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Preface

It is a great pleasure for me to present the annual report of 2017 of the Damien Foundation Bangladesh that has been produced through contributions from all those involved in every steps in carrying out the activities, serving the population and in facilitating the services.

Keeping the concept of quality health care as our core principle, we tried our best in reaching as many TB (plus MDR TB) and leprosy affected people as possible during the year despite limited resources. Finally, we could bring 25,633 TB, 211 MDR TB and 475 leprosy affected people under effective treatment in the reporting year. The results reflect the efforts made by the staff members through their commitment, motivation and dedication. We also appreciate the supports received from national and local level health authorities and from other partners which also facilitated us in achieving these excellent results.

We continued to look at possibilities and creating opportunities in order to reach to more presumptive cases which resulted at screening of more than 300,000 presumptive cases. There remains still many who could not be reached and more efforts will be required in the coming days in reaching to them.

The organization received recognition for outstanding operation research (9-month shorter treatment regimen for MDR TB), endorsement of which by WHO has facilitated in saving many lives (of MDR TB patients) and in reduction of both patients' and programmes' costs in many countries. Conducting such research was only possible in an environment where highly controlled quality services are provided through skilled personnel. Supports from international institutions like ITM and the Union besides the NTP Bangladesh essentially facilitated the organization in conducting such researches. We duly recognize the contributions made by the participants to these researches through their participation.

A new approach, moving from passive to active case finding, yielded positive results so far both for TB and leprosy. This approach needs further enhancement in the coming years in order to detect those affected as early as possible.

The organization intends to continue fruitful partnerships in and outside of Bangladesh. We are equally grateful for the continuous commitment of our staff, at all levels, and we want to continue to excel in quality health care provision, because that is what makes us unique.

Sincerely,

Dr. Aung Kya Jai Maug
Country Director
Damien Foundation Bangladesh

ANNUAL REPORT 2017

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

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ANNUAL REPORT 2017

Contents

List of abbreviations

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

1. 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 16 countries of Asia (Bangladesh, India & Nepal), Africa (DR of Congo, Burundi, Rwanda, Nigeria, Niger, Guinea, Mozambique, 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 the lepers 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 contributes to operational and epidemiological research projects, the publication of scientific literature on 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 more than three 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 Programme (NTP) & National Leprosy Programme (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 and Leprosy Programme on behalf of the GoB and LTCC (Leprosy & Tuberculosis Coordination Committee). LTCC is a consortium of 10 NGOs (Damien Foundation, The Leprosy Mission International, LEPRA Bangladesh, HEED Bangladesh, RDRS, LAMB, Salvation Army, Dhanjuri Leprosy Center, Prime Sister and the Christian Leprosy Centre, Chandraghona).

As per MoU, each NGO partner is allocated to implement the programme in a defined geographical area and GoB agreed to ensure supply of essential drugs, equipments (e.g. microscopes), laboratory reagents, other consumables, recording and reporting forms, registers etc. Besides 6 existing districts, 3 new districts from Rajshahi division were included in this collaborative agreement and daily centres from 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 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 32 million people (20% of 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 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 sub-districts. Additional second microscopy centers were established in 2005-2006 in order 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 9,523 Fixed DOT Providers (FDPs) are involved in providing DOT in the area covered by DF.

The Damien Foundation program is providing specialized hospital care for complicated TB & 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.

In addition, DF MDR-TB project (9 month regimen) is operational since 1997 in the DF working area, DF also expanded its MDR-TB project to the 13 new districts of the Rajshahi division through establishing a culture & drug-susceptibility testing (DST) laboratory in Rajshahi Chest Disease Hospital (CDH) since 2008. Damien Foundation Bangladesh developed a standardized shorter regimen (9 months) for MDR TB patients and this has drawn international attention and WHO endorsed this regimen under certain conditions in May 2016. The same combination of drugs for MDR TB with 12 months is being tested in some African countries where the initial results are also excellent (>80% success rate). The NTP Bangladesh also adopted this shorter regimen and scaled up throughout the country starting from 2017.

Funding sources

The Damien Foundation-Bangladesh is mainly co-financed by the Belgian Government (Directorate General for Development-DGD) through the Damien Foundation-Belgium. Since August 2004, Damien Foundation Bangladesh is also financially supported for its Faridpur and Rajshahi projects from the Global Fund to Fight AIDS, Tuberculosis and Malaria (GFATM). Since July 2015, DF also receives funding from MSH for the Challenge TB project.

In 2017, a total amount of Taka 126,442,664.93 (Euro 1,390,522.25) was received as grant from Damien Foundation Belgium to cover the expenses of DGD supported projects. And a total fund received from GFATM in local currency was Taka 63,545,897.00 (equivalent to 698,830.44 Euro).

In addition, a considerable contribution was received from the Government of Bangladesh equivalent to Taka 76,609,915.00 which was realized in kind as drugs, lab materials, logistic supplies, and so on. Besides, an estimated clinic-rent for 161 clinics was Taka 3,840,000.00. So, in total the government contribution was Taka 80,449,915.00 (equivalent to 876,980.73 Euro) in 2017.

Moreover, DF has signed an agreement with Management Science for Health (MSH) for the Challenge TB (CTB) Bangladesh project for a period from March 01, 2017 to September30, 2017 and a total amount of Grant was Taka 16,277,180.00 (equivalent to 179,004.30 Euro). The type of Grant was Fixed Obligation Grant (FOG). DF received the total amount of this period and carried out the planned activities in order to achieve the 100% of target which have been foreseen.

2. Tuberculosis (TB)

Tuberculosis is a major public health problem in Bangladesh with an estimated 360,000 new cases and about 66,000 deaths due to TB annually. Bangladesh is in the list of top 20 high TB and MDR-TB burden countries in the world in 2016. The WHO estimates that there were 221 new cases (all forms of TB) per 100,000 population in Bangladesh in 2016 and the estimated mortality rate for the same year was 40 per 100,000 population [1]. The 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 years [2]. The WHO estimates on TB incidence and mortality will be revised after having the final results from 2015/2016 survey. The preliminary results of this survey were shared in the UNION conference in Liverpool and in the JMM 2016 briefing and the final results are to be published yet. However, the information shared so far shows that there is a high prevalence of Bacteriologically Confirmed TB cases among adult population (aged15 years and above), 295 per 100,000 adult population. This is mainly due to the use of modern technology like GeneXpert and redefining the definition of presumptive TB covering a wider range of symptoms. Moreover, the prevalence survey also shows that only about 18% of the total Pulmonary Bacteriologically Confirmed (PBC) cases (52 out of 291) are detected through Microscopy by symptom screening and around 19% (56 out of 291) PBC cases from symptom negative participants (screened through chest X-Ray). It also gives impression that about 90% of the total Bacteriologically Confirmed cases can be detected through Chest X-Ray (264 out of 291).

The country adopted the WHO recommended DOTS strategy in 1993. The country achieved expansion of DOTS strategy throughout the country by 1998. With the financial support from GFATM, since August 2004, the NTP and its partner NGOs expanded and strengthened the overall TB control programme in the country. The service has been expanded to prisons, garments industries / work places, medical teaching institutes, Army hospitals etc. As a result, the national TB case notification (all forms) increased to 138/100,000 population in 2016 [3] from 58/100,000 population in 2000. DOTS services 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). A total of 193 GeneXperts were installed at the end of 2017 throughout the country.

The NTP national strategic plan covering the period 2015 – 2020 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.

[1] WHO estimates of TB burden 2016. (source Global TB Report 2017)
[2] Health and Science Bulletin vol. 8 No. 4 December 2010; available online at http://dspace.icddrb.org/jspui/handle/123456789/4872
[3] Tuberculosis Control in Bangladesh: Annual Report 2017

2.1 Progress towards case detection and treatment outcome targets:

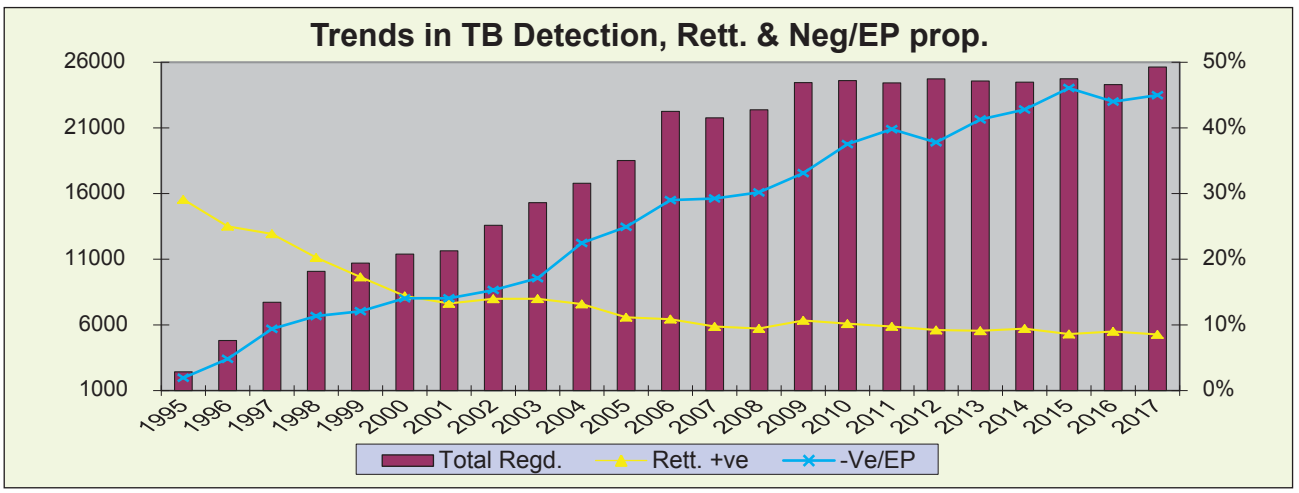
A total of 25,633 TB cases were registered during 2017, of which 55% were pulmonary bacteriologically confirmed TB cases. The remaining (45%) were pulmonary clinically diagnosed TB and Extra-Pulmonary TB cases. The table below presents the numbers of the different forms of TB that were diagnosed annually during the period 2001-2017 in all project areas combined.

Table: 1 Tuberculosis cases (different type) registered since 2001

Year	New smear-pos / PBC	Re-treatment	Smear-neg. / 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	21766
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

Registration of TB cases (all forms) has increased over time but remained almost stable for the last several years up to 2016. However, due to some special efforts, like identifying scope of increase according to recent prevalence survey and micro planning to find out missing cases, 1333 more TB cases were identified in 2017. The proportion of re-treatment patients among the positive cases remained at 9%, as shown in graph 1. The increase in numbers of pulmonary clinically diagnosed and extra-pulmonary 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 enhance the diagnosis and treatment of all forms of TB including clinically diagnosed pulmonary and EP TB since 2006 through establishing collaboration with Chest Diseases Clinics, medical colleges and specialists and by conducting training for doctors on x-ray reading. Besides training of the doctors, support to patients was also provided for diagnostic examinations e.g. X-Ray and biopsy costs utilizing GFATM fund. All these efforts have contributed to an increase in clinically diagnosed pulmonary and extra-pulmonary TB patients during the period.

Graph 1: Trends in TB case registration, Rett. and sm-ve/EP proportion

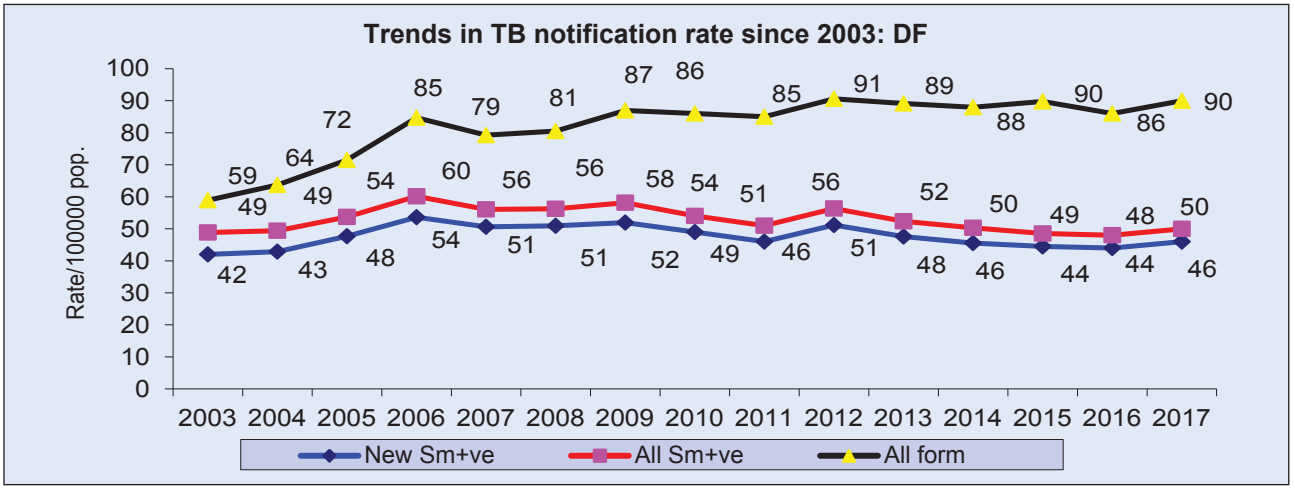


The decreasing trend of re-treatment cases could be explained as a good indicator of programme performances. At start of the project, during the year 1995 most of the re-treatment cases registered by the project were treated previously outside the NTP by the private providers, as such the proportion of re-treatment cases among all smear positives at that time was 29%. Over the years this proportion has come down to and remained at around 9% which explains the good

referral linkage with the private sectors 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 back for re-treatment.

The DF projects achieved an average case notification rate of 90 per 100,000 population for all forms and 50 per 100,000 population for smear positive forms in 2017. Although there was a little increase of notification rate to 90 per 100,000 population in 2017 compared to 86 per 100,000 population in 2016 but the overall trend has been almost stable with very little variation over the last several years and thus difficult to conclude on the reflection of real current epidemiological situation in the project area.

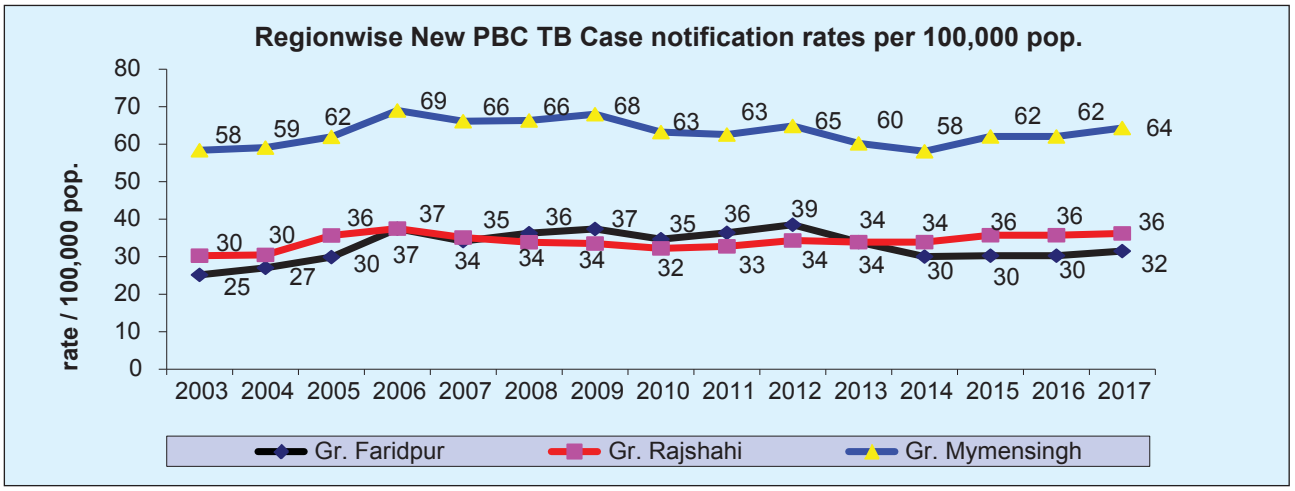
Graph 2: Trends in TB notification rate per 100,000 population in DF working area



However, the steady case notification during the last several years might indicate that the optimal case detection has been achieved and the same level of notification might be expected for the coming few years in the project area.

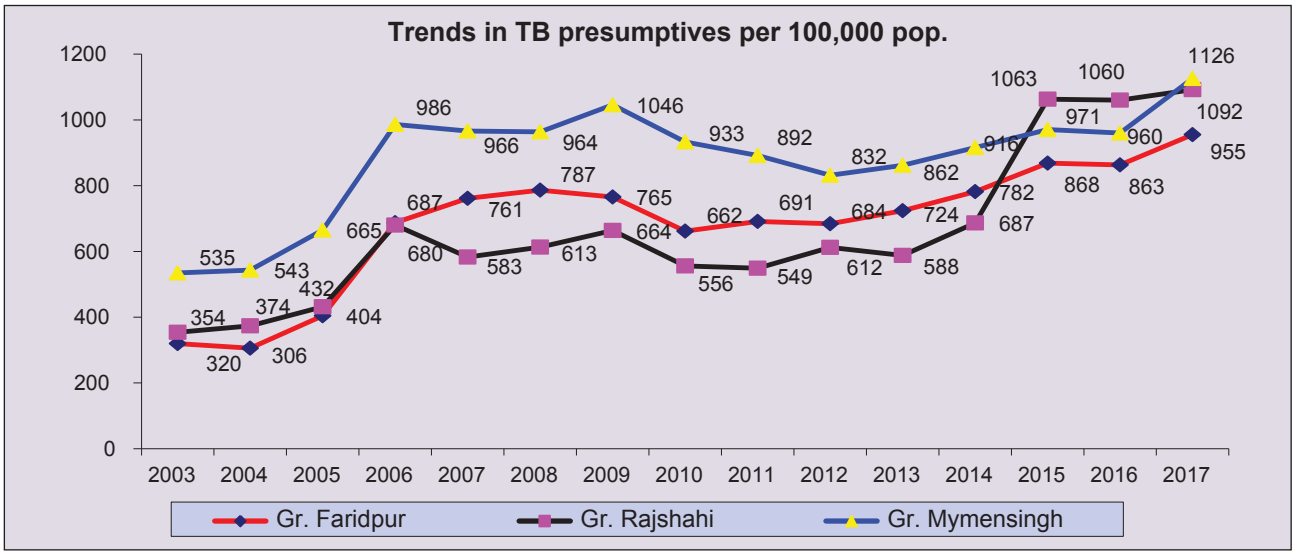
New Pulmonary Bacteriologically Confirmed (PBC) TB case notification varies significantly among the different regions. In the Northern region (greater Mymensingh) the notification rate of new PBC cases has always been higher (64 per 100,000 population) than in the other two (greater Rajshahi around 36 and greater Faridpur around 32 per 100,000 pop) regions. The same variation in notification rates for pulmonary clinically diagnosed and extra-pulmonary TB cases 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

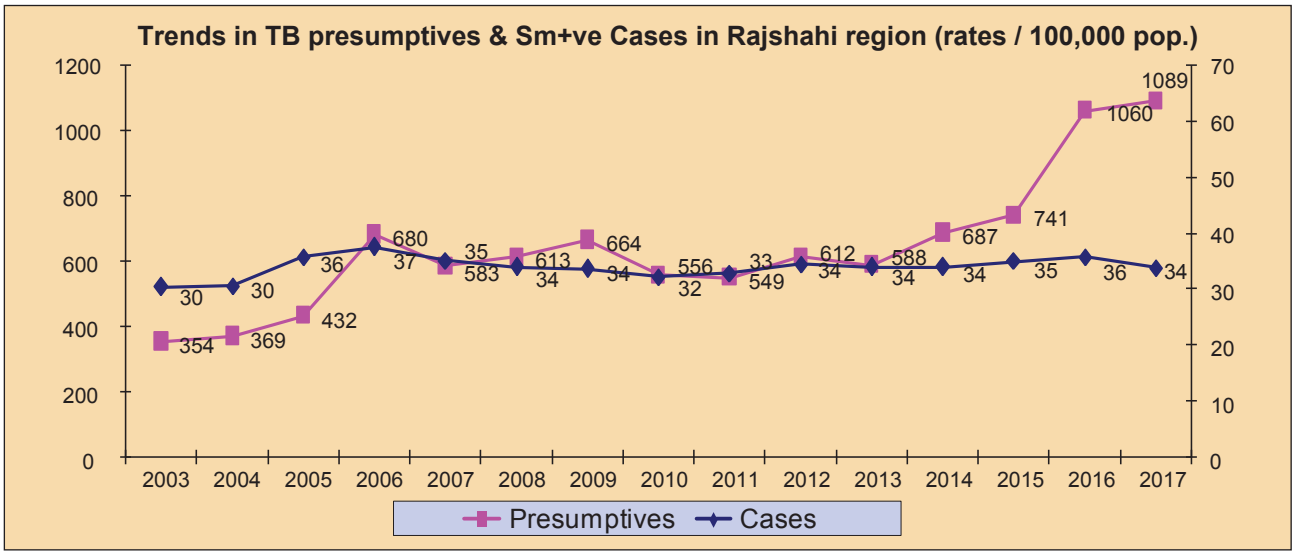


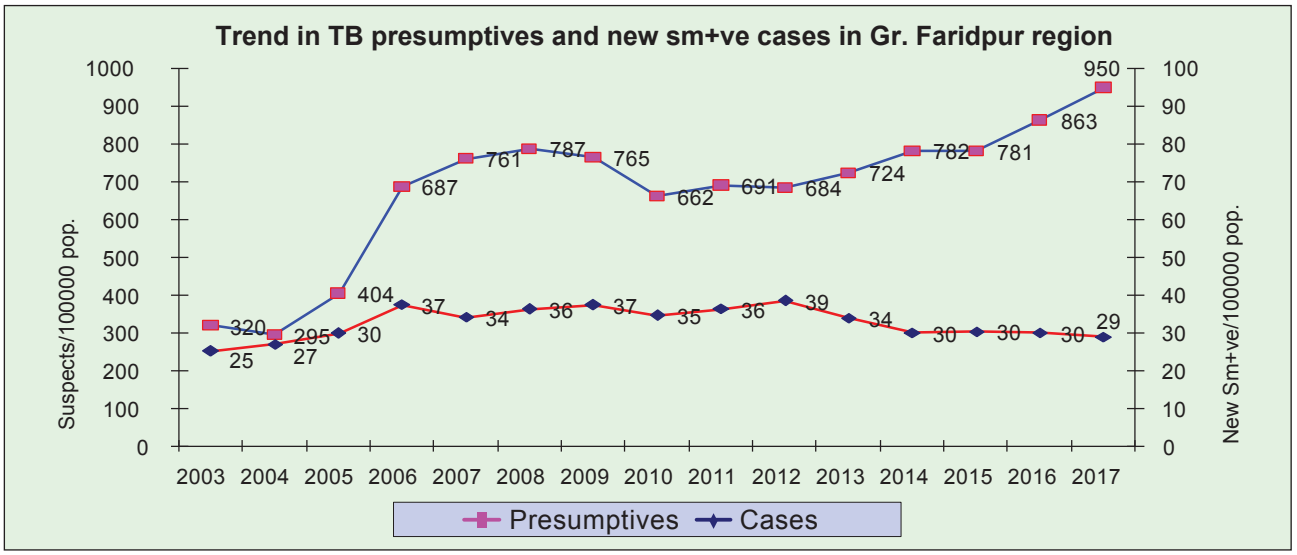
Analysis of data also shows that despite significant increase in presumptive TB cases in all the 3 regions with significant efforts, the case notification did not increase significantly in two regions (Rajshahi and Faridpur)- only very little in fact as shown in graphs 5 and 7.

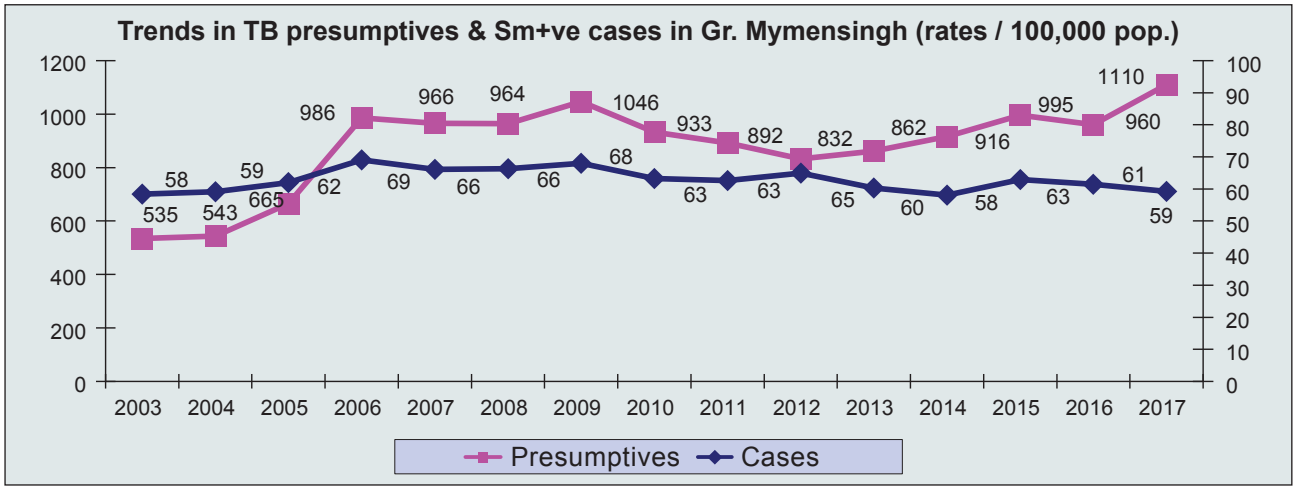
Graph 4: DF region wise trends in TB presumptives per 100,000 populations



Graph 5 - 7: Trends in presumptives and new sm+ve TB cases per 100,000 populations in 3 different DF working regions





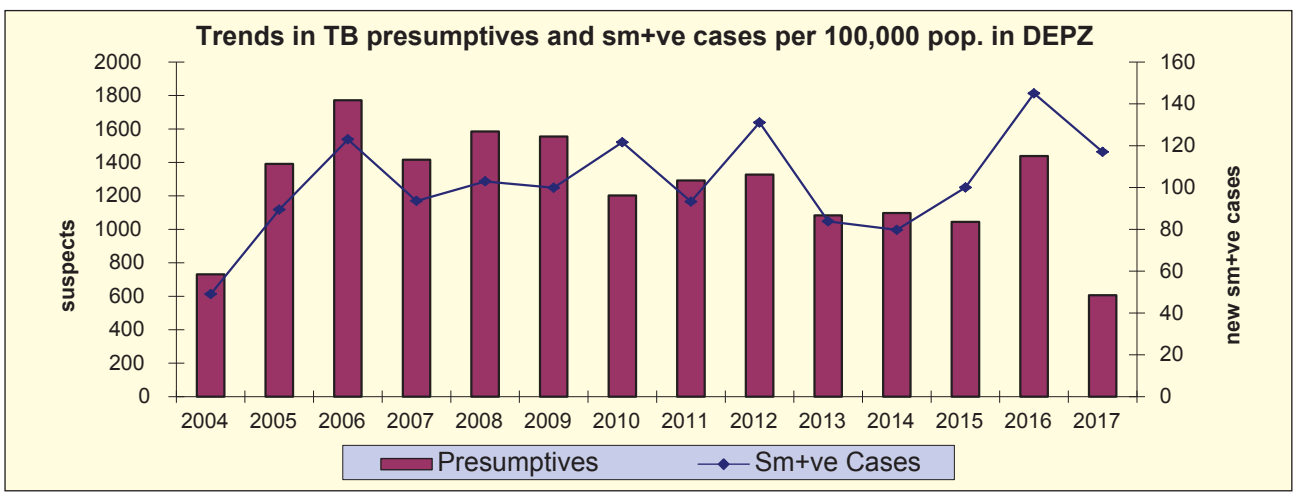


Taking into account the good quality of microscopy services in the project area and standardized screening system of presumptive, it could be concluded that TB is not equally distributed all over the country. WHO thus recommends use of notification trends to assess performances of TB control programmes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

2.2 TB control activities in workplace (Dhaka Export Processing Zone)

TB, a highly communicable disease, spreads fast in crowded conditions. At least 10% of the infected people bear lifelong risk of developing the disease. Progression of infection to the development of the TB disease mostly depends on the individual's nutritional status and HIV infection status. Like other developing countries, there has also been the rapid urbanization in Bangladesh leading to the development of several factories 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 poor ventilation. These poor workers are often paid low and several workers share a small room for their living. Such living and working conditions are the most favourable environment for easy transmission of TB. 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. Since the start of the programme in DEPZ, DF has observed a higher TB incidence among the workers compared to the general population. The female ratio among detected TB cases in this workplace is almost three times compared to the general population. The graphs below show the trends in presumptive and TB cases per 100,000 workers:

Graph 8: Trends in presumptive TB cases and new sm+ve cases per 100,000 population in DEPZ

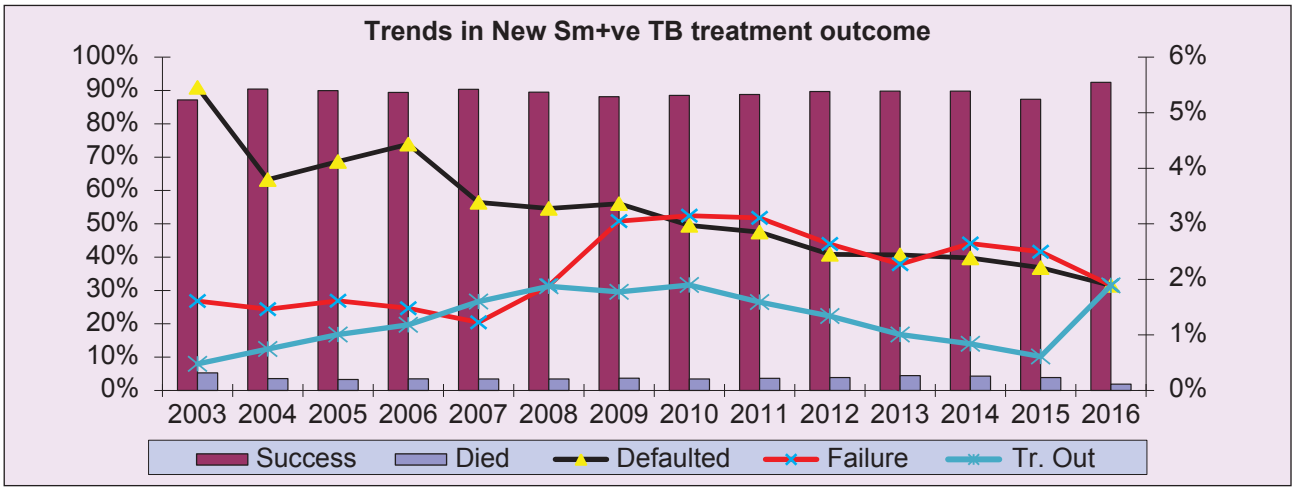


Considering the growing expansion of industrial factories, DF planned to strengthen TB activities in newly industrialized DF border districts involving the private sector. Situation analysis involving the workers who got admitted in DF hospitals indicated their unawareness about the availability of TB 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 on TB among factory workers, DF has been organizing orientation sessions for them in these border districts with the support from Challenge TB. As a result 564 TB cases were diagnosed from factory workers and put 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 with a low rate in unfavourable outcomes (death at 4%, lost to follow up at 2%). The ability to detect a good proportion of failure cases (2.52%) is a good indicator of sputum smear microscopy quality. The average success rate for all the projects was 92% with a death rate at 2% for the cohort 2016. The graph below shows the trends in TB treatment success rates since 2003.

Graph 9: Treatment outcome in new smear positive cases



2.3 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 in 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 cases. Presentation of symptoms of childhood TB is different compared to adult TB. 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.

Analysis done by the DF project in the past showed a sputum positivity rate among children presumptive for TB of 1% compared to > 7% among adult symptomatic TB.

Estimating the incidence of TB among children is difficult and the published estimates vary[4/5]. The study conducted in one DF upazila during 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 under-detection of child TB cases in Bangladesh which helped the NTP Bangladesh to adopt strategies to increase child TB cases 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 algorithm for detection of child TB and effectiveness of community awareness in enhancing diagnosis of child TB which also support the above findings[6] . An increase in child TB detection in the study clinics was also observed.

Efforts at improving diagnosis of TB among children were continued in 2017 through coordinating with government doctors on diagnosis of childhood TB. A total of 80 doctors were trained involving the eminent national level child specialists on diagnosis of child TB since 2008. As a result, diagnosis of TB among children has been higher (7% among new TB cases and 5% among all TB cases) in DF area compared to the other parts of the country (3.8% national average). The graph below shows the number of child TB cases diagnosed in the DF project area.

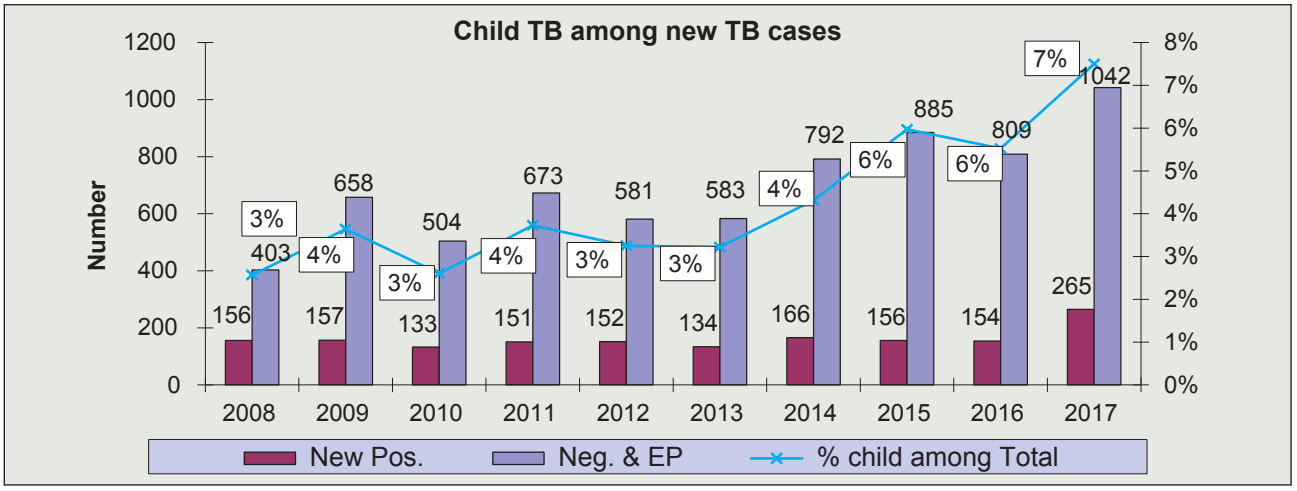
Chemoprophylaxis using Isoniazid tablet (initially 5 mg per kg body weight, later on changed to 10 mg per kg body weight) for 6 months is being recommended for children aged below 5 years not suffering from TB who are close contacts of a TB patient. The preventive therapy prevents two severe forms of TB in children, namely milliary TB and TB meningitis. A total of 26,260 children received chemoprophylaxis during the last 7 years, of which 5,166 in 2017. Chemoprophylaxis completion rate among children enrolled during 2016 was 92%.

[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 tuberuclosis 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

Graph 10 : Child TB detection



2.4 TB in prisoners and other vulnerable groups

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 the 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, Noagoan, 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 staffs are informed if TB presumptive are identified among the prisoners and sputum samples are collected by prison health staff. DF staffs regularly visit the prisons to collect sputum samples. During 2017, from 9 prisons of DF working area 31 TB cases (24 smear-positive, 2 smear-negative & 5 extra-pulmonary TB) were diagnosed and started treatment. The prison health staffs 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.

2.5 TB-HIV Co-infection

TB remains the most common opportunistic infection among HIV infected people in high TB burden countries like Bangladesh. TB-HIV co-infection leads to rapid progression to TB disease and earlier deaths. Luckily HIV prevalence among Bangladeshi adult population and TB patients is still low (<0.1%) but rising, and the prevalence is higher in high-risk groups such as intravenous drug users (5.3%) located in some hot spots (in 23 districts). As such HIV testing services are limited to those district spots only and DFBD has to refer TB cases with high risk behavior (if any) to the available nearest HIV Counseling and testing centres.

2.6 MDR – 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. Treatment success has been maintained at 84% 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 it's unavailability in the market. WHO is trying to get it back in the market and is looking for manufacturers & suppliers through GDF.

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 cases. Currently 4 very simple laboratories in DF areas are capable of delivering min. 95% correct diagnoses of TB resistant to rifampicin, fluoroquinolones (high or low level) and 2nd-line injectables, besides its differentiation from non-TB mycobacterial disease, and this within 2 weeks.

This "Bangladesh MDR regimen" was also adopted by The Union as "its" MDR regimen, and it was being formally evaluated in two trials, one in 9 francophone African countries, not randomized and the other, the UK Medical Research Council and the Clinical Trial Unit of the Union, implemented 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. Complete result of the stage 1 of STREAM trial is expected to be available in late 2018. In stage 2, two new regimens are 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 weeks[7] . Following an expert review of available observational study findings on shorter regimens, the WHO updated it's guideline[8] in 2016 including the shorter regimen for use under certain programmatic conditions.

Following the achievements of this shorter regimen in DF Bangladesh projects and in other countries, 35 countries have already adopted this regimen. NTP Bangladesh adopted and started expansion of this regimen throughout the country in 2017.

In 2017, enrolment of MDR TB patients on levofloxacin-based shorter 9-month regimen was continued. A total of 211 MDR TB patients were enrolled under the levofloxacin-based 9-month shorter regimen in 2017 in DF working area of Bangladesh and 284 MDR TB patients in rest of the country under moxifloxacin-based shorter national MDR TB regimen.

