rGLC COUNTRY SUPPORT MISSION REPORT

Country: Sri Lanka

Inclusive dates of mission: 19-23 June 2017

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Some of the graphs and flowcharts in this report are adapted from the NPTCCD documents/ presentations

The programme has agreed with open sharing of this report ☒

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Abbreviations and acronyms

AFB	acid-fast bacilli
AIDS	acquired immunodeficiency syndrome
CBO	community-based organizations
CPT	co-trimoxazole preventive therapy
DCC	district chest clinic
DCCL	district chest clinic laboratory
DDG-PHS	Deputy Director General of Public Health Services
DGHS	Director General of Health Services
DOTS	directly observed therapy – short course
DRS	drug resistance survey/surveillance
DR-TB	drug-resistant tuberculosis
DST	drug susceptibility testing
DTCO	district TB control officer
EP-TB	extrapulmonary tuberculosis
EQA	external quality assurance
FDC	fixed-dose combination
FLD	First-line (anti-TB) drugs
GDF	Global (TB) Drug Facility
GF	Global Fund (Global Fund to Fight AIDS, Tuberculosis and Malaria)
HRD	human resource development
IC	infection control
IPT	isoniazid preventive therapy
IC	infection control
MDR-TB	multidrug-resistant tuberculosis
M&E	monitoring and evaluation
NGO	nongovernmental organization
NPTCCD	National Programme for Tuberculosis Control and Chest Diseases
NTRL	national TB reference laboratory
PHC	primary health care
PLHIV	persons living with HIV/AIDS
PMDT	programmatic management of drug-resistant tuberculosis
PPM	public-private mix
RDHS	Regional Director of Health Services
RR	rifampicin-resistant
SDG	Sustainable Development Goals
SEAR	South-East Asia Region (of WHO)
SLD	Second-line anti-TB drugs
SOPs	standard operating procedures
TA	technical assistance
TB	Tuberculosis
TWG-TB	Technical Working Group on TB
WHO	World Health Organization
XDR-RB	extensively drug-resistant TB

Executive summary

i. TORs of the mission

- Review the performance of PMDT including status of implementation of DR-TB diagnostic and treatment services
- Review the status of implementation of recommendations from previous review mission (2016)
- Technical discussions on shorter regimen and use of new drugs for DR-TB
- Planning way forward with support needed for roll-out of shorter regimen and new drugs

ii. Overall implementation status of PMDT compared to targets in NSP. Status of implementation of GF supported activities

	2010	2011	2012	2013	2014	2015	2016	2017 up to date
Target	14	14	14	10	14	15	20	28
RR /MDR TB patients detected	8	12	5	4	13	13	17	9
Enrolled in the same year	4	5	4	4	11	13	17	9
Enrolled in the next year	1	4	1	-	-	-	-	-
Total no. and % put on treatment	**5 63%**	**9 75%**	**5 100%**	**4 100%**	**11 85%**	**13 100%**	**17 100%**	**9 100%**

iii. Significant achievements since last visit

- 9 new (additional) GeneXpert machines available including one 16 module machine. 3 more in pipeline
- Nutritional support (Thriposha) approved for all TB patients through government funding
- Contact investigations becoming increasingly systematic (as in visited districts)
- Orders for shorter regimen and new drugs placed

iv. Key challenges identified in this mission in relation to the ToRs

a. Low notifications of retreatment cases leading to lower screening for drug-resistance
b. Sputum transportation network remains weak
c. Lab quality assurance supervisory visits are not always possible
d. Suboptimal use of available GeneXpert machines
e. Treatment initiation of MDR-TB continues to be centralized to a single centre
f. Infection control at visited facilities continues to be sub-optimal

g. Treatment success rates are declining with increasing number of deaths among those started on second-line treatment
h. DOT is generally only family based (both for DS and DR-TB)
i. There is a need to develop SoPs for shorter regimen and newer drugs including strengthening of mechanisms for monitoring of adverse events

v. Priority recommendations of the mission:

Recommendation	Responsible persons/agency	Timeline	Support required to fulfill the recommendation
Monitor referrals from large hospitals specifically teaching hospitals	MoH, NPTCCD	Ongoing/ quarterly	
Purchase sputum transportation boxes and strengthen sputum transportation	NPTCCD and NTRL	Purchase by 4th quarter 2017	
Monitor the use of available GeneXpert machines and optimize their use	NPTCCD and NTRL	Ongoing/ quarterly	
Prepare guidelines and SoPs for introduction of shorter regimen	NPTCCD	BY 4th quarter 2017	External TA may be needed
Set up all elements of aDSM	NPTCCD	BY 4th quarter 2017	External TA may be needed
Prepare a PMDT monitoring framework for monitoring MDR-TB services including the use of shorter regimen and newer drugs in future	NPTCCD	BY 4th quarter 2017	External TA may be needed
Establish model centres for infection control and replicate	NPTCCD	By 1st quarter 2018	

vi. Status of priority recommendations of previous mission:

Recommendations	Responsible agency/person	Status
Improve TB case notification • Focus on districts with low case notifications • Hiring and placement of lab staff for operationalising all microscopy centres • Monitor contact investigations • Improving communication channels with private sector and teaching hospitals	MoH, NPTCCD,	• District Coordinating committees were formulated to discuss the matters with RDHS & other health & non health sectors.
Strengthening laboratory network • Quick introduction and roll out of Laboratory Information Management System • Strengthening sputum transportation mechanism from remote areas	NPTCCD and NTRL	• LIMS - Still it is in process. Future uncertain • Strengthening sputum transportation mechanism is in process. But not completed. • SL DST capacity will be

• Rapid establishment of SL DST capacity		established with MGIT, in 2018.
Find missing DR-TB cases • Increased use and access of rapid diagnostics as per national guidelines • Expedite procurement of pending GeneXpert machines and their installation at identified sites • Supplement efforts by involvement of private sector laboratory • Screening criteria for drug resistance should be widely disseminated to all health facilities managing TB symptomatics or cases, in all sectors • Improving communication with private sector screening and managing DR-TB	NPTCCD and NTRL	• Increased use and access of rapid diagnostics as per national guidelines started & in process. • Eight 4 modular machines & one 16 modular machine received. • One private lab is having GeneXpert - monitored by NPTCCD. • Screening criteria for drug resistance dissemination in all sectors is done. Will be revised after DRS. • Awareness programmes are done.
Improving adherence • Decentralize treatment initiation to at least 2 more centres • Expedite the process of enhanced allowance for MDR-TB patients • Make access to allowance easy and streamlined • Provide access to Thriposha for patients on second line treatment • Strengthen counselling services for RR/MDR-TB patients • Early management of adverse events	NPTCCD, Provincial Director of Health Services (PDHS), DTCO	• It is decided to build two facilities in Jaffna & Kandy, when more patients detected. • It is requested from Social Service Ministry. Meeting is scheduled with Social Service officers in July. • "Thriposha" will be provided for all TB patients from June onwards. • Counselling is done by a trained nurse. Will arrange at district level by Social service Department. • Early management of adverse events is happening. ADRs are monitored continuously.
Adoption of shorter regimen • Include new chapter/ annexures to PMDT guidelines • Prepare a transition plan • Plan for aDSM mechanism • Aim to initiate at least 5-10 cases on shorter regimen in 2017 (based on targeted MDR-TB cases)	NPTCCD, NMRA, Pulmonologists, Microbiologist, DTCO	• It is to be disseminated as a new document as the PMDT Guideline was printed. • Selection criteria were prepared. Selection will be done by the site committee, where treatment is initiated. • Plan for aDSM mechanism is prepared. Format is being used for patients on SLD. • It is decided to start one to two patients in 2017. Drugs ordered for two patients.

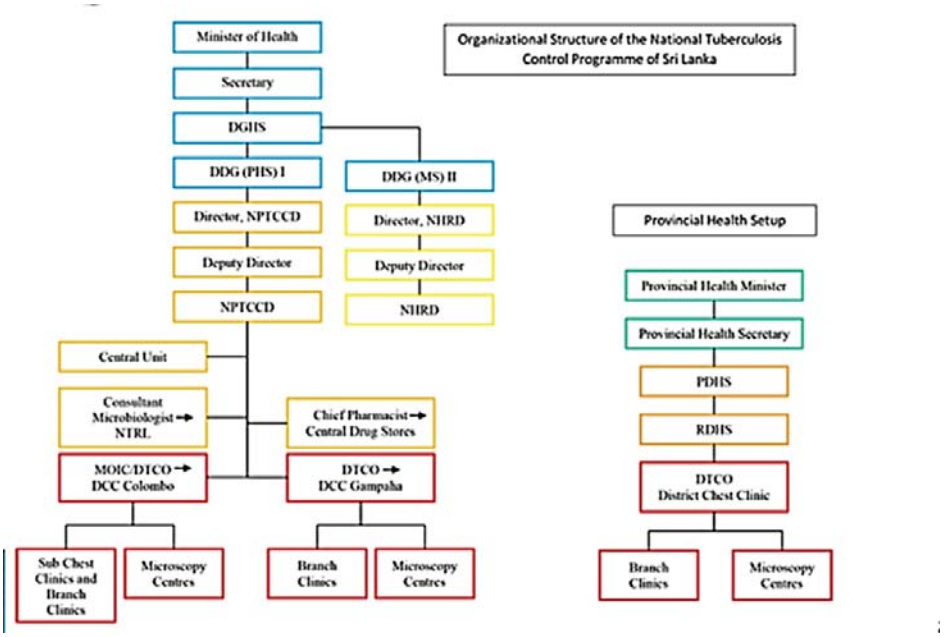
Airborne infection control practices in general should be followed	NPTCCD and PDHS	• TOR was prepared. Guideline will be prepared by a National TA. Awareness programmes were done for infection prevention control, triage of patients, promoting cough etiquette, avoidance of over crowding
Role of NGOs needs to be strengthened with involvement of grassroots workers	NPTCCD	• CNAPT is the only active NGO in this regard, Very active in Kandy

Achieved	
Some progress/ ongoing	
No change	

Detailed report

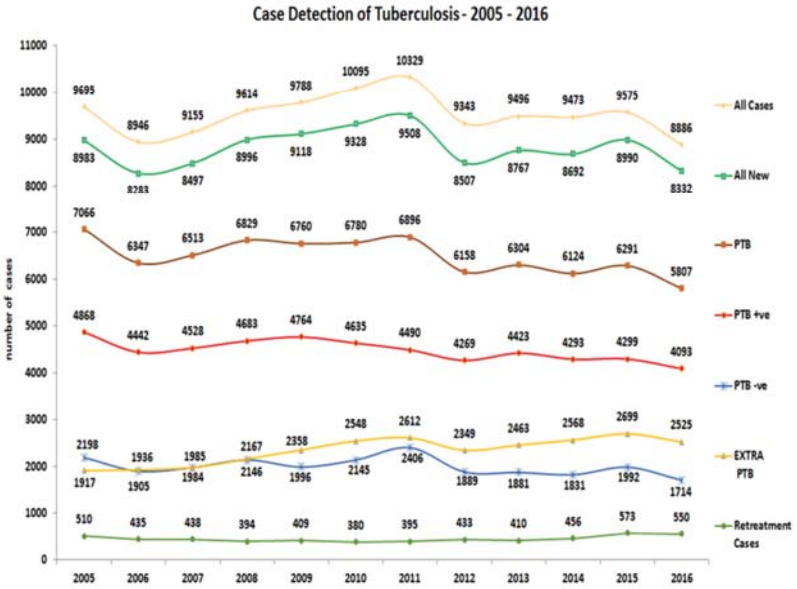
A. Introduction/Background

The National Programme for Tuberculosis Control and Chest Diseases (NPTCCD), Sri Lanka, is primarily responsible for the control of tuberculosis in the country. The work of the NPTCCD is under the supervision and guidance of the Director General of Health Services (DGHS) and the Deputy Director General of Public Health Services (DDG-PHS)[1]. The NPTCCD is assisted by a technical National Advisory Committee under chairmanship of the DGHS and consists of representatives from the Directorates of Health Services, , Consultant Respiratory Physicians, Consultant Microbiologists, representatives from Professional Colleges, representatives from Prison and Social Service Department, other senior administrators, public health professionals, university academia, private practitioners and non-governmental organizations.

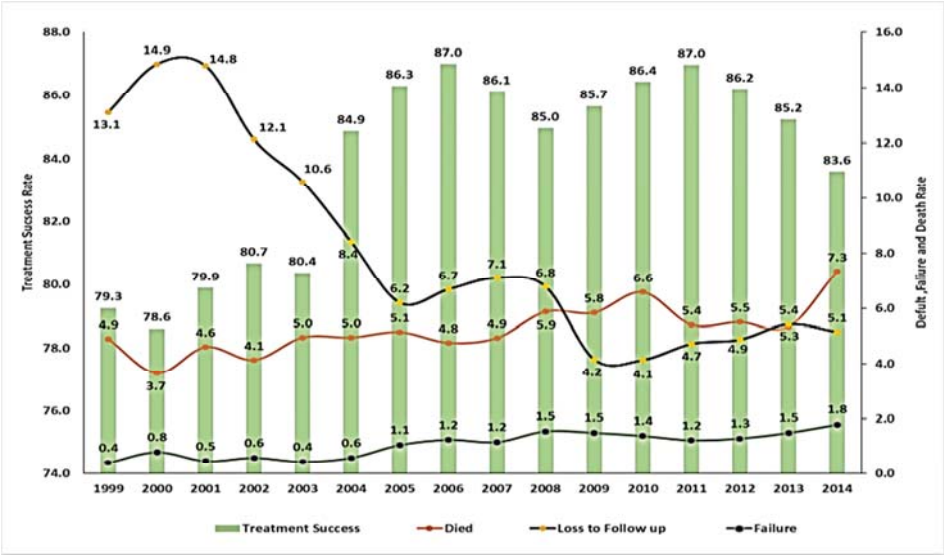


[1] Source: Presentations made by the country programme

- *Case notification and treatment success rates*[2]



- *Treatment success rates*



Sri Lanka is considered is a relatively low TB burden country with an estimated incidence of 65/100,000 cases of all forms of TB. In 2016 the country notified 8,886 [2] (down from 9,575 in previous year) all forms of TB. Out of this 550 cases (6.2%) were retreatment cases. The treatment success rate among new and relapse cases registered in 2014 was 84% (declining as compared to previous years).

The overall case notification rate has been declining since 2012. The proportion of retreatment cases remains low. This should also be viewed against the fact that proportions of unfavourable outcomes

[2] Source: Presentations made by the country programme

like treatment failure and loss to follow-up are much higher than those who are enrolled for retreatment indicating that a significant proportion of previously treated patients are either not getting enrolled or being enrolled as new cases thereby missing the chance for screening for drug resistance.

- *TB-HIV collaboration*[3]

Patients with known HIV-status who are HIV-positive (2015)	25	<1%
- on antiretroviral therapy (out of the above)	17	68%
Treatment success among HIV-positive TB cases, all types, (registered in 2014)	19	63%

It was informed that all TB cases are offered voluntary HIV testing after counselling. As is apparent from the reported figures, the positivity rate of HIV is low. A significant proportion of HIV positives received anti-retroviral treatment

B. Overall DR-TB programme performance

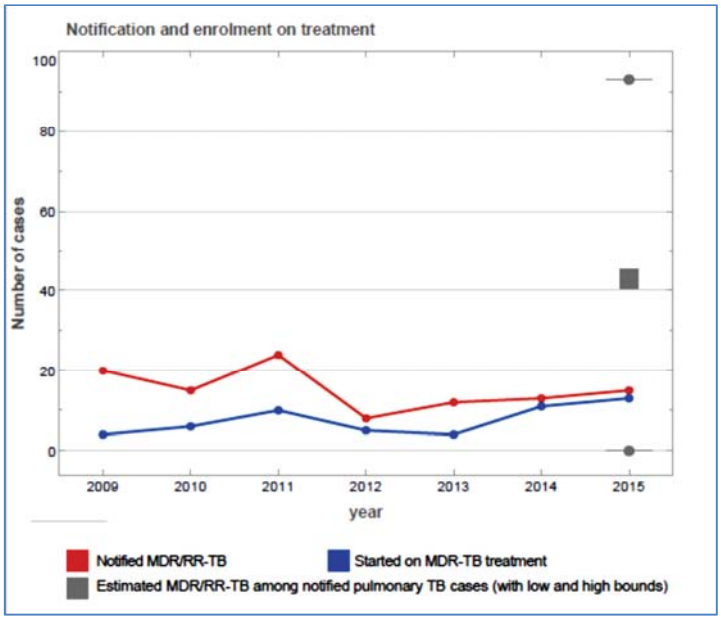
Sri Lanka had undertaken a Mycobacterium tuberculosis drug resistance surveillance in 2005/2006 on 1036 patients enrolled for treatment at all chest clinics (905 newly diagnosed and 93 previously treated cases). Culture positivity was 57.4% (62% for new and 36.6% for previously treated cases). The drug resistance to any drug was 1.4% on new and 8.8% for previously treated cases. Only one case (1/595) was reported to have MDR-TB.

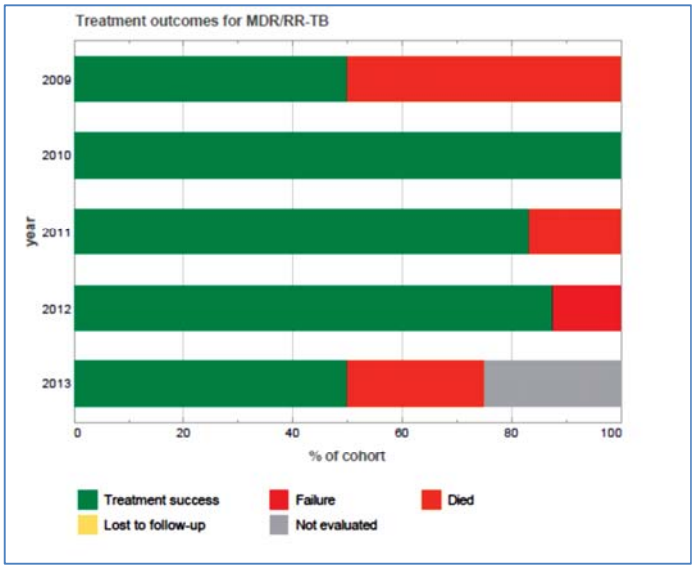
DR-TB burden estimates and notifications in 2015[3]

Drug-resistant TB care, 2015	New cases	Previously treated cases	Total number***
Estimated MDR/RR-TB cases among notified pulmonary TB cases			43 (0–93)
Estimated % of TB cases with MDR/RR-TB	0.54% (0–1.3)	1.7% (0.64–3.7)	
% notified tested for rifampicin resistance	13%	75%	1 635
MDR/RR-TB cases tested for resistance to second-line drugs			0
Laboratory-confirmed cases		MDR/RR-TB: 15, XDR-TB: 0	
Patients started on treatment ****		MDR/RR-TB: 13, XDR-TB: 0	

[3] Source: WHO Global TB report 2016

Trends of case notifications and treatment outcome among DR-TB patients[4]





<u>Recommendations</u>:

- Overall the case finding activities for DR-TB need to be intensified along with measures to be taken for improving adherence, discussed in details in relevant sections below

[4] Source: www.who.int/tbdata

C. Role of partners in delivery of TB and MDR-TB care

All private health care providers and institutions are supposed to be identifying TB symptomatics and diagnose TB or refer them to appropriate public health facility However there is very little activity related to diagnosis and treatment of MDR TB directly. Private sector mainly includes:

- Private hospitals
- Corporate health services in particular tea estates,
- Private chest physicians and GPs. Most of the chest physicians working in private also work in the government hospitals during the day time and practice during the evening.
- Non-allopathic care providers and
- Pharmacies

Low referrals were noted from large hospitals including the teaching hospitals. This could partly be attributed to inability to record all referrals. However, it appears that there could be other reasons like physicians not being aware about screening, lack of complete information on places to refer symptomatics and patients being lost in referral.

Recommendations:

- Continued sensitisation of private physicians regarding risks for DR-TB and their appropriate referral
- Improving communication channels with private sector and teaching hospitals and reasons for low referral rate being recorded should be explored

D. Case finding strategy

As per the national PMDT guidelines, the first step in case finding begins with identification of presumptive DR-TB cases. DR-TB would be suspected in the following categories of diseases and their sputum should be sent for rapid molecular tests (GeneXpert), and culture and DST in order of priority.

Category A: High risk cases for drug resistance

a. Symptomatic contacts of MDR-TB patients or those asymptomatic contacts screened with chest x ray and found to have CxR having changes suggestive of TB
b. First line regimen failures and non-converters/ delayed sputum conversion
    - Patients who continue to remain sputum smear positive after 3 months of retreatment with FLD or failures of retreatment with FLD. Category II (patients on retreatment regimen with first line drugs) failures and Category II patient remaining sputum smear positive at 3rd month
    - Patients who continue to remain sputum smear positive after 2 months of new treatment regimen with FLD or failures of new treatment regimen with FLD. Category I failure (patients who are on treatment with first line drugs for a new

episode of TB) and Category I patients remaining sputum smear positive at 2nd month

c. Patients with history of repeated treatment interruptions
d. All other previously treated TB patients

Category B: Patients with moderate or low risk of drug resistance but in whom the risk of mortality or chance of spread of resistant bacillus to contacts is high

e. Patients with TB/HIV co-infection,
f. Institutionalized patients e.g.:- prisoners
g. Drug addicts
h. Healthcare workers
i. Those who return from abroad with active TB.
j. TB patients treated outside the NTP.

In some cases classified as low risk, clinical judgement would be used to determine if they could be high risk e.g. a health care worker working in a facility where MDR-TB is being treated will be considered high risk for drug-resistance.
GeneXpert tests will also be used in Smear negative patients (including paediatric cases) and extra-pulmonary cases (except pleural fluid which is considered sub-optimal sample. The current WHO recommendations also do not cover blood, stool or urine samples).
From presumptive DR-TB cases, two sputum specimens in sterile universal bottles. One sample should be sent to the nearest facility where with GeneXpert test available. The other sample should be sent to the nearest culture facility which could be National Tuberculosis Reference Laboratory (NTRL) at Welisara or a Regional Tuberculosis Culture Laboratory for culture & DST. Such specimens can originate from the DCCs, other government health institutions or the private sector health institutions. DST results indicating RR/ MDR-TB are sent as soon as possible to the sender, the DTCO of the relevant district and to the PMDT Coordinator. Results are communicated over the telephone which is followed by a written report by post and by e-mail.

Low utilization of newly installed GeneXpert machines was observed. In Kurunegala, only 3 tests were conducted on the available GeneXpert Machine in first two weeks and those were samples of CSF from hospital. DCC will 'start' sending samples now onwards

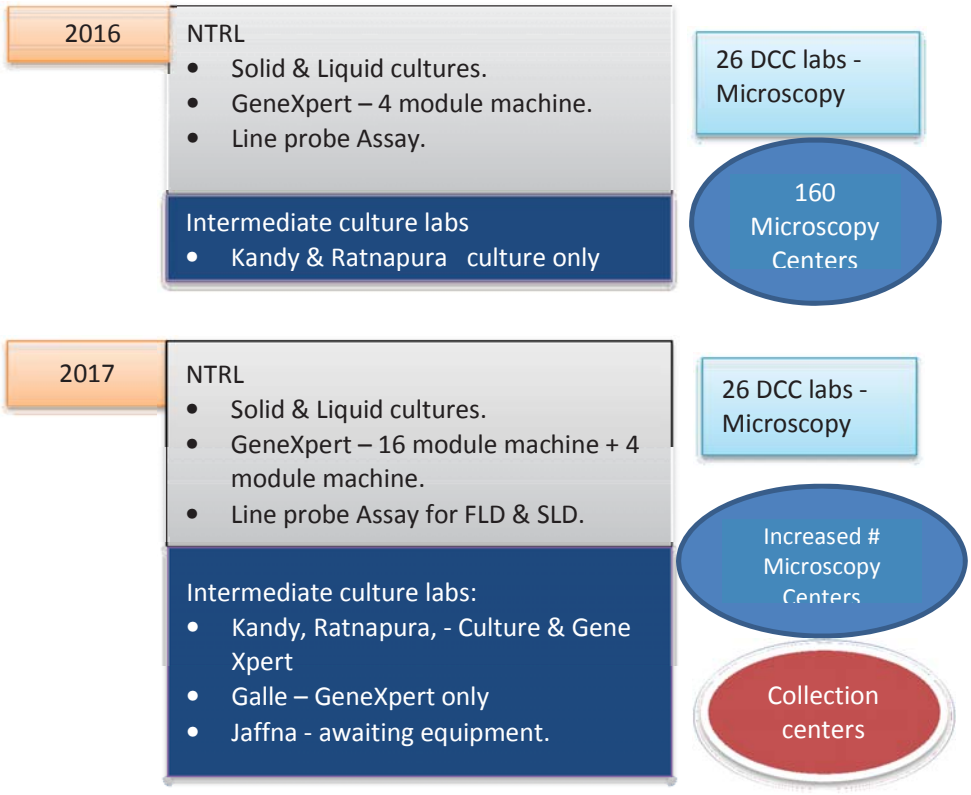
Recommendations:

- Screening criteria should be widely (re) disseminated to all health facilities managing TB symptomatics or cases, in all sectors.
- GeneXpert can be used in at least:
    - Diagnose drug resistance in those at risk or coming from congregate setting to prevent spread of resistance or those at increased risk of mortality if having drug resistant TB
    - To diagnose TB among vulnerable cases including paediatric TB, CNS TB and other cases who face risk of complications or mortality due to delay in diagnosis

E. Laboratory services and expansion plan

The TB laboratory network of NPTCCD is a well-established 4 tiered structure-National (National TB Reference Laboratory), Regional TB Culture Laboratories, Intermediate (District Chest Clinic laboratory) and peripheral level (Microscopy Centres). The microscopy services are delivered by the microscopy centres (MCs) located in District Chest Clinic laboratories (26) and peripheral health institutions-primary health care centres and base/district General hospitals (214). The EQA for smear microscopy services using the LQAS system is in place and is covering the entire nation. All MCs need to include one positive and one negative unstained slide with each batch of staining as a part of internal quality control. Each set of positive and negative slides are also stained when new batch of reagents are received in the MCs. These MCs sends the calculated number of slides to the DCCLs and slides are rechecked and feedback reports are sent back to MCs. The National Tuberculosis Reference Laboratory (NTRL) at Welisara is currently providing culture and DST (1st line) in the country, in public sector.

Current status of laboratories as compared to previous year



Eight 4 modular machines & one 16 modular machine have been received by the programme since last year. They are distributed as follows.

Five 4 modular machines purchased using the HSDP funds have been installed at:

- NHSL
- Teaching hospital Anuradhapura

- PGH Badulla
- Teaching hospital Baticaloa
- PGH Kurunegala

Three 4 modular machines purchased using the Global Fund support have been distributed to:

- PGH Rathnapura (Culture Lab)
- DCC Kandy (Culture Lab - Kandy)
- Teaching hospital Karapitiya (Culture Lab)

One 4 modular machine was already in NTRL and a new 16 modular machine from HSDP Funds has also been placed there.

Three 4 modular machines from Global Fund support are being ordered nad will be placed at:

- DCC Jaffna (Culture Lab- Jaffna)
- NIHS - Colombo
- Mobile Vehicle Mounted

- *Laboratory expansion plan*

		2017	2018	2019
No of Intermediate culture labs		4*	6	6
No of Xpert machines in place		10**	13	13
No of Bact/Alert machines in place		1	1	1
No of MGIT systems in place		1	1	1
Line Probe Assay	FLD	1	1	1
	SLD	1	1	1

*Against 6 targetted earlier

**Against 7 targetted earlier

Culture Laboratories. A total of 9 laboratories with capacity to perform cultures are planned in the country

- NTRL – Welisara.
- Regional laboratories functioning – Kandy & Rathnapura.
- Regional laboratories constructed – Galle & Jaffna (will start soon).
- Regional laboratories planned but not yet constructed – Anuradhapura & Batticaloa.
- Decided to construct new labs in Badulla & Kurunegala.

