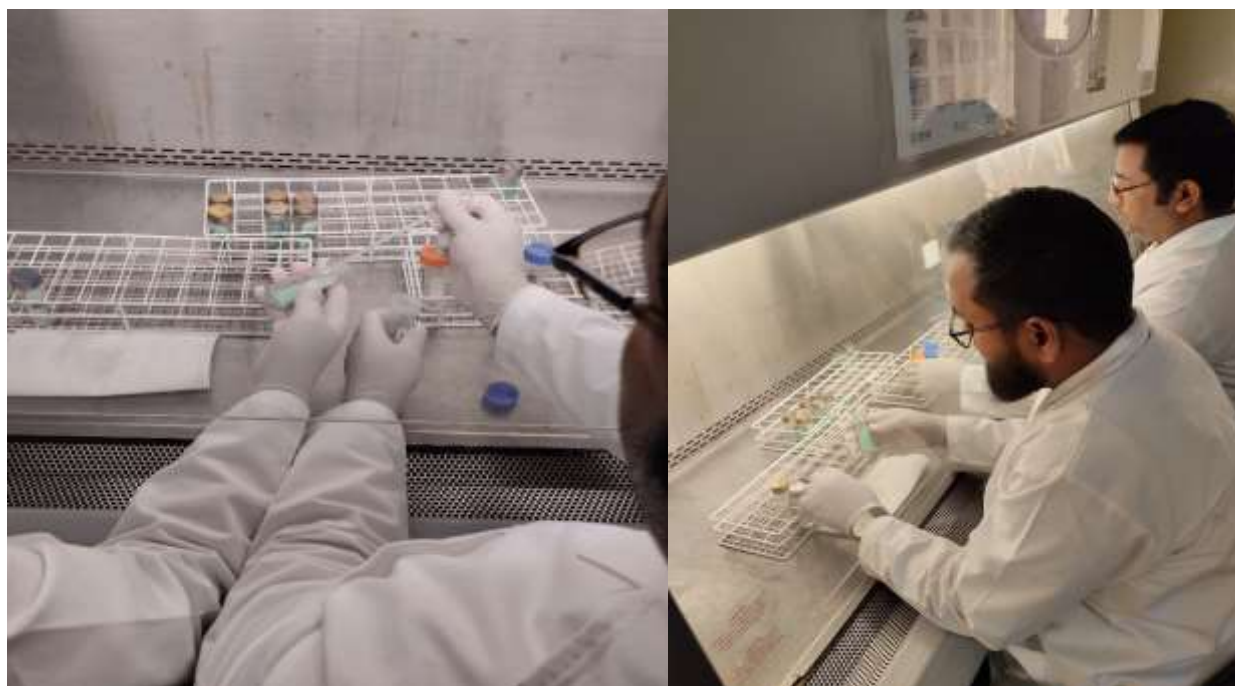
Primary culture on LJ medium and conventional phenotypic LJ-DST is done in the Netrakona lab. Strains isolated on LJ culture at the Netrakona culture lab are regularly sent to the Antwerp supra-national reference lab (SRL) for quality control of culture and DST of this lab.

For 2022, the Reference laboratory processed 1641 primary culture and 123 LJ-DST, 32 slide DST and 193 Xpert test. The main cause of less Gene Xpert test was the failure of all the modules for a long time which were not reparable. Netrakona lab sent one strain for each MDR patient before the treatment start of MDR/Pre-XDR and also NTM strains that are asked by ITM. LJ- DST in Netrakona is done only for Rifampicin, Kanamycin and Levofloxacin and is rewarding for the DF projects to find out Pre-XDR and XDR TB cases earlier.

DF Netrakona Lab. has been participating in the quality assurance programme for DST of MTB in the network of supra-national laboratories (SRL) for long (rounds of proficiency testing) and has successfully demonstrated acceptable performance. During the last round (round 26) of proficiency testing, this lab demonstrated acceptable proficiency for rifampicin genotypic, rifampicin, isoniazid and amikacin phenotypic DST.

Netrakona lab has also been serving as the external quality assessment site of skin smears from leprosy patients examined at the DF project laboratories. All the DF project laboratories serve as the first control of all DF field laboratories for EQA of sputum smears. The Netrakona lab served

as second control for EQA of sputum smears for several years and later on the 2nd control has been temporarily shifted to Tangail project lab as a step of decentralization with capacity development.



2.DF DST Laboratory at Netrakona

6. HOSPITAL ACTIVITIES

Besides 160 field clinics, DF also runs three hospitals with a bed capacity of 255 to take care of complicated leprosy and TB, including MDR TB patients for about 34 million population in DF area in Bangladesh. These hospitals are situated in Jalchatra - Madhupur, Raghurampur – Shambhuganj and Anantapur (Baluakanda) under Tangail, Mymensingh and Netrakona districts respectively. During the year 2022, a total of 1210 patients (TB 925 or 76% and leprosy 285 or 24%) received care from DF hospitals. As complicated patients and patients with very poor general conditions are normally referred to hospitals for intensive care, the death rate among hospitalized patients is likely to be higher than the patients treated ambulatory from the field clinics. However the death rate among hospitalized TB patients was lower (2%) compared to the overall death rate among all TB patients including those treated in the field (around 5% including all types) which indicates the high-quality services provided by DF hospitals or the timely referral. Overall bed occupancy in Jalchatra, Mymensingh and Netrakona hospitals was 31%, 24% and 29% respectively during 2022. The average bed occupancy rates per disease category and duration of stay in different DF hospitals are shown in the table below:

Table 2: Bed Occupancy and duration of stay

	TTLCP			MTLCP		NTLCP	
	Leprosy	TB	General	Leprosy	TB	Leprosy	TB
Subtotal	31%	34%	0%	37%	16%	32%	28%
Total	31%			24%		29%	
Duration of stay in days							
Average	42	30	0	34	23	21	16

Graph 14: Trends in hospital bed occupation

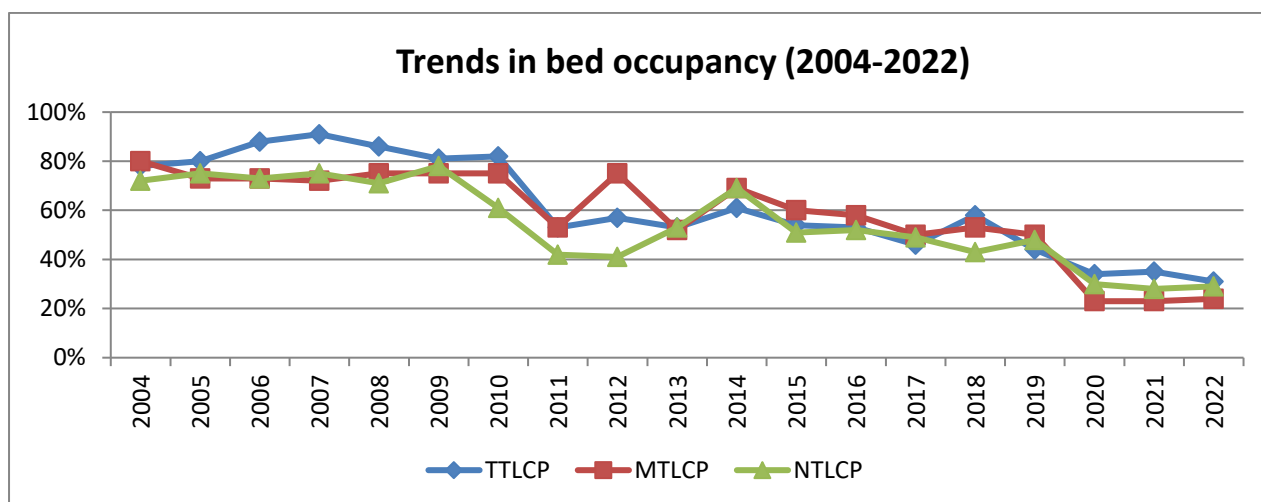


Table 3: Reasons of TB admission – 2022

Hospital	Complication	Poor general health	Drug reaction	MDR	Other	Total TB patient
TTLCP	104 (25%)	148 (36%)	61 (15%)	55 (13%)	45 (11%)	413
MTLCP	4 (2%)	49 (29%)	7 (4%)	105 (63%)	3 (2%)	168
NTLCP	110 (32%)	114 (33%)	81 (24%)	39 (11%)	0 (0%)	344
Total	218 (24%)	311 (34%)	149 (16%)	199 (22%)	48 (5%)	925

Table 4: Reasons of Leprosy Admission- 2022

Hospital	Reaction & neuritis	Ulcer	Eye complication	Reconstructive Surgery	Other	Total patient
TTLCP	18 (36%)	31 (62%)	0 (0%)	0 (0%)	1 (2%)	50
MTLCP	34 (22%)	109 (71%)	1 (1%)	0 (0%)	10 (6%)	154
NTLCP	8 (10%)	64 (79%)	4 (5%)	1 (1%)	4 (5%)	81
Total	60 (21%)	204 (72%)	5 (2%)	1 (0%)	15 (5%)	285

The organization runs an OPD for general patients from Jalchatra Hospital (TTLCP) to serve the local community and ensures twenty-four hours emergency service for the general patients. During the year 2022, a total of 23,566 general patients came for consultations at the OPD and a total of 381 patients received emergency care, out of which 173 (45%) were out of office hours.

7. Advocacy Communication & Social Mobilization (ACSM)

ACSM has been continuing from the period of the MDG and Stop TB strategy to the period of the End TB Strategy. It is an important component of the TB Control Program to address four key challenges - improving case detection, treatment adherence, combating stigma/discrimination, and empowering people affected by TB and mobilizing political commitment and resources for TB.

The objectives of ACSM are to increase awareness, bring about behavioral change, influence social norms, and expand community support in the TB control Program those are important for sustaining community level support for TB activities. In line with the Global and National strategy the Damien Foundation Bangladesh (DF) is actively involved in disseminating TB & Leprosy related health messages through a variety of communication channels to improve and sustain TB & Leprosy related safe behavior among individuals and community. These are as follows:

- Community & OPD health education
- Orientation of village doctors
- Meeting with cured TB patients/elites of the community (TB club meeting)
- Orientation of MO/GP
- Meeting/orientation with different NGO staff/Govt. health service providers
- Health Education in out-patient and indoor department of health service providing institutes
- Mobilization through miking at community/marketplaces and mobilization through house-to-house visits
- Patient to patient education for self-care
- Observance of World TB & Leprosy Day
- Training and refresher course for own staff



3. Community-based health education



4 & 5. Hospital Health Education (Outdoor -above and Indoor – below)





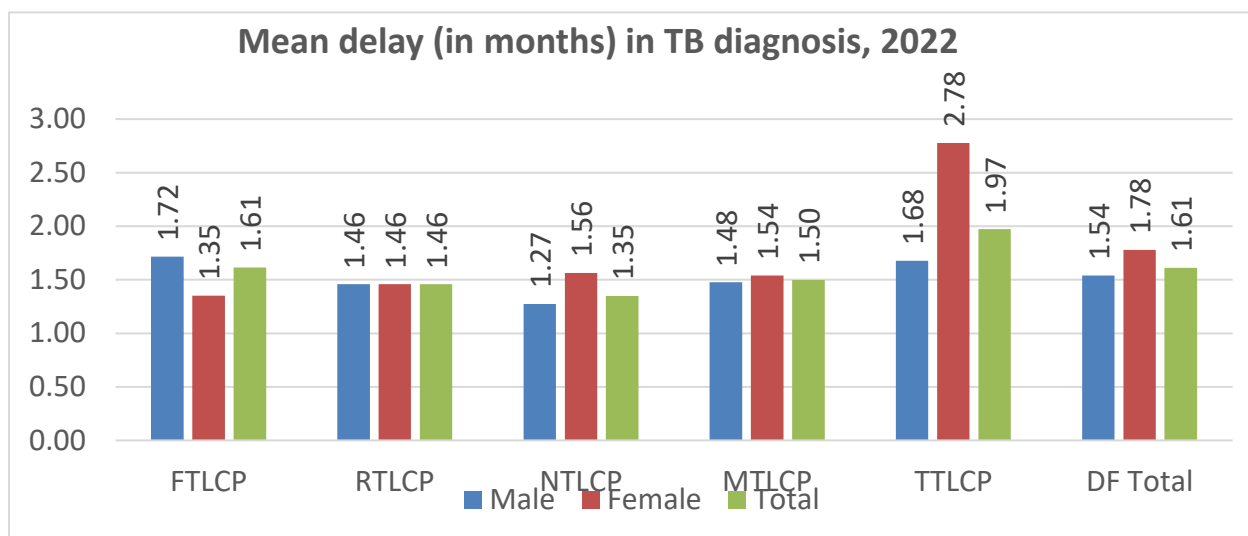
6. Courtyard Meeting

The table below shows ACSM activities in 2022 briefly-

Training/Orientation and other ACSM activities conducted in 2021		
Activities	Session Conducted	Participant Attended
Training/Orientation/Refresher		
Training for Village Doctors, Pharmacy Holders (1 day)	36	900
Orientation for Medical Doctors (Public-Private)	12	218
Other ACSM Events		
Health Education sessions at the community level	352509	1842464
Health Education in the Out-Patient Department (OPD) of Upazila Health Complex, Sadar Hospital, Medical College, Sub Center, Community Clinic	112674	1482437
Health Education session in Indoor of Upazila Health Complex, Sadar Hospital, Medical College	23426	314219
Health Education session in Damien Foundation clinic/treatment center	194351	688631
World TB and Leprosy Day celebration	Celebrated at National and local level: total 107 TB events and 5 leprosy events in DF working area	

World TB Day and World Leprosy Day of this reporting year have been observed on 30 January 2022 and 24 March 2022 respectively. The days were observed in collaboration with local govt. health authorities. Observance of these days was through standing/walking rallies, short meetings and the display of banners at the Upazila Health Complexes. The ACSM activities and network activities play an important role in the promotion of TB control at the community level. ACSM activities help in early diagnosis of TB, so, the overall delay is continued at less than 2 months in all DF projects till 2022.

