UNITED REPUBLIC OF TANZANIA

MINISTRY OF HEALTH, COMMUNITY DEVELOPMENT, GENDER, ELDERLY AND CHILDREN

QUALITY IMPROVEMENT FOR TB CASE DETECTION

A Toolkit for Health Facilities

June 2021

Table of Contents

ACRONYMS AND ABBREVIATIONS

ADDO	Accredited Drug Dispensing Outlets
AFB	Acid-fast bacillus
AIDS	Acquired Immunodeficiency Syndrome ART Anti-retroviral Therapy
CHCP	Community Health Care Providers CHS Community Health Supporter
CHMTs	Council Health Management Teams
CHW	Community Health Worker
CME	Continuous Medical Education
CPR	Cardiopulmonary Resuscitation
CTC	Care and Treatment Clinic
CXR	Chest X-Ray
DHIS	District Health Information System
DLT	District Laboratory Coordinator
DMO	District Medical Offer
DOT	Direct Observed Therapy
DP	Development Partners
DR-TB	Drug Resistant Tuberculosis
DSM	Dar es Salaam
DST	Drug-susceptibility Testing
DTLC	District TB and Leprosy Coordinator
ENT	Ear, Nose and Throat unit
EPTB	Extra-Pulmonary TB
EQA	External Quality Assessment
ETL	Electronic TB and Leprosy
FNA	Fine Needle Aspiration
GFATM	The Global Fund to Fight AIDS, Tuberculosis and Malaria
HB	Home Based
HBCP	Home-Based Care Providers
HC	Health Centre
HCPs	Health Care Providers
HF	Health Facility
HIV	Human Immunodeficiency Virus
HVL	HIV viral load
ICF	Intensified TB Case Finding
IEC	Information, Education and Communication MP Member of Parliament
IPs	Implementing Partners
IQC	Internal Quality Control
LED	Light Emitted Diode

LF-LAM	Lateral flow lipoarabino-manan assay
LQAS	Lot Quality Assurance System
MDH	Management and Development for Health
MGIT	Mycobacterium Growth Indicator Tube
MoHCDGEC	Ministry of Health, Community Development, Gender, Elderly and Children
MPs	Member of Parliament
MSH	Management Sciences for Health
MTB	Mycobacterium Tuberculosis
NGO	Non-Governmental Organisations
NTLP	National Tuberculosis and Leprosy Program
OPD	Outpatient Department
PATH	Program for Appropriate Technology in Health PCT Patient Centered TB Treatment
PCT	Patient centered TB Treatment
PEPFAR	The President's Emergency Plan For AIDS Relief
PITS	Provider-initiated TB Screening
PLHIV	People Living with HIV
PMP	Preventive Maintenance Plan
PMTCT	Prevention of Mother to Child Transmission of HIV
PPM	Planned Preventive Maintenance
PST	Prevalence Survey for TB
PