rGLC COUNTRY SUPPORT MISSION REPORT

Country: Bhutan

Inclusive dates of mission: 7-14 October 2017

Author(s): Vineet Bhatia, WHO SEARO

Acknowledgments: The author would like to express his gratitude towards Ministry of Health, Government of Bhutan for the support extended for this mission. Special thanks to National Tuberculosis Control Programme (NTP), Medical Superintendent, Specialists and Pharmacists at JDW National Referral Hospital, and the team from Drug Regulatory Authority for providing the requisite information. Thanks to WHO country office for facilitating the visit. The team also thanks the doctors, nurses, health care staffs and patients at the sites visited for their hospitality and collaboration with the mission members.

The programme has agreed with open sharing of this report ☒

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Abbreviations and acronyms

DOT	Directly Observed Treatment
DOTS	Directly Observed Treatment Short-course
DRS	Drug Resistance Survey
DST	Drug Susceptibility Testing
DVED	Drugs, Vaccines and Equipment Division
EPTB	Extra-Pulmonary Tuberculosis
EQAS	External Quality Assurance Scheme
FDC	Fixed-Dose Combination
FYP	Five Year Plan
GDF	Global (TB) Drug Facility
GDP	Gross Domestic Product
GNH	Gross National Happiness
HIV	Human Immunodeficiency Virus
HRD	Human Resource Development/Division
INH	Isoniazid
JDWNRH	Jigme Dorji Wangchuk National Referral Hospital
LPA	Line Probe Assay
MDR-TB	Multi-Drug-Resistant Tuberculosis
MO	Medical Officer
MOH	Ministry of Health
MSTF	Multi Sectoral Task Force
NACP	National AIDS Control Programme
NGO	Non-Governmental Organization
NSB	National Statistical Bureau
NSP	New smear Positive Tuberculosis
NTCP	National Tuberculosis Control Programme
NTRL	National TB Reference Laboratory
PHCB	Population and Housing Census of Bhutan
PHL	Public Health Laboratory
PLWHA	People living with HIV/AIDS
PPE	Personal Protection Equipment
rGLC	regional Green Light Committee
RGOB	Royal Government of Bhutan
RRH	Regional Referral Hospital
SRL	Supranational Reference Laboratory
TB	Tuberculosis
TWG	Technical Working Group
VCT	Voluntary Counselling and Testing
VHW	Village Health Worker
WHO	World Health Organization
XDR-TB	Extensively Drug-Resistant Tuberculosis

Executive summary

i. TORs of the mission

- Conduct desk review of progress in PMDT activities
- Support update of guidelines for shorter regimen for MDR-TB
- Undertake training of medical officers/ specialists and pharmacists in shorter regimen

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

- One national and two regional referral hospitals functioning as MDR-TB treatment sites
- Continuation phase treatment done in all district hospitals on case basis
- GeneXpert machines operating in 5 sites with one more to come in the next funding cycle of the GF grant

iii. Significant achievements since last visit

- 5 GeneXpert machines have been installed and made operational
- 2 staff at PHL have been trained and country is ready to start SL LPA testing
- Referral system and shipment of samples by all 32 TB reporting centers in place. Turnaround time is better

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

a. Long lead times in procurements – specifically lab consumable for SL LPA
b. GeneXpert usage needs to be strengthened as no substantial increase in case notification has been observed after roll-out of the machines
c. Innovative patient support mechanisms are required for those on second-line treatment

v. Priority recommendations of the mission:

Recommendation	Responsible persons/agency	Timeline	Support required to fulfil the recommendation
Finalise the updated PMDT guidelines	NTP	Mid-November 2017	Desk support from WHO SEARO
Ensure that all drugs needed for shorter regimen are part of the country EML	NTP, DRA, MoH	End November 2017	
Place orders with GDF in consultation with focal point	NTP	Early December 2017	GDF to help quantify drugs
Establish multi-stakeholder high level national initiative in accordance with Delhi Call for Action	NTP and MoH	January 2018	

Capitalise on the existing momentum and political commitment to mobilise domestic resources – both government and private sector	NTP and MoH	Ongoing	
Follow-up on pending recommendations made during previous rGLC mission	NTP	Ongoing	

vi. Status of priority recommendations of previous mission:

Recommendations	Responsible agency/person	Time frame	Status
Scale up line probe assays for first-line (and introduce second-line) antituberculosis drug susceptibility testing. Consider linkage with Indian counterparts for training.	MoH, NTCP Supported by WHO, SRL	6 months	The LPA for first line has been already scaled up and started the testing of samples. While SL LPA has been established in the NTRL. Two NTRL officials have been trained on the second line LPA at SNRL. Further, NTCP with support from WHO CO and WHO SEARO will be conducting the training of lab technicians from GeneXpert sites and NTRL on rapid diagnostic test and second line LPA at National Institute of TB and Respiratory Disease in New Delhi from 20-28 November 2017.
Introduce MDR "Short Course" amongst a small cohort of patient to gain local experience. Consider partnering with "Centres of Excellence" of neighboring countries such as India (e.g., National Institute of Tuberculosis and Respiratory Diseases) and Bangladesh (International Centre for Diarrhoeal Disease Research, Bangladesh (ICDDR,B) through onsite training and observation or through innovative distance learning technologies, such as Project ECHO	MoH, NTCP, JDWNRT Supported by WHO, NITRD	12 months	NTCP with TA support from WHO SEARO is undertaking (this mission) a capacity building exercise to introduce shorter regimen for the treatment of MDR-TB. The mission will sensitize medical specialist and medical officers and relevant officials on the implementation of the shorter regimen. Program intends to officially lunch the treatment of patients with shorter regimen on 24th March 2018 (World TB Day). Currently program in close coordination with WHO, SEARO is in the process of updating PMDT guidelines and develop SoP for shorter regimen.
Conduct a nationally-representative antituberculosis drug resistance survey. Survey must include data related	MoH, NTCP Support by: WHO, USAID, CDC	12 months	With the joint monitoring mission conducted by programme in close coordination with WHO and CDC, it was recommended that there is no

to the prevalence of SLD amongst new and retreatment cases. Implementation and validation of LPA (see recommendation 1) could be streamlined as part of preparations			requirement of nationwide prevalence survey. NTRL/RCDC had been conducting routine MDR-TB surveillance report for the cohort years.
Expand, monitor and optimize all WHO endorsed rapid diagnostics (WRD) to rationalize use of technologies that complement each other for early and accurate diagnosis of all forms of TB	MoH, NTCP Supported by WHO, SRL	6 months	NTCP has already implemented this recommendation and procured 5 GeneXpert machines. The machines had been placed in three referral hospitals and two other hospitals in strategic locations.
Decentralize PMDT diagnostic and treatment services to make it more accessible, convenient and friendly to the patient's needs	MoH, NTCP Supported by WHO, GF	24 months	The PMDT diagnostic had been already decentralized to referral hospitals and selected district hospitals from National TB Reference Laboratory as recommended. It is not possible to decentralize PMDT services to all districts considering the facilities and the service standards present in respective hospitals. However, the treatment services for the MDR-TB patients during the continuation phase have been already decentralized to the respective reporting centers/hospitals in the districts.
Enhance interdepartmental collaboration within various departments of RGOB to mobilize or cross-utilize resources for TB services	MoH, NTCP Supported by WHO	6 months	As a part of recommendation, NTCP in close collaboration with various national programmes had been conducting joint meetings, trainings and the workshop to make best use of limited resources. NTCP have been collaborating with other relevant departments/divisions within the ministry to mobilize resources for TB services.

Intensify implementation of administrative and personal protective infection control measures in hospital settings with adequate HCW training while building capacity of architects and engineers in addressing engineering aspects of AIC under cold climate conditions	MoH, NTCP Supported by WHO, CDC	6 months	The administrative and the personal protective infection control measures in the hospital setting with adequate HCW training was conducted in close coordination with Infection Control Programme under the Department of Medical Services of the Ministry Programme had trained inflection control focal persons each from referral and district hospitals. To incorporate the infection control designs in the hospital constructions, program had trained two architects from the Health Infrastructures Development Division at Thailand with funding support from Global Fund. Further, the Ministry with funding support from Government of India has planned to train infection control focal persons (Nurse supervisors) to train on infection control for about one week at India.
Establish systems to address social determinants of TB through inter-sectoral collaboration and community engagements	MoH, NTCP Supported by WHO	6 months	Programme, in close coordination with village health worker programme, Health Promotion Division, district health sectors had been involving the community based organizations like Village Health Workers, Multisectorial Task Force, Community Based Support Systems and the basic health units at the community level to address this issue in providing TB services. Moreover, the MDR-TB ward at the Gidakom Hospital is being refurbished with measures to improve infection control through redesigning of existing infrastructure through trained architects and medical experts.
Conduct operational research in focusing a several key areas (i.e., age- and gender-stratified analyses, border and bi-national TB epidemiology, extrapulmonary TB disease, molecular	MoH, NTCP Supported by WHO, UNION, CDC	12 months	Program has been prioritizing operational research for evidence based planning and interventions. It has conducted an operational research workshop to the district health managers, medical officer in close collaboration with KGUMSB and

epidemiology / transmission studies, evaluation of shorter regimens within the Bhutanese population, and evaluation of novel initiatives to enhance treatment compliance, such as 99DOTS			Research Unit of the Ministry. An EP-TB study under the SAARC funding, study on the factors to determine development of MDR-TB among new TB patients has been outsourced to KGUMSB in the current fiscal year with GF support, and an operational research on the implementation of GeneXpert machines has been ongoing with WHO TDR grant. National programme is in the process of developing proposal under the TB reach funding to adopt 99DOTS or Video Observed Treatments (VDOTS) to enhance treatment compliance and monitoring.

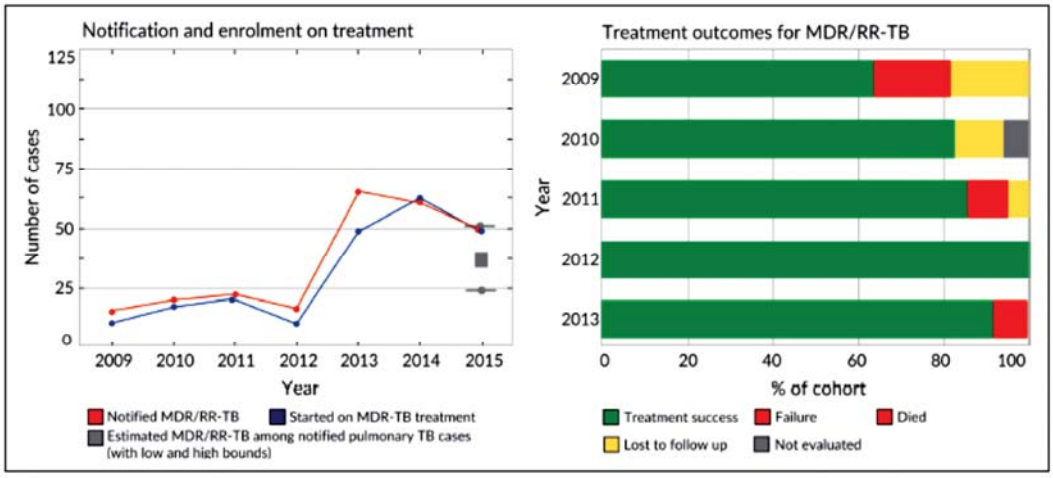
Achieved	
Some progress/ ongoing	
No change	

Detailed report

(Since the major focus of this mission was country capacity building and transition to shorter regimen, the background information and progress assessment is short and based on desk-review only)

A. Overall DR-TB programme performance

The programme demonstrated accelerated DR-TB case notification in 2013 but it has almost been static since then. It is expected that notifications will increase once there is optimal utililisation of GeneXpert machines that have already been installed. Treatment success rate so far has been good and consistent more than 80% for several years that may also be because the cohort size is relatively small and patients receiving individualised attention.



Source: http://www.who.int/tb/data

B. Case finding strategy

As per the existing programme policy, all sputum smear positive patients are screened for drug-resistance using GeneXpert and conventional methods in addition to those considered at risk of drug resistance or those where there is a possibility of an unfavourable outcome because of co-morbidities and hence at high risk of mortality due to drug-resistance. As per the guidelines being updated, following groups will be screened for resistance using rapid tests:

1. All TB cases starting on treatment will be screened with GeneXpert, if not already done at the time of diagnosis. However, in clinically diagnosed and extra-pulmonary (EP) TB cases, the testing will depend on availability of adequate specimen.

2. High Risk groups– Certain categories of patients are considered at high risk fordrug resistance TB and this group also includes vulnerable populations in whom, because of their immunity and co-morbidity, mortality could be higher if they have associated drug resistance. Therefore, the following groups will be subjected to Xpert test without undergoing sputum microscopy:

- All re-treatment TB cases - both smear-positive and negative cases (Relapse, Failure and treatment after loss to follow-up cases)
- Symptomatic close contacts of MDR-TB cases including health care workers or those contacts who have suspicion of TB on physical examination by a physician. Non-symptomatic close contacts will be screened using chest X-ray. Patients with anomalies on Chest X-ray suggestive of TB will be screened using GeneXpert irrespective of symptoms;
- Non-converters at 2/3 months of TB treatment;
- Treatment failure cases of TB treatment;
- TB-HIV co-infected cases
- Diabetes, chronic kidney disease, drug users etc.

C. Laboratory services and expansion plan

	Methods and Technology	Year of establishment
1.	Solid Culture & DST using egg based	2010
2.	Liquid Culture & DST using BACTEC MGIT 960	2012
3.	Line Probe Assay for Rapid detection MDR-TB (Rifampicin and Isoniazid)	2014
4.	GeneXpert for Rapid detection MDR-TB – 5 machines installed as of date	Sept. 2016
5.	Second line drugs Line Probe Assay	Planned before end 2017

The programme aims to have at least one more machine in coming year for a mobile diagnostic unit to reach the difficult to reach populations because of geographical constraints.

D. Treatment strategy

The programme intends to transition to shorter regimen in a phased manner. The regimen to be used is in alignment with WHO recommendations
Intensivephase4-6 Km-Mfx-Pto-Cfz-Z-Hhigh-dose-E
Continuationphase5Mfx-Cfz-Z-E

The regimen can be used in all adult, children and PLHIV patients if they do not fall in any exclusion criteria (as in the guidelines).

In the initial phases of implementation, the shorter regimen will be used only in new RR/MDR-TB cases after checking for exclusion criteria as above. It is possible that around ~30 cases will be initiated on treatment in the first year of implementation. Based on developing evidence and further guidance of WHO, the regimen may be considered for all eligible cases in next year

For other cases, longer MDR-TB regimen will continue to be used

Intensive phase8Z+Ka+Lfx+Eto+Cs
Continuation phase12Z+Lfx+Eto+Cs

Z–Pyrazinamide; Ka–Kanamycin; Lfx– Levofloxacin; Eto– Ethionamide; Cs- Cycloserine; H – Isoniazid

The regimen can be individualized after receiving reports of the SL LPA

E. PMDT plan for shorter regimen

Sl.No.	Plans and programs	Status
1.	Infrastructure	In place
2.	National Strategic Plan	In place (2017-2023)
3.	FL-LPA in NTRL	established in 2014
4.	Training of Laboratory staffs on SL-LPA	2 staff trained in 2nd quarter of '16
5.	Procurement of LPA kits for SL-DST	Process initiated
6.	Develop guidelines, algorithms and SOPs	4th quarter of 2017
7.	Training of HPs on shorter regimen	4th quarter of 2017
8.	Drug forecast, logistics and supplies	4th quarter of 2017
9.	Arrival of drugs, logistics and supplies	1st quarter of 2018
10.	Launch the implementation of shorter regimen	World TB Day 2018
11.	Implementation of aDSM	Simultaneous with introduction of shorter regimen
12.	Enhanced supervision and monitoring	Simultaneous with introduction of shorter regimen

F. Training summary

A two days training of 33 experts, medical doctors and pharmacists from districts on shorter regimen was held in Paro. The topics covered were

- Case definitions and treatment outcomes
- Screening for DR-TB and diagnosing cases
- WHO guidelines for Laboratory network
- Treating MDR-TB and use of shorter regimen
- aDSM – important definitions and implementation
- Treatment adverse effects and their management
- Drug needs for shorter regimen and transitioning from longer to sorter regimen
- Recording and reporting on MDR-TB

Each topic was followed by interactive exercises

Pre and post-tests was also conducted for all participants. All questions were objective in nature. Each question had 1 mark. If a question had multiple correct choices, marks were given only if all correct choices were chosen. Summary is as follows

In pre test

Minimum score	3	
Maximum score	14	2 participants
Average score	9	
Median score	8	
Maximum correct answers	Q 10	24 participants
Minimum correct answers	Q 11	0 participants

Q 10 pertained to managing QT prolongation in patients on second line drugs while Q 11 pertained to correct definition of 'treatment failure' in patients on second line drugs.

In post test: Significant improvement in scores was seen in post test

Minimum score	10	3 participants
Maximumscore	16	3 participants
Averagescore	14	
Medianscore	14	
Maximum correct answers	Q 6	32 particpants
Minimum correct answers	Q 7	11 participants

Q 6 pertained to clinical decision to be taken in case where a patient on shorter regimen is smear positive at 4 months of treatment and Q 7 to circumstances under which a DR-TB patient may receive medicines for self-administration. It is also to be noted that for Q 7 only 6 participants had correctly answered during the pre-test. Hence, despite being answered correctly by a low number of participants, it is improvement over the pre-test

G. Discussions on updating of PMDT guidelines

A meeting of experts was held on 13 October to further discuss adoption of WHO guidelines for diagnosis and management of MDR-TB. Some of the salient decisions were

1. The programme will move towards universal drug susceptibility testing using the available GeneXpert machines. With current capacity, around 3000 tests can be performed each year

2. The WHO recommended shorter regimen will be adopted as such without any modifications

3. As soon as the guidelines are finalized, the programme will approach Essential Medicines and Technology Division and Drug Regulatory Authority for inclusion of Moxifloxacin and Prothionamide in the essential drug list of the country. The process can be expedited for approval within a month of proposal from the National Drug Committee

4. The programme will sound GDF on its intention to introduce shorter regimen from first quarter of 2018 and make a formal procurement rest as soon as the necessary administrative processes are complete

5. Process of receiving consent from the patient specifically when initiating on shorter regimen will be formalized

6. A low-chart for information flow on adverse events will be prepared in coordination with the Pharmacovigilance department

7. Duties of persons responsible for adverse events reporting will be assigned and included in the guidelines

8. The programme will include bedaquiline and delamanid use in guidelines as options for patients where an effective regimen cannot be constituted with available drugs.

Annexure 1: Agenda for training on shorter regimen for DR-TB

Day 1 (11/10/2017)

Time	Program	Facilitators
08.30-09.00	Registration of participants	Facilitators plus participants
09.00-09.10	Introduction of participants and facilitators	NTCP
09.10-09.20	Objectives and expectations	NTCP
09.20-09.40	Pre-test	Dr. Vineet Bhatia
09.40-10.00	Current status of PMDT in the country and future plans, including those for introduction of shorter regimen	NTCP
10.00-10.30	PMDT programme performance – global, regional and country	Dr. Vineet Bhatia
10.30-11.00	Tea/coffee break	Dr. Vineet Bhatia
11.00-11.30	PMDT programme performance – global, regional and country	Dr. Vineet Bhatia
11.30-12.00	Case definitions and treatment outcomes	Dr. Vineet Bhatia
12.00-12.30	Screening for DR-TB and diagnosing cases	Dr. Vineet Bhatia
12.00-12.30	WHO guidelines for Laboratory network	Dr. Vineet Bhatia
12.30-13.00	Exercises on detection of MDR-TB followed by discussions	Dr. Vineet Bhatia
13.00-14.00	Lunch break	
14.00-14.30	Treating MDR-TB and use of shorter regimen	Dr. Vineet Bhatia
14.30-15.00	Exercises on treatment of MDR-TB followed by discussions	Dr. Vineet Bhatia
15.00-15.30	Tea/coffee break	
15.30-17.00	Continue Exercises followed by discussions	Dr. Vineet Bhatia

Day 2 (12/10/2017)

09.00-09.15	Recap of Day 1	Participants
09.15-10.00	Pharmacovigilance – current guidelines and policies in Bhutan	DRA, Bhutan
10.00-10.30	aDSM – important definitions and implementation	Dr. Vineet Bhatia
10.30-11.00	Tea/coffee break	
11.00-11.30	Side effects and their management	Dr. Vineet Bhatia
11.30-13.00	Exercises on treatment of MDR-TB followed by discussions	Dr. Vineet Bhatia
13.00-14.00	Lunch-Break	
14.00-14.30	Continue Exercises on treatment of MDR-TB f	Dr. Vineet Bhatia
14.30-15.00	Drug needs for shorter regimen and transitioning from longer to sorter regimen	Mr Alessio Mola/GDF
15.00 15.30	Tea/coffee break	
15.30-16.00	Recording and reporting on MDR-TB	Dr. Vineet Bhatia
16.00-16.30	Exercises on R&R of MDR-TB followed by discussions	Dr. Vineet Bhatia
16.30-17.00	Post-test & End of the day	Dr. Vineet Bhatia

Annexure 2: Pre and post-test questionnaire

1. Write a "T" for true or "F" for false by the following statements:

   _____ A drug-susceptibility test (DST) is required to confirm a diagnosis of MDR-TB.

   _____ Xpert MTB/Rif can be done for people presumed to have DR-TB even before smear test.

   _____ An HIV-positive patient with smear-negative TB does not need Xpert MTB/Rif test.

   _____ All patients with confirmed MDR-TB have strains of TB that are resistant to at least isoniazidand rifampicin.

   _____If available, all patients starting on shorter regimen for MDR-TB should get a second line LPA done.

2. Which of the following is correct WHO recommended shorter regimen for MDR-TB(tick 1)

   a. 5 Km-Z-Cs-Lfx-PAS/ 5 Cs-Lfx-PAS
   b. 4-6 Km-Mfx-Pto-Cfz-Z-Hhigh-dose-E / 5 Mfx-Cfz-Z-E
   c. 8 Km-Mfx-Pto-Cfz-Z-Hhigh-dose-E / 8Mfx-Cfz-Z-E
   d. 4-6 Km-Z-Cs-Lfx-PAS/ 5 Cs-Lfx-PAS