Graph 15: Diagnosis delay in 2022 - project and gender wise



8. Engaging all care providers and community

8.1 Public-public and public-private mix approaches

Engaging all care providers through public-private mix (PPM) approaches is an important core component of the TB Control Program. The engagement of all relevant healthcare providers is essential to meet the TB-related Sustainable Development Goals (SDGs) and reach the targets for TB Control Program.

In the project area, Damien Foundation successfully involved all health institutions belonging to public sector health care networks, such as public hospitals, health care providing facilities at rural levels, medical college hospitals, prison health facilities and workplaces.



7. Medical Officer (MO) & General Practitioners' (GP) orientation

Besides, many non-graduate private practitioners (village doctors), cured TB patients, graduate private medical practitioners, private hospitals and NGO health facilities were involved in referral of presumptive patients and providing DOT.

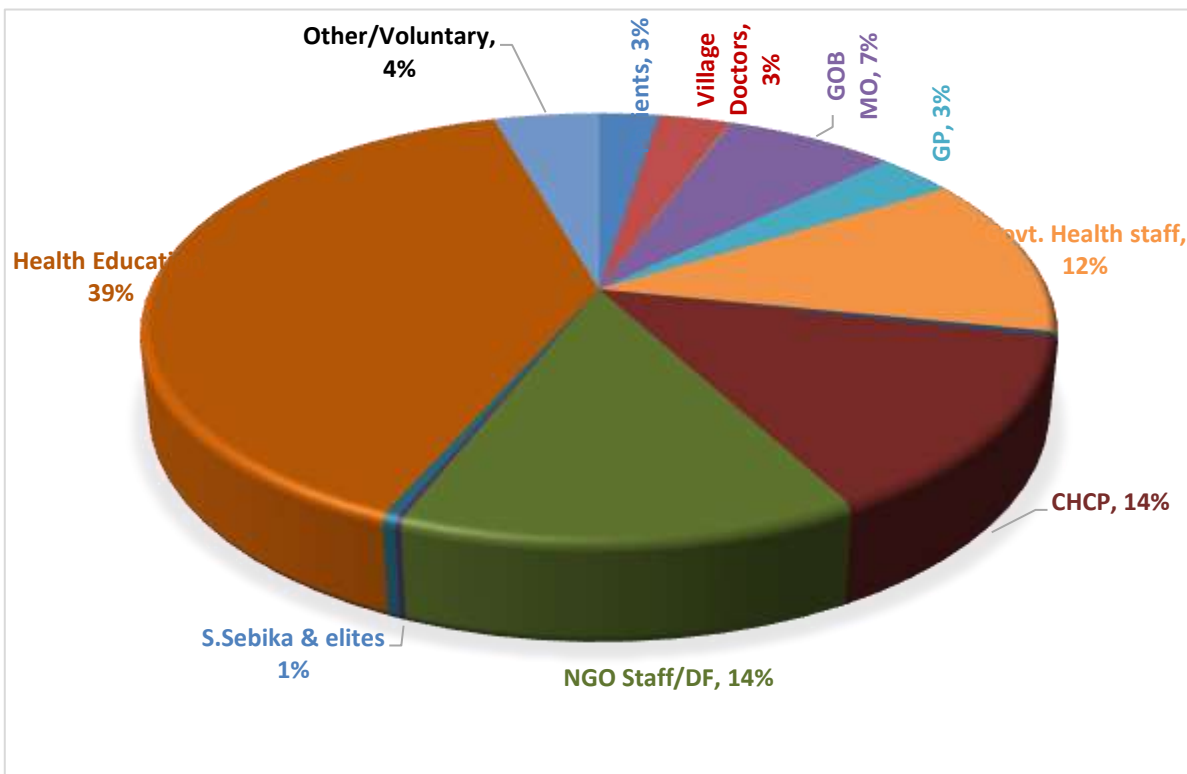
8. Non-Graduate Private Practitioners' (Village Doctors) orientation in Mymensingh project



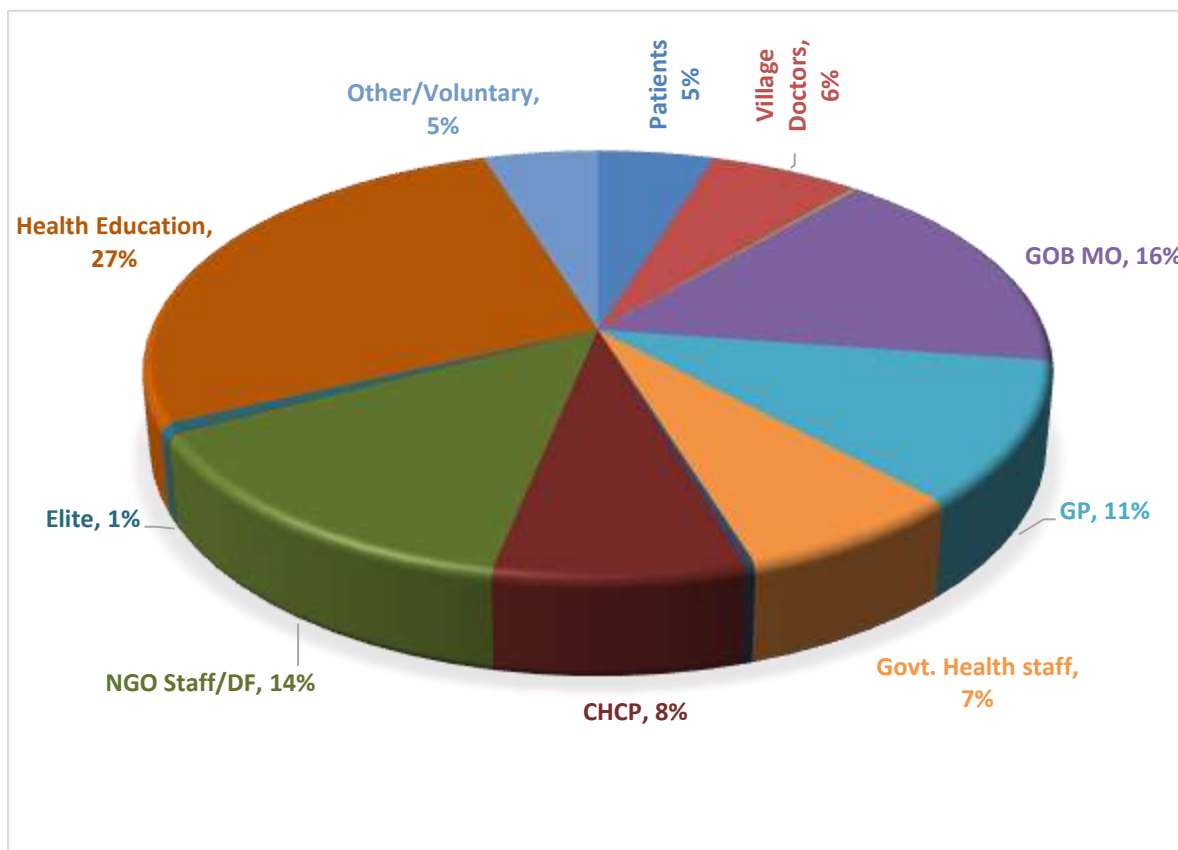
9. Students from Netrakona Medical college paid study visit at DF Netrakona hospital



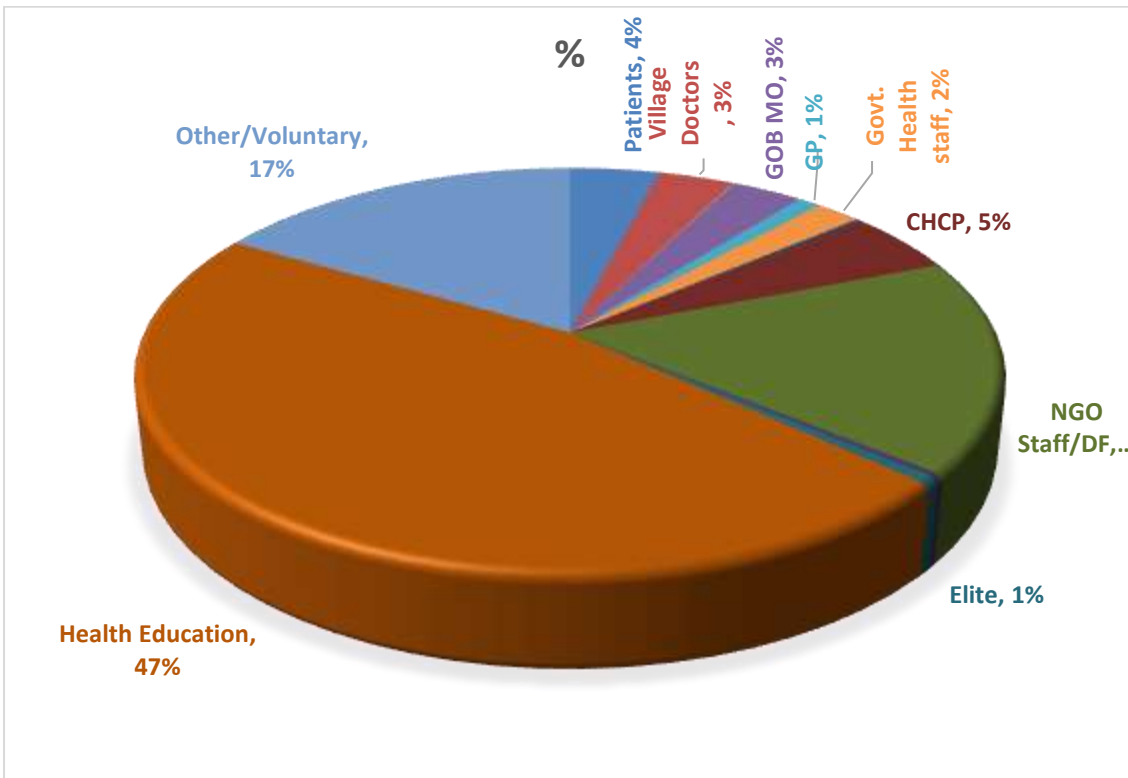
Graph 16: The graph below shows contribution to referral of TB presumptive by different providers and sources.



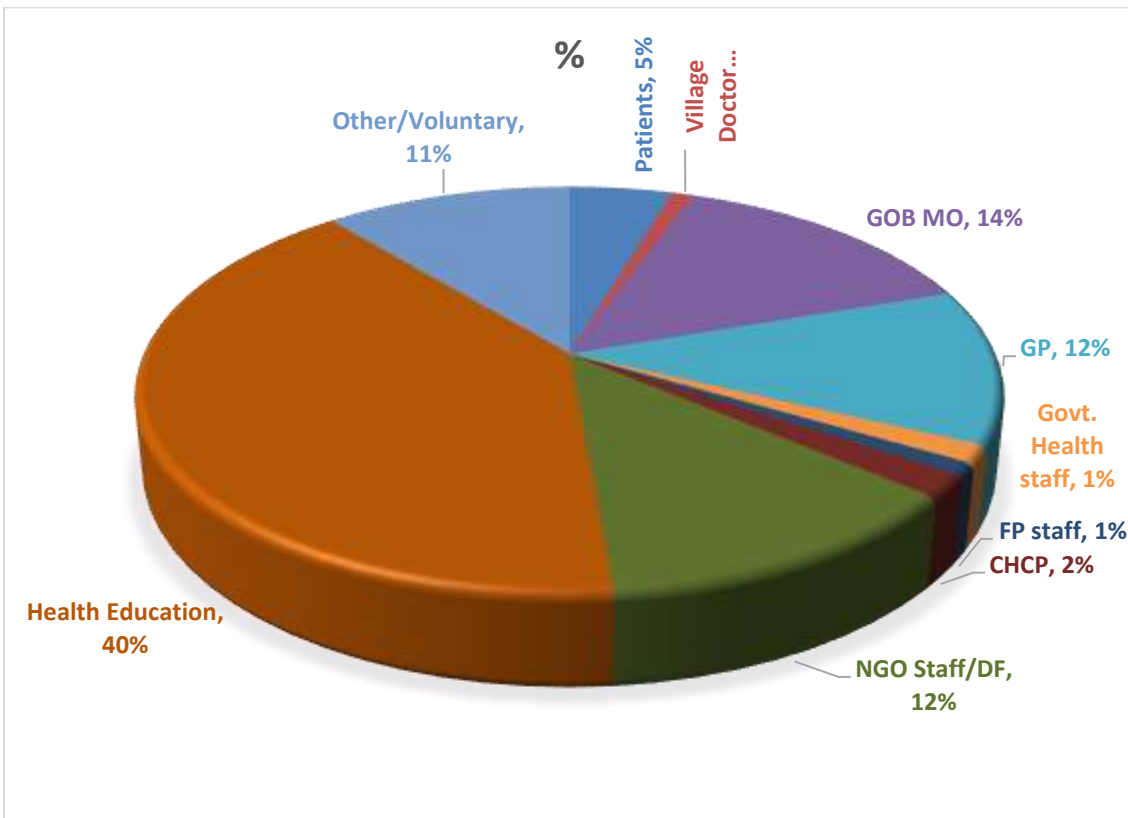
Graph 17: The graph below shows contribution to TB case detection by different providers and sources.



Graph 18: Mode of Leprosy Presumptive Referral in 2022



Graph 19: Mode of Leprosy Patients Detection in 2022



8.2 Partnership with the Village Doctors

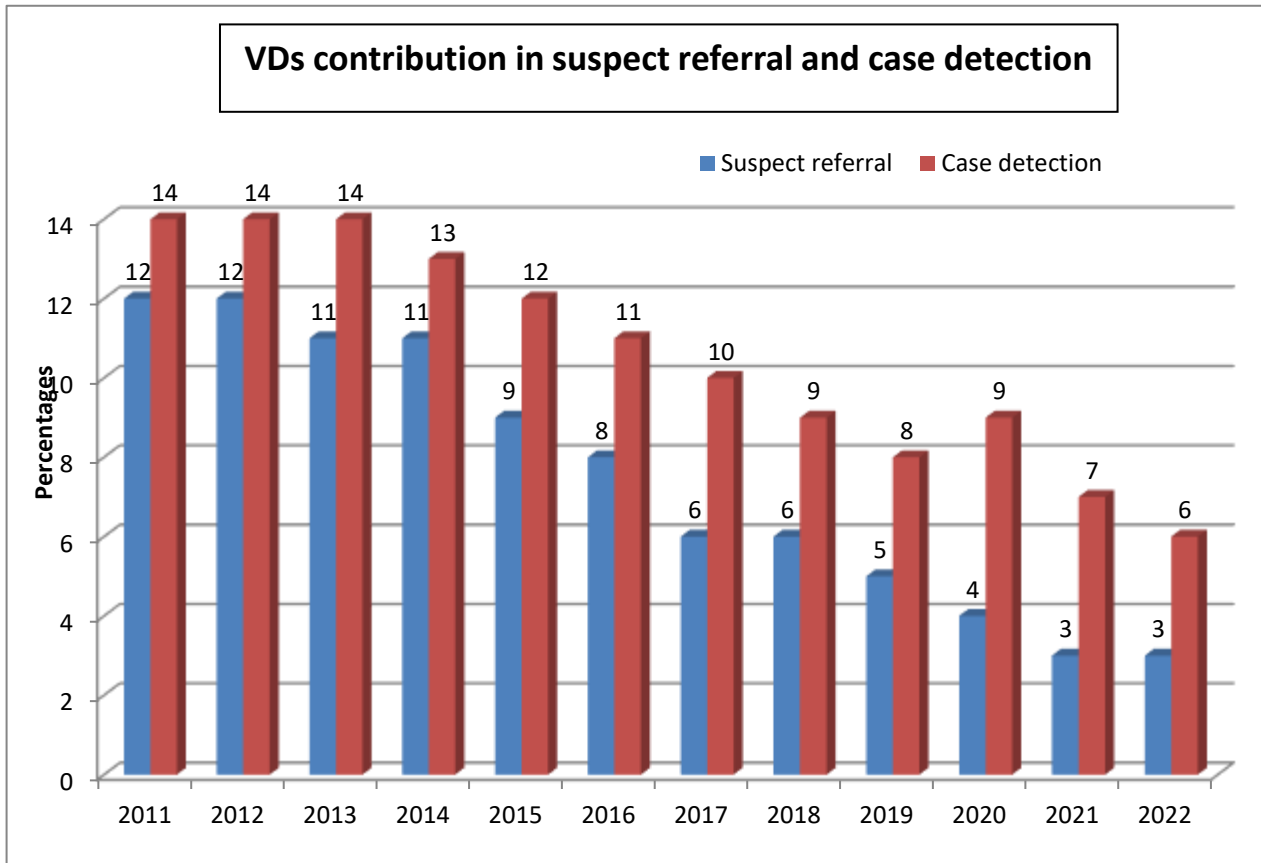
Over the period, the Damien Foundation's partnership with the Village Doctors (VD) has been proven as one of the most effective and sustainable approaches; thus, the partnership with the VD was continued in 2022. The Village Doctors continued their important role in contributing to case detection by referring Presumptive and providing DOT services to the community as in previous years.

Village Doctors in 2022

DF Efforts in 2022 with VDs			Contribution by Village Doctors		
	Session	Participants		Presumptive	Patients (PBC)
Training (1 day)	131	3185	TB (Number)	13535	954
			% among total	3%	6%

In addition to the referral, the Village Doctors were involved as DOT providers for 15,748 TB patients, 43% of the total TB patients.

Graph-20: Contributions of village doctors in TB case detection



8.3 Working with the Government Health & Family Planning staff and General Physicians

DF partnership with the Government Health Personnel is another cost-effective approach for case finding and case holding. This partnership has been continued as before.

Govt. Medical Doctors and General Practitioners in 2022

DF Efforts in 2022 with Medical Doctors (GoB MOs & GPs)			Contribution by Medical Doctors		
	Session	Participants		Presumptive	Patients
Orientation for Medical Doctors (1 day)	28	430	TB (Number)	46,962	4,072
			% among total	10%	27%
			Leprosy (Nr.)	600	58
			% among total	4%	26%
In the project area, the Govt. Medical Doctors continue their support in diagnosing and managing complicated patients (both TB and Leprosy) at the early stages and facilitating different courses/orientations for other stakeholders.					

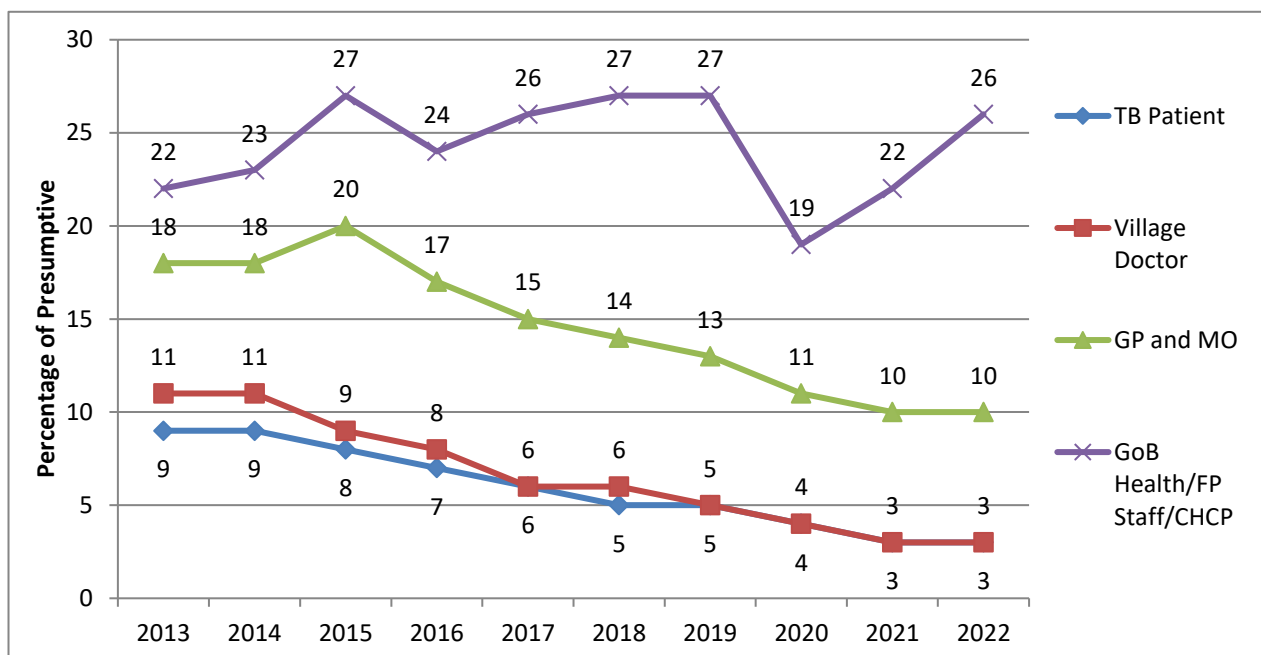
Govt. Health & Family Planning staff in 2022

Support of the Government Primary Health Care Field Staff in referring presumptive patients to the clinic and monitoring of DOT in the community has been continued as in previous years.

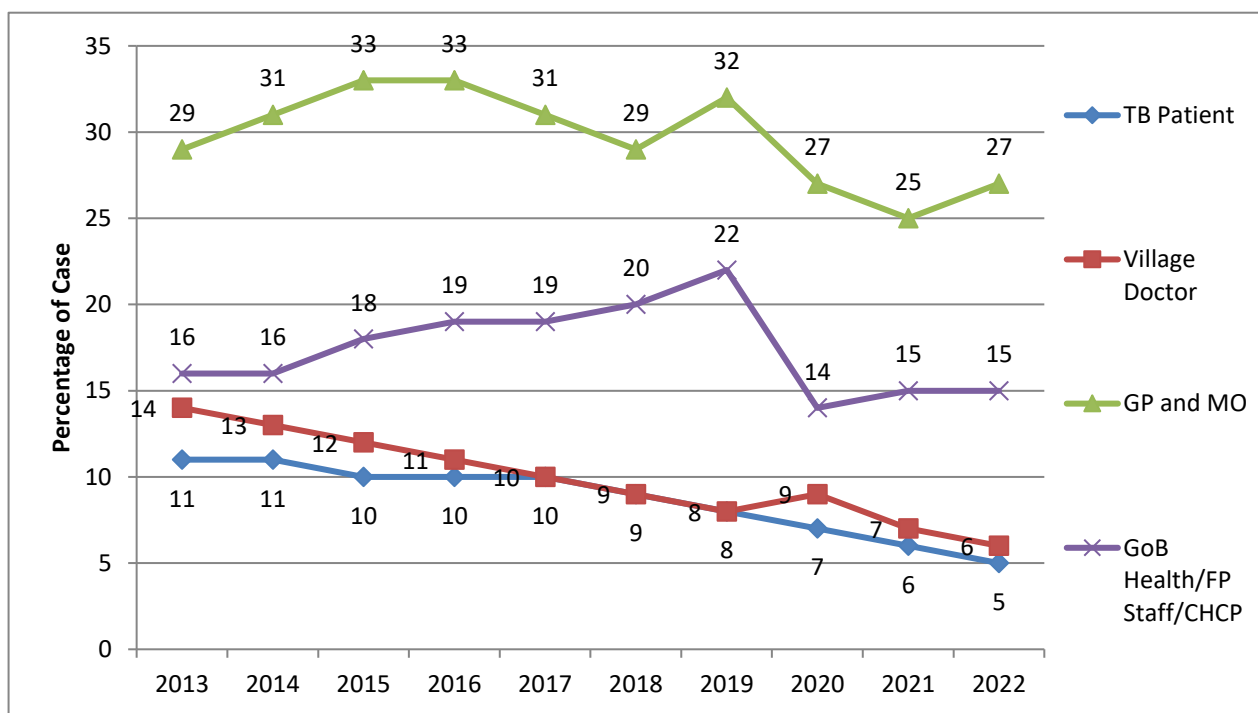
DF Efforts in 2022 with Govt. Health & Family Planning staff			Contribution by Govt. Health & Family Planning staff		
	Session	Average Participants per session		Presumptive	Patients
Review meeting/ Orientation (1 day)	1524	42	TB (Number)	56,015	1,113
			% among total	12%	7%
			Leprosy (Nr.)	80	1
			% among total	2%	2%
Besides referral, Govt. Health and FP staff play an important role in providing DOT. A total of 4,137 TB patients received DOT under their supervision in 2022, which is an 11% contribution to the total DOT for patients at the community level. Their involvement increased the DOT expansion in the community, which is very important to improve patient-friendly access to the services and enabling community participation in TB control for enhancing sustainability.					

Report of last ten years shows that there is a slow decreasing trend in the referral of TB presumptive by Govt. MO, GP, VD & cured patients up to 2021 but static in 2022 but case detection is increasing through MO & GP. There is an increasing trend of referral of presumptive observed for govt. health staff. Trend of TB case finding also slightly increasing through govt. health staff. This increasing trend of involvement of field health staff also seems a positive sign for long-term sustainability. The following graphs (21 & 22) shows the trend of TB presumptive and case detection in the last ten years (2013 to 2022) -

Graph 21: Comparison of trend of TB presumptive referral from Cured TB Patients, VD, GoB Staff and GP-MO



Graph 22: Comparison among trend of contribution from VD, GoB Staff and GP-MO for TB patient detection



8.4 Empowering patients and communities

Considering the pivotal role of Advocacy, Communication and Social Mobilization (ACSM) in the field of TB control and Leprosy elimination the ACSM activities have been continued in collaboration with the Government (NTP & NLEP), with financial support from the Belgian Government through Damien Foundation and GFATM.

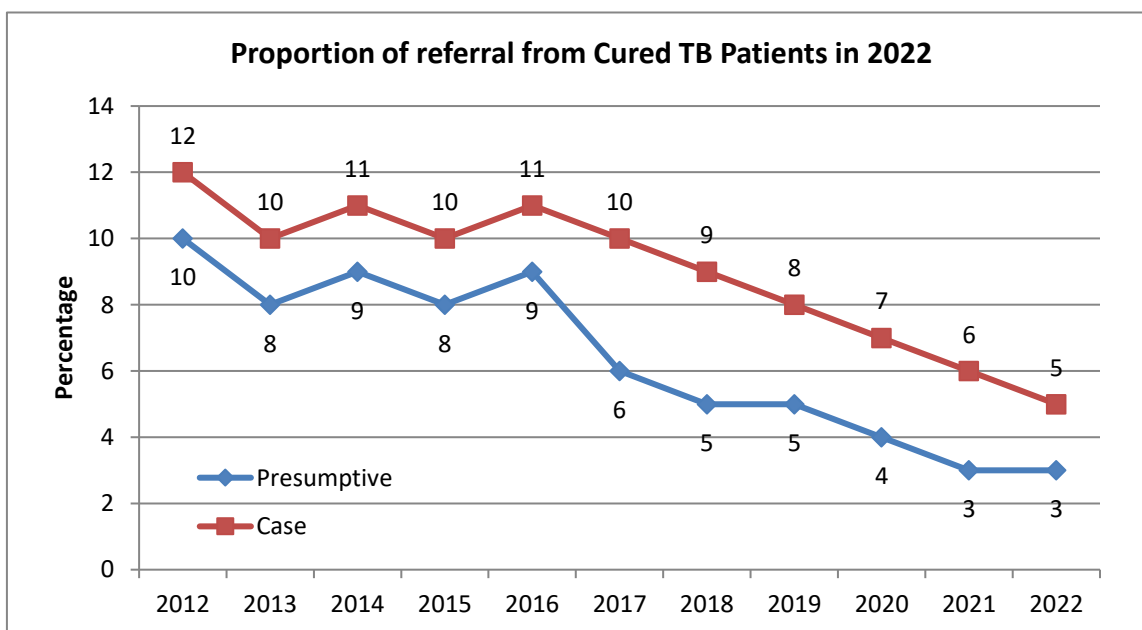
The effect of several ACSM activities and a dense network of services has been revealed through sustaining the referral of presumptive patients and increasing trends among certain groups of people as well. The clinic staff was involved with several ACSM activities besides routine activities on diagnosis, treatment and follow-up.