2.7 Tuberculosis Infection control

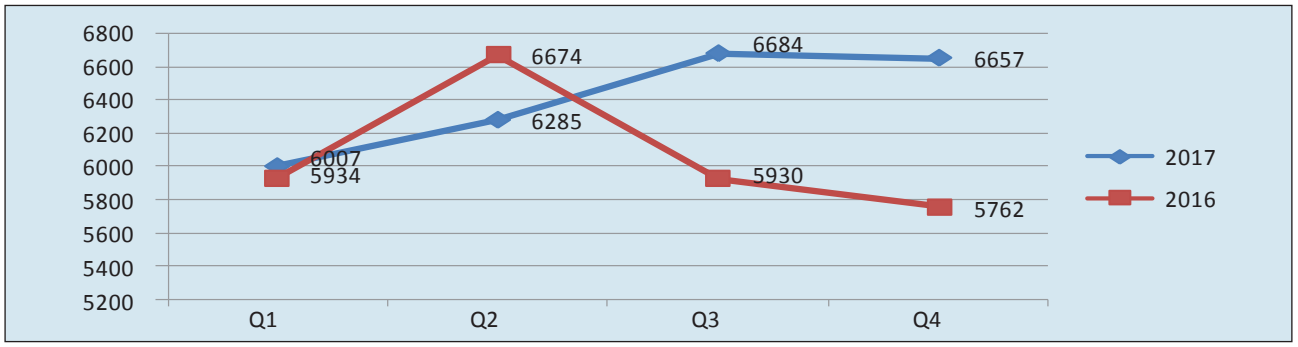
Infection prevention and control (IPC) aiming at protecting healthy people from the sick remains an important step in TB control programme especially when M/XDR TB is posing threat to the achievements made so far in this disease programme. Infection control measures were established in DF hospitals since its inception through ensuring separate rooms for MDR TB patients from non-MDR TB patients, smear positives from smear negatives 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 through keeping the doors and windows open and installing adequate ceiling fans. Health education among hospitalized patients on safe sputum collection (in 2 - 5% phenol solution containing buckets for disposal), cough hygiene and cough etiquette is being continued routinely. Surgical masks are routinely supplied to all hospitalized patients in DF and Rajshahi Chest disease hospitals and their regular use and cleaning have been ensured by the nurses. In the clinics, the infection control measures have been ensured through arranging the different assets (cupboard, tables, chairs etc.) and through modifying the sitting arrangements taking the airflow into account. Practice of ensuring infection control measures have been incorporated in routine supervision visit checklist.

2.8 Results of special efforts for finding missing TB cases:

There remains always a gap (missing cases) between the WHO estimates and the national notification data on all forms of tuberculosis in the country which is about 37%. The recent (2015 - 2016) National TB prevalence survey included chest X-ray as an additional screening tool (to symptoms screening) among adult population while routine programme covers only symptomatic. In 2017, two special initiatives were undertaken by Damien Foundation Bangladesh to assess the effectiveness of these initiatives to routine case finding strategies – (1) Active case finding through household visits and strengthening contact tracing and (2) Micro-planning & its implementation. **The Active Case Finding** initiative was implemented in 19 upazilas of 11 districts through 38 Community Volunteers and 20 Field Staff from December 2016 to December 2017. During the reporting year (2017) a total of 11,50,665 people of 2,51,499 households were symptom-screened and among them, 17,906 presumptive of TB were identified. About 81% (15,635) of the presumptive TB cases were tested by sputum smear microscopy and 188 (1.2%) Smear positive TB cases were diagnosed from them which was higher than the rate observed from national prevalence survey (0.72%; 52 out of 7252 symptom positive). **The Micro-planning** initiative was designed and implemented during the last two quarters of 2017 by analysing the information of recent TB prevalence survey 2015-2016 in Bangladesh, which indicates that more use of Gene Xpert and digital X-Ray technology can be helpful for finding out missing TB cases. Accordingly, all projects of DF Bangladesh prepared their own plan up to upazila & union level to find out the missing presumptive TB cases, bring them to microscopy, Gene Xpert, X-Ray and other tests with the help of GFATM supported social/diagnostic support and reprogramming activities. As a result, 1649 more TB cases (all forms) were detected in last two quarters of 2017 compared to the same period of 2016 (14% increase). Mainly provision of social support (investigation costs like chest X-ray and other investigations) contributed in the increase of clinically diagnosed TB cases leading to the overall increase in case finding. These initiatives clearly showed their effectiveness compared to the routine case finding strategies.

[7] Accessed online at: http://www.newtbdrugs.org/pipeline/trials/stream-trial-stage-2
[8] Available at: http://www.who.int/tb/areas-of-work/drug-resistant-tb/treatment/resources/en/

The following graph shows the increase in all forms of TB case finding from these initiatives:



3. Leprosy

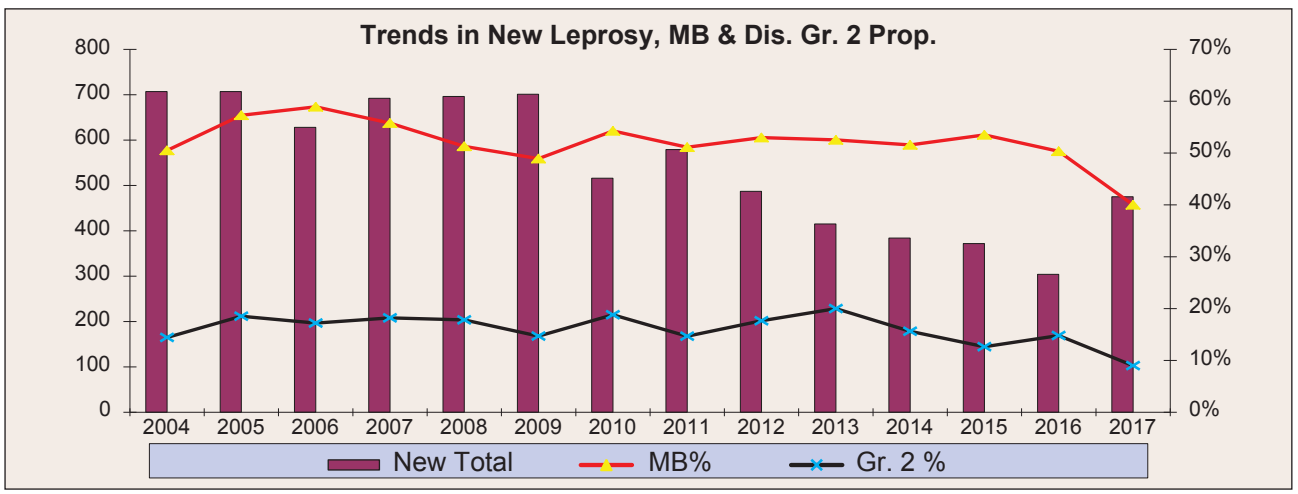
Following the achievement of the elimination status[9] in 1998 at national level, leprosy has no longer been considered as a major public health problem in Bangladesh. Since then the interest in leprosy by health care providers decreased significantly resulting in a sharp decline in leprosy case detection in the country, e.g. a decrease of about 62% in 2017 (3754) compared to 2002 (9844).

Despite the elimination status, Bangladesh remains one of the countries worldwide detecting around 4,000 new leprosy cases 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 cases detected in Bangladesh more than 70% cases are detected in the NGO covered area. It thus seems that there is a serious under-detection in the area covered by the government.

Among the 475 new leprosy cases detected in 2017 in the DF area, 40% were MB leprosy and 28% of MB cases were skin smear positive. The proportion of children among new cases was 11% in 2017 as a result of efforts made at detecting new cases actively in some leprosy pockets especially in Rajshahi region. The decreased proportion of MB leprosy cases with skin smear positive (28%) might also indicate their early detection. Among these new cases 226 cases (48%) were female which indicates the efforts made at detecting everybody affected by leprosy at an early stage.

Active case finding also resulted in the decrease in disability grade 2 rate amongst newly diagnosed leprosy patients in the districts where this activity was performed at 4.6% in 2017 while in other districts this rate remained at 13%. Overall disability G2D rate in 2017 in DF area was 8.8% compared to the rate of 15% in 2016, which is still high. This rate of disability might be due to the decreasing awareness and lack of diagnostic skills among health care providers i.e. delayed referrals by health care providers. Internal migration from rural to urban areas for seeking income generation is a big problem in Bangladesh. Poor people return from urban working area to their home village for care seeking when they become sick. This is because health services in rural areas are much cheaper - low cost village doctors and private chambers as well as easily accessible UHCs – as compared to services in urban areas with huge expensive private providers. This might also explain the higher disability grade 2 rates among newly detected cases in the DF working rural areas.

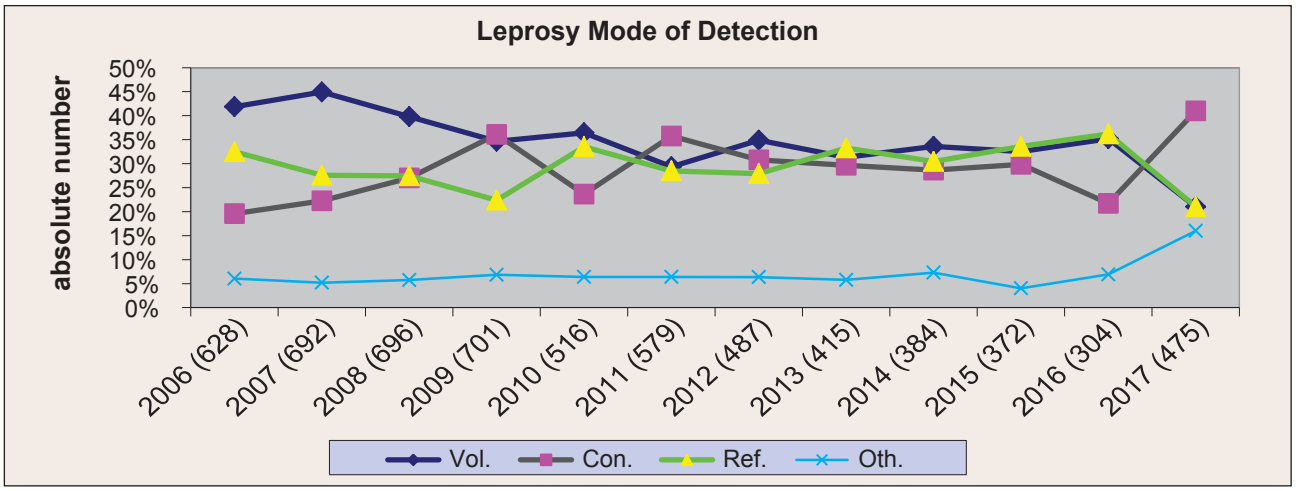
Graph 11 : New Leprosy Detection, Proportion of MB & disability grade 2 in DF Bangladesh, 2004 – 2017



[9] Defined as <1 case per 10.000 population.

Contact checking (active case finding) remains an important part in sustaining leprosy case detection in situations where the leprosy endemicity is low. Sustaining the level of community awareness (indicating voluntary reporting) is also a difficult task in such low endemic situation. The graph below shows the trends in leprosy case reporting indicating the sources.

Graph 12 : Trends in leprosy mode of case detection in DF Bangladesh projects



Vol. = voluntarily Con. = contact Ref. = referral Oth. = other

High treatment success (95%) has been maintained for both PB and MB leprosy cases in DF Bangladesh project during the last several years. These rates for PB was 99% and for MB 92% during 2017.

However, the high proportion (40%) of multi-bacillary infectious cases among the newly detected Leprosy cases, higher (11%) child proportion and high (8.8%) grade-2 disability indicates the late diagnosis and continued spread of diseases in the community. This situation along with the need of lifelong care for deformed leprosy patients indicates the importance for the DF project of continuous and intensified support and care for the leprosy component.

3.1 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: minimum additional disability apart from that which was present at diagnosis through teaching patients with disabilities on self care and through providing protective foot-wears & ulcer cares. Since the beginning (1972), DF has been providing passive care to limit further disability and deformity by asking them to report voluntarily for any problem after completion of MDT. Additionally from the year 2008, DF took the special initiative for 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 are 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 staffs are informed for their presence in the clinic about the Pre-POD visit by the physio-technician (PT), visit by PT one month prior to the POD Day. During Pre-POD visit, PT sits with all the field staff including the TLCO to make a good planning of all activities essential for POD Day including the listing of patients under care, checking the stock of POD materials, prepare list of patients for community based rehabilitation (CBR), vocational training (VT) & Reconstructive surgery. All the POD listed patients are invited on the scheduled POD Day by home visits during other field activities of the field staff.

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 on self care, ulcer care and active & passive exercises. A 'Self Care Kit' box containing all the basic materials for simple ulcer care, anesthetic hand and foot care, is provided to all patients to take immediate care at home when necessary. Protective footwear is also distributed on POD day.

TLCAs gain more confidence and improve their skill on patient management through this POD day. For the care of patients having anesthetic feet, a total of 2094 pairs of MCR shoes were supplied during 2017.

During the year 2017, a total of 376 leprosy cases were hospitalized for the management of different types of complications in the three DF hospitals, 59% of them were due to ulcer management and for special type of shoes and 16% of the hospitalized leprosy cases received septic surgery as a management of ulcer care.

4. Basic Project: Community Based Rehabilitation Program (CBR)

Bangladesh achieved the World Health Organization (WHO) declared "Leprosy Elimination" goal at national level in December 1998. But there are still about 4000 new cases being detected each year. And still there are some new leprosy cases with disability grade 1 and 2. In addition, there are about 12,000 people disabled by leprosy in the country, who have already grade 2, with visible deformity at end of treatment. This group certainly needs a broad range of services. The main principles of leprosy control are based on timely detection of new cases and their treatment with effective chemotherapy. The emphasis will remain on sustaining the provisions for quality patient care that are equitably distributed, affordable and easily accessible. However, there is an urgent need to bring about decisive and innovative changes to the organization of leprosy control and the working arrangements among all partners, as well as to influence the attitude of health-care providers, persons affected by leprosy and their families, and the general public.

The National Leprosy Elimination Program of Bangladesh focuses its activities mainly on medical cure of the disease. There is no organized routine program for supporting people with disabilities/deformities. However, there is a great need to ensure quality of life for those who end up with permanent disabilities. The World Health Organization (WHO) initially provided rehabilitation and vocational training support but this support was stopped once leprosy elimination status was achieved. Damien Foundation started to provide support to leprosy affected deformed people in order to improve their living conditions.

Damien Foundation Bangladesh detected and treated 23,134 leprosy cases since 1972. About one-fifth of the diagnosed cases have already disability grade 2 limiting their routine income generating activities. Most of them already completed their treatment meaning that they were declared cured medically but physically having the same disability. Most of them are unable to continue normal activities due to their deformities and disabilities. Disabilities cause long term or lifelong unfavorable socio-economic consequences to the affected persons and to their family members.

The WHO "Enhanced Global Leprosy Strategy 2016-2020" emphasizes on community-based rehabilitation for people with leprosy-related disabilities. Pillar-3: "Stop discrimination and promote inclusion, Page VIII;

supporting community-based rehabilitation for people with leprosy-related disabilities". In compliance with the WHO enhance Global Leprosy Strategy Damien Foundation Bangladesh program is giving emphasis to implement the community based rehabilitation program through Basic project.

In April 2009 Damien Foundation started a pilot project as Basic Project for CBR program in the area of Mymensingh, Kishoreganj and Netrakona districts, located in the northern region of Bangladesh where Leprosy control activities have been carried out since 1972.

The Main objective of this project is to support the most vulnerable, disabled and poor leprosy patients including their children to improve their livelihood, which will be a living example for other cured patients to survive with dignity through reducing leprosy associated stigma in the community. And the specific objectives are i). to support leprosy patients through income generating activities (IGA), ii). to develop technical skills of leprosy affected persons through vocational training, iii). to ensure educational support for children either affected by leprosy or belonging to leprosy affected families, and iv). to provide houses for abundant leprosy patients.

A total of 219 (male 149 + female 70) deformed Persons Affected by Leprosy (PAL) and their children benefited from this intervention through 5 phases from August 2009 to December 2015. Among them, 125 PAL received a GRANT under this Basic project to start an Income Generating Activity (IGA). Support from a local NGO "SABALAMBI UNNAYAN SAMITY (SUS)", expert in the field of micro-credits and micro-enterprise, has been received for assuring an intense supervision of 40 clients and other 85 clients are directly supervised by DF. All these beneficiaries started diverse small-scaled enterprises: business with Rickshaw, a three wheeler local transport system, Milking cow, land lease for Cultivation, Mobile shop (Hawker), Rice husking machine, and Grocery shop. Most of them are running their income generating activities satisfactorily. Besides this, houses were built for 19 leprosy affected persons, 17 received Vocational Training (VT) along with support to run their businesses and 58 children from leprosy affected persons' families received support for their education including school dress, tuition fee, private tutor fee, books and other educational materials.

Please see the below total beneficiaries enrolled under this basic project from Phase-1 to Phase-5:

Phases	IGA	Technical Skill	Housing	Education	Total
Phase-1: starting from Aug 2009	25	9	0	11	45
Phase-2: starting from Aug 2011	25	1	4	14	44
Phase-3: starting from Jan 2013	25	5	5	15	50
Phase-4: starting from Mar 2014	25	1	5	10	41
Phase-5: starting from Jan 2015	25	1	5	8	39
Total	125	17	1	58	219

We have evaluated all 5 phases on the basis of the following income parameters for **Income Generating Activities (IGA)** such as small-scaled enterprises: business with Rickshaw, a three wheeler local transport system, Milking cow, land lease for cultivation, Mobile shop (Hawker), Rice husking machine, Grocery shop etc. and **Technical Skilled** through vocational training such as Tailoring, Haircutting (Saloon), Shoemaker (Cobbler), Electric Welding, Electric wiring, Mason etc. found the below results also situation of total 5 phases **Education** & **Housing** (shelter) supports:

Income parameters for IGA & Technical Skilled are:
i). **Sustainable:** Able to contribute 100% to family expenses,
ii). **Medium:** Able to contribute 50% - 70% to family expenses,
iii). **Low:** Able to contribute less than 50% to family expenses &
iv). **Failure:** Capital lost or moved away.

Result of total 5 phases intervention (IGA & Technical skill development)		
Income parameter	**IGA**	**Technical Skilled**
Sustainable	**42** (34%)	**5** (29%)
Medium	**36** (29%)	**5** (29%)
Low	**20** (16%)	**4** (24%)
Failure	**27** (21%)	**3** (18%)
Total Clients	**125**	**17**

Result of total 5 phases intervention (Education & Housing)			
Education support		**Housing support**	
Successfully completed intervention (passed 12 class)	**17**	Living in the house	**16**
Dropout	**15**	Died	**3**
Study on going	**26**	X	X
Total clients	**58**	**Total clients**	**19**

5. DF Reference laboratory and Quality Control of laboratories

Damien Foundation Bangladesh (DFBD) has a well equipped reference laboratory at Anantapur of Netrakona (NK) district in Bangladesh which is providing support to and ensures quality of other 150 peripheral as well as 5 project laboratories of DF projects.