3. Which of the following is not a core MDR-TB regimen drug as per the recent regrouping of drugs by WHO
   a. Ethionamide
   b. Cycloserine
   c. p-aminosalicylicacid
   d. Linezolid
   e. Clofazimine

4. Which of the following cases cannot be given shorter regimen for MDR-TB (tick all that apply)

   a. New case with no history of previous TB medications
   b. HIV positive individual
   c. EP-TB case with Rif resistance
   d. Pregnant females
   e. Patient who took Levofloxacin for chest infection for more than one month

5. What are the number of injections Kanamycin needed for intensive phase of shorter regimen

a. 112
b. 152
c. 224
d. 236

6. What is the clinical decision in case where a patient on shorter regimen is smear positive at 4 months of treatment

    a. Declare as failure
    b. Consider extension of intensive phase
    c. Switch to continuation phase
    d. Switch to longer regimen

7. Under which circumstances may a DR-TB patient receive medicines for self-administration? (Tick all that apply)

    a. when the patient has to travel
    b. when the patient cannot come to the health centre for directly observed treatment because she or he feels sick
    c. when the patient has completed the intensive phase
    d. when a patient has never missed a dose
    e. none of the above

8. What are the critical aspects of directly observed treatment? (tick all that apply)

    a. talking to the patient and giving support
    b. providing medicine to the patient
    c. watching the patient swallow the medicines
    d. recording the treatment on the treatment card

9. What is the full form of aDSM

    a. Active drug side-effects management
    b. Active TB drug-safety monitoring and management
    c. Acute drug side-effects monitoring
    d. Absolute drug safety monitoring

10. What would you do in case you notice significant QT prolongation in a patient on second line anti-TB medicines

    a. Stop QT prolonging drugs
    b. Check for electrolytes
    c. Repeat ECG

d. All of the above

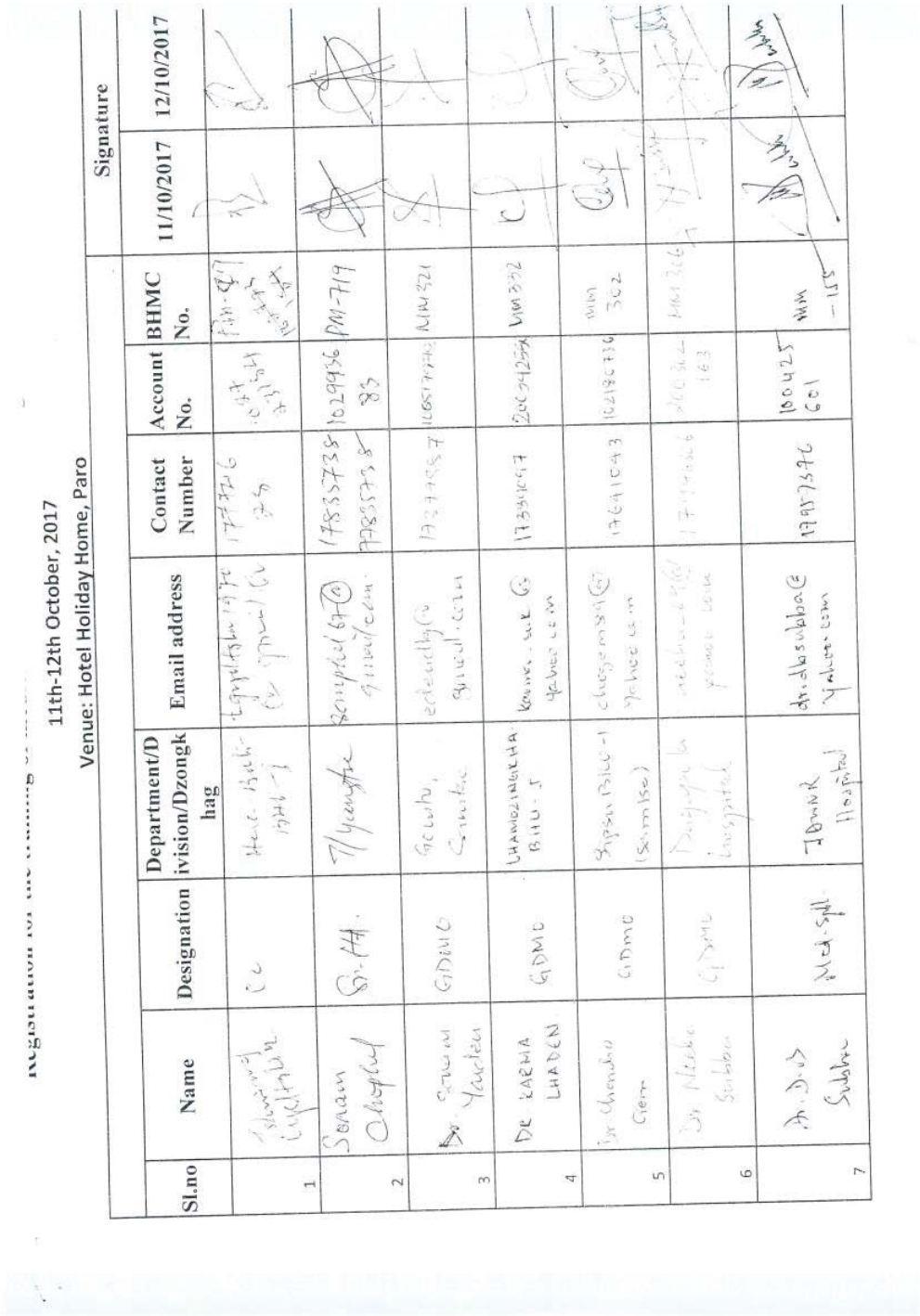
11. Treatment failure in a case on second line treatment is defined as treatment terminated or need for permanent regimen change of at least two anti-TB drugs because of (tick all that are applicable):

    a. Lack of conversion by the end of the intensive phase
    b. Bacteriological reversion in the continuation phase after conversion to negative
    c. Evidence of additional acquired resistance to fluoroquinolones or second-line injectable drugs
    d. Adverse drug reactions

12. What is the definition of Cure in second-line treatment

    a. Treatment completed as recommended by the national policy without evidence of failure
    b. Three or more consecutive cultures taken at least 30 days apart are negative after the intensive phase
    c. Treatment completed as recommended by the national policy without evidence of failure OR three or more consecutive cultures taken at least 30 days apart are negative after the intensive phase
    d. Treatment completed as recommended by the national policy without evidence of failure AND three or more consecutive cultures taken at least 30 days apart are negative after the intensive phase

Annexure 3: Attendance list of training



11th-12th October, 2017

Venue: Hotel Holiday Home, Paro

Sl.no	Name	Designation	Department/Division/Dzongkhag	Email address	Contact Number	Account No.	BHMC No.	Signature 11/10/2017	Signature 12/10/2017
1									
2	Sonam Chophel	Sr. HA	T/Yangtse		17855735	10299[illegible]	PM-719		
3		GDMO	Gelephu, Sarpang				NM321		
4	DR KAEMA LHADEN	GDMO	LHAMOIZINGKHA BHU-I		17336[illegible]	[illegible]	NM332		
5		GDMO	Bajo, Paro-I (Semtse)		17641[illegible]	[illegible]	NM 302		
6		GDMO							
7		Med. Supdt.	TBMNR Hospital		17957[illegible]	10042[illegible]	NM -155		

Registration for the training of medical officers on shorter regimen to treat MDR-TB

11th-12th October, 2017

Venue: Hotel Holiday Home, Paro

Sl.no	Name	Designation	Department/Division/Dzongkhag	Email address	Contact Number	Account No.	BHMC No.	Signature 11/10/2017	Signature 12/10/2017
8	Dr. Manish Raj Gurung.	Sr. MO	Tsimalakha	mgdejawri@gmail.	17671522	100178944	MM-054		
9	Dr. Sunanda Pradhan	Medical Specialist	Sarpang	drsunanda_p @hotmail.com	17290900	100466 830	MM-043		
10	Dr. Ugyen Choden	Medical Specialist	ERRH Mongar	Ugyenc @ hotmail. com	17950581	10068 7486	MM-117		
11	Dr. Athin Nath Subedy	CMO Pemagatshel	Pemagatshel	[illegible]	[illegible]	10500 9213	MM-094		
12	Dr. Sitanjal	GDMO	Gelephu	[illegible]	77303520	100678 776	MM 385		
13	Dr. Dekee Yangzom	GDMO	Gidakom Hospital	dekee yangzee7 @ gmail.com	77301636	10074-8189	MM-380		
14	Dr. Sangay Wangmo	GDMO	Trongsa hospital	wangmo.sangay@gmail. Com	17767742	20000-4133	MM370		