8.4.1 Working with the Former Patients and Elites (TB Club Meeting)

The objective is to involve cured patients from the community to increase the case finding and to encourage them to refer presumptive TB patients and for early detection of new cases and relapse. Since 2000, DF has emphasized involving former patients in the identification of presumptive TB patients from the community and referring them to health centers. This involvement was extended to organizing “TB clubs” of former patients at the union level (a union is a small administrative unit with a population of about 20,000). The vast majority of the cured TB patients are from the poorest segment of society, but their role in TB and Leprosy control activities has given them an identity as the best advocate to the community in terms of referral of presumptive TB and Leprosy patients.

Contribution of cured TB Patients and Local Elites		
	Presumptive	Patients
TB (Number)	11,328	736
% among all	3%	5%
Leprosy (Nr.)	127	4
% among all	4%	9%

Graph 23: Contribution of former TB patients in referring presumptive TB patients and smear-positive case detection during the last seven years (2012-2022)



8.4.2 Health Education Activities in Community and Govt. Health Facilities:

Health education events do create greater social commitment and support behavioral change to ensure access to treatment and care for all, particularly the poor, vulnerable and hard-to-reach populations. The activities include disseminating accurate information on the diseases and dispelling myths about TB/Leprosy, educating and encouraging people with their family members to be more actively involved. Several events of health education were conducted in the year **2022**.

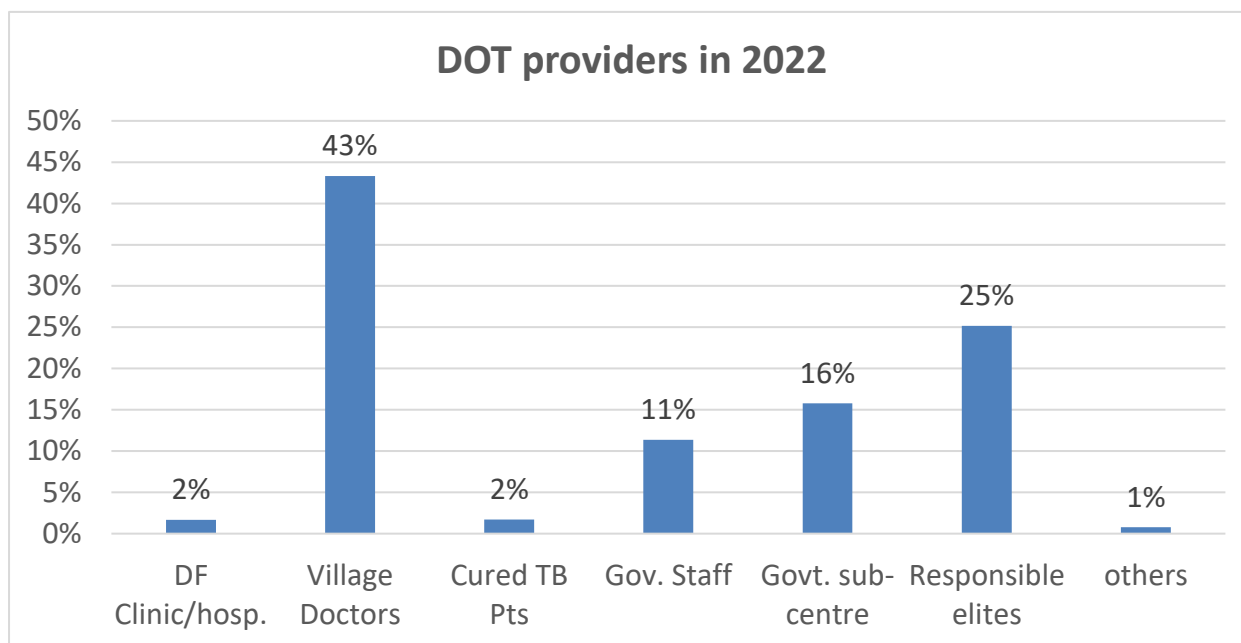
Details are in the following table:

Health Education Activities in 2022			Contribution from all Health Educational Activities		
	Session	Participants		Presumptive	Patients
Health education sessions in the community	352509	1842464	TB (Number)	174833	4126
HE session in OPD (UHC, SH, MC, FWC, SC, CC)	112674	1482437	% among total	39%	27%
HE session in INDOOR (UHC, SH, MC)	23426	314219			
HE session in the DF clinic	194351	688631	Leprosy (Nr.)	6627	88
			% among total	47%	40%
Total	682960	4327751			
Health education activities help to enhance community participation which leads to increased awareness, promotes health-seeking behavior, inspires dialogue, and heightens community concern and action for TB/Leprosy control.					

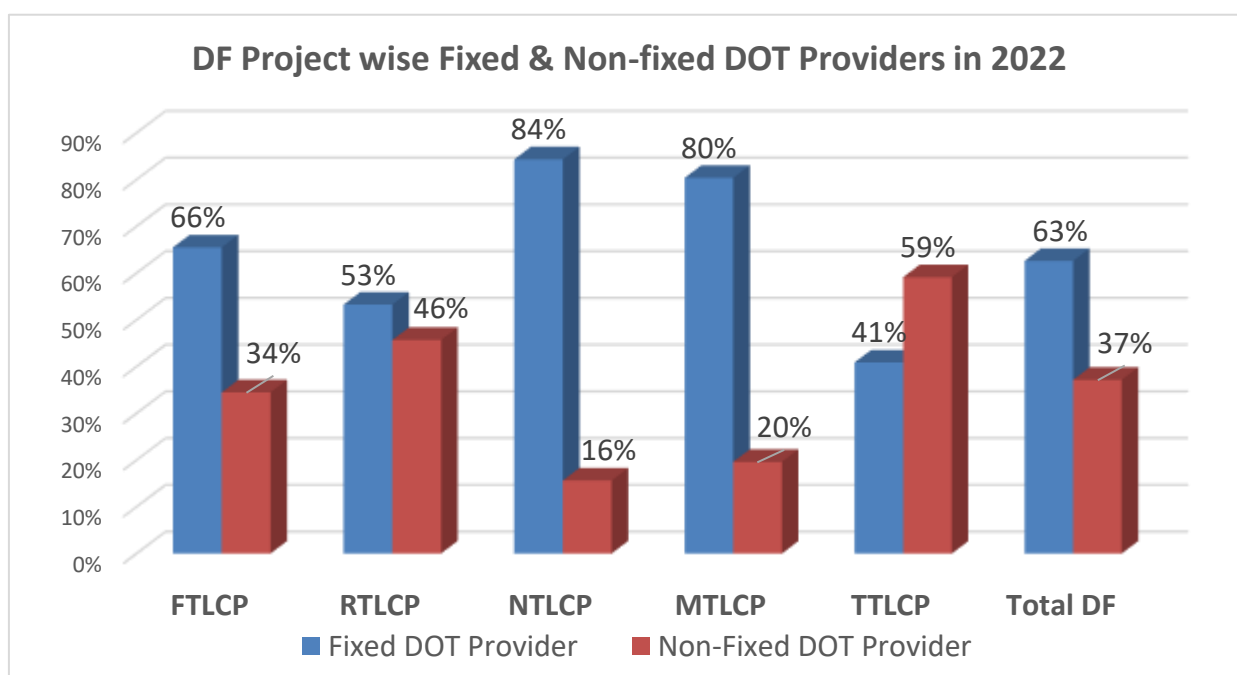
8.4.3 Community participation in DOT expansion

In compliance with the global strategy of maintaining high-quality DOTS, Damien Foundation Bangladesh, since initiation of the TB control Program, has decentralized DOT to the community level to make it more patient-friendly by involving VDs, GOB Health and Family planning staffs, other NGO staff, cured patients, school teachers, religious leaders and local elite. In each Union, there are 5 to 6 Fixed DOT Providers (FDP) to provide DOT to the patients, next to other Non-Fixed DOT Providers. The graph below shows the involvement of different categories of DOT providers in the TB Control Program, where about 43% of them are Village Doctors in DF project areas.

Graph 24: DOT Providers in 2022



Graph 25: Fixed and Non-Fixed DOT Provider in DF project areas in 2022



9. Operational Research in Damien Foundation Bangladesh

Damien Foundation Bangladesh conducted operational research next to its routine activities aiming at defining or establishing cost-effective means of diagnosis and treatment, documenting and validating different research findings or publications from other countries and providing input to the national and international Health Agencies to develop or recommend new tools and strategies for different NTPs based on study results obtained in DF Bangladesh.

9.1 Assessing the Effectiveness of Intensified Extended Contact Survey (IECS) to Routine Contact Survey (RCS) in Bangladesh

Damien Foundation started the implementation of this IECS study project in 2020 with funding support from the Leprosy Research Institute (LRI) and in collaboration with ITM, Antwerp, Belgium; MSF, Belgium; Erasmus MC, University Medical Centre Rotterdam. Although the agreement with the donor was signed in 2019 due to process delay in getting approval from different authorities the project was actually started in March 2020. As per the agreement this project is supposed to end in August 2023, but the implementation of the project was seriously affected due to the COVID-19 situation in 2020 and 2021 the donor agreed to extend the project period for one more year.

Realizing the facts and experiences from different countries that leprosy often clusters not just within households but also within neighbourhoods. Apart from screening household contacts, it would therefore be equally important to screen neighbourhood contacts. Therefore, a new approach of contact screening based on door-to-door screening of a wide circle of neighbourhood contacts of new leprosy patients will be tested through this operational research project. Areas to be screened will be determined based on the geographical coordinates of the affected households, ensuring a targeted area that is wide enough to avoid identification of the index case households. With this 'Intensified Extended Contact Survey' approach, hereafter called the 'IECS Strategy', and through this strategy, it is expected to achieve early case detection, reflected in a reduced prevalence of G2D among new patients.

The main objective of this operational study project is to assess the impact of the IECS strategy in reducing the proportion of patients with G2D at diagnosis. Moreover, reducing the delay in diagnosis and cost effectiveness of the project are also important aspects of the project to assess the feasibility of this strategy to run in the future in the programmatic condition. This is a cluster randomized intervention trial where, out of a total of 14 DF districts, 7 districts have been selected as intervention area and 7 as control areas. A total of 658 patients (328 in each intervention and control arm) will be enrolled under this project. GPS trackers are used for collecting coordinates (longitude and latitude) of the patients' house which is used to draw a line around the patient's house (covering about 75 meter radius or a total hamlet) through QGIS software and create a GPX file. In the intervention area, this GPX file is used to locate the patient's house and the area (about a 75-meter radius around the patient's house) to be screened with the help of an Android mobile set.

In intervention districts consenting incident leprosy patients are provided with a GPS tracker for a period of one week. The GPS tracker records a GPS point every three minutes. This allows us to identify on a satellite image such as Google Earth the exact location of the home of the patient. Then either a complete hamlet is outlined or a circle of 75 meters around the index case household is drawn. This is the area for door-to-door screening. Data on all individuals screened plus the geographic coordinates of households are recorded in an Android app. If secondary leprosy cases are found, the area to be screened is expanded accordingly.

So far till December 2022, a total of 518 leprosy patients have been enrolled – 273 in the control area and 224 in the intervention area since the starting of this project activities in March 2020. The figure shows that the intervention area, the main IECS activity, was affected more by COVID-19 than the control area both in 2020 and 2021. However, the IECS activities in 2022 were better than the previous two years. The preliminary result obtained till the end of 2022 shows that there is an increasing trend of leprosy case findings in intervention in 2022, however, till now almost no change has been observed in disability grade-2 or delay in diagnosis.

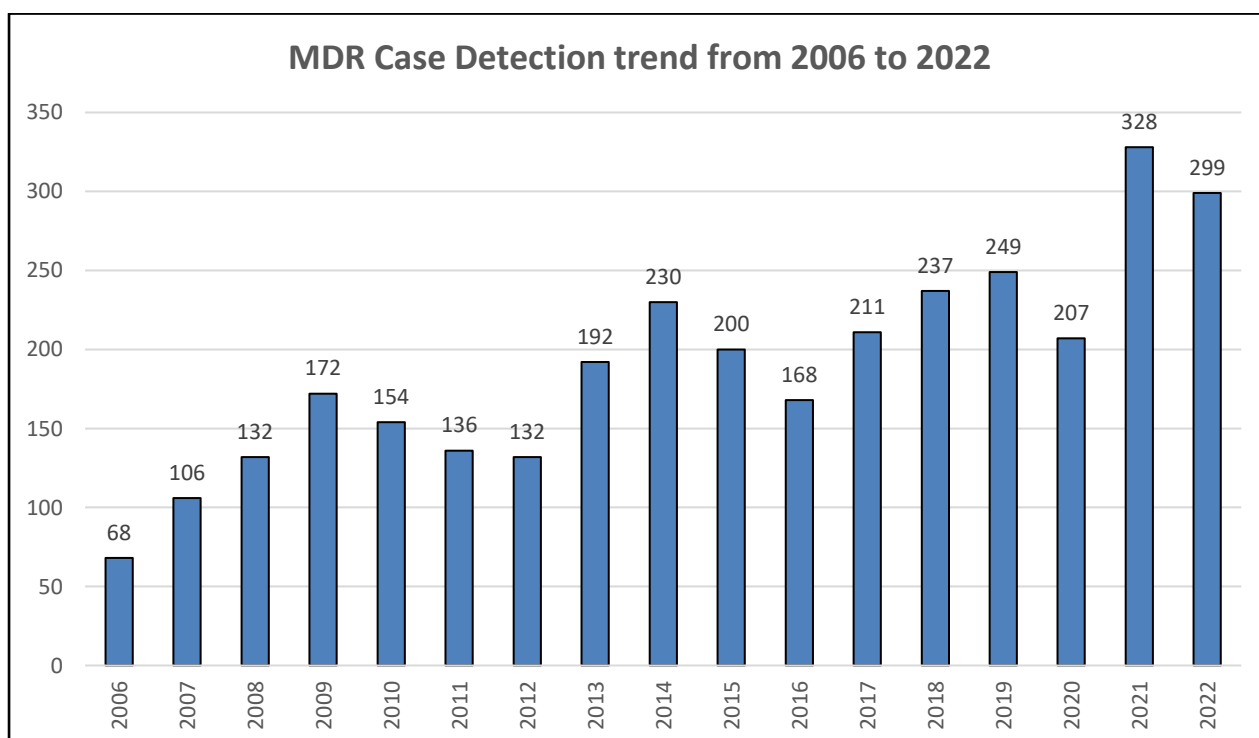
9.2 Diagnosis and Management of MDR/RR-TB

Damien Foundation received intensive support from the Mycobacteriology laboratory of the Institute of Tropical Medicine (ITM) in establishing a culture and DST laboratory and including all other technical supports for the development of a standardized regimen for MDR TB in Bangladesh.

Since the introduction of GeneXpert MTB/RIF for diagnosis of RR-TB and the WHO endorsement of DF-invented shorter treatment regimen for MDR/RR-TB, DF has been using the GeneXpert technology for the detection of RR-TB and the NTP adopted regimen under the programmatic conditions. However, DF continues to use slide DST to detect levofloxacin resistance among RR-TB patients besides sputum sample transportation to the LPA lab at NTRL. DF started a process of establishing a liquid culture DST lab along with GeneXpert MTB/XDR in 2022 but not there was a delay in various approval processes, so, this may be done in 2023.

In 2022, enrolment of MDR TB patients on Shorter Oral Treatment Regimen (SOTR) was initiated. Since 2005, a total of 2,979 MDR TB patients have been enrolled under 9-month shorter regimen up to 2021 and the enrollment during 2022 was 299 under MDR treatment out of which only 4 patients of Rajshahi region were on longer treatment regimen. Among them, 150 (50.17%) were from greater Dhaka division (that include Greater Mymensingh and Faridpur region of DF) and 149 (49.83%) from Rajshahi division (including DF Rajshahi project area). Male and female proportion among total MDR TB patients was 62% and 38% respectively. Less MDR case detection in 2022 than 2021 was due to cartridge shortage in 3rd & 4th quarter of 2022. Treatment success rate of MDR patients has been 75% in 2022, who started their treatment about 15 months back.

Graph 26: Enrollment of MDR TB patients since 2006



9.3 Drug resistance monitoring

The Damien Foundation monitored TB drug resistance in DF Bangladesh projects since the end of 1995, mainly through systematic referral of sputum from a return after loss to follow-up, relapse and failure patients, besides the random surveys done in 1995 and 2001. From May 2002 onwards, most primary cultures were handed over by Antwerp to the reference lab in Bangladesh (Netrakona). Netrakona lab started LJ DST in 2008 and since 2010 this lab has been performing LJ DST independently under the direct supervision and control of Antwerp lab (coordinating laboratory for supra-national TB reference laboratories). Selective strains are sent for quality control to Antwerp lab besides the routine participation in proficiency testing. The total number of inoculated cultures has risen considerably over the years. Annually 2,000 to 3,000 sputum samples are processed in the Netrakona lab, most of which belong to follow-up samples of MDR TB patients. Since 2004 following the introduction of rifampicin throughout intermittent regimen in the country, an increase in the MDR TB rate was observed. The analysis of trends in Rifampicin and Ofloxacin resistance incidence for all DF districts expressed per 1000 smear-positive patients (new+Rett.), show at least that there is no increase in rifampicin resistance over the last several years. Considering only RIF-resistant isolates, fluoroquinolone resistance has reached 20%, and the trend seems to be increasing slowly. Apart from MDR follow-up specimens, XDR and 2nd-line injectable resistance are virtually absent. Shipment of infectious samples including primary TB culture strains to the Antwerp lab has been very difficult. As such, only the ethanol-deactivated samples belonging to the MDR/RR-TB sputum samples have been sent to the Antwerp lab for drug resistance monitoring among MDR/RR-TB patients since 2000 (COVID-19 pandemic situation).

9.4 FDA staining and slide DST

DF used Fluorescein Di-Acetate (FDA) staining in detecting live AFB among routine microscopy-positive follow-up sputum samples presumptive of DR TB. FDA-positive sputum samples were then processed for slide culture DST which took about 14 days to know MDR/RR-TB status. This simple, cheap technology was used in DF project laboratories for early detection of MDR/RR-TB cases. Since the introduction of GeneXpert MT/RIF in 2012, DF has been using Xpert technology in detecting RR-TB cases. Slide DST has been performed to detect levofloxacin resistance among RR-TB cases as obtaining SL LPA result (for levofloxacin) from NTRL through sputum sample transportation often takes longer time.

Slide DST is thus currently performed to detect 2nd line drug resistance on all newly enrolled RR-TB patients' sputum samples.

10. Short-term new projects:

10.1 IDDS Project

In 2022, Damien Foundation in partnership with the Infectious Disease Detection and Surveillance (IDDS) project implemented by FHI360 expanded TB laboratory services by introducing "Truenat" molecular technology, a new technology for Bangladesh, in 18 remote sites in the DF working area. Moreover, another 20 Gene Xpert sites were provided additional human resources and logistic support to help in increased utilization of Gene Xpert machines and hence to increase TB case finding. Another technical focus of the project was to streamline the existing specimen collection and transportation process to improve timely access to second-line Line Probe Assay (LPA), liquid culture and drug susceptibility testing (DST), and testing resistance to Isoniazid and Fluoroquinolone (FLQ) services available at the national and divisional level reference laboratories.

The duration of the project was very short. It started in April 2022 and will end in August 2023. However, in 2022 following results have been achieved –

- Around 6,036,028 people, especially in remote areas including sub-districts and hard-to-reach areas, were brought under the coverage of molecular diagnostic test facility through 18 Truenat sites.
- A total of 1759 Drug Sensitive TB (DS-TB) patients and 38 Drug Resistant TB (DR-TB) patients were diagnosed during the project period through 18 Truenat machines.
- Orientation sessions and sensitization meetings were organized at each Truenat site for doctors, village doctors, GO-NGO authority and health workers and community people and, so far, oriented 380 GO-NGO health staff, 232 Medical doctors, 360 Village doctors and 170 Community health workers during the project period. Moreover, organized 90 campaign events at the community level at Truenat sites.
- Furthermore, provided 08 online UPS and 05 ACs in Gene Xpert sites as needed to keep the Gene Xpert machines functional.



10. Community Health Workers Orientation under IDDS project

10.2 Learning 360 project

The Learning 360 project was started in June 2022 in the DF area with funding and technical support from TLMI Bangladesh. The main objective of the project is to Empower leprosy people and their organization (including federation) and people affected by NTDs, and create an environment where disability and marginalization have increased accessibility to all levels of education, technical and vocational training for employment, decent jobs and entrepreneurship.

In 2022, this project was implemented in 6 upazilas (sub-districts) of three districts but there is a scope to expand to other areas in the next year. A total of 30 self-help groups and 6 federations formed, 90 children from leprosy affected and group members' families provided educational support, leadership and financial training was provided to leaders of 6 federations. Moreover, 3 training sessions for govt. health workers and 2 sessions for the members of civil society organizations also provided.

11. Human Resource Management & Development

11.1 Overview

To provide high quality healthcare service to the community and to ensure smooth functioning of 160 DF field clinics and 3 hospitals, a total of 667 local staff are involved. Out of this, 502 staffs (Medical Technologists/TLCA and Field Level Staffs) are directly involved in carrying out the field activities under the supervision of 35 Supervisors (TLCOs, Sr. TLCO, Monitoring & Evaluation Officers) and 7 Medical Doctors. Among the total staff 245 Field Level Staff are involved in community level active case finding activities. These Field Level Workers have been trained in identifying TB & Leprosy presumptive and in preparing smears. The male-female staff ratio of Damien Foundation Bangladesh is 2:1 in 2022.

11.2 Workshop/Training/orientation organized by Damien Foundation throughout the year 2022

To develop skills in different key staff, the DF Bangladesh organized several training/workshops in the year 2022. A detailed schedule of the workshop/training is given below:

Name of Training Course/Orientation	Participants	Organized by
Technical Assistance, Capacity Building Training Orientation on Latent TB Infection (LTBI) & TB Preventive Therapy (TPT)	Tota 257: PDs 5, MO/Doctors 8, M&EOs 5, TLCO 30, TLCA 94, MT Lab 31 & FLS 84	Organized by Damien Foundation at Jalchatra for 5 projects
Training on HIV screening test	FTLCP: Total 53 (TLCO 7, TLCA 33 MT-Lab 13)	Organized by Damien Foundation at FTLCP at the Project Office and field clinics
Financial Orientation of IDDS project	4 participants: AOs from TTLCP, MTLCP. NTLCP & RTLCP	Organized by IDDS at their Office in Gulshan, Dhaka
Refreshers Training on TB & TB services	RTLCP: (24 participants): MT-lab 8, TLCA/Sr. TLCA 7, FLS 9	Organized by Damien Foundation at RTLCP
Orientation sessions organized for community TB health workers	Participants 170 from TTLCP, MTLCP. NTLCP & RTLCP	Organized by the Damien Foundation under the IDDS project
Training sessions organized on TB screening and specimen referral for DF and GoB Staff	Participants 380 from TTLCP, MTLCP. NTLCP & RTLCP	Organized by the Damien Foundation under the IDDS project



11. Orientation for working group of Latent Tuberculosis Infection (LTBI)



12. DF lab staff training on Truenat testing



13. World TB Day Rally 2022 at Mymensingh



14. School Health Education at Paba, Rajshahi

11.3 Participation of DF staff in different in-country training courses in 2022

To develop skills in different fields, DF staff members attended different in-country training courses in 2022, organized by NTP/BRAC/ICDDR,B. A detailed schedule of the training courses and participants is given below:

Name of Training Course/Orientation/Workshop	Participants	Duration and Organized by
Training on all oral STR for the management of MDR-TB patients	FTLCP: (Total 32) TLCOs 8, TLCAs 15 & Field level staff 7 and MO & M&EO. RTLCP: (Total 9) TLCO 1, MT Lab 2, TLCA 3, FLS 3	NTP & ACTB project of ICDDR,B organized at different places.
Refresher training of Laboratory Technician on LED Microscopy/GeneXpert	FTLCP: MT-Lab 13, FLS 9, TLCA 4	Organized by BRAC at different places
Training on Logistics Management – e-LIMS & e-indenting	FTLCP: 5 TLCO MTLCP: (Total 7) MO, TLCO 01, TLCA/Sr. TLCA 5, NTLCP: (Total 13)MO 1, M&EO 1, TLCO 2, Sr. TLCA 9 & FLS1 RTLCP: (Total 14) TLCO 2, MT-lab 1, TLCA 5, FLS 6	Organized by NTP-MSH in Dhaka places
Orientation for the Working group in every treatment center of LTBI involving GOB and implementing partners at District level	FTLCP: (Total 30 staff) MT-Lab 2, TLCO 4, TLCA 16 & FLS 8	Organized by NTP at different places
Refresher training of Laboratory Technician on LED Microscopy/GeneXpert	FTLCP: MT-Lab 13, FLS 9, TLCA 4	Organized by BRAC at different places
Basic training on Truenat testing & implementation	MT Lab 18 of MTLCP, RTLCP and TTLCP and TLCA 6	Organized by IDDS/FHI360 and NTP at Mymensingh and Rajshahi
EP TB sample Testing in GeneXpert	MTLCP: MO-Hosp 1, MT-lab 1 NTLCP: MO 1, Sr. Lab Technician 2, MT-lab 2	Organized by IDDS/FHI360 at DF Jalchatra hospital training venue of TTLCP project
Training on COVID-19	MTLCP: TLCO 3, MT-lab 3, TLCA/Sr. TLCA 6	Organized by ICDDR,B at SK hospital, Mymensingh
Training on Gene Xpert	MTLCP: MT-lab 1	Organized by NTRL
ToT on Truenat Technology	NTLCP: Sr. Lab Technician 1	Organized by IDDS & NTRL
Training on DOT	RTLCP: (Total 18): MT lab 1, TLCA 8, FLS 9	Organized by ICDDR,B
Truenat EQA Training	RTLCP: MT-lab 1 MTLCP:	Organized by IDDS/FHI360 and NTP
TLCA training on increased utilization of Gene Xpert	TLCA 20 (from RTLCP, MTLCP, NTLCP & TTLCP)	Organized by IDDS & NTP
Data entry by Aspect (Gene-Expert)	RTLCP: MT lab 1, TLCA 2 MTLCP: MT lab 1	Organized by NTP

11.4 Participation in International training courses/meetings/conferences including webinar:

With a view to update knowledge and to share experience, DF Bangladesh staff members participate in different international training courses, meetings, conferences, workshops, seminars and also provided technical support by DF staff around the world. In 2022, the following DF staff attended two international events (1 conference and 1 workshop) as per schedule below:

Conference/ Meeting /Training	Participants/focal person	Place, Duration & Organized by
Data Analysis workshop	1. Dr. Dipak Kumar Biswas, Medical Coordinator and 2. Dr. Tonmoy Kumar Dutta, Medical Officer, MTLCP	Organized by Leprosy Research Initiative (LRI) in Kathmandu, Nepal from 07 to 12 September 2022
21st International Leprosy Congress 2022	Dr. Dipak Kumar Biswas, Medical Coordinator (<i>participated online from DF Bangladesh</i>)	Organized by ILEP (<i>International Federation of Anti-Leprosy Associations</i>) from 8-11 November 2022

12. Program Management and Coordination

At the project level, overall implementation management of the program is done through a team approach by the Management Team (MT). The Management Team is headed by the Project Director with the Hospital/Field Director, Medical Officer/consultant, M&E Officers/Field Coordinators/Senior TLCOs as MT members. The MT discusses the day-to-day management issues on a weekly basis and decides on the major issues, including issues referred from TLCO meetings, on a quarterly basis. They can also organize the MT meeting at any time to deal with urgent issues.

An important process of Program Management and Coordination is the regular monthly TLCO meeting in which all TLCOs, M&E Officers, Medical Officers, Field Directors and Project Directors attend. The TLCOs, in fact, serve as the main bridge between the project office and the field clinics besides the project-based supervisors (doctors and M&E officers).

In-depth analysis of monthly progress reports including performance, achievements, challenges and problems are done through the active participation of the participants present, and decisions are taken, recommendations are made or action plans are adapted to improve the situation. Dissemination of information and instruction from the national level, exchange of information between field clinic and project/DFCO, monthly clinic-wise planning, settlement of bills and collection of monthly running / different costs of the clinics take place in these monthly meetings.

In order to assess case detection and results of health education activities, a manual geographic information system is maintained in each Upazila. This information helps to identify areas with low-case findings and enables the staff to identify the barriers for that specific area and to act accordingly.

Information/instruction flow takes place mostly through emails between the national level office and the project offices on a regular basis. Besides, mobile phone communications are used for urgent matters between national and project levels, and field clinics. In this way, the national office is kept updated on what is happening at any point at the field level.

To facilitate better coordination representative/s from the Damien Foundation Coordinating Office (DFCO) in Dhaka also participated in some project-level meetings of Management Teams and TLCO meetings and guided them.

13. Monitoring, Supervision & Evaluation

13.1 Internal monitoring, supervision & Evaluation

Damien Foundation is maintaining its monitoring, supervision, and evaluation according to its Monitoring and Evaluation Plan. Monitoring of case detection, sputum conversion, results of treatment and quality control of smear microscopy are routinely done and evaluated quarterly. In addition, drug resistance surveillance is continued through routine sputum culture and DST of failure and relapse patients. Monitoring MDR TB treatment through regular updating of MDR files. The quarterly collected data from the projects are being used to monitor the performances. Cross-checking between different datasets allows assessing the quality of the data and feedback is given to the projects in order to improve the performances. Reports are cross-checked with registers and cards by supervisors during their supervision visits and feedback is given on the spot to the field staff.

Monitoring of activities and supportive supervision of staff is done through field visits by different levels of staff. At the field level, TB and leprosy Control Officers (TLCOs) are the first-line staff for monitoring of the project activities in 3-5 upazilas (Sub-districts) each. They supervise the first-line field staff, Medical Technologists (MT) laboratory, TB & Leprosy Control Assistants (TLCAs) / paramedics, Field Level Staff (FLS) and other community-based workers. TLCOs monitor all the activities implemented at the field level, provide need-based support and build/strengthen the capacity of the field staff for better implementation or improvement.

A TLCO regularly visits each TB clinic/lab/UHC under his/her mandate to monitor and supervise once a week and check/cross-check the clinic documents including registers, reports, treatment cards and other records. S/he monitors case detection, sputum conversion, treatment results, quality control of sputum microscopy, and drug resistance and failure and relapse patients. S/he also pays need-based visits to the community and discusses with patients, DOT providers and other stakeholders to cross-check status of DOT implementation, patient follow-up, social mobilization and presumptive referral activities. Monitoring and follow-up of project performances are carried out by analyzing the achievements realized, compared to the planned activities and results. Quarterly and annual reports are used to monitor the project's performance.

M&E Officer (M&EO) and Medical Officer (MO) pay monitoring visits to a TB clinic/lab/UHC once in 3 months (quarterly) as well as additional visits based on the needs of the program/project. During the monitoring visits they supervise the activities of TLCO and other field staff, guide them, provide technical supports and build or strengthen their capacities through on-the-job training.

The Project Director, who is the overall responsible person of a project, and the Field Director are the management staff at the project level of DF, and they also monitor field activities on a sample basis as well as according to the needs.

From the Damien Foundation Coordinating Office (DFCO), the Medical Coordinator and Programme Specialist pay need based visit the field especially for programmatic monitoring to provide professional and technical support. Finance Director (FD) and Finance Manager visit the field for need based monitoring purposes. The Country Representative of DF also pays visits based on the needs of project management and to discuss strategic issues of the TB & leprosy programme and overall management.

13.2 Supervision & monitoring from DF Head Quarter, Belgium:

Dr. Alberto Piubello, Medical Adviser and Dr. Nimer Ortuno Gutierrez, Medical Adviser and Research Coordinator, Damien Foundation Belgium visited Bangladesh activities in 2022. They visited different field clinics and hospitals of Damien Foundation (DF) and had meetings with DF Coordinating Office and Project teams.



15 & 16. Dr. Nimer & Dr. Alberto’s visit to DF Netrakona (above) and DF Mymensingh project (below)



13.3 Visit from Govt. Officials:

Besides internal monitoring DF projects were also visited by the health authorities from Government. As a part of monitoring from local govt. official, Civil Surgeon of Mymensingh district visited DF hospital.



17. Visit of DF Mymensingh project by Civil Surgeon



18. Visit of NTP representative (Dhaka Divisional Consultant) to DF Faridpur project

13.4 Visit of DGD officials from Belgium: Mrs Hilde Herssens, representative from DGD, Belgium visited DF Tangail and Mymensingh projects in Bangladesh in 2022. She visited DF clinic, hospital and project offices and had meetings with DF staff of respective projects.



19. Visit of Hilde Herssens from DGD, Belgium



20. Ninth International Joint Monitoring visit to DF project

Government Health Infrastructure in DF-areas

Annex Table-1

District / project	Square KM	Population	Hospitals	Upazila Health Complexes	Health Centres	TB Clinics	Leprosy Control Assistants	TB beds	Leprosy beds
Tangail Project	6,810	7,968,424	5	24	1,124	2	24	0	0
Tangail	3,414	4,003,321	2	12	569	1	12	0	0
Jamalpur	2,032	2,513,613	2	7	346	1	7	0	0
Sherpur	1,364	1,451,490	1	5	209	0	5	0	0
Mymensingh Project.	7,052	9,190,560	4	24	958	2	15	48	0
Mymensingh	4,363	5,888,114	2	12	593	1	6	48	0
Kishoreganj	2,689	3,302,446	2	12	365	1	9	0	0
Netrakona Project.	2,810	2,524,591	1	9	352	0	7	0	0
Netrakona	2,810	2,524,591	1	9	352	0	7	0	0
Rajshahi Project	7,546	7,694,680	14	25	796	2	24	150	0
Rajshahi	2,407	2,918,234	9	9	436	1	8	150	0
Naogaon	3,436	2,848,458	4	11	230	0	11	0	0
Nawabganj	1,703	1,927,988	1	5	130	1	5	0	0
Faridpur Project	7,008	6,876,758	7	24	1,159	3	21	24	0
Faridpur	2,073	2,091,248	3	8	292	1	7	24	0
Gopalganj	1,490	1,194,574	1	4	275	1	3	0	0
Madaripur	1,145	1,194,824	1	3	206	1	3	0	0
Rajbari	1,119	1,155,315	1	4	186	0	4	0	0
Shariatpur	1,181	1,240,798	1	5	200	0	4	0	0
Total DF	31,226	34,255,013	31	106	4,389	9	91	222	0

Supportive activities over 2022

Hospitals, physiotherapy, shoemaking and health education

Supportive activities over 2022
Hospitals, physiotherapy, shoemaking and health education

Annex Table - 2

Project	no. of beds on		Hospitalizations: no. of bed-days for			Average bed occupation	no. of Lep. patients admitted		TB admissions for		OPD consultations
	1/1/2022	12/31/2022	Leprosy	TB	General		surgery / ulcer	Reaction / other	Retreatments	Others	
TTLCP	95	95	1,936	7,714	16	28%	31	18	75	338	23,383
MTLCP	100	100	5,332	3,587	0	24%	109	45	85	83	0
NTLCP	60	60	1,456	4,793	0	29%	64	17	58	328	0
RTLCP	No hospital, not applicable										
FTLCP	No hospital, not applicable										
Total projects	255	255	8,724	16,094	16	27%	204	80	218	749	23,383

Project	Shoes made (pairs)		Plastic / Spring shoes supplied	HE activities: no. of sessions				Training / Orientation / ref. / seminar: no. of sessions for						Skismears		Physiotherapy sessions
	MCR	Plastazote		Miking	Folk song	Community ^{*1}	Schools	GP / MO	GoB H & FP staff	VD / FDP ^{*2}	TB club	Seminar / workshops ^{*3}	Opinion leader / scout / NGO ^{*4}	Total done	Positives	
TTLCP	514	3	13	45	0	17,297	0	5	7	18	0	5	17	82	8	488
MTLCP ^{*5}	1,605	1	3	170	0	155,410	245	3	0	31	0	0	718	482	60	398
NTLCP	0	0	0	0	0	38,736	201	4	0	19	0	1	110	22	3	0
RTLCP	0	0	0	296	0	473,827	412	1	0	26	0	0	11	441	13	0
FTLCP	0	0	0	65	0	153,424	652	1	0	6	0	0	11	15	2	0
Total projects	2,119	4	16	576	0	838,694	1,510	14	7	100	0	6	867	1042	86	886

^{*1} Community HE : in the villages, OPD HE, UHC indoor HE and organisation (microcredit or other groups), informal group HE during field visit, HE with the patient's attendants etc.

^{*2} Village Doctors, Fixed DOT provider and Pharmacy holders training.

^{*3} Seminar in Medical college, sadar hospital

^{*4} Opinion leader, scout and girls guide, NGO workers, review workshop at Upazilla level and DOT committee meeting.

^{*5} MTLCP made shoe for NTLCP, FTLCP and RTLCP.

Personnel and infrastructure over 2022 Numbers of personnel, transport, equipment

Personnel and infrastructure over 2022
Numbers of personnel, transport, equipment

Annex Table - 3

Department: Administrative + Hospital													
Project	Personnel						Transport			Operation	X-Ray	Microscopes	Shoe
	Doctors	Paramedical	Administrative	Support/Techn.	MT Lab	Others	Cars	Motorcycles	Bicycles	Theatre (OT)	Units	in use	workshops
TTLCP	2	19	4	19	2	0	1	1	2	1 sterile	1	2	1
MTLCP	1	13	3	16	2	0	1	16		1 septic	1	2	1
NTLCP	0	7	1	13	2	0	1	0	0	1 septic	0	2	0
RTLCP	0	0	11	0	2	0	2	8	1	not applicable, no hospital		0	0
FTLCP	0	0	0	0	0	0	0	0	0	not applicable, no hospital		0	0
DFCO	2	0	4	0	0	0	0	0	0	not applicable, no hospital		0	0
Total projects	5	39	23	48	8	0	5	25	3	3	2	6	2

Department: Field													
Project	Personnel							Transport			Microscopes	Combined	
	Doctors	M&EO	TLCO	TLCA/ATLCA	MT Lab	Field Workers	Clinic Assis.	Cars	Motorcycles	Bicycles	in use	TB/Lep clinic	Leprosy clinic
TTLCP	1	1	6	49	17	16	0	1	11	70	34	34	5
MTLCP	1	1	7	18	11	29	0	1	10	57	34	34	6
NTLCP	1	1	2	17	6	14	0	0	3	22	12	12	0
RTLCP	1	1	7	13	19	78	0	2	13	42	33	33	0
FTLCP	1	1	8	21	11	73	0	2	9	64	40	38	0
DFCO	0	0	0	0	0	0	0	2	0	0	0	0	0
Total projects	5	5	30	118	64	210	0	8	46	255	153	151	11

CONSOLIDATED REPORT, LEPROSY 2022
Evolution of case-finding and caseload

Annex Table-4

Year	Project	Districts & population	NUMBERS						RATES				
			New cases			New children	Disabled new cases	On treatment at end (Year)	New Lepr. / 100,000 pop.	Lep. preval. / 10,000 pop.	Proportion MB new Lep.	Prop. new children L.	Prop. new disabled L.
			PB	MB	Total								
2015	TTLCP	TG+JM+SP 7,519,262	36	39	75	2	10	59	1.00	0.08	52%	3%	13%
	MTLCP	MM + KS 8,433,791	41	38	79	7	9	68	0.94	0.08	48%	9%	11%
	NTLCP	Netrakona 2,333,286	3	10	13	1	4	11	0.56	0.05	77%	8%	31%
	RTLCP	RA + NG + NW 7,161,268	76	89	165	4	22	135	2.30	0.19	54%	2%	13%
	FTLCP	FP+GP+MP+RJ+SR 6,613,354	17	23	40	2	2	37	0.60	0.06	58%	5%	5%
	TOTAL	32,060,961	173	199	372	16	47	310	1.16	0.10	53%	4%	13%
2016	TTLCP	TG+JM+SP 7,586,936	16	31	47	1	6	39	0.62	0.05	66%	2%	13%
	MTLCP	MM + KS 8,540,798	34	39	73	7	14	62	0.85	0.07	53%	10%	19%
	NTLCP	Netrakona 2,359,995	4	9	13	0	3	9	0.55	0.04	69%	0%	23%
	RTLCP	RA + NG + NW 7,188,760	86	64	150	13	18	140	2.09	0.19	43%	9%	12%
	FTLCP	FP+GP+MP+RJ+SR 6,653,417	11	10	21	1	4	18	0.32	0.03	48%	5%	19%
	TOTAL	32,329,907	151	153	304	22	45	268	0.94	0.08	50%	7%	15%
2017	TTLCP	TG+JM+SP 7,649,200	31	36	67	3	6	51	0.88	0.07	54%	4%	9%
	MTLCP	MM + KS 8,645,801	34	29	63	4	8	51	0.73	0.06	46%	6%	13%
	NTLCP	Netrakona 2,386,663	13	13	26	1	9	25	1.09	0.10	50%	4%	35%
	RTLCP	RA + NG + NW 7,270,597	202	101	303	46	16	220	4.17	0.30	33%	15%	5%
	FTLCP	FP+GP+MP+RJ+SR 6,691,233	3	13	16	0	3	8	0.24	0.01	81%	0%	19%
	TOTAL	32,643,494	283	192	475	54	42	355	1.46	0.11	40%	11%	9%
2018	TTLCP	TG+JM+SP 7,711,985	36	44	80	8	25	65	1.04	0.08	55%	10%	31%
	MTLCP	MM + KS 8,752,099	35	31	66	1	16	57	0.75	0.07	47%	2%	24%
	NTLCP	Netrakona 2,413,632	11	22	33	1	16	28	1.37	0.12	67%	3%	48%
	RTLCP	RA + NG + NW 7,353,411	130	84	214	18	40	165	2.91	0.22	39%	8%	19%
	FTLCP	FP+GP+MP+RJ+SR 6,729,346	7	9	16	2	9	12	0.24	0.02	56%	13%	56%
	TOTAL	32,960,473	219	190	409	30	51	327	1.24	0.10	46%	7%	26%
2019	TTLCP	TG+JM+SP 7,775,296	19	25	44	7	5	40	0.57	0.05	57%	16%	11%
	MTLCP	MM + KS 8,859,707	30	33	63	3	9	44	0.71	0.05	52%	5%	14%
	NTLCP	Netrakona 2,440,906	5	11	16	0	6	10	0.66	0.04	69%	0%	38%
	RTLCP	RA + NG + NW 7,437,214	71	67	138	18	18	92	1.86	0.12	49%	13%	13%
	FTLCP	FP+GP+MP+RJ+SR 6,767,759	5	9	14	0	3	10	0.21	0.01	64%	0%	21%
	TOTAL	33,280,882	130	145	275	28	41	196	0.83	0.06	53%	10%	15%
2020	TTLCP	TG+JM+SP 7,839,136	4	19	23	3	3	21	0.29	0.03	83%	13%	13%
	MTLCP	MM + KS 8,968,642	22	25	47	7	5	34	0.52	0.04	53%	15%	11%
	NTLCP	Netrakona 2,468,488	8	9	17	1	1	13	0.69	0.05	53%	6%	6%
	RTLCP	RA + NG + NW 7,522,018	48	41	89	7	4	74	1.18	0.10	46%	8%	4%
	FTLCP	FP+GP+MP+RJ+SR 6,806,474	8	5	13	1	1	10	0.19	0.01	38%	8%	8%
	TOTAL	33,604,759	90	99	189	19	14	152	0.56	0.05	52%	10%	7%
2021	TTLCP	TG+JM+SP 7,903,511	12	20	32	2	7	27	0.40	0.03	63%	6%	22%
	MTLCP	MM + KS 9,078,921	23	21	44	1	5	39	0.48	0.04	48%	2%	11%
	NTLCP	Netrakona 2,496,382	5	8	13	0	5	12	0.52	0.05	62%	0%	38%
	RTLCP	RA + NG + NW 7,607,836	25	34	59	12	2	55	0.78	0.07	58%	20%	3%
	FTLCP	FP+GP+MP+RJ+SR 6,845,495	7	4	11	1	1	8	0.16	0.01	36%	9%	9%
	TOTAL	33,932,145	72	87	159	16	20	141	0.47	0.04	55%	10%	13%
2022	TTLCP	TG+JM+SP 7,968,424	11	25	36	2	8	32	0.45	0.05	69%	6%	22%
	MTLCP	MM + KS 9,190,560	28	26	54	5	4	42	0.59	0.06	48%	9%	7%
	NTLCP	Netrakona 2,524,591	11	11	22	2	3	13	0.87	0.09	50%	9%	14%
	RTLCP	RA + NG + NW 7,694,680	47	59	106	11	4	100	0.38	0.14	56%	10%	4%
	FTLCP	FP+GP+MP+RJ+SR 6,876,758	2	3	5	0	1	4	0.07	0.01	60%	0%	20%
	TOTAL	34,255,013	99	124	223	20	20	191	0.65	0.07	56%	9%	9%

CONSOLIDATED REPORT, LEPROSY 2022
Case loading and results of treatment, workload

Annex Table - 5

Project	District	PB/MB	On treatment on 31/12/2022	Completed MDT	For care on 31/12/2022	MDT Relapse over 2022	Outcome of treatment(cohort: PB 2021 & MB 2020 in %)	
							completed	defaulted
TTLCP	Tangail	PB	1	2	4	0	100%	0%
		MB	5	5	77	0	100%	0%
	Jamalpur	PB	4	2	11	0	100%	0%
		MB	12	11	111	0	89%	11%
	Sherpur	PB	2	6	40	0	89%	11%
		MB	8	5	190	0	100%	0%
	TOTAL PROJECT	PB	7	10	55	0	92%	8%
MB		25	21	378	0	94%	6%	
TOTAL		32	31	433	0	93%	7%	
MTLCP	Mymensingh	PB	14	20	70	0	100%	0%
		MB	16	19	229	0	86%	14%
	Kishoreganj	PB	2	5	31	0	100%	0%
		MB	10	6	103	0	75%	25%
	TOTAL PROJECT	PB	16	25	101	0	100%	0%
		MB	26	25	332	0	85%	15%
TOTAL		42	50	433	0	92%	8%	
NTLCP	Netrakona	PB	3	11	28	0	100%	0%
		MB	10	10	119	0	100%	0%
		TOTAL	13	21	147	0	100%	0%
RTLCP	Naogaon	PB	16	11	5	0	100%	0%
		MB	27	21	107	0	100%	0%
	Nawabganj	PB	4	4	1	0	100%	0%
		MB	13	9	72	0	92%	8%
	Rajshahi	PB	19	9	9	0	100%	0%
		MB	21	6	65	1	100%	0%
	TOTAL PROJECT	PB	39	24	15	0	100%	0%
MB		61	36	244	1	98%	3%	
TOTAL		100	60	259	1	98%	2%	
FTLCP	Faridpur	PB	0	0	1	0	0%	0%
		MB	1	0	33	0	0%	0%
	Gopalganj	PB	0	0	0	0	0%	0%
		MB	0	0	24	0	0%	0%
	Madaripur	PB	0	1	3	0	0%	0%
		MB	0	0	30	0	100%	0%
	Rajbari	PB	0	0	8	0	0%	0%
		MB	0	1	19	0	0%	0%
	Sariatpur	PB	1	4	12	0	100%	0%
		MB	2	2	45	0	100%	0%
	TOTAL PROJECT	PB	1	5	24	0	100%	0%
MB		3	3	151	0	80%	20%	
TOTAL		4	8	175	0	92%	8%	
ALL PROJECTS		PB	66	75	223	0	99%	1%
		MB	125	95	1224	1	93%	7%
		TOTAL	191	170	1447	1	96%	4%

CONSOLIDATED REPORT, LEPROSY 2022
Evolution of case-finding and caseload

Annex Table-6

Project	Districts & population	NUMBERS								RATES						
		New cases PB	MB	Total	New child	New Women	New Gr. 2 Disab.	SSS+ve MB	UT at end	New per 100,000 pop.	Preval. per 10,000 pop.	New (%) MB	Women %	(%) SSS+ve among MB	New (%) Child	New Gr. 2 (%) Disab.
TTLCP	Tangail 4,003,321	2	5	7	0	1	0	3	6	0.2	0.0	71.4	14%	60.0	0.0	0.0
	Jamalpur 2,513,613	5	12	17	0	7	5	2	16	0.7	0.1	70.6	41%	16.7	0.0	29.4
	Sherpur 1,451,490	4	8	12	2	2	3	0	10	0.8	0.1	66.7	17%	0.0	16.7	25.0
	Total project 7,968,424	11	25	36	2	10	8	5	32	0.5	0.0	69.4	28%	20.0	5.6	22.2
MTLCP	Mymensingh 5,888,114	22	16	38	4	15	4	7	30	0.6	0.1	42.1	39%	43.8	10.5	10.5
	Kishoregonj 3,302,446	6	10	16	1	8	1	5	12	0.5	0.0	62.5	50%	50.0	6.3	6.3
	Total project 9,190,560	28	26	54	5	23	5	12	42	0.6	0.0	48.1	43%	46.2	9.3	9.3
NTLCP	Netrakona/Projec 2,524,591	11	11	22	2	9	3	3	13	0.9	0.1	50.0	41%	27.3	9.1	13.6
RTLCP	Naogaon 2,848,458	22	27	49	5	20	1	6	43	1.7	0.2	55.1	41%	22.2	10.2	2.0
	Naw abganj 1,927,988	5	12	17	2	5	1	1	17	0.9	0.1	70.6	29%	8.3	11.8	5.9
	Rajshahi 2,918,234	20	20	40	4	13	2	3	40	1.4	0.1	50.0	33%	15.0	10.0	5.0
	Total project 7,694,680	47	59	106	11	38	4	10	100	1.4	0.1	55.7	36%	16.9	10.4	3.8
FTLCP	Faridpur 2,091,248	0	1	1	0	0	1	1	1	0.0	0.0	0.0	0%	100.0	0.0	100.0
	Gopalganj 1,194,574	0	0	0	0	0	0	0	0	0.0	0.0	0.0	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!
	Madaripur 1,194,824	0	0	0	0	0	0	0	0	0.0	0.0	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!
	Rajbari 1,155,315	0	0	0	0	0	0	0	0	0.0	0.0	0.0	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!
	Sariatpur 1,240,798	2	2	4	0	2	0	0	3	0.3	0.0	50.0	50%	0.0	0.0	0.0
	Total project 6,876,758	2	3	5	0	2	1	1	4	0.1	0.0	60.0	40%	33.3	0.0	20.0
All project	Total population 34,255,013	99	124	223	20	82	21	31	191	0.7	0.1	55.6	37%	25.0	9.0	9.4

TUBERCULOSIS: Evolution of case findings and caseload 2022

Annex Table-7

Year	Project	Districts & population	All TB patients	PBC	No smear done PTB	PCD & EP	Proportion PBC / total
2015	TTLCP	TG + JM + DEPZ 6,176,815	6,044	3,501	0	2,543	58%
	MTLCP	MM + KS 6,112,926	7,098	3,898	0	3,200	55%
	NTLCP	Netrakona 2,333,286	2,734	1,540	0	1,194	56%
	RTLCP	RA + NG + NW 6,875,746	4,658	2,358	0	2,300	51%
	FTLCP	FP+GP+MP+RJ+SR 6,613,354	4,204	2,045	0	2,159	49%
	TOTAL	28,112,127	24,738	13,342	0	11,396	54%
2016	TTLCP	TG+JM+DEPZ 6,235,784	5,766	3,353	0	2,413	58%
	MTLCP	MM + KS 6,189,302	7,451	4,243	0	3,208	57%
	NTLCP	Netrakona 2,359,995	2,585	1,569	0	1,016	61%
	RTLCP	RA + NG + NW 6,896,330	4,393	2,292	0	2,101	52%
	FTLCP	FP+GP+MP+RJ+SR 6,653,417	4,105	2,056	0	2,049	50%
	TOTAL	28,334,828	24,300	13,513	0	10,787	56%
2017	TTLCP	TG+JM+DEPZ 6,239,782	5,906	3,391	0	2,515	57%
	MTLCP	MM + KS 6,254,078	7,905	4,403	0	3,502	56%
	NTLCP	Netrakona 2,386,663	2,724	1,716	0	1,008	63%
	RTLCP	RA + NG + NW 6,781,245	4,812	2,498	0	2,314	52%
	FTLCP	FP+GP+MP+RJ+SR 6,691,233	4,286	2,096	0	2,190	49%
	TOTAL	28,353,001	25,633	14,104	0	11,529	55%
2018	TTLCP	TG+JM+DEPZ 6,294,251	6,531	3,114	0	3,417	48%
	MTLCP	MM + KS 6,329,761	7,974	4,073	0	3,901	51%
	NTLCP	Netrakona 2,413,632	3,094	1,589	0	1,505	51%
	RTLCP	RA + NG + NW 6,857,942	5,302	2,463	0	2,839	46%
	FTLCP	FP+GP+MP+RJ+SR 6,729,346	4,774	2,012	0	2,762	42%
	TOTAL	28,624,932	27,675	13,251	0	14,424	48%
2019	TTLCP	TG+JM+DEPZ 6,419,197	7,221	3,353	0	3,868	46%
	MTLCP	MM + KS 6,406,364	8,361	4,115	0	4,246	49%
	NTLCP	Netrakona 2,440,906	3,308	1,474	0	1,834	45%
	RTLCP	RA + NG + NW 6,985,551	6,060	2,756	0	3,304	45%
	FTLCP	FP+GP+MP+RJ+SR 6,767,759	5,485	2,022	0	3,463	37%
	TOTAL	29,019,777	30,435	13,720	0	16,715	45%
2020	TTLCP	TG+JM+DEPZ 6,474,624	5,703	2,635	0	3,068	46%
	MTLCP	MM + KS 6,483,896	7,365	3,825	0	3,540	52%
	NTLCP	Netrakona 2,468,488	2,516	1,183	0	1,333	47%
	RTLCP	RA + NG + NW 7,064,085	5,048	2,657	0	2,391	53%
	FTLCP	FP+GP+MP+RJ+SR 6,806,474	3,883	1,736	0	2,147	45%
	TOTAL	29,297,567	24,515	12,036	0	12,479	49%
2021	TTLCP	TG+JM+DEPZ 6,530,534	8,723	3,987	0	4,736	46%
	MTLCP	MM + KS 6,562,370	9,411	5,037	0	4,374	54%
	NTLCP	Netrakona 2,496,382	3,085	1,548	0	1,537	50%
	RTLCP	RA + NG + NW 7,143,553	6,247	3,605	0	2,642	58%
	FTLCP	FP+GP+MP+RJ+SR 6,845,495	5,061	2,135	0	2,926	42%
	TOTAL	29,578,335	32,527	16,312	0	16,215	50%
2022	TTLCP	TG+JM+DEPZ 6,590,934	9,684	4,120	0	5,564	43%
	MTLCP	MM + KS 6,641,797	10,713	5,145	0	5,568	48%
	NTLCP	Netrakona 2,524,591	3,304	1,453	0	1,851	44%
	RTLCP	RA + NG + NW 7,173,969	7,286	3,568	0	3,718	49%
	FTLCP	FP+GP+MP+RJ+SR 6,876,758	5,429	2,153	0	3,276	40%
	TOTAL	29,808,050	36,416	16,439	0	19,977	45%