The conventional culture had been introduced in 2002 in Netrakona as a pioneer for NTP partner. There is a Gene Xpert machine in NKLab which is continuously supporting the other project labs of DF as well as field clinics. Xpert is used as a screening tool, no further testing by culture or DST is performed if MTB/RIF show a negative result. Rapid diagnosis of RIF-resistance by Xpert has become the rule. There is a QA program for lab.which is monitored by DF- Reference lab and Netrakona lab is working with the full technical support of Supranational Reference Laboratory (SRL), Antwerp-Belgium. Netrakona lab is giving full technical assistance for lab. Aspect for OneRif study/Cat-2 study. Different training on microscopy as well as for slide dst and LJ-DST is performed only in Netrakona. For ADR study all samples are checked by Netrakona lab for forwarding to ITM via DFCO.

DST Lab

Along with L-J culture DST, FDA staining was used as the screening tool for identification of MDR TB presumptive cases and slide culture DST (which gives results in 2 weeks) for detection of MDR TB. This laboratory procedure requires very minimal equipments and infra-structure which was also established in other project laboratories afterwards. 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 specimen and the presence of

rifampicin resistance only in about 2 hours. Since then Gene Xpert has been used as a screening tool for detection of rifampicin resistance. 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 DF area.

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. This laboratory serves as 2nd controller for QA system. Netrakona lab is also providing full assistance for DF clinical and lab related researches, e.g currently supporting the lab aspect of MDR TB study. Different trainings on (LED) microscopy as well as on slide-DST and Liquid-DST (LJ-DST) are performed in Netrakona.

Primary culture is done in Netrakona lab as well as conventional LJ_DST and around 50% is sent in Antwerp. Culture is done at Netrakona reference lab on LJ medium. Netrakona DF reference lab strains isolated on LJ have been referred systematically to Antwerp supra-national reference lab (SRL), but because of workload the selection has been narrowed recently.

For 2017, two new LTs were trained on lab. service coming from RTLCP as well as FTLCP. Netrakona Ref. lab . processed 2,587 primary culture including OneRif study and also processed 302 LJ-DST, 103 slide dst and 1,164 Xpert test. Netrakona lab also sent one strain for each MDR cases before the treatment start of MDR/Pre-XDR and also and NTM strains those are asked by ITM. LJ- DST in Netrakona is done only for RIF, kanamycin and OFX that is giving reward to find out Pre-XDR and XDR. For EQA 2nd control for sputum microscopy is done in Netrakona for whole DF-Bangladesh. Netrakona Lab. is also participating for EQA of WHO for 1st line and 2nd line drugs for phenotypic for 1st and 2nd line and genotypic for Rif also. EQA of SSS (Slit skin smear) is also done in nklab for DF-Bangladesh.

In 2017 Netrakona lab passed for WHO round 23 and a certificate has been given for phenotypic test for INH,RiF, Ethambul,Ofloxacin and also for 2nd line drug Kanamycin and as well for genotypic test of Rif. There is a request to DFB for 2nd line LPA setting for Netrakona Lab. DFCO is trying to set up as soon as possible depending on budget.

6. Hospital Activities

Besides 160 field clinics for about 32 million population in Bangladesh, DF also runs three hospitals with a bed capacity of 255 to take care of complicated leprosy and TB patiants, including MDR TB cases. These hospitals are situated in Jalchatra - Madhupur, Raghurampur - Shambhuganj and Anantapur (Baluakanda) under districts Tangail, Mymensingh & Netrakona respectively.During the year 2017, a total of 1,400 patients (TB: 1,019 Leprosy: 376 & General 5) received care from DF hospitals. As the complicated and very weak patients are normally referred to hospitals for intensive care, the death rate among hospitalized cases are likely to be higher than the patients treated ambulatory from the field clinics. But the death rate among hospitalized TB patients was lower (1.86%) compared to the overall death rate among all TB patients including those treated in the field (5.64%) which indicates the high quality services provided by DF hospitals or the timely referral. The average bed occupancy rates foreseen per disease category and duration of stay in different DF hospitals are shown in the table-2:

Leprosy Patients in Hospital

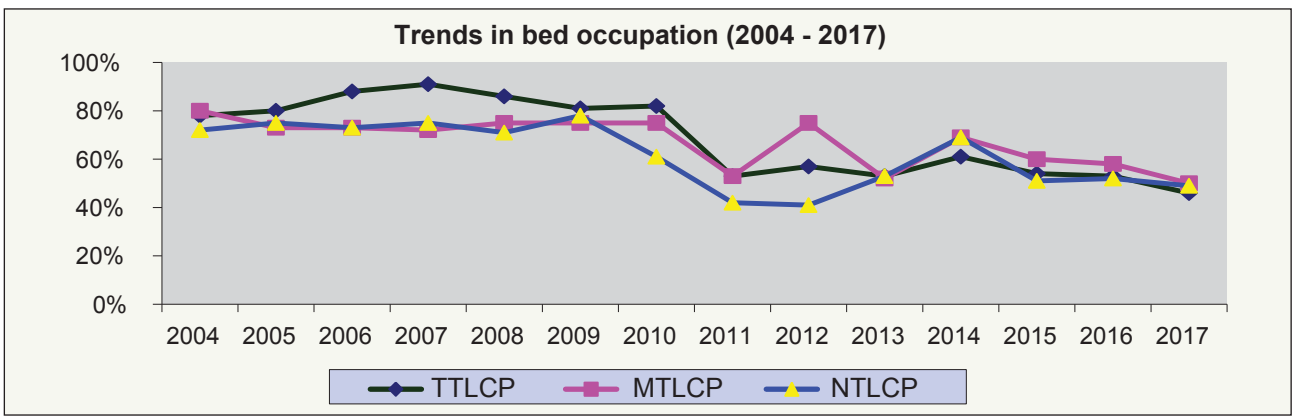
TB patients in Hospital

Table 2: Bed Occupancy and duration of stay

	TTLCP			MTLCP		NTLCP	
	Leprosy	TB	General	Leprosy	TB	Leprosy	TB
Subtotal	41 %	52 %	2%	54 %	48 %	73 %	43 %
Total	46 %			50%		49 %	
Duration of stay in days							
Average	27	22	4	41	32	30	29

Overall bed occupancy in Jalchatra, Mymensingh and Netrakona hospitals was 46%, 50% and 49% respectively during 2017. There has been a decrease in hospital bed occupancy during the last few years. The reasons might be the reduction in admission of TB patients because of early case detection (less complication) and management at upazila health complexes.

Graph 13: Trends In Hospital Bed Occupation



Admission rate among the smear positive cases registered during the year ranges from 6% to 11% among the three hospitals.

Table 3: Reasons of TB admission – 2017

Hospital	Complication	Poor Gen. health	Drug reaction	DOT	MDR	Other	Total
TTLCP	99 (24%)	183 (44%)	89 (21%)	0 (0%)	41 (10%)	6 (1%)	418
MTLCP	24 (8%)	158 (50%)	15 (5%)	0 (0%)	68 (22%)	51 (16%)	316
NTLCP	73 (26%)	131 (46%)	24 (8%)	2 (1%)	41 (14%)	14 (5%)	285
Total	196 (16%)	472 (39%)	128 (11%)	2 (0%)	150 (12%)	71 (6%)	1019

Table 4: Reasons of Leprosy Admission- 2017

Hospital	Reaction & neuritis	Ulcer	Eye complication	Reconstructive Surgery	Other	Total
TTLCP	22 (35%)	38 (60%)	0 (0%)	0	3 (5%)	63
MTLCP	54 (25%)	141 (64%)	2 (1%)	3 (1%)	20 (9%)	220
NTLCP	10 (11%)	72 (77%)	0 (0%)	1 (1%)	10 (11%)	93
Total	86 (20%)	251 (59%)	2 (1%)	4 (1%)	33 (8%)	376

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 2017, a total of 20,954 general patients came for consultations at the OPD and a total of 388 patients received emergency care, out of which 269 were out of office hour.

7. Advocacy Communication & Social Mobilization (ACSM)

ACSM has been continuing from the period of MDG and Stop TB strategy to the SDG of End TB Strategy (up to 2035) as an important component of the TB control programme to address four key challenges like, improving case detection and treatment adherence, combating stigma and discrimination, 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 TB control programme 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 the individual and community. These are as follows:

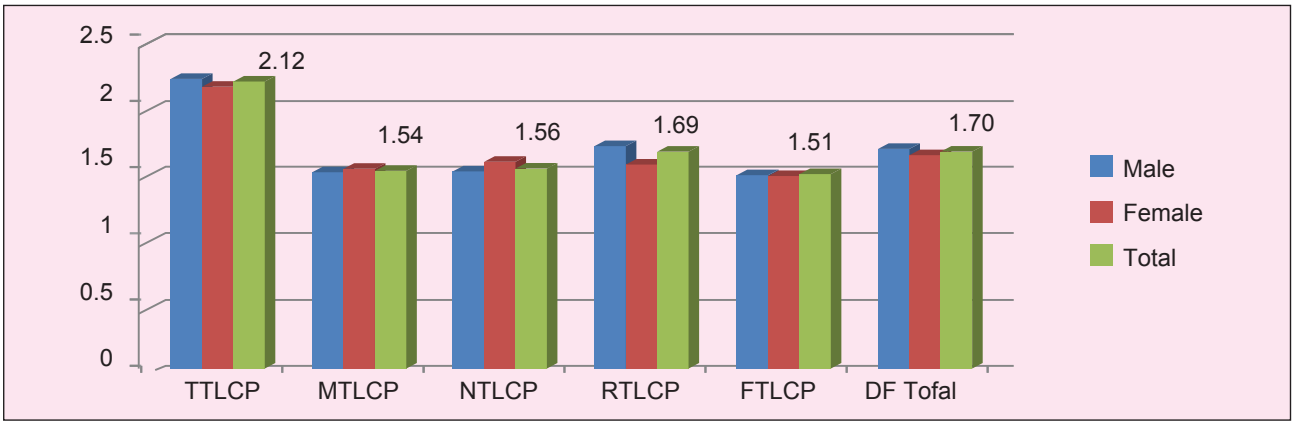
- Community health education
- Orientation of village doctors
- Meeting with cured TB patients/elites of the community (TB club meeting)
- Orientation of MO/GP
- Meeting/orientation with different NGO staff/Govt. health service providers
- Health Education in out-patient and indoor department of health service providing institutes
- Dissemination of TB message through cable TV network
- Mobilization through miking at community/market places for 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

Table below shows ACSM activities in 2017 at a glance-

Training/Orientation and other ACSM activities conducted in 2017		
Activities	**Session Conducted**	**Participant Attended**
Training/Orientation/Refresher		
Training for Village Doctors, Pharmacy Holders (1 day)	66	1,650
Review meeting/ orientation with Govt. Health & Family Planning staff	21	1,853
Orientation for Medical Doctors (Public-Private)	9	162
Other orientation (for Women groups, MDR, TB/HIV, Multipurpose, Factory)	32	3,714
Other ACSM Events		
TB Club Meeting	220	Pts.- 4,069 Elite- 282 Total-4,351
Health Education session at community level	168,624	1,181,608
Health Education in Out Patient Department (OPD) of Upazila Health Complex, Sadar Hospital, Medical College, Sub Center, Community Clinic	84,761	1,101,688
Health Education session in Indoor of Upazila Health Complex, Sadar Hospital, Medical College	16,767	607,101
Health Education session in Damien Foundation clinic/treatment center	184,912	607,101
Dissemination of TB message through cable TV network	22 units per month and 264 units in 2017; 10-15 times for each unit per day	
Miking for disseminating health message on TB/Leprosy	624	
World TB and Leprosy Day celebration	Celebrated at National, District and Upazila level	

The impact of several ACSM activities and dense network of services ultimately plays an important role in the promotion of TB service facilities in the community, which leads to early diagnosis. As a result, the main duration of diagnostic delay (patient delay plus health service delay) for TB is decreasing. The overall delay is continued as less than 2 months in 2017 except for TTLCP area. The delay in case of females to total cases is almost similar as the delay for males.

Graph 14: Diagnosis delay in 2017 - project and gender wise



7.1 Engaging all care providers and community

7.1.1 Public-public and public private mix approaches

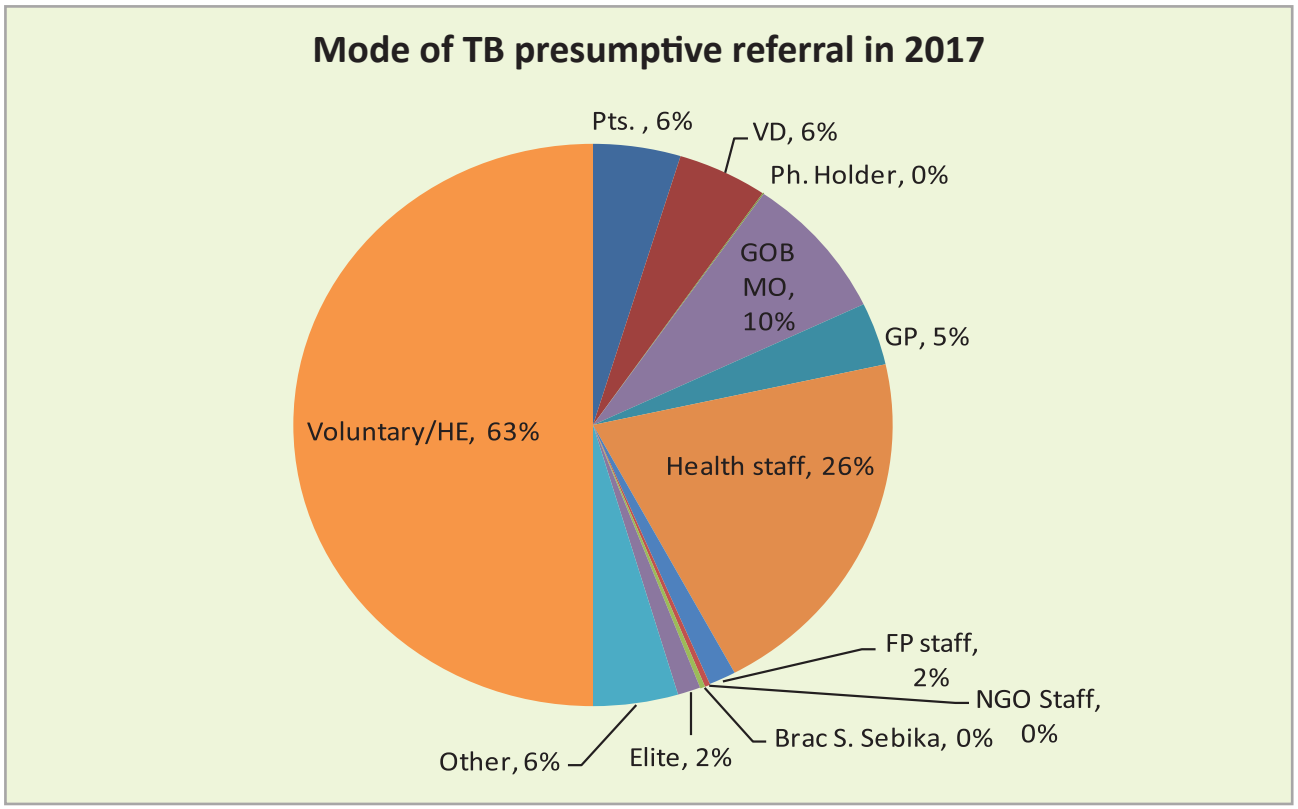
Engaging all care providers through public-private mix (PPM) approaches is an important core component of TB Control Programme. The engagement of all relevant health-care providers is essential to meet the TB-related Sustainable Development Goals and reach the targets for TB Control Programme.

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.

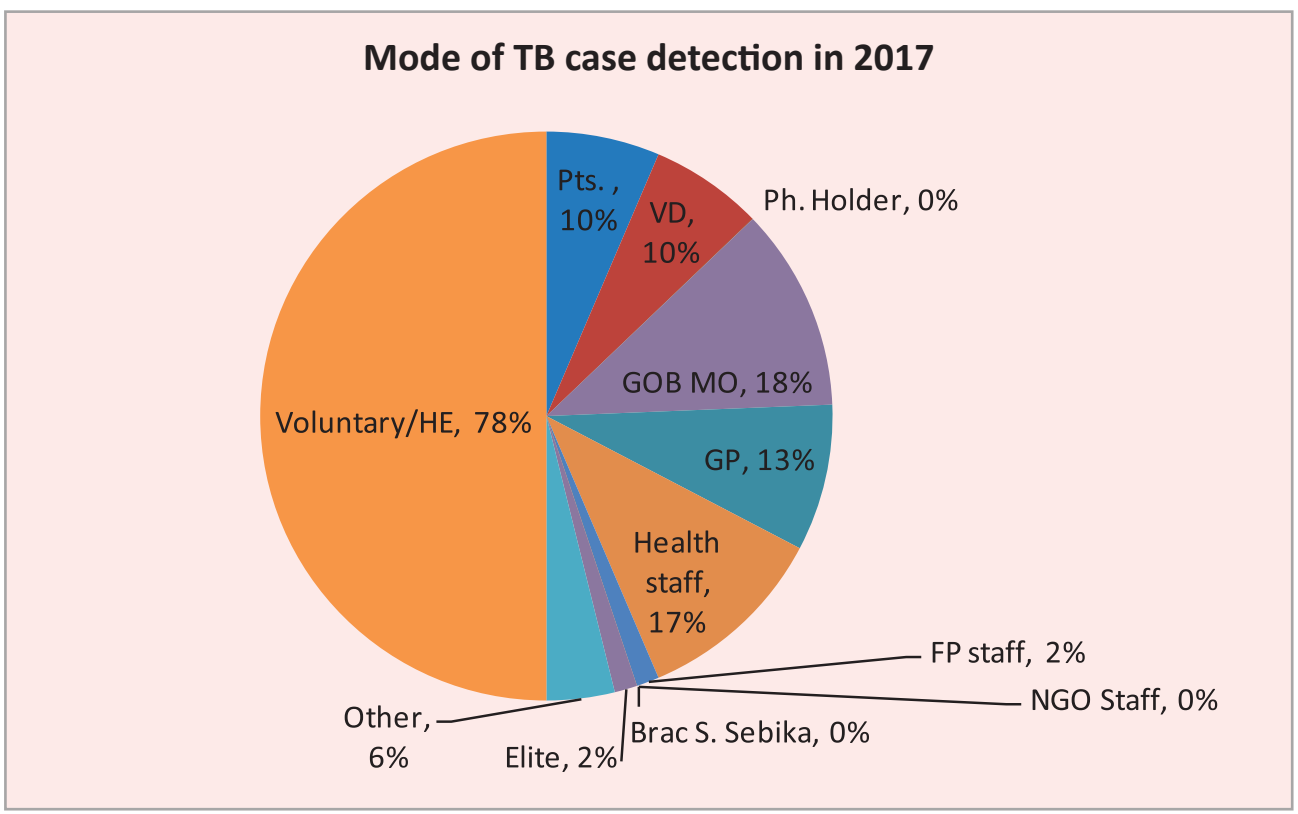
Besides, a large number of non graduate private practitioners (village doctors), graduate medical practitioners, private hospitals and NGO health facilities were involved in referral of presumptive cases and providing DOT.

Medical Students orientation

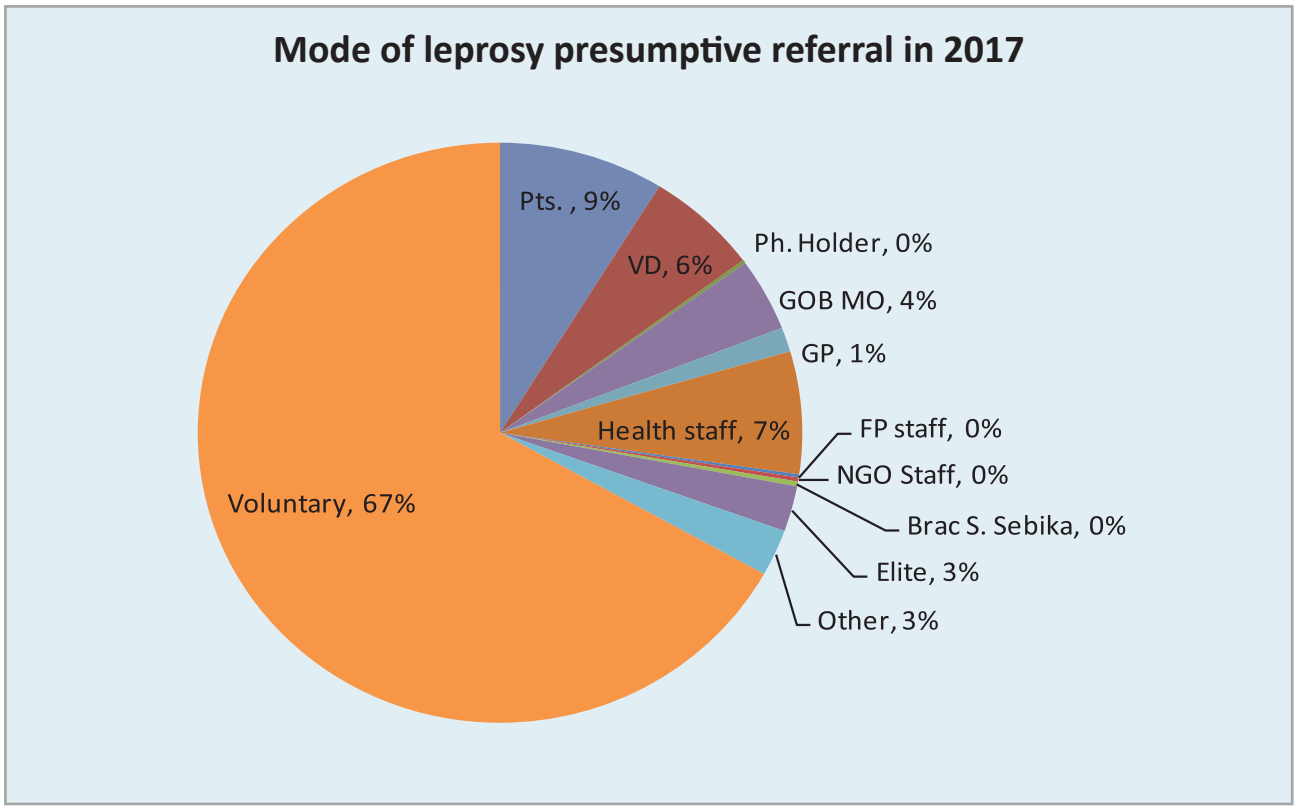
Graph 15: **The graphs below shows contribution to referral of presumptive and case detection by different providers and sources.**



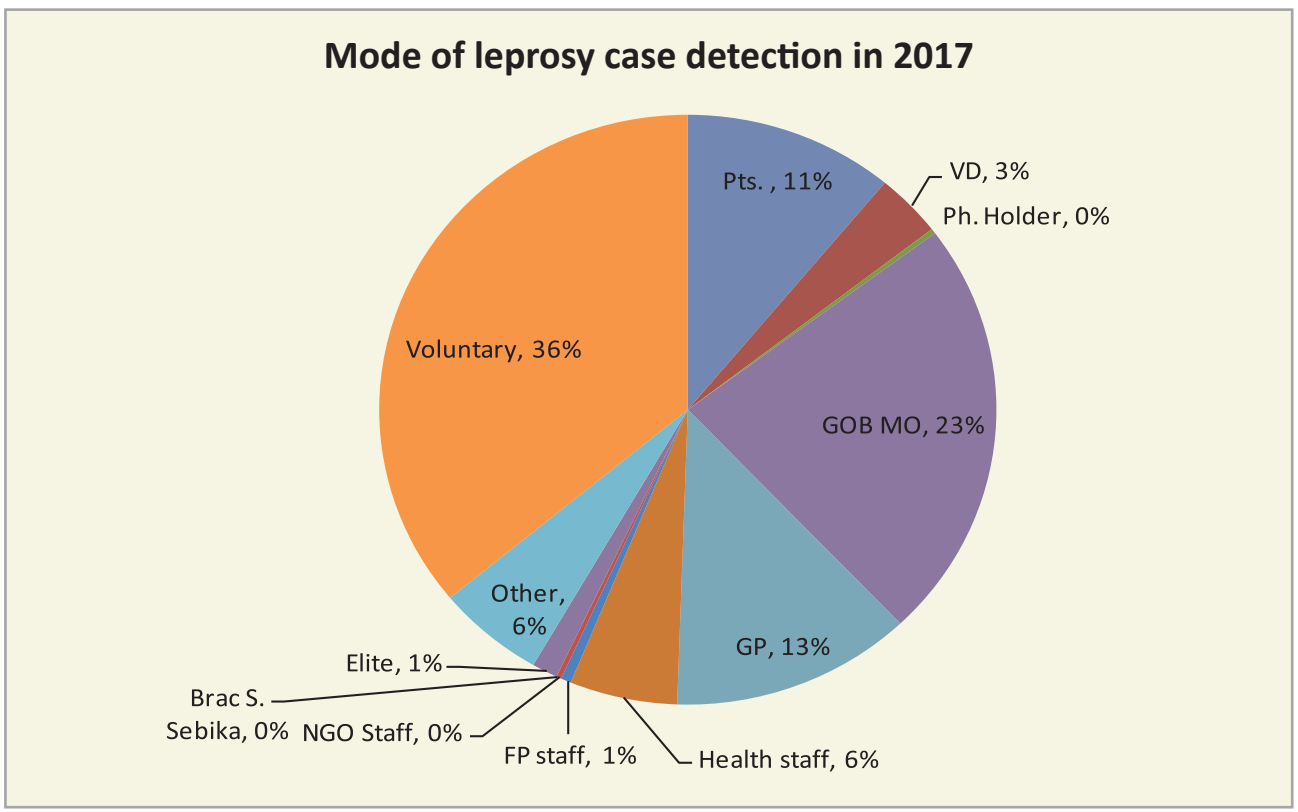
Graph 16: **The graphs below shows contribution to TB case detection by different providers and sources.**



Graph 17: Mode of Leprosy Presumptive Referral



Graph 18: Mode of Leprosy Cases Detection



7.1.2 Partnership with the Village Doctors

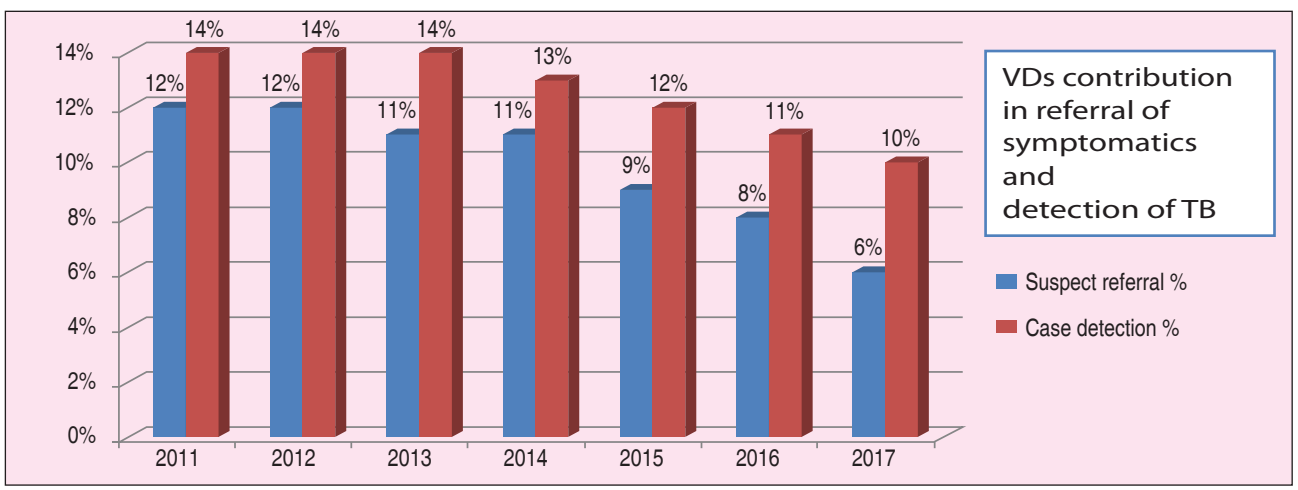
Over the period, the Damien Foundation partnership with the Village Doctors (VD) has been proven as one of the most effective and sustainable approaches; and thus the partnership with the VD was continued in 2017. The Village Doctors continued their important role in referring suspects, as well as contributing to case detection and providing DOT services to the community as in previous years.

Village Doctor Orientation

Village Doctors in 2017

DF Efforts in 2017 with VDs			Contribution by Village Doctors		
	Session	Participants		Presumptive	Cases
Training (1day)	66	1,650	TB (Number)	19,063	1,379
			% among all	6%	10%
In addition to the referral- the Village Doctors were involved as DOT providers for 11,2038 TB cases, which is 44% of total DOT in the year.					

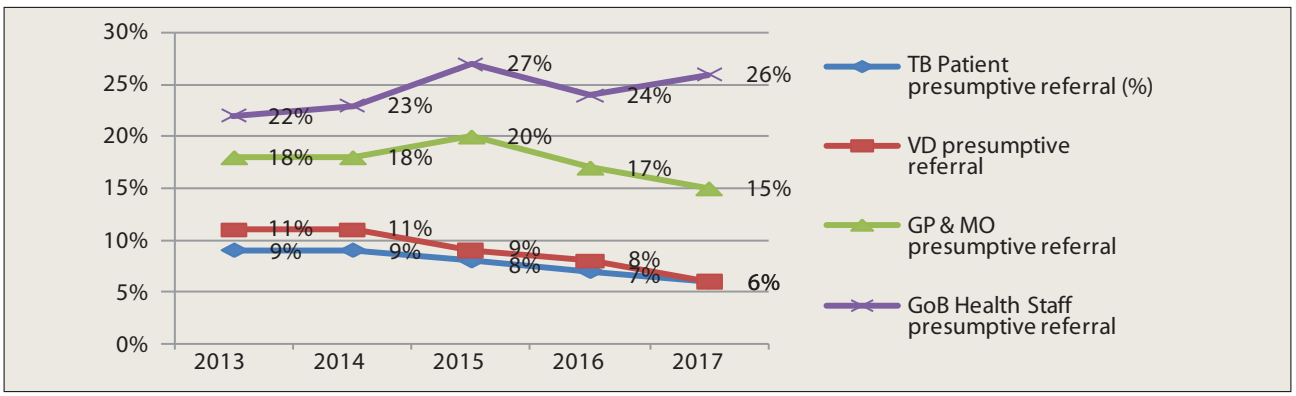
Graph 19: Trends on Contribution from village doctor during last 5 years



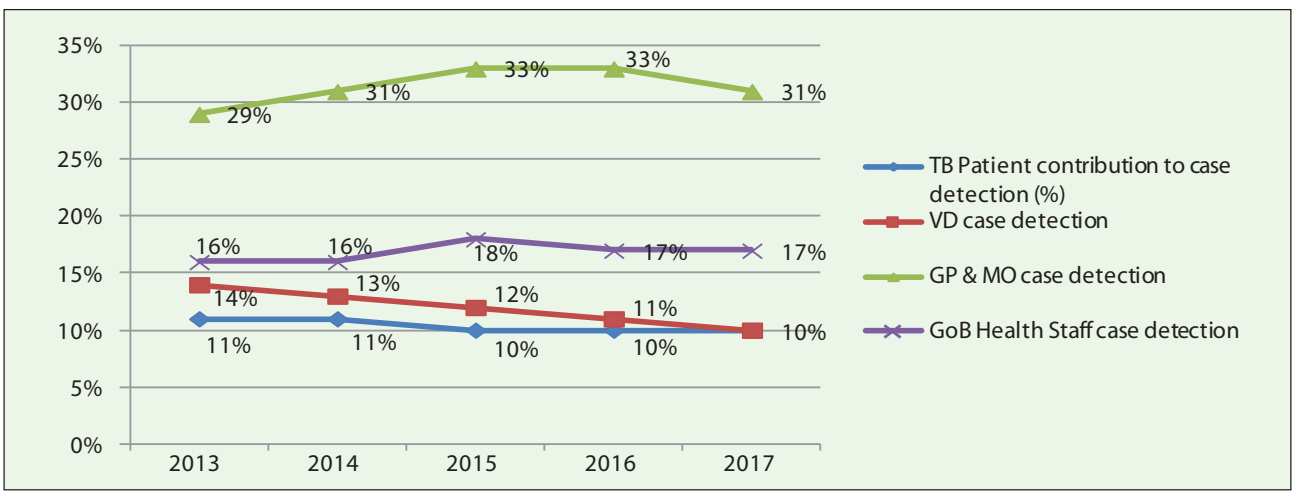
Though the graph shows a slight decrease in contribution in referrals and case detection from VDs in compare to last year, this was probably be due to increase referral from Government Medical Officers, Graduate Private Practitioners and Govt. Health staff as well as more involvement of some VDs in other work, especially with the local clinics for more income by referring patients to them.

It is to be mentioned here that there was an emphasis for enhanced linkages with them in recent years in order to detect more Pulmonary Smear Negative and Extra-pulmonary TB cases. Last four years report shows that referral of TB presumptive by Govt. MO and GP has been increased from 18% to 20% during the period from 2013 & 2015 but decreased to 15% in 2017. Similarly, their contribution in TB case detection also increased from 29% to 33% during the period from 2013 & 2015-16 but decreased to 31% in 2017. Moreover, referral of TB presumptive cases by Govt. Health staff has been increased from 23% to 26% and their contribution in TB case detection increased from 16% to 17% from 2013 to 2017. Following graphs shows the trend of case detection in last four years (2013 to 2017) -

Graph 20: Comparison of trend of TB presumptive referral from Cured TB Patients, VD, GoB Staff and GP-MO



Graph 21: Comparison among trend of contribution from VD, GoB Staff and GP-MO for TB case detection



This increasing trend of involvement of GoB MOs and field health staff seems a positive sign for sustainability.

7.1.3 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. During last year, this partnership approach has been strengthened.

Govt. Medical Doctors and General Practitioners in 2017

DF Efforts in 2017 with Medical Doctors (GoB MOs & GPs)			Contribution by Medical Doctors		
	Session	Participants		Presumptive	Cases
Orientation for Medical Doctors (1 day)	09	162	TB (Number)	45,854	4,449
			% among all	15%	31%
			Leprosy (Nr.)	646	88
			% among all	5%	36%
In the project area, the Govt. Medical Doctors continue their support in diagnosing and managing complicated cases (both TB & Leprosy) at the early stages and facilitating different courses/orientation for other stakeholders.					

Govt. Health & Family Planning staff in 2017

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

DF Efforts in 20167with Govt. Health & Family Planning staff			Contribution by Govt. Health & Family Planning staff		
	Session	Participants		Presumptive	Cases
Review meeting/ Orientation (1 day)	21	2000	TB (Number)	93,385	4279
			% among all	28%	19%
			Leprosy (Nr.)	633	42
			% among all	7%	7%
Besides referral, Govt. Health & FP staff play an important role in providing DOT. A total of 3,236 TB patients received DOT under their supervision in 2017, which is 13% contribution to the total DOT monitoring. Their involvement increased the DOT expansion in the community, which is very much important to improve patient friendly access to the services and enabling community participation in TB control for enhancing sustainability.					

7.2 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 the financial support from the Belgian Government & Damien Foundation, GFATM, CTB and WHO.

The effect of several ACSM activities and dense network of services has been revealed through sustaining the referral of presumptive cases and increasing trend among certain group of people as well. The clinic staffs were involved with several ACSM activities besides routine activities on diagnosis, treatment and follow-up.