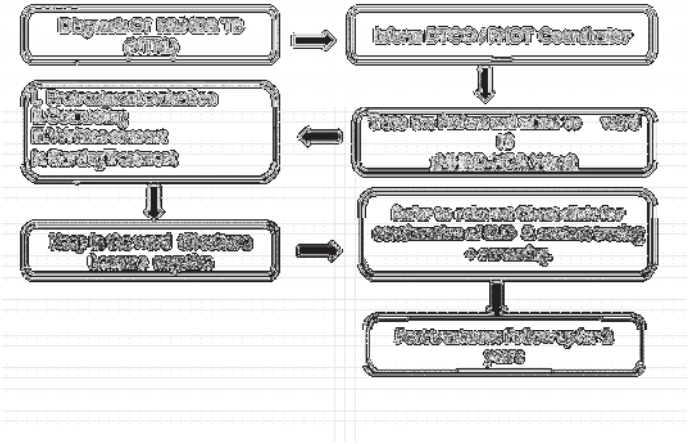
Recommendations:

- Strengthening sputum transportation mechanism from remote areas including expeditious purchase of sputum transportation boxes
- Quick introduction and roll out of Laboratory Information Management System and linked with Patient Management Information System (Expedite procurement process)
- Rapid establishment of SL DST capacity

F. Treatment strategy

As per the current policy, diagnosed MDR TB patients are admitted to isolation ward of NHRD for the intensive phase of treatment. Prior to commencement of second line regimen, all patients undergo pre-treatment evaluation viz. includes clinical evaluation by a physician, chest radiograph, and relevant haematological and biochemical tests. The PMDT coordinator registers patients in the MDR TB register and a MDR TB number is allocated. Patients are commenced on longer regimen of second line anti TB drugs.

Management of RR-/MDR-TB patients



Any patient in whom RR-/MDR-TB is diagnosed requires treatment with second-line drugs as per the country guidelines. The regimen used for second line treatment are:

Intensive phase	At least 8	Km + Lfx + Eto + Cs + Z +/- E
Continuation phase	At least 12	Lfx + Eto + Cs +Z / +-E

Km-Kanamycin; Cs- Cycloserine; E-Ethambutol; Lfx- Levofloxacin; Eto- Ethionamide; Z-Pyrazinamide

As of now only NaPAS is available as a back-up drug for the MDR-TB regimen in case the patient cannot tolerate any of the second-line drugs, in most cases being Cs.

Treatment delivery (DOT), adherence and social support

For patient support, as also reported in last mission, the government has approved a monthly financial support of upto Rs 5000/- for MDR-TB patients for first six months. However the implementation is taking time because this needs to be approved by Provincial Administration which actually bears the cost of these payments. It was learnt that the central ministry is in touch with provinces over the issue and is expected to be resolved soon.

Counselling services are available for patients once they are admitted for treatment.

It was observed during the mission that DOT is largely dependent on family DOT. Execution will be variable. At one of the visited facilities 66 of 74 patients in intensive phase of DS TB treatment and both MDR-TB patients were on family DOT
Recently the government has approved provision of Thriposha (nutritional package) for all TB patients

Recommendations:

- Expedite groundwork processes needed for introduction of shorter regimen
- Development of PMDT training modules (based on those developed by WHO-HQ)
- Other steps
    - Annexures to PMDT guidelines outlining the use of newer drugs and shorter regimen need to be developed and circulated
    - Preparation of SOPs – outline to be provided. To be discussed with College of Pulmonologists and a time bound plan to be developed
- The programme should explore options like community volunteer engagement as DOT providers or other forms of DOT to ensure treatment adherence as well as patient support in case of any side effects before initiating patients on family based DOT.
- Decentralize treatment initiation to at least 2 more centres
- Expedite the process of enhanced allowance for MDR-TB patients
- Make access to allowance easy and streamlined

G. Pharmacovigilance/ aDSM

Regular laboratory tests are done in most cases on treatment. A check-list is also now being used to monitor adverse effects early. However response to adverse events seems to be talking time in certain instances.

Ancillary drugs for side effects management are generally available in hospitals.

Activity	Status
Technical working group in place	To be formed within TEG
Data collection tools and SOPs for safety data available	Need to be updated
National database established	No
Staff trained on aDSM	Partially - ongoing
Dedicated funding for aDSM available	No
Availability of electrocardiogram, audiometry and biochemistry test machine/equipment	Yes

Recommendations:

- Although mechanisms to actively collect information on adverse effects is in place, there is a need to streamline the process, update the data collection forms and establish a national database for formalizing the process of aDSM and making the process robust.

H. Drug management

Overall the drug management system was found to be working well. There were sufficient stocks of drugs for existing longer MDR-TB regimen being used in the country and orders for next tranche have been placed. Orders for one pre-XDR-TB course and two short regimens have also been placed. (Details of available second-line drug stocks are available in Annexure)

Recommendations:

- Check with drug regulatory authority for use of drugs like Cfz and Lzd for TB
- Plan purchase of at least 2 course of drugs for pre-XDR and XDR in next tranche so as to have enough drugs and not run into emergency purchases
- Check registration waiver status of bdq and dlm
- Re-check the conditions under which bdq and dlm is being made available by GDF (bdq through USAID grant) so that there is adherence to prescribed conditions

I. Recording and reporting, and data management

Paper based reporting is being used in the country. It was observed that although a lot of data is being collected, it is not monitored enough for course correction and planning. There were some good examples of pro-active electronic case based management system being used along with GIS mapping of patients . However there were other instances as well when the staff was completely unaware about any electronic recording and reposting system being available in the country. The programme is also in the process of establishing an electronic case based management system with different modules based on specific programme needs. This is being supported through the GF grant. However the first call for expression of interest was apparently not successful and this will probably be floated again soon.

It was also observed that still DS-TB treatment cards are being used for DR-TB. This would mean that the information available for DR-TB patients on the treatment card may not be complete.