TB case notification, 2022

Annex Table-8

District	Population covered	Pulmonary Bacteriologically Confirmed (PBC) TB Patients					Pulmonary Clinically Diagnosed (PCD) New	Extra-pulmonary (EP) New	PCD & EP not New	Total registration	% of new PBC patients	Notification rate/ 100,000 pop. new PBC	Notification rate/100,000 pop. all forms of TB
		New cases	Relapses	Failures	RALTFU	Other							
Faridpur	2,091,248	605	55	9	0	5	311	516	76	1577	38%	29	75
Rajbari	1,155,315	217	25	3	1	5	78	220	29	578	38%	19	50
Madaripur	1,194,824	310	33	3	1	6	245	328	38	964	32%	26	81
Gopalganj	1,194,574	330	35	2	0	3	234	304	48	956	35%	28	80
Shariatpur	1,240,798	458	38	5	0	4	456	337	56	1354	34%	37	109
FTLCP	6,876,758	1920	186	22	2	23	1324	1705	247	5429	35%	28	79
Naogaon	2,848,458	1581	93	17	4	2	611	822	118	3248	49%	56	114
Nawabganj	1,927,988	601	64	6	0	5	267	545	60	1548	39%	31	80
Rajshahi	2,397,523	1080	63	11	2	3	310	854	45	2368	46%	45	99
RMCH	50,000	26	5	3	0	2	3	80	3	122	21%	52	244
RTLCP	7,173,969	3288	225	37	6	12	1191	2301	226	7286	45%	46	102
Tangail	4,003,321	2243	180	29	2	3	2,050	1199	390	6096	37%	56	152
Jamalpur	2,513,613	1407	116	47	2	1	947	683	189	3392	41%	56	135
DEPZ	74,000	83	5	2	0	0	22	69	15	196	42%	112	265
TTLCP	6,590,934	3733	301	78	4	4	3019	1951	594	9684	39%	57	147
NLCP	2,524,591	1300	138	12	2	1	913	759	179	3304	39%	51	131
Mymensingh	3,339,351	1933	181	33	2	7	920	1173	359	4608	42%	58	138
Kishoreganj	3,302,446	2818	156	12	3	0	1,411	1411	294	6105	46%	85	185
MTLCP	6,641,797	4,751	337	45	5	7	2,331	2,584	653	10,713	44%	72	161
DF Bangladesh	29,808,050	14,992	1,187	194	19	47	8,778	9,300	1,899	36,416	41%	50	122

Note: RL = Relapses, FL = Failures, RALTU = Retrun after loss to follow-up

Treatment outcomes for new smear positive cases, 2021 cohort

Annex Table-9

Table - 9

Treatment outcomes for new bacteriologically confirmed cases, 2021 cohort

Districts	Registered	Treatment outcomes (%)						Treatment success (%)
		Cured + Completed	Died	Failed	Lost to follow up	Transferred out / Not. Evaluated	Not evaluated	
NETRAKONA	1365	94%	4%	2%	0%	0%	0%	94%
TANGAIL	2215	95%	4%	1%	0%	0%	0%	95%
DEPZ	56	91%	0%	2%	5%	2%	0%	91%
JAMALPUR	1372	92%	4%	3%	1%	0%	0%	92%
MYMENSINGH	1819	92%	5%	2%	1%	0%	0%	92%
KISHOREGANJ	2767	97%	2%	1%	0%	0%	0%	97%
NAOGAON	1611	94%	4%	1%	1%	0%	0%	94%
NAWABGANJ	518	94%	6%	0%	0%	0%	0%	94%
RAJSHAHI	1209	91%	5%	1%	2%	0%	0%	91%
RMCH	28	64%	0%	1%	0%	0%	0%	64%
FARIDPUR	546	90%	8%	1%	1%	0%	0%	90%
GOPALGANJ	347	95%	5%	1%	0%	0%	0%	95%
MADARIPUR	319	93%	4%	1%	2%	0%	0%	93%
RAJBARI	233	94%	3%	3%	1%	0%	0%	94%
SARIATPUR	450	95%	4%	1%	0%	0%	0%	95%
TOTAL DF	14855	93.7%	4.0%	1.3%	0.7%	0.1%	0.0%	93.7%

Treatment outcomes for re-treatment smear positive cases, 2021 cohort

Annex Table -10

Table - 10

Treatment outcomes for re-treatment bacteriologically confirmed cases, 2021 cohort

Districts	Registered	Treatment outcomes (%)						treatment success (%)
		cured	died	failed	Lost to follow up	transferred	not evaluated	
NETRAKONA	183	93%	4%	1%	2%	0%	0%	93%
TANGAIL	184	96%	4%	0%	1%	0%	0%	96%
DEPZ	5	80%	0%	20%	0%	0%	0%	80%
JAMALPUR	155	85%	3%	5%	6%	0%	0%	85%
MYMENSINGH	238	86%	7%	3%	3%	1%	0%	86%
KISHOREGANJ	213	92%	6%	0%	1%	0%	0%	92%
NAOGAON	89	93%	3%	2%	1%	0%	0%	93%
NAWABGANJ	69	97%	3%	0%	0%	0%	0%	97%
RAJSHAHI	63	89%	3%	3%	5%	0%	0%	89%
RMCH	16	69%	0%	5%	3%	0%	0%	69%
FARIDPUR	67	88%	7%	1%	3%	0%	0%	88%
GOPALGANJ	48	98%	2%	0%	0%	0%	0%	98%
MADARIPUR	53	89%	4%	2%	6%	0%	0%	89%
RAJBARI	34	91%	6%	0%	3%	0%	0%	91%
SARIATPUR	38	97%	3%	0%	0%	0%	0%	97%
TOTAL DF	1455	91%	4.5%	1.9%	2.5%	0.2%	0.1%	90.7%

Table: Summary results of External Quality Assurance by project 2022

Annex Table 11

Table - 11

Table: Summary results of External Quality Assessment by project 2022

PROJECTS	Nr. Of Microscopy centres	Routine smears examined (nos.)			Smears rechecked by EQA (nos.)			EQA rechecking results					
		Total	% positive	% scanty	Pos.	Scanty	Neg.	Nr. HFP slides	Nr. HFN slides	Nr. Of centres with at least 1 HFP	Nr. Of centres with at least 1 HFN	HFP%	HFN%
FTLCP	38	193,767	1.0%	0.4%	86	39	2132	2	0	2	0	1.60%	0.00%
MTLCP	34	238,509	2.4%	1.0%	177	43	1869	3	4	3	4	1.36%	0.21%
NTLCP	12	81,062	1.7%	0.6%	61	15	642	1	0	1	0	1.32%	0.00%
RTLCP	32	168,164	1.5%	1.4%	163	62	1696	7	2	7	2	3.11%	0.12%
TTLCP	34	165,251	2.4%	1.1%	99	26	1947	2	1	2	1	1.60%	0.05%
DF Total	150	846,753	1.83%	0.90%	586	185	8286	15	7	15	7	2.56%	0.08%

* Jalchatra & Mymensingh hospital labs are included in 150 centres

**Damien Foundation Bangladesh
Quality Control of Skin-smears: 2022**

Annex Table 12

Project	Total smears checked in QC			Rates of false results				Proportions registered results					Neg.(among all smears)	
	Pos.		Neg.	False positives		False negatives		Quantification		Among all positives				
	+1	+2 to +6		+1	+2 to +6	+1	+2 to +6	1 log	>1 log	+1/+2	+3/+4	+5/+6		
TTLCP	0	0	45	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	100%
MTLCP	0	12	36	0%	0%	0%	0%	0%	0%	0%	33%	67%	75%	
NTLCP	2	2	20	0%	0%	0%	0%	0%	0%	100%	0%	0%	83%	
RTLCP	0	0	42	0%	0%	0%	0%	0%	0%	0%	0%	0%	100%	
FTLCP	3	3	15	0%	0%	0%	0%	67%	0%	50%	33%	17%	71%	
DF TOTAL	5	17	158	0%	0%	0%	0%	12%	0%	33%	43%	24%	88%	

Pictures of some activities



21 & 22. Examination of contacts of leprosy patients (contact survey)



23. Clinic DOT at DF Centre



24. Truenat laboratory



25. Truenat laboratory visit by USAID team



26. TLCA Training at Jalchatra Hospital Training Centre



27. Tuberculin Skin test at DF clinic



28. School Health Education at Chapai Nawabganj



29. Sputum Collection Centre at Mymensingh



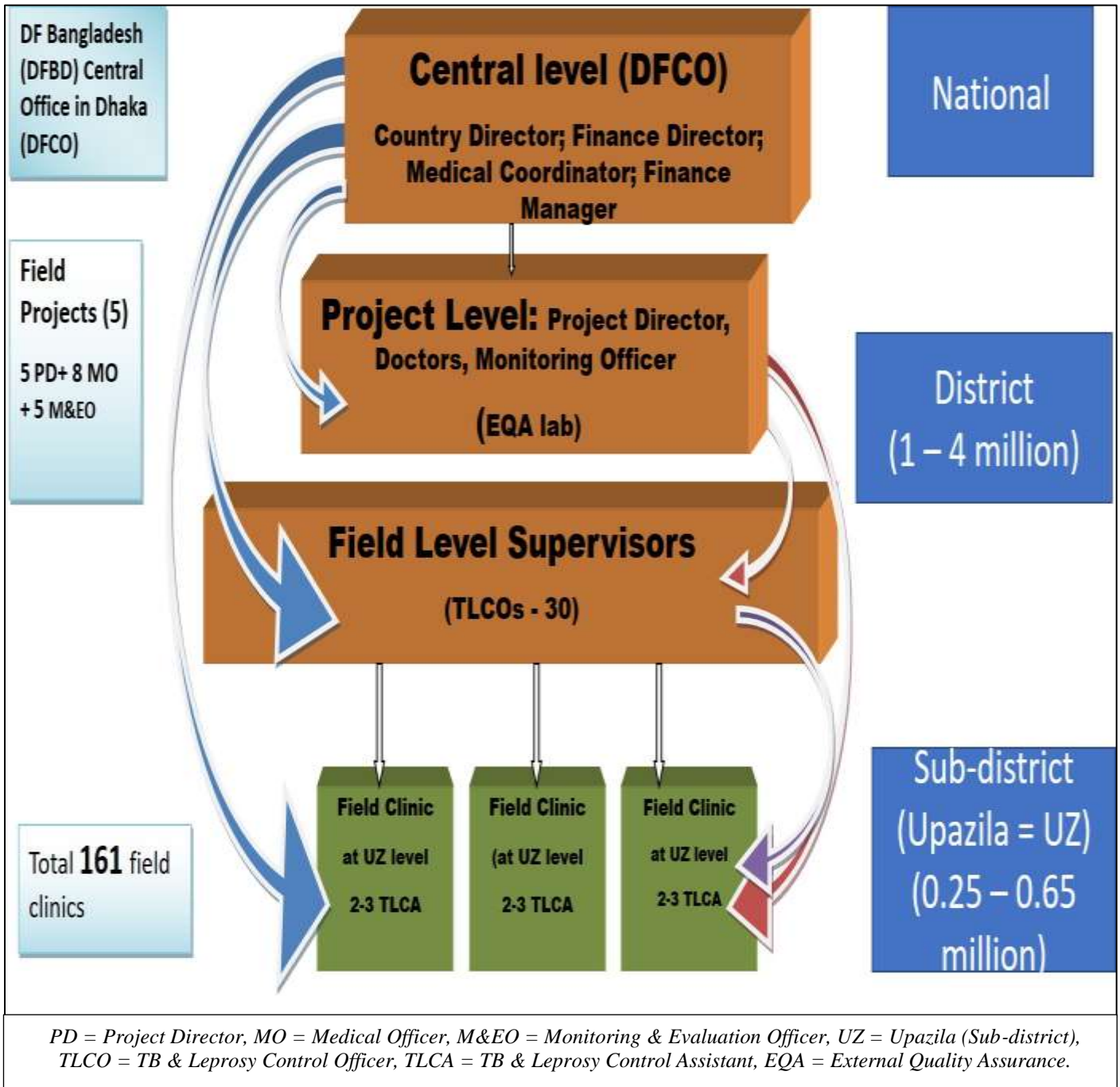
30. Home based health education



31. Patient counselling at DF clinic

Damien Foundation Bangladesh

Monitoring and Supervision Structure



Short forms of names of districts in DF area:

FP = Faridpur, RJ = Rajbari, GP = Gopalganj, MP = Madaripur, SR = Shariatpur,
 RA = Rajshahi, NG = Naogaon, NW = Nawabganj, NK = Netrakona, MM = Mymensingh,
 KS = Kishoreganj, TG = Tangail, JM = Jamalpur, SH = Sherpur



DF Jalchatra Hospital



DF Mymensingh Hospital



DF Netrakona Hospital

ANNUAL REPORT 2022



damien 
let's act now,
it's contagious **foundation**

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