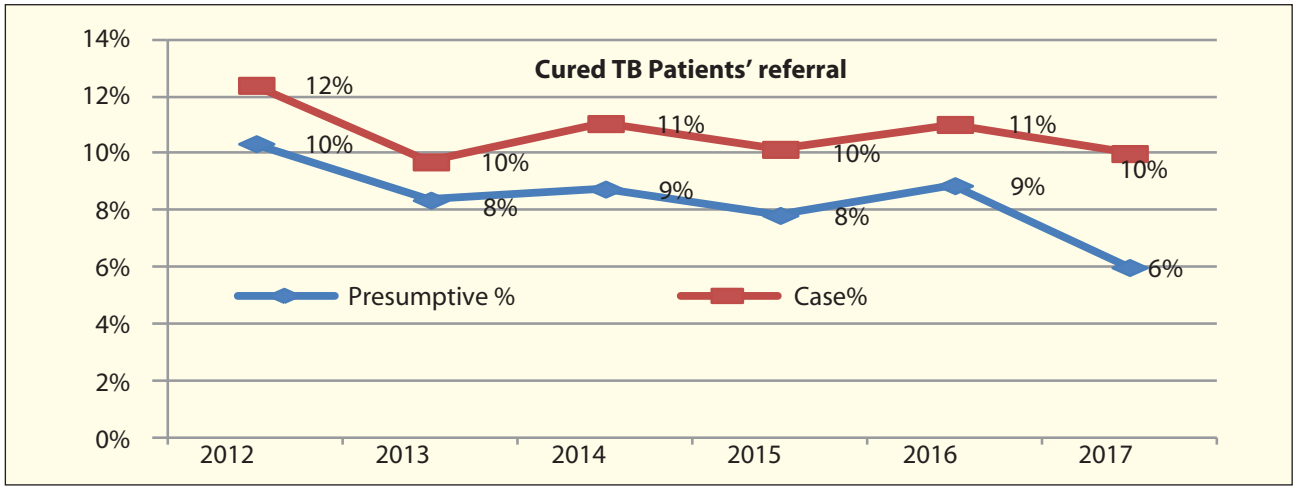
7.2.1 Working with the Former patients and Elites (TB Club Meeting)

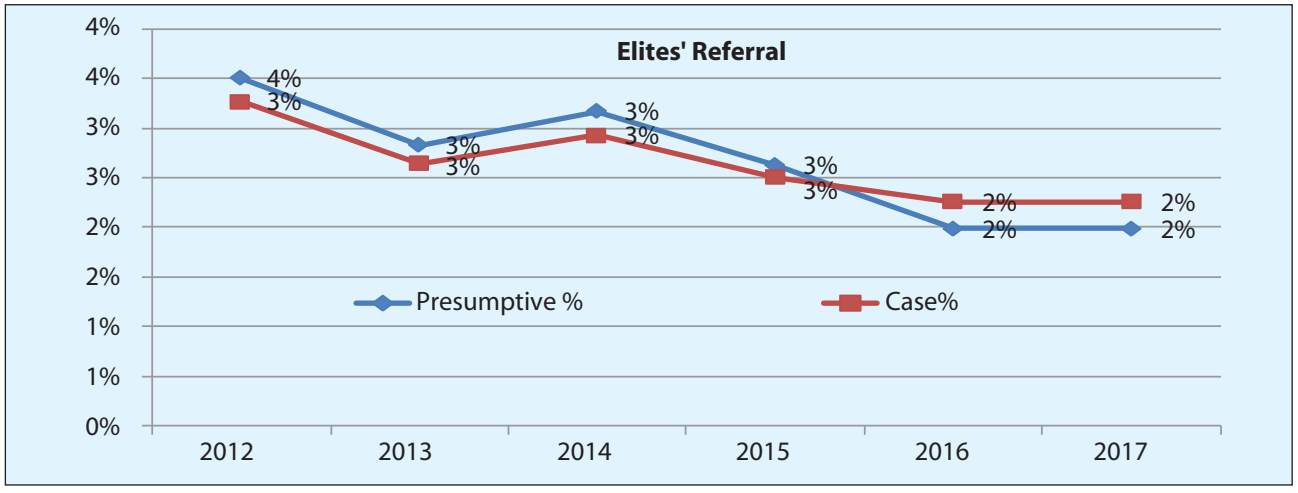
The objective is to involve cured patients from the community to increase the case finding and to encourage them to refer presumptive TB cases and for early detection of new case and relapse. Since 2000, DF has emphasized involving former patients in the identification of presumptive TB cases from the community and for 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 the society, but their role in TB & Leprosy control activities has given them an identity as the best advocate to the community in terms of referral of presumptive TB & Leprosy cases.

DF Efforts in 201 7 with Cured Patients and Local Elites			Contribution by Patients and Local Elites		
	Session	Participan ts		Presumptive	Cases
TB Club meeting at union level (1 day)	145	Patients - 3,659	TB (Number)	18,306	1351
			% among all	6%	10%
			Leprosy (Nr.)	1,236	44
			% among all	9%	11%
		Elites - 282	TB (Number)	4,782	245
			% among all	2%	2%
			Leprosy (Nr.)	371	2
			% among all	3%	1%
Each cured patient is a living example for the community that "TB is curable".					

TB Club Orientation

Graph 22: Contribution of former TB patients and Elites in referring presumptive TB cases and smear positive case detection during last five years (2012-2017)





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

Health education events do create greater social commitment and support behavioral change in order 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 2017.

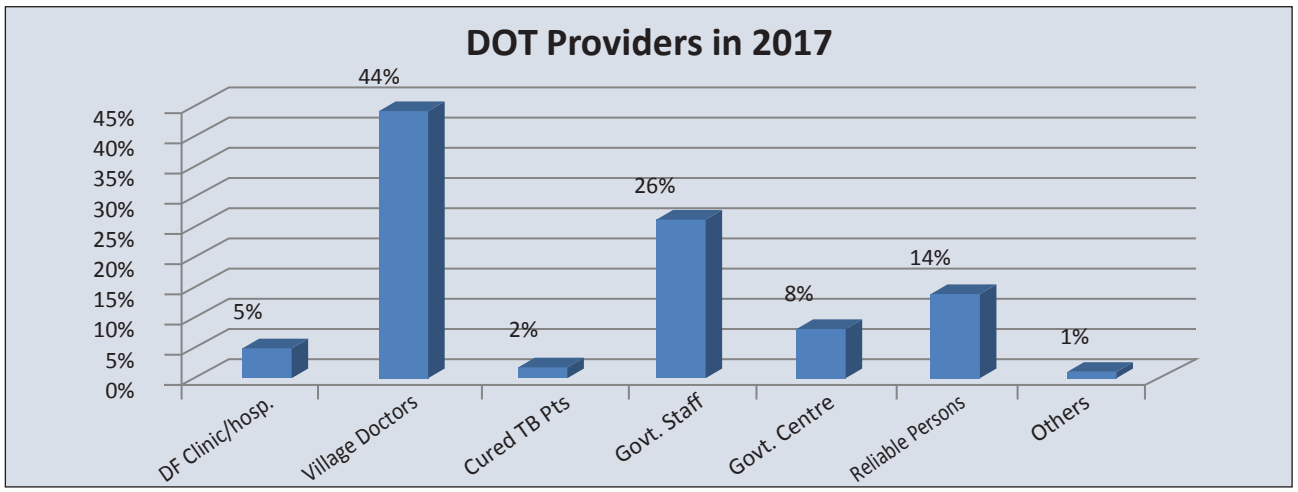
Details are in following table:

Health Education Activities in 2017			Contribution from Health Educational Activities		
	Session	Participants		Presumptive	Cases
Health education session in community	168,624	1,181,608	TB (Number)	101,574	2,994
HE session in OPD (UHC, SH, MC, FWC, SC, CC)	84,761	1,101,688			
HE session in INDOOR (UHC, SH, MC)	16,767	258,915	% among all	33%	21%
HE session in DF clinic	184,912	607,101	Leprosy (Nr.)	11,663	272
Miking	590		% among all	70%	53%
Total	455,654	3,149,312			
Health education activities helps to enhance community participation which leads to increased awareness, promote health-seeking behavior, inspire dialogue, and heighten community concern and action for TB/Leprosy control.					

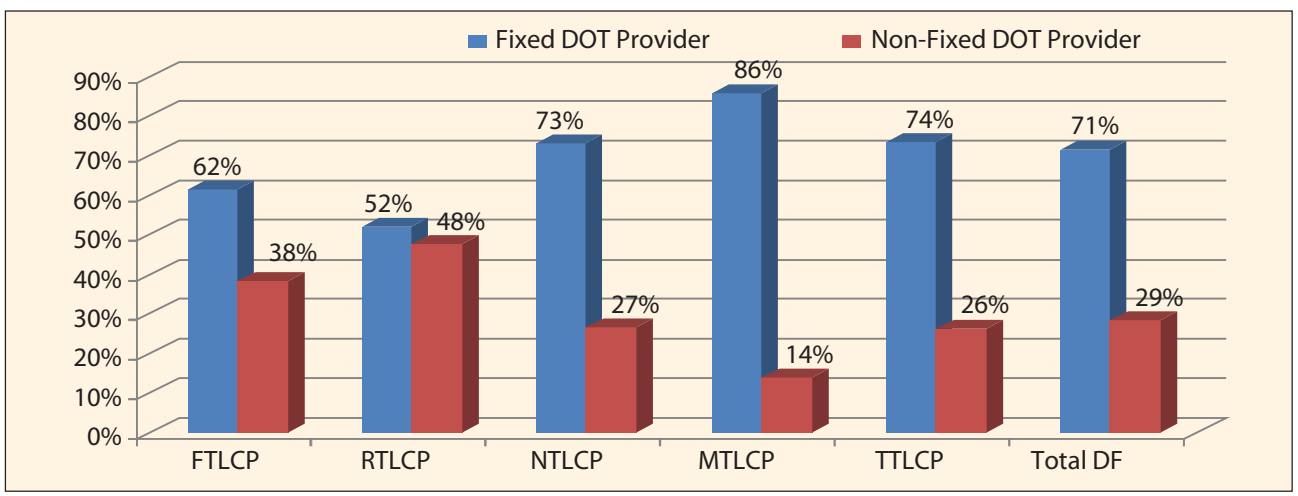
7.2.3 Community participation in DOT expansion

In compliance with the components of the STOP TB STRATEGY: "Pursue High-Quality DOTS Expansion and Enhancement", Damien Foundation Bangladesh, since initiation of the TB control programme, has decentralized DOT to the community level to make it more patient friendly by involving VDs, GOB Health and Family planning staffs, other NGO staffs, cured patients, school teachers, religious leaders and local elites. In each Union, there are 5 to 6 Fixed DOT Providers (FDP) to provide DOT to the patients, next to this there are other Non-Fixed DOT Providers. The graph bellow shows the involvement of different categories of DOT providers in TB Control Programme, where about 44% of them are Village Doctors in DF project areas.

Graph 23: DOT Providers in 2017



Graph 24: Fixed and Non-Fixed DOT Provider in DF project areas in 2017



8. Operational Research in Damien Foundation Bangladesh

Damien Foundation Bangladesh has been conducting several operational researches next to its routine activities aiming at defining/establishing cost-effective means of diagnosis & treatment, documenting/validating different research findings/publications from other countries and to provide input to the national and international Health Agencies (WHO, IUATLD) to develop/recommend new tools and strategies for different NTPs based on study results obtained in DF Bangladesh.

8.1 Diagnosis and Management of MDR–TB

Since 1997 DF started to treat MDR-TB patients using a succession of standardized regimens of MDR TB under operational research conditions, which led to the development of a highly efficient, safe, short and relatively cheaper regimen initially resulting in close to 90% cure with minimal bacteriological failure or relapse, and without amplification of second-line drug resistance.

Additionally 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 drug resistant TB cases. Currently 4 very simple laboratories in DF areas are capable of delivering min. 95% correct diagnoses of TB resistant to rifampicin, fluoroquinolones (high or low level) and 2nd-line injectables, besides its differentiation from non-TB mycobacterial disease, and this within 2 weeks.

The more efficient but very costly molecular diagnosis of rifampicin resistance by GeneXpert machines were installed in 5 DF laboratories (donations from NTP/USAID) but most of them showing disturbances (equipment errors) most of the time leading to dependence on DF developed DST testing methods.

For these achievements in the field of drug resistant TB, DF Bangladesh received intensive support from the Mycobacteriology Unit of the Institute of Tropical Medicine in Antwerp, Belgium, with gradual transfer of capacity to its reference laboratories (the main one at its own hospital in Netrakona)[10].

In 2017, enrolment of MDR TB patients on shorter 9-month levofloxacin-based regimen was continued. A total of 1,962 MDR TB patients have been enrolled under 9-month shorter regimen since 2005 and the enrollment during 2017 was 211 (154 from DF area and 57 from non-DF area in Rajshahi division).

Despite increasing quinolone resistance, treatment success rate has been maintained above 80%.

The drug cost per patient treated with this 9 month regimen is around 225 Euro which is much lower than the WHO recommended regimen. Considering the cost, treatment duration and higher treatment success, several countries have already adopted this regimen under programmatic conditions following the WHO recommendation. The Union coordinated TREAT TB initiative in conducting a clinical trial using a modified version of this 9 month regimen in South Africa, Vietnam, Mongolia and Ethiopia. The stage 1 of STREAM trial is being continued with stage 2. In stage 2, two new regimens are included with stage 1: Kanamycin is replaced by new drug bedaquiline (BDQ) in one regimen and kanamycin given for first 2 months in the other. The duration of new regimens with BDQ is 9 months while the other with kanamycin is 6 months. The NTP Bangladesh also adopted this 9 month shorter regimen (developed by Damien Foundation) and scaled up throughout the country starting from 2017.

8. 2 Drug resistance monitoring

Monitoring the TB drug resistance in DF Bangladesh projects is in place since end of 1995, mainly through systematic referral of sputum from return after lost to follow up, relapse and failure cases, 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 is performing LJ DST independently under the direct supervision and control of Antwerp lab. 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 during the years. Annually more than 3,000 sputum samples are processed in Netrakona lab, most of which belong to follow-up samples of MDR TB cases. Since 2004, following the introduction of rifampicin throughout intermittent regimen in the country, an increase in MDR TB rate was observed. The analysis of trends in RMP and Ofloxacin resistance incidence for all DF districts expressed per 1000 smear positive cases (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. Apart from MDR follow-up specimens, XDR and 2nd-line injectable resistance are virtually absent.

8. 3 FDA staining and slide DST

Since mid-2008, slide culture and (FDA) vital staining are used decentralized by all DF Bangladesh projects, except for FTLCP where the lab is still suitable only for FDA. FDA staining was installed in 8 clinics of Greater Mymensingh, preparing for the OneRIF clinical trial on earlier detection of MDR-TB and effect of double dose rifampicin first-line treatment. FDA results at 2 weeks treatment was used as screening to define samples for further tests (GeneXpert, slide DST). Following the WHO recommendation to abandon Cat.2 for patients with INH resistance but not MDR TB, expansion of FDA staining is planned to more sites for strengthened Cat.2 study where FDA staining will be performed on sputum smears at start and at 2 weeks.

FDA staining of sputum smears is now being used for declaration of failure of MDR regimen: FDA result at least 1+ in 2 occasions one month apart from 5 months onwards, so failure of MDR regimen is declared at 6 months or later.

[10]At present the DF Netrakona hospital works independently, with ITM Antwerp supporting only for data management, quality assurance particularly for the MDR DST, and advanced tests needed for study documentation and/or management of the most complicated cases (fingerprinting; DNA sequencing of resistant genes and tests on a wide range of second-line drugs).

Slide DST is performed to detect 2nd line drug resistance. This test provides information on Kanamycin and ofloxacin results at different concentrations besides rifampicin in 2 weeks time described in the laboratory section.

8.4 Six months MDT Regimen trial For MB Leprosy Patients

In 2002, WHO recommended to launch trials of a uniform MDT of six-month duration for all the leprosy cases (PB and MB) with the regimen given to MB cases. As the current regimen for PB cases is adequate, Damien Foundation in collaboration with Danish Bangladesh Leprosy Mission undertook this study on MB patients during 2005 – 2006. MB patients under this study are being followed up annually for 10 years to assess relapse rate.

After exclusion of those withdrawn from the study, the number of patients eligible for analysis are 562 and 773 for twelve months and six months cohort respectively. Among them respectively 44% and 38% were skin smear positive, 20% and 23% were with Grade 2 disabilities at enrollment. Their mean Nerve Function Impairment (NFI) score was 83 for both groups at the time of diagnosis.

Regarding gender distribution, 30% and 27% were female in twelve and six month cohort respectively while the average age of male was 40.12 (range 16-88 years) and for female it was 41.19 (range 16-80) for both groups together.

Despite some errors and data missing from the yearly routine follow-up, respectively 96% and 98% cases completed their treatment in twelve and six months cohort.

No significant difference has been observed in NFI score from start to current follow-up among the regular cases. It stays 83 to 84 out of 90. The decreasing trend in maximum BI is observed in both cohorts, from 1.59 to 0.03 in twelve months and 1.30 to 0.18 in six months after the follow-up in 2017.

Only one confirmed relapse has been diagnosed till end of 2016 from the intervention group.

8.5 Optimization of TB treatment regimen (OneRIF study)

Several studies[11] are currently ongoing globally to find new regimens for the treatment of TB. Most of these studies focus on finding new/more efficient drugs for both drug- susceptible and - resistant TB. The DF project focuses on optimizing the current TB treatment regimen by doubling the dose of rifampicin for drug susceptible TB. This new clinical trial using double dose rifampicin for smear positive TB patients aged 15 years and older in the intervention group, was started in 2014 in 8 clinics with a high patient load, in collaboration with the clinical trial unit of the Institute of Tropical Medicine, Antwerp - Belgium. Early follow-up of sputum smear by FDA vital staining at 2 weeks along with Xpert testing of slow responders (speeding up diagnosis of MDR and start of MDR treatment) was used as screening tool. Enrollment was completed by the end of September 2015: 476 under intervention arm and 471 under control arm. No significant increase in hepatic enzymes with double dose rifampicin among those enrolled was observed. A total of 24 failure cases (14 intervention arm and 10 control arm) have been observed. Follow up sputum smears (microscopy and culture) from all cured, treatment completed and lost to follow up patients were examined after one year period to assess relapse rates. A total of 8 relapse cases (5 from intervention and 3 from control arm) have been identified. Among them infection with non-TB mycobacteria was found one from each group.

9. Human Resource Management & Development

9.1 Overview

To provide high quality healthcare service to the community and to ensure smooth functioning of 161 DF field clinics and 3 hospitals, a total of 555 (male-354 and female-201) local staff are involved. Out of this, 358 staffs are involved in carrying out the field activities under the supervision of 35 Supervisors (TLCOs, Sr. TLCO, Monitoring & Evaluation Officers and Field Coordinators) and 6 Medical Doctors. Besides DF staff, one volunteer for each of the 261 sputum collection centres are engaged from the respective communities. These volunteers have been trained in identifying TB & Leprosy presumptive and in preparing smears. The male-female staff ratio of Damien Foundation Bangladesh is 1.76 : 1 in 2017.

In 2017, total staff turnover was 10.71% (62). On the other hand, DF recruited 38 new staff to fill-up the vacant positions at the different levels including 02 medical officers (field & OPD), 22 paramedics and 14 others.