From the available data, it is difficult to make out what proportions of new and retreatment cases and what proportion of various categories were screened

Recommendations:

- Develop a monitoring framework for PMDT with key indicators be developed
- New treatment cards specific for entering information on MDR-TB patients and their treatment needs to be circulated
- Introduce electronic data management and its wider use in the country

J. Infection control

A general national infection control guideline has been developed and provides general instructions for infection control measures for health care workers in different settings like out-patient departments, hospital ward settings, laboratory, intensive care units and medico-legal units. In alignment with global guidelines, the national guidelines incorporate infection control measures at three levels –administrative, environmental and personal. The NPTCCD follows these general guidelines.

Patients with presumptive or confirmed infectious respiratory TB when found to have associated complications and needing admission are isolated in separate wards and use of personal protection masks and proper ventilation is advised. A limited contact and visit by other health and non-health staff is practiced.

Surgical masks are available for patients in the TB wards and N95 and other general masks are available and used by health staff. However low stock of N(% respirators was found at afew facilities visited.

The infection control committee in the DCC meets every 2 months to assess the infection control situation at the chest clinic. Training instructions from NPTCCD were sent to DCC for infection control trainings

As in previous review missions, infection control does not appear to be a priority in most settings and only minimum I/C practices observed.

Recommendations:

- Airborne infection control practices in general should be followed
- Identify a few centres and create models for IC to start with

K. Human resource, training and technical support strategy

The overall staffing situation in the health system In Sri Lanka compared to other countries in the region is, relatively high (2.29/1,000 population). Through the GF grant additional TB specific staff (technical and administrative) have been hired earlier. As per the transition plan, most of the staff recruited through the GF support (TB assistants and Data Entry Operators) will be replaced by PHLTs and DOs gradually by the end of the NFM period. The current major challenge in human resource in general is the absence of a realistic approved cadre, imbalance in the recruitment and production of different categories of staff, inequity in spatial deployment and the disparity between expected job performance and training, due to the quality of training.

A comprehensive training of divisional hospital staff in TB detection and case management based on National policies has been proposed in the GF NFM to be undertaken through the development of specific training material targeting doctors at General, base- and divisional hospitals, and a comprehensive training program will ensure that doctors at all hospitals in the country will be trained in TB management. This includes training on identification and appropriate referral of DR-TB cases.

PMDT Modular training materials development needs to be started. MDR-TB lecture was incorporated to DTCO / MO Modular training and DTCD training.

It was observed that the position of PMDT coordinator and DTCO Welisara are held by a single person. This may make it difficult for a single person to discharge both duties efficiently.

Recommendations:

- Appoint a full time PMDT coordinator at national level and DTCO in respective districts for effective discharge of duties
- There is also a need to develop capacity of at least one more Medical Officer to support PMDT coordinator in his activities and cover the work in his absence

L. Supervision of the programme

According to the existing NPT manual the guidelines for on-site supervision of TB services are as below:

- Supervision from the Central level to the District level – This includes supervisory visits by the Director of the National Programme and the staff, Consultant Microbiologist of the NTRL and the staff, and supervisory visits by the Chief Pharmacist.
- Supervision done by the District level officers – This includes supervisory visits by the DTCO, PHI and MLT/PHLT that are carried out to Branch Clinics, health institutions, DOT centres, and microscopy centres in their respective districts. The PHI of DCC should supervise the DOT centres at least once a month and assess the programmatic activities while the PHLT/MLT of DCC are expected to regularly supervise once a month all activities related to diagnostic services in the Microscopy Centres.

The supervisory team needs to prepare a check list which should include activities related to administration, recording and reporting, community awareness, medicine stock and laboratory functioning. During visits by the NPTCCD and NTRL to lower levels a standard check list is used and a detailed report is prepared with recommendations, person responsible and timeframe for completion.

However, it was observed by the mission that supervisory visits are not always possible as per the prescribed schedule. Supervision suffers due to

- Non availability of transportation/ vehicles to carry out the supervisory duties
- Multiple duties of certain staff which makes it difficult for them to leave the duty station for supervisory work

Recommendations:

- Some of the possible mechanisms to strengthen supervision are
    - Carry out combined visits with other programs and departments
    - Arranges for additional transportation mechanisms
- It is also recommended that number of supervisory visits should be monitored and a checklist, as per the national guidelines, be maintained for each visit undertaken

M. PMDT plan including funding source

Country PMDT plan is available as a separate document and the targets include:

PMDT plan has following targets for detection and enrolment:

	2017	2018	2019
Number of MDR TB cases expected	46	50	51
No of Xpert testing for MDR TB case detection	380	536	699
Number of MDR TB Cases to be detected	28	40	41
Percentage of MDR TB Cases to be enrolled for treatment	100	100	100
Percentage of MDR TB Cases to be treated successfully	75	75	75

Budget: It is observed that expenditures on MDR-TB services were around 50% of Global Fund allocations in 2016. It appears that purchase of quite a few diagnostic equipment and corresponding consumables is pending. Further, available funds for supervision and monitoring were not fully utilized.

So far, in 2017, the expenditures booked have been very very low. (Details in tables below)