Registration for the training of medical officers/professionals on shorter regimen to treat MDR-TB

11th-12th October, 2017

Venue: Hotel Holiday Home, Paro

Sl.no	Name	Designation	Department/Division/Dzongkhag	Email address	Contact Number	Account No.	BHMC No.	Signature 11/10/2017	Signature 12/10/2017
15	Dr. Pema Wangchuk	GDMO	Bumthang	pelwang73@gmail.com	17767720	102907-467	365		
16	Dr. Tandin Wangchuk	GDMO	Paro	[illegible]	17712053	200069-588	381		
17	Dr. Abhijeet Pradhan	GDMO	Panbang BHU-1	abhisek1992pradhan@gmail.com	77655125	200153652	376		
18	Dr. Tandin Zam	GDMO	Nganglam BHU-I	tandinzam@yahoo.com	17671334	200361719	352		
19	Dr Pema Cheden	GDMO	Dewathang Hospital	pemacheden631@gmail.com	77471797	100722386	346		
20	Dr. Tshering Penjor	GDMO	Tsirang Hospital	tpenjor@tsirang.gov.bt	17698756	[illegible] 8659	[illegible]		
21	Dr. Kinley Gyeltshen	GDMO	Phuentsholing Hospital	kinleynorden@gmail.com	17909332	~~200158~~ 200185266	335		

Registration for the training of medical officers/professionals on shorter regimen to treat MDR-TB

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Sl.no	Name	Designation	Department/Division/Dzongkhag	Email address	Contact Number	Account No.	BHMC No.	Signature 11/10/2017	Signature 12/10/2017
22	Yoshi [illegible]	GDMO	Tsirang	[illegible]	1795[illegible]	100[illegible]	MM-337		
23	Tshering Wangchuk	GDMO	Risibuo	tsheringson@gmail.com	17330582	[illegible]	MM-307		
24	Kezang Wangdi	GDMO	S/Jongkhar	wangdikezang88@gmail.com	17951545	101079235	MM-128		
25	Tandin Wangyel Dorji	GDMO	Samtse	Wangyel[illegible]@[illegible].com	17584117	1007[illegible]	MM-261		
26	Hari Prd. Dhimal	GDMO	Gedu	dhimal.h@gmail.com	77819696	10051 7672	MM-349		
27	Dadi Ram Darjee	GDMO	[illegible] Hosp. [illegible]	[illegible]2289@gmail.com	774[illegible]63	20[illegible]381 102	MM-348		
28	Yeshey Dorji	GDMO	Samdrup Jongkhar [illegible] BHU-I	yesheyste@yahoo.com	1726[illegible]5	1013822 57	MM-205		

Registration for the training of medical officers/professionals on shorter regimen to treat MDR-TB

11th-12th October, 2017

Venue: Hotel Holiday Home, Paro

Sl. no	Name	Designation	Department/Division/Dzongkhag	Email address	Contact Number	Account No.	BHMC No.	Signature	
								11/10/2017	12/10/2017
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30	Dr. Sangay Dorji	MO	Wangdue	dorjisangye@gmail.com	17233678	101796 915	MM-190		
31	Dr. P. Tenzing	Chest Physician	Respiratory Hosp. Thimphu	dtptenzing@gmail	17609703	100488 403	MM-072		
32	Dr. Vineet Bhatia	Technical Officer	WHO SEARO	bhatiav@who.int	+91 [illegible] 35481				
33	Chewang Kinzang								
34	Jangchup P. Dorji		NSPD	jpdorje@health.gov.bt	17477259	10072564[illegible]			
35	Jigme Tenzin	R.O	Drug Regulatory Authority	jtenzin@dra.gov.bt	17697475	10068003[illegible]	-		

Registration for the training of medical officers/professionals on shorter regimen to treat MDR-TB

11th-12th October, 2017

Venue: Hotel Holiday Home, Paro

Sl. no	Name	Designation	Department/Division/Dzongkhag	Email address	Contact Number	Account No.	BHMC No.	Signature	
								11/10/2017	12/10/2017
36	Lila Maya Adhikari								
37	Tamyang Pema.								
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