9.2 Workshop/Training/course organized by Damien Foundation throughout the year 2017

To develop skills in different key staff, the DF Bangladesh organized several workshops in the year of 2017. A detailed schedule of the workshop/training is given below:

[11] Available at: http://www.newtbdrugs.org/pipeline/clinical

Name of Training Course/Orientation/Workshop	Participants	Duration, place & organized by
2 days Workshop on Income TAX & VAT rules & regulations	A total 06 persons of Accounts Officers/Accounts Assistant	02-03 March, 2017 (2 days), Organized by DFCO at MTLCP
A day long workshop on MDR TB Management	A total 11 Medical Doctors and 05 Field Coordinator/Monitoring & Evaluation Officers/Sr. TLCO	02 April, 2017 (01 day), Organized by DFCO at DF training Center, Jalchatra Hospital, TTLCP
A day long workshop on Micro Planning and Strengthen of Monitoring & Evaluation system	A total 04 Project Directors, Lab Director, 11 Medical Doctors and 05 Field Coordinator/Monitoring & Evaluation Officers/Sr. TLCO	21 July, 2017 (01 day), Organized by DFCO at DF training Center, Jalchatra Hospital, TTLCP
A day long workshop on MDR TB Management	A total 11 Medical Doctors and 05 Field Coordinator/Monitoring & Evaluation Officers/Sr. TLCO	24 December, 2017 (01 day), Organized by DFCO at DF training Center, Jalchatra Hospital, TTLCP

Micro planning workshop of DF staff

Workshop on Income TAX & VAT with Accounts Officers

9.3 Participation in different in-country training courses in 2017

To develop skills in different fields, DF staff members attended different in-country training courses in 2017, organized by NTP/MSH /BRAC. A detailed schedule of the training courses & participants are given below:

Name of Training Course/Orientation/Workshop	Participants	Date, Duration & Organized by
LED Training	Total 04 (02 Sr. TLCA/TLCA, 01 C-TLCA and 01 A-TLCA)	18-23 February & 03-08 December, 2017 (2 Training Courses 6 days each) by NTP
Performance Review Orientation on EQA	Total 02 (01 MO & 01 Lab Assistant)	27 March, 2017 (01 day), by NTP
TOT for Capacity Building to conduct Training on Counseling Patients by DOT	Total 02 TLCOs	02-04 April, 2017 (3 days), by NTP
Basic LED-FM Microscopy Training	Total 04 TLCAs/A-TLCA	15-20 April, 2017 (06 days), by NTP
Gene-Xpart	Total 01 Sr.TLCA	06-08 December, 2017 (3 days), by NTP
MDR Training	Total 07 TLCOs	09 August, 2017 (01 day), by CTB
Training on GoB Health Information System	Total 02 (01 M&E Officer & 01 Sr.TLCA)	25 September, 2017 (01 day), CTB
Organize one day orientation on GxAlert	Total 02 Lab Technicians	27 September, 2017 (01 day), by CTB
Training on e-TB Manager	Total 19 (17 Sr.TLCAs & 02 TLCAs)	16, 25, 26, 27 & 28 November, 2017(5 sessions 01 day each), by SIAPS, MSH
Refresher Training on Enhancing Case Finding Activities	Total 11 persons (07 Sr.TLCAs/TLCAs, 02 Field Staffs, 01 ATLCA & 01 CA)	17-19 January, 22-24 January, 14-16 May, 6-8 August & 15-17 October, 2017 (5 courses, 03 days each), by BRAC
Refresher on TB	Total 04 (02 TLCAs & 02 C-TLCAs)	04-06 June & 17-19 September, 2017 (2 courses, 03 days each), by BRAC

9.4 Participation in International training courses/meetings/conferences and provided Technical support by DF Bangladesh staff in 2017:

With a view to update knowledge and to share experience, DF staff members participate in different international training courses, meetings, conferences, workshops, seminars and also provided technical support by DF staff around the world. In 2017, the following DF staff attended conferences, meetings, training courses and provided technical support as focal person as per schedule below:

Conference/ Meeting /Training Course	Participants/focal person	Place, Duration & Organized by
As a focal person to provide "Training of chest physicians and DR TB implementing partners in Pakistan on implementation of DF Bangladesh invented shorter treatment regimen for MDR TB	Dr. Aung Kya Jai Maug, Medical Specialist Research Training & MDR TB, Damien Foundation Bangladesh	Islamabad, Pakistain from 04 March 2017 to 11 March 2017, Organized by World Health Organization
"The proposal writing workshop and general meeting in Brussels, Belgium"	Dr. Dipak Kumar Biswas, Medical Coordinator, Damien Foundation Bangladesh)	Brussels, Belgium from 28 May 2017 to 01 June 2017, Organized by Head Quarter of DF Belgium
"The rGLC (Regional Green Light Committee) Mission"	Dr. Aung Kya Jai Maug, Medical Specialist Research Training & MDR TB, Damien Foundation Bangladesh	Jakarta, Indonesia from 10 September 2017 to 15 September 2017, Organized by World Health Organization
As a focal person to provide "Training of clinicians on implementation of shorter treatment regimen for MDR TB" and attend also the rGLC (Regional Green Light Committee) Mission"	Dr. Aung Kya Jai Maug, Medical Specialist Research Training & MDR TB, Damien Foundation Bangladesh	Myanmar from 22 September 2017 to 29 September 2017, Organized by World Health Organization

10. Building Camp

Damien Foundation (DF) Bangladesh had the pleasure to receive visiting groups from Belgium every year. Those visits have this characteristic in common: all visitors are volunteers in the network of the Communication Department. With their relentless support DF Belgium manages to raise, year after year, the necessary funds for the worldwide programmes. During the visits the volunteers obtain a clear insight into:

(1) The many-sided tasks of a programme, fighting against TB and leprosy &

(2) The challenges and realities specific to this country.

The groups have different objectives as follows:

i). Volunteers participating in "Building Camp"

ii). Cycling groups who discover the DF activities and Bangladesh by cycle.

iii). Network volunteers who witness the DF work during an "immersion" journey.

iv). Business groups, sponsoring DF Bangladesh.

v). Regional Belgian TV stations, accompanied by students and teachers from their own broadcasting area.

In 2017, we did not receive such kind of visiting group, instead, we organized a building camp with Local initiative in consultation with DFB to do the following urgent and necessary works utilizing the leftover fund of last three consecutive years 2014, 2015 & 2016 of building camp:

(i). Build a new Tin-shade garage for car parking at DF Jalchatra Hospital

(ii). Training accommodation & Training room renovation & painting work at DF Jalchatra Hospital,

(iii). Safety tank & sock-well renovation for DF Netrakona Hospital and

(iv), Incinerators for DF all field projects

11. Programme Management and Coordination

At the project level, overall implementation management of 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 weekly basis and decides on the major issues, including issues referred from TLCO meetings, on quarterly basis. They can also organize the MT meeting at any time to deal with urgent issues.

An important process of Programme Management and Coordination is the regular monthly TLCO meeting, where all TLCOs, FCs, M&E Officers/Medical Officers, Hospital/Field Directors and Project Director 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 officer).

In depth analysis of monthly progress reports including performance, achievements, challenges and problems are done through 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 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 finding 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 national level office and the project offices on a regular basis. Besides, mobile phone communications are used for urgent matters between national & project levels, and field clinics. In this way, the national office is kept updated on what is happening at any point at field level.

For facilitating better coordination representative/s from Damien Foundation Coordination Office at Dhaka also participated in some project level meetings of Management Teams and TLCO meetings and guided them.

12. Monitoring, Supervision & Evaluation

12.1 Internal monitoring, supervision & Evaluation

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 cases. Monitoring MDR TB treatment through regular updating of MDR files are routinely done by DFCO. 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 staffs.

Monitoring of activities and supportive supervision of staff is done through field visits by different levels of staff. At the field level, TB & Leprosy Control Officers (TLCOs) are the first line staff for monitoring of the project activities in 3-4 upazilas (Sub-districts) each. They supervise the first line field Clinic staff, TB & Leprosy Control Assistants (TLCAs) / paramedics, Assistant TB & Leprosy Control Assistant (ATLCA) and Clinic Assistants (CAs). 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 at least 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 resistant and failure and relapse cases. 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 is carried out through analyzing the achievements realized, compared to the planned activities and results. Quarterly and annual reports are used to monitor the project performances.

M&E Officer (M&EO), Medical Officer (MO) and Field Coordinator (FC) pay monitoring visits to a TB clinic/lab/UHC at least 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 Hospital Director/ 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.

Monitoring Visit from DFCD

From the Damien Foundation Coordinating Office (DFCO), the Medical Coordinator and Medical Specialist visit the field especially for programmatic monitoring to provide professional and technical support. Admin & HR Director (AHRD) and Finance Director (FD) visit the field for need- based monitoring purposes. The Country Director of DF also pays visits based on the needs of project management (HR, finances), and to discuss strategic issues (program/project).

12.2 Supervision & monitoring from NTP, NLP, MoH & other donor agencies:

DF field projects, hospitals & clinics were routinely visited by the different representatives of the NTP and NLP. The supervisors include: Director MBDC, PM, DPM, NTP MOs, GFATM supported TB Consultants posted at the divisional level, a designated Medical Officer (TB/Leprosy) based in the Civil Surgeon's office at the district level, a junior consultant at the district chest clinic.

Also top level personnel visited DF projects, hospital & clinics from Ministry of Health, BCCM oversight committee, NGO Affairs Bureau, Local Funding Agent (LFA) of GFATM, PR-BRAC of GFATM, MSH-Challenge TB etc.

12.3 Supervision by DF Brussels and other foreign visitors

DF Bangladesh project is also closely monitored through regular communications and field visits from Damien Foundation head quarter in Brussels. The Programme Manager and the Medical Advisor of DF Brussels pay visits to DF Bangladesh projects once annually and more when necessary. Their observations are shared with DF teams in Bangladesh.

As part of their scheduled supervision visit to Bangladesh Mrs. Celine Van den Bergh, the Project Manager of DF Brussels and Dr. Nimer Ortuno Gutierrez, the Medical Advisor of DF Brussels have visited in the month of November 2017. Dr. Nimer Ortuno Gutierrez, the Medical Advisor of DF Brussels also visited in Bangladesh earlier in this year in the month of February 2017.

Meeting of DF Brussels Representatives with NTP

Monitoring Visit from DF Brussels

In addition, Bart Smekens and Natacha Herssens, Clinical Research Scientists, Department Klinische Wetenschappen/Clinical Trials Unit from Institute of Tropical Medicine (ITM), Antwerp, Belgium came to Bangladesh to oversee and monitor One RIF study's clinics in DF Bangladesh program in the month of October 2017. Mr. Mourad Gumusboga visited DF Bangladesh program from ITM Brussels for providing technical support (Calibration the Genexpert Machine) to Netrakona Lab.

A team of Nepal, Damien Foundation consists of 04 persons (Dr. Sushel Koirala, Country Director, DF-Nepal, Dr. Prosad Raj Bhattarai, MDR TB Medical Officer, DF-Nepal, Mr. Shilikram Rigal, Operation Manager, DF-Nepal, and Dr. Neeas Shah-NTP-Nepal) and a team of NTP, Nigeria consists of 06 persons (Dr. Victor A.Babawale, Elom Emeka, Yasfekat Ali Taiwo, Alasia Datonye, Ohisoji Ige and Chiagozie Bonita Ngbemena) also visited DF Bangladesh program in the month of December 2017 for learning the implementation of 9 months MDR-TB management.

Visitors from Nepal

Visitors from Niageria

Government Health Infrastructure in DF-areas

Annex Table -1

District / Project	Square km	Population	Hospitals	Upazilla Health Complexes	Health Centers	TB Clinics	Leprosy Control Assistants	TB beds	Lep. beds
Tangail Project	**6,810**	**7,655,380**	**3**	**24**	**1,078**	**2**	**24**	**0**	**0**
Tangail	3,414	3,832,907	1	12	545	1	12	0	0
Jamalpur	2,032	2,412,546	1	7	332	1	7	0	0
Sherpur	1,364	1,409,927	1	5	201	0	5	0	0
Mymensingh Project.	**7,052**	**8,649,512**	**4**	**23**	**958**	**2**	**16**	**48**	**0**
Mymensingh	4,363	5,528,051	2	11	593	1	7	48	0
Kishoreganj	2,689	3,121,461	2	12	365	1	9	0	0
Netrakona Project.	**2,810**	**2,387,031**	**1**	**9**	**295**	**0**	**8**	**0**	**0**
Netrakona	2,810	2,387,031	1	9	295	0	8	0	0
Rajshahi Project	**7,546**	**6,685,055**	**14**	**24**	**1,106**	**2**	**25**	**150**	**0**
Rajshahi	2,407	2,267,603	9	9	389	1	8	150	0
Naogaon	3,436	2,709,506	4	11	489	0	12	0	0
Nawabganj	1,703	1,707,946	1	4	228	1	5	0	0
Faridpur Project	**7,008**	**6,693,876**	**7**	**23**	**982**	**3**	**31**	**24**	**0**
Faridpur	2,073	2,004,524	3	7	268	1	11	24	0
Gopalganj	1,490	1,193,911	1	4	262	1	8	0	0
Madaripur	1,145	1,186,097	1	3	149	1	4	0	0
Rajbari	1,119	1,098,634	1	4	166	0	5	0	0
Shariatpur	1,181	1,210,710	1	5	137	0	3	0	0
Total DF	**31,226**	**32,070,854**	**29**	**103**	**4,419**	**9**	**104**	**222**	**0**

Supportive activities over 2017
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
	1/1/2017	12/31/2017	Leprosy	TB	General		surgery / ulcer	Reaction / other	Retreatments	Others	
TTLCP	95	95	2,977	13,037	33	**46%**	38	22	41	377	20,954
MTLCP	100	100	7,875	10,477	0	**50%**	141	54	109	207	1,045
NTLCP	60	60	2,921	7,708	0	**49%**	72	10	89	196	133
RTLCP	No hospital, not applicable										
FTLCP	No hospital, not applicable										
Total projects	**255**	**255**	**13,773**	**31,222**	**33**	**48%**	**251**	**86**	**239**	**780**	**22,132**

Project	Shoes made (pairs)		Plastic / Spring shoes supplied	HE activities: no. of sessions				Training / Orientation / ref. / seminar: no. of sessions for						Skinsmears		Physiotherapy sessions
	MCR	Plastazote		Miking	Folk song	Community *1	Schools	GP / MO	GoB H & FP staff	VD / FDP *2	TB club	Seminar / workshops *3	Openion leader/ scout / NGO *4	Total done	Positives	
TTLCP	799	7	0	58	0	49,842	864	5	0	3	64	0	0	225	18	106
MTLCP *5	1,711	3	67	67	0	110,001	0	1	0	5	51	0	0	0	0	0
NTLCP	0	0	3	14	0	29,771	386	1	0	3	26	0	0	289	41	293
RTLCP	527	0	13	300	0	48,659	1,500	3	0	25	50	0	0	1,533	130	21
FTLCP	0	0	0	180	0	45,923	412	5	0	32	46	0	0	80	7	0
Total projects	**3,037**	**10**	**83**	**619**	**0**	**284,196**	**3,162**	**15**	**0**	**68**	**237**	**0**	**0**	**2127**	**196**	**420**

*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 hoders 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 2017
Numbers of personnel, transport, equipment

Annex Table -3

Department:	Administrative + Hospital										
Project	**Personnel**				**Transport**			**Theatre**	**X-Ray Units**	**Microscopes in use**	**Shoe workshops**
	Doctors	**Paramedical**	**Administrative**	**Support/Techn.**	**Cars**	**Motorcycles**	**Bicycles**				
TTLCP	2	21	5	20	1	1	2	1 sterile	1	4	1
MTLCP	1	14	2	21	1	8	15	1 septic	1	2	1
NTLCP	1	14	1	15	0	2	6	1 septic	1	4	0
RTLCP	0	0	2	13	0	1	0	not applicable, no hospital		0	0
FTLCP	0	2	2	6	0	3	7	not applicable, no hospital		2	0
DFCO	2	0	6	8	2	0	0	not applicable, no hospital		0	0
Total projects	**6**	**51**	**18**	**83**	**4**	**15**	**30**	**3**	**3**	**12**	**2**

Department:	Field										
Project	**Personnel**					**Transport**			**Microscopes in use**	**Combined TB/Lep clinic**	**Leprosy clinic**
	Doctors	**TLCO**	**TLCA**	**Assis. TLCA**	**Clinic Assis.**	**Cars**	**Motorcycles**	**Bicycles**			
TTLCP	1	7	59	17	3	1	12	34	34	35	5
MTLCP	2	7	55	25	6	1	10	39	34	34	6
NTLCP	0	2	22	10	2	1	3	12	12	12	0
RTLCP	2	8	66	13	4	1	12	40	34	32	0
FTLCP	1	9	61	12	3	2	9	33	37	37	0
DFCO	0	0	0	0	0	0	0	0	0	0	0
Total projects	**6**	**33**	**263**	**77**	**18**	**6**	**46**	**158**	**151**	**150**	**11**

CONSOLIDATED REPORT LEPROSY 2017

Annex Table -4

Evolution of casefinding and caseload

Year	Project	Districts & population	NUMBERS				RATES						
			New cases			New	Disabled	On treatment	New Lepr. /	Lep. preval. /	Proportion	Prop. new	Prop. new
			PB	MB	Total	children	new cases	at end (Year)	100.0000 pop.	10.000 pop.	MB new Lep.	children L.	disabled L.
2011	TTLCP	TG+JM+SP 7,256,082	41	58	99	5	9	84	1.36	0.12	59%	5%	9%
	MTLCP	MM + KS 8,022,179	39	51	90	6	20	69	1.12	0.09	57%	7%	22%
	NTLCP	Netrakona 2,229,642	13	18	31	2	5	22	1.39	0.10	58%	6%	16%
	RTLCP	RA + NG + NW 6,842,875	148	122	270	24	36	227	3.95	0.33	45%	9%	13%
	FTLCP	FP+GP+MP+RJ+SR 6,456,938	42	47	89	8	15	63	1.38	0.10	53%	9%	17%
	TOTAL	30,807,716	283	296	579	45	85	465	1.88	0.15	51%	8%	15%
2012	TTLCP	TG+JM+SP 7,320,769	41	53	94	7	19	71	1.28	0.10	56%	7%	20%
	MTLCP	MM + KS 8,122,683	34	37	71	2	21	53	0.87	0.07	52%	3%	30%
	NTLCP	Netrakona 2,255,083	11	12	23	1	3	21	1.02	0.09	52%	4%	13%
	RTLCP	RA + NG + NW 6,920,960	122	112	234	25	34	196	3.38	0.28	48%	11%	15%
	FTLCP	FP+GP+MP+RJ+SR 6,495,476	21	44	65	6	9	55	1.00	0.08	68%	9%	14%
	TOTAL	31,114,971	229	258	487	41	86	396	1.57	0.13	53%	8%	18%
2013	TTLCP	TG+JM+SP 7,386,189	35	43	78	3	22	78	1.06	0.11	55%	4%	28%
	MTLCP	MM + KS 8,224,766	42	38	80	7	16	60	0.97	0.07	48%	9%	20%
	NTLCP	Netrakona 2,280,834	5	16	21	1	4	18	0.92	0.08	76%	5%	19%
	RTLCP	RA + NG + NW 7,000,045	91	96	187	12	37	170	2.67	0.24	51%	6%	20%
	FTLCP	FP+GP+MP+RJ+SR 6,534,388	24	25	49	9	4	40	0.75	0.06	51%	18%	8%
	TOTAL	31,426,222	197	218	415	32	83	366	1.32	0.12	53%	8%	20%
2014	TTLCP	TG+JM+SP 7,452,350	29	48	77	3	12	66	1.03	0.09	62%	4%	16%
	MTLCP	MM + KS 8,328,458	41	43	84	8	16	62	1.01	0.07	51%	10%	19%
	NTLCP	Netrakona 2,306,900	7	11	18	1	4	13	0.78	0.06	61%	6%	22%
	RTLCP	RA + NG + NW 7,080,143	85	72	157	8	24	124	2.22	0.18	46%	5%	15%
	FTLCP	FP+GP+MP+RJ+SR 6,573,679	24	24	48	3	4	40	0.73	0.06	50%	6%	8%
	TOTAL	31,741,530	186	198	384	23	60	305	1.21	0.10	52%	6%	16%
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 7,655,379	31	36	67	3	6	51	0.88	0.07	54%	4%	9%
	MTLCP	MM + KS 8,649,512	34	29	63	4	8	51	0.73	0.06	46%	6%	13%
	NTLCP	Netrakona 2,387,031	13	13	26	1	9	25	1.09	0.10	50%	4%	35%
	RTLCP	RA + NG + NW 7,326,656	202	101	303	46	16	220	4.14	0.30	33%	15%	5%
	FTLCP	FP+GP+MP+RJ+SR 6,693,875	3	13	16		3	8	0.24	0.01	81%	0%	19%
	TOTAL	32,712,453	283	192	475	54	42	355	1.45	0.11	40%	11%	9%