PMDT Budget Summary 2016 -2018 **152.33** **Exchange Rate (1 USD = LKR 152.33)**

Global Fund Allocation and Expenditure under NFM grant

No	Activities	NFM Grant period							Bud line NFM
		2016 All USD	2016 Exp USD as at 31.12.2016	2017 All USD	2017 Exp USD as at 31.05.2017	2018 Allocation in USD	2016 -2018 Allocation in USD	2016-2018 Exp in USD as at 31 May 2017	
1	**Procurement of Diagnostic Equipments**								
	Lab equipments for bio-chemical & clinical investigations (analyser) for DCCs (10 items in 2016 & 5 items in 2017)	22,950.00	-	12,048.75	-		34,998.75	-	249
	Procurement of GeneXpert Machines (Product, PSM and Maintenance cost) Y1- 3 & Y2 -3	66,756.45	76,997.93	70,094.50	2,166.30	-	136,850.95	79,164.23	228, 230, 232
	Procurement of MGIT 960 machines	52,785.00	-	-	-		52,785.00	-	238
	Sub Total	**142,491.45**	**76,997.93**	**82,143.25**	**2,166.30**	**-**	**224,634.70**	**79,164.23**	
2	Procurment of Reagents and consumables								
	Procurement of BD BACTEC MGIT 960 Consumable for the NTRL	49,266.00	-	51,729.30	-	54,315.77	155,311.07		225, 226, 227
	Procurement of GeneXpert Cartriges	60,051.72	55,389.00	88,077.13	-	103,866.09	251,994.94	55,389.00	63,64
	Lab consumables for clinical investigations	26,637.91	-	36,710.37	-	38,545.89	101,894.17	-	250
	Sub Total	**135,955.63**	**55,389.00**	**176,516.80**	**-**	**196,727.75**	**509,200.18**	**55,389.00**	
3	Procurement of Second Line Drugs							-	
	Procurement of second line drugs - Product & PSM cost	24,131.81	17,718.77	32,175.76	13.40	45,045.60	101,353.17	17,732.17	239, 240
	GLC Fee	25,000.00	25,000.00	25,000.00	-	25,000.00	75,000.00	25,000.00	241
	Quality assurance fee for the SLD procurment	7,650.00	-	8,032.50	-	8,434.13	24,116.63	-	242
	Sub Total	**56,781.81**	**42,718.77**	**65,208.26**	**13.40**	**78,479.73**	**200,469.80**	**42,732.17**	
4	PMDT Training								

	Training on Microscopy maintenance for the Laboratory Technicians of the NTP laboratory networks (02 Prog)	351.14	-		-		351.14	-	252
	MDR-TB management training for Medical Officers and Nurses (02 Prog per year)	552.33	228.55	552.33	-	552.33	1,656.99	228.55	260
	Sub Total	**903.47**	**228.55**	**552.33**	**-**	**552.33**	**2,008.13**	**228.55**	
5	PMDT Supervision and Administration charges (M & E)							-	
	International courier charges (Sample send to SRL)- Semi Annually	11,508.00	-	12,083.40	-	12,687.57	36,278.97	-	253
	MDR-TB evaluation mission travel and management expenses	1,500.00	778.17	1,500.00	-	1,500.00	4,500.00	778.17	258
	Supervision of the DCCs by MDR TB coordinator	1,826.82	614.20	1,826.82	-	1,370.12	5,023.76	614.20	259
	PMDT Committee meeting at National Level	2,071.62	1,077.33	2,071.62	-	20,071.62	24,214.86	1,077.33	261
	Sub Total	**16,906.44**	**2,469.70**	**17,481.84**	**-**	**35,629.31**	**70,017.59**	**2,469.70**	
	Grand Total - PMDT Activities	**353,038.80**	**177,803.95**	**341,902.48**	**2,179.70**	**311,389.12**	**1,006,330.40**	**179,983.65**	

	2016	2017	2018	NFM Grant
Total grant budget - GF	**3,863,224.00**	**2,140,512.00**	**1,906,269.00**	**7,910,005.00**
Percentages	**9%**	**16%**	**16%**	**13%**

Exchange Rate (1 USD = LKR 152.33) for 2017

Exchange Rate (1 USD = LKR 145.60) for 2016

Government Allocation (Including GoSL, World Bank, WHO)	2016 All USD	2016 Exp USD as at 3 Dec 2016	2017 All USD	2017 Exp USD as at 31 May 2017	2018 All USD	2018 Exp USD
NPTCCD Recurrent						
GoSL	1,407,421.13	1,278,974.61	1,136,197.73	500,633.60		
WHO	-	-	-	-		
World Bank	-	-	-	-		
NPTCCD Capital						
GoSL	-	-	-	-		
WHO	3,434.07	-	1,397.30	588.52		
World Bank	785,209.76	539,195.88	202,192.61	19,680.37		
	2,196,064.96	1,818,170.49	1,339,787.63	520,902.49		
Welisara Recurrent						
GoSL	3,353,713.14	3,538,978.93	3,252,478.17			
WHO	-	-	-	-		
World Bank	-	-	-	-		
Welisara Capital						
GoSL	814,888.20	277,663.95	354,493.53			
WHO	-	-	6,564.70	-		
World Bank	-	-	1,989,102.61	-		
	4,168,601.35	3,816,642.88	5,602,639.01	-		
	6,364,666.31	5,634,813.37	6,942,426.64	520,902.49	-	-

Recommendations:

- Potential savings in allocated budget should be identified and if needed, reprogrammed for other priority activities

Second line Drugs Stock Balance at CDS & DCCs

Date: 17st June 2017

	Products	Stock on hand at CDC	Stock in the pipeline & Expected Time of Arrival LKA/DP/16/6125 27/06/2017	Stock in the pipeline & Expected Time of Arrival LKA/DP/16/6127 / /2017	Total stock Available	Expiry date (indicate all batches per product, if shelf life is different
1.	Cap.Cycloserine 250mg	4335			14335	03/01/2019
		10000				11/2018
			8100	8000		
2.	Tab.Ethionamide 250mg	35			10235	31/01/2019
		10200				07/2019
			15600	15600		
3	Tab.Levofloxacin 250mg	3825			17725	31/12/2020
		13900				07/2021
			19400	19300		
4	Inj.Kanamycin 1g	820			1780	03/2019
		960				03/2019
			1600	1600		
5.	PAS Sodium Sachets	47			1322	30/08/2017
		350				31/04/2018
		475	250	225		31/05/2018
		450				11/2019
6.	Pyrazinamide 500mg	10080			35616	04/2020
		12768				05/2020
		12,768				10/2020
			8736	8064		