CONSOLIDATED REPORT LEPROSY 2017

Annex Table -5

Caseholding and results of treatment, workload								
Project	District	PB/MB	On treatment on 31/12/2017	Completed MDT	For care on 31/12/2017	MDT Relapse over 2017	Outcome of treatment(cohort: PB 2016 & MB 2015 in %)	
							completed	defaulted
TTLCP	Tangail	PB	3	5	8	0	100%	0%
		MB	8	9	96	0	92%	8%
	Jamalpur	PB	4	3	6	0	100%	0%
		MB	22	14	153	0	94%	6%
	Sherpur	PB	9	14	37	0	100%	0%
		MB	5	7	212	0	83%	8%
	TOTAL	PB	16	22	51	0	100%	0%
	PROJECT	MB	35	30	461	0	90%	7%
		TOTAL	51	52	512	0	93%	5%
MTLCP	Mymensingh	PB	17	24	63	0	96%	4%
		MB	21	32	284	0	97%	0%
	Kishoreganj	PB	5	7	58	0	100%	0%
		MB	8	8	127	1	100%	0%
	TOTAL	PB	22	31	121	0	97%	3%
	PROJECT	MB	29	40	411	1	98%	0%
		TOTAL	51	71	532	1	97%	1%
NTLCP	Netrakona	PB	12	3	26	0	100%	0%
		MB	13	6	188	0	91%	0%
		TOTAL	25	9	214	0	93%	0%
RTLCP	Naogaon	PB	71	85	50	0	100%	0%
		MB	63	18	175	0	95%	5%
	Nawabganj	PB	14	37	10	0	96%	0%
		MB	21	13	123	1	96%	4%
	Rajshahi	PB	26	29	21	0	96%	4%
		MB	25	33	151	0	86%	10%
	TOTAL	PB	111	151	81	0	98%	1%
	PROJECT	MB	109	64	449	1	92%	7%
		TOTAL	220	215	530	1	95%	4%
FTLCP	Faridpur	PB	0	2	3	0	200%	0%
		MB	0	2	47	0	100%	0%
	Gopalganj	PB	0	2	2	0	100%	0%
		MB	1	1	49	0	67%	33%
	Madaripur	PB	0	2	3	0	100%	0%
		MB	2	2	40	0	100%	0%
	Rajbari	PB	0	2	7	0	100%	0%
		MB	1	1	22	0	50%	50%
	Sariatpur	PB	0	2	5	0	100%	0%
		MB	4	4	48	0	100%	0%
	TOTAL	PB	0	10	20	0	110%	0%
	PROJECT	MB	8	10	206	0	91%	9%
		TOTAL	8	20	226	0	97%	6%
ALL PROJECTS		PB	161	217	299	0	99%	1%
		MB	194	150	1715	2	92%	5%
		TOTAL	355	367	2014	2	95%	4%

CONSOLIDATED REPORT LEPROSY 2017

Annex Table -6

Evolution of casefinding and caseload

Project	Districts & population	NUMBERS									RATES					
		New cases			New	New	New	New	SSS+ve	UT	New per	Preval. per	New	(%) SSS+ve	New	New
		PB	MB	Total	child	SLPB	Women	Disab.	MB	at end	100,000 pop.	10,000 pop.	(%) MB	among MB	(%) Child.	(%) Disab.
TTLCP	Tangail 3,832,907	6	8	14	0	0	5	2	3	11	0.37	0.03	57	38	0	14
	Jamalpur 2,412,546	5	23	28	0	0	8	2	9	26	1.16	0.11	82	39	0	7
	Sherpur 1,409,927	20	5	25	3	0	12	2	1	14	1.77	0.10	20	20	12	8
	Total project 7,655,379	**31**	**36**	**67**	**3**	**0**	**25**	**6**	**13**	**51**	**0.88**	**0.07**	**54**	**36**	**4**	**9**
MTLCP	Mymensingh 5,528,051	26	24	50	4	6	28	5	10	38	0.90	0.07	48	42	8	10
	Kishoregonj 3,121,461	8	5	13	0	3	2	3	2	13	0.42	0.04	38	40	0	23
	Total project 8,649,512	**34**	**29**	**63**	**4**	**9**	**30**	**8**	**12**	**51**	**0.73**	**0.06**	**46**	**41**	**6**	**13**
NTLCP	**Netrakona 2,387,031**	**13**	**13**	26	**1**	**1**	**6**	**9**	**5**	**25**	**1.09**	**0.10**	**50**	**38**	**4**	**35**
RTLCP	Naogaon 2,733,384	136	59	195	34	11	38	10	9	134	7.13	0.49	30	15	17	5
	Naw abganj 1,794,966	26	18	44	6	5	21	1	3	35	2.45	0.19	41	17	14	2
	Rajshahi 2,798,307	40	24	64	6	1	99	5	8	51	2.29	0.18	38	33	9	8
	Total project 7,326,656	**202**	**101**	**303**	**46**	**17**	**158**	**16**	**20**	**220**	**4.14**	**0.30**	**33**	**20**	**15**	**5**
FTLCP	Faridpur 2,004,524	0	5	5	0	0	4	0	1	0	0.25	0.00	100	20	0	0
	Gopalgonj 1,193,911	0	1	1	0	0	0	0	0	1	0.08	0.01	100	0	0	0
	Madaripur 1,186,097	1	2	3	0	1	0	2	1	2	0.25	0.02	67	50	0	67
	Rajbari 1,098,634	0	1	1	0	0	0	0	0	1	0.09	0.01	100	0	0	0
	Sariatpur 1,210,710	2	4	6	0	1	3	1	1	4	0.50	0.03	67	25	0	17
	Total project 6,693,875	**3**	**13**	**16**	**0**	**2**	**7**	**3**	**3**	**8**	**0.24**	**0.01**	**81**	**23**	**0**	**19**
All project	**Total population 32,712,453**	**283**	**192**	**475**	**54**	**29**	**226**	**42**	**53**	**355**	**1.45**	**0.11**	**40**	**28**	**11**	**9**

Tuberculosis: Evolution of case finding and caseload

Annex Table -7

Year	Project	Districts & population	All cases	Sm+ PTB	No smear done PTB	Sm- PTB & EP	Proportion sm+ / total
2011	TTLCP	TG + JM + DEPZ 5,947,757	6,087	3,897	0	2,190	64%
	MTLCP	MM + KS 5,819,899	7,024	4,308	0	2,716	61%
	NTLCP	Netrakona 2,229,642	2,547	1,523	0	1,024	60%
	RTLCP	(RA) + NG + NW 6,812,592	4,163	2,365	0	1,798	57%
	FTLCP	FP+GP+MP+RJ+SR 6,456,938	4,604	2,610	0	1,994	57%
	TOTAL	27,266,828	24,425	14,703	0	9,722	60%
2012	TTLCP	TG + JM + DEPZ 6,004,017	6,207	4,079	0	2,128	66%
	MTLCP	MM + KS 5,891,337	7,025	4,450	0	2,575	63%
	NTLCP	Netrakona 2,255,083	2,642	1,607	0	1,035	61%
	RTLCP	(RA) + NG + NW 6,655,569	4,245	2,499	0	1,746	59%
	FTLCP	FP+GP+MP+RJ+SR 6,495,476	4,613	2,749	0	1,864	60%
	TOTAL	27,301,482	24,732	15,384	0	9,348	62%
2013	TTLCP	TG + JM + DEPZ 6,060,941	5,898	3,718	0	2,180	63%
	MTLCP	MM + KS 5,963,971	6,905	4,187	0	2,718	61%
	NTLCP	Netrakona 2,280,834	2,673	1,638	0	1,035	61%
	RTLCP	RA + NG + NW 6,751,823	4,521	2,458	0	2,063	54%
	FTLCP	FP+GP+MP+RJ+SR 6,534,388	4,577	2,428	0	2,149	53%
	TOTAL	27,591,957	24,574	14,429	0	10,145	59%
2014	TTLCP	TG + JM + DEPZ 6,118,537	6,030	3,700	0	2,330	61%
	MTLCP	MM + KS 6,037,824	6,995	4,044	0	2,951	58%
	NTLCP	Netrakona 2,306,900	2,765	1,587	0	1,178	57%
	RTLCP	RA + NG + NW 6,801,430	4,488	2,530	0	1,958	56%
	FTLCP	FP+GP+MP+RJ+SR 6,573,679	4,202	2,143	0	2,059	51%
	TOTAL	27,838,370	24,480	14,004	0	10,476	57%
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+SP 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+SP 6,185,783	5,906	3,391	0	2,515	57%
	MTLCP	MM + KS 6,189,302	7,905	4,403	0	3,502	56%
	NTLCP	Netrakona 2,359,995	2,724	1,716	0	1,008	63%
	RTLCP	RA + NG + NW 6,896,330	4,812	2,498	0	2,314	52%
	FTLCP	FP+GP+MP+RJ+SR 6,653,418	4,286	2,096	0	2,190	49%
	TOTAL	28,284,828	25,633	14,104	0	11,529	55%

TB case notification, 2017

Annex Table -8

District	Population covered	Pulmonary Smear positive cases					Pulm. Smear-negative New	Extra-pulmon. New	P-ve & EP not New	Total registration	% of new pulmon.cases sm+ve	Notification rate/100,000 pop. new sm+ve	Notification rate/100,000 pop. all forms of TB
		New cases	Relapses	Failures	RALTFU	Other							
Faridpur	1,988,880	480	29	7	3	6	200	361	22	1108	43%	24	56
Gopalganj	1,190,283	331	17	3	2	9	197	234	26	819	40%	28	69
Rajbari	1,090,300	242	15	11	2	6	81	168	20	545	44%	22	50
Madaripur	1,182,709	401	17	6	2	4	131	242	20	823	49%	34	70
Sariatpur	1,201,246	462	21	3	1	16	217	251	20	991	47%	38	82
FTLCP	**6,653,417**	**1916**	**99**	**30**	**10**	**41**	**826**	**1256**	**108**	**4286**	45%	**29**	**64**
Rajshahi	2,225,321	611	23	16	3	4	142	534	33	1366	45%	27	61
RMCH	190,880	22	1	1	2	1	1	32	1	61	36%	12	32
Naogaon	2,710,636	1161	42	29	3	9	348	552	50	2194	53%	43	81
Nawabganj	1,769,493	529	21	12	3	5	198	374	49	1191	44%	30	67
RTLCP	**6,896,330**	**2323**	**87**	**58**	**11**	**19**	**689**	**1492**	**133**	**4812**	48%	**34**	**70**
Tangail	3,793,791	1815	105	33	11	28	482	871	113	3458	52%	48	91
DEPZ	50,000	38	4	1	0	4	11	54	5	117	32%	76	234
Jamalpur	2,391,992	1230	51	29	13	29	313	590	76	2331	53%	51	97
TTLCP	**6,235,784**	**3083**	**160**	**63**	**24**	**61**	**806**	**1515**	**194**	**5906**	52%	**49**	**95**
Netrakona	2,359,995	1558	82	46	6	24	362	545	101	2724	57%	66	115
Mymensingh	3,103,997	1824	82	40	9	37	629	804	165	3590	51%	59	116
Kishoreganj	3,085,305	2196	121	44	15	35	747	957	200	4315	51%	71	140
MTLCP	**8,549,297**	**5578**	**285**	**130**	**30**	**96**	**1738**	**2306**	**466**	**10629**	52%	**65**	**124**
DF Bangladesh	**28,334,828**	**12900**	**631**	**281**	**75**	**217**	**4059**	**6569**	**901**	**25633**	50%	**46**	**90**

Treatment outcomes for new smear positive cases, 2016 cohort

Annex Table -9

		Treatment outcomes (%)						
Districts	Registered	Cured + Completed	Died	Failed	Lost to follow up	Transferred out / Not. Evaluated	Not evaluated	Treatment success (%)
NETRAKONA	1436	90%	4%	3%	2%	0%	0%	90%
TANGAIL	1703	90%	6%	2%	2%	0%	0%	90%
DEPZ	53	92%	2%	2%	2%	2%	0%	92%
JAMALPUR	1304	89%	5%	3%	3%	1%	0%	89%
MYMENSINGH	1695	90%	3%	2%	2%	2%	0%	90%
KISHOREGANJ	2103	92%	3%	2%	1%	1%	0%	92%
NAOGAON	996	90%	5%	3%	2%	0%	0%	90%
NAWABGANJ	513	92%	4%	2%	2%	0%	0%	92%
RAJSHAHI	600	88%	5%	3%	3%	2%	0%	88%
FARIDPUR	485	90%	4%	3%	3%	0%	0%	90%
GOPALGANJ	327	90%	6%	1%	3%	0%	0%	90%
MADARIPUR	405	92%	5%	2%	1%	0%	0%	92%
RAJBARI	246	91%	3%	2%	3%	0%	0%	91%
SARIATPUR	429	93%	3%	3%	2%	0%	0%	93%
TOTAL DF	**12295**	**90.4%**	**4.3%**	**2.5%**	**2.1%**	**0.7%**	**0.0%**	**90%**

Treatment outcomes for re-treatment smear positive cases, 2016 cohort

Annex Table -10

		Treatment outcomes (%)						
Districts	Registered	cured	died	failed	Lost to follow up	transferred	not evaluated	treatment success (%)
NETRAKONA	134	88%	7%	1%	3%	1%	0%	88%
TANGAIL	149	86%	9%	0%	4%	1%	2%	86%
DEPZ	8	88%	0%	0%	0%	13%	0%	88%
JAMALPUR	134	89%	4%	1%	4%	1%	0%	89%
MYMENSINGH	226	88%	4%	1%	5%	2%	1%	88%
KISHOREGANJ	216	93%	4%	1%	2%	0%	0%	93%
NAOGAON	73	88%	11%	0%	1%	0%	0%	88%
NAWABGANJ	33	100%	0%	0%	0%	0%	0%	100%
RAJSHAHI	46	83%	7%	2%	9%	0%	0%	83%
FARIDPUR	45	84%	7%	0%	9%	0%	0%	84%
GOPALGANJ	31	90%	3%	0%	6%	0%	0%	90%
MADARIPUR	28	93%	0%	0%	7%	0%	4%	93%
RAJBARI	24	88%	4%	4%	4%	0%	0%	88%
SARIATPUR	35	100%	0%	0%	0%	0%	0%	100%
TOTAL DF	**1182**	**89.26%**	**5.25%**	**0.93%**	**3.72%**	**0.85%**	**0.59%**	**89%**

Table: Summary resutls of External Quality Assurance by project 2017

Annex Table -11

		Routine smears examined (nos.)			Smears rechecked by EQA (nos.)			EQA rechecking results					
PROJECTS	Nr. Of Microscopy centres	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	132,626	2.2%	1.0%	138	76	2034	3	4	3	3	1.40%	0.20%
TTLCP	34	119,300	4.3%	1.8%	82	48	1962	1	1	1	1	0.77%	0.05%
RTLCP	32	158,592	2.4%	1.1%	132	116	1616	2	3	2	3	0.81%	0.19%
MTLCP	34	176,559	4.0%	1.4%	216	69	1804	1	4	1	4	0.35%	0.22%
NTLCP	12	62,262	4.2%	1.6%	81	47	586	0	1	0	1	0.00%	0.17%
DF Total	**150**	**649,339**	**3.30%**	**1.32%**	**649**	**356**	**8002**	**7**	**13**	**7**	**12**	**1.08%**	**0.16%**

DAMIEN FOUNDATION BANGLADESH
QUALITY CONTROL OF SKINSMEARS: 2017

Annex Table -12

Project	Total smears checked in QC			Rates of false results						Proportions registered results			
	Pos.		Neg.	False positives		False negatives		Quantification		Pos.			Neg.
	+1	+2 to +6		+1	+2 to +6	+1	+2 to +6	1 log	>1 log	+1/+2	+3/+4	+5/+6	
TTLCP	2	7	45	0%	0%	0%	0%	44%	0%	33%	43%	23%	81%
MTLCP	2	10	48	50%	10%	0%	0%	33%	0%	42%	46%	12%	86%
NTLCP	2	7	21	0%	0%	0%	0%	11%	0%	15%	40%	45%	86%
RTLCP	1	19	130	0%	0%	0%	0%	10%	0%	22%	45%	34%	92%
FTLCP	1	3	19	100%	0%	0%	0%	0%	0%	14%	71%	14%	91%
DF BDESH	**8**	**46**	**263**	**25%**	**2%**	**0%**	**0%**	**20%**	**0%**	**29%**	**45%**	**26%**	**89%**

Pictures of few activities

LTCC meeting

Visitors from NGO Affairs Bureau

Observed World Leprosy Day 2017

Pictures of few activities

BCCM team visit

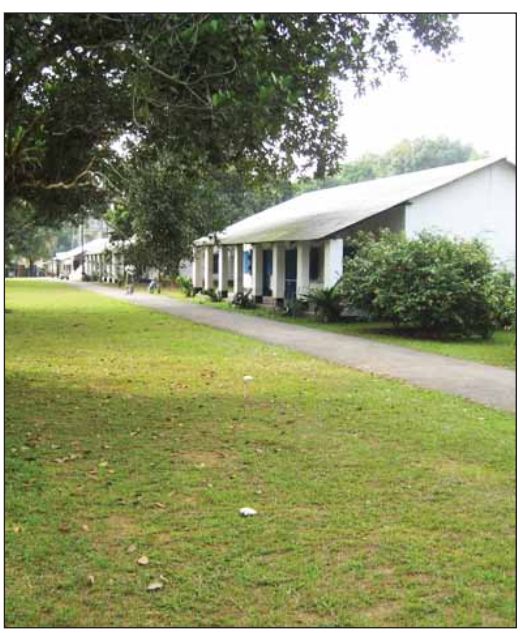
Visitors from AFMC, Kurmitola, Dhaka

Observed World TB Day 2017

Management Team of DF Bangladesh

Damien Foundation Bangladesh Team: From left: Mr. Arif Iftikhar Mannan, Project Director-RTLCP, Mr. Kabir Md. Manirul Azam Khan, Project Director-TTLCP, Mr. Mutakabber Hossain-Finance Director, Khondoker Habebul Arif-HR & Administrative Director, Dr. Dipak Kumar Biswas-Medical Coordinator, Dr. Aung Kya Jai Maug, Country Director, Mr. A.H.M. Akram Hossain, Project Director-FTLCP and (front) Mrs. Joshnara Begum, Project Director-MTLCP

Three DF Hospitals



DF Jalchatra Hospita

DF Mymensingh Hospital

DF Netrakona Hospital

ANNUAL REPORT

2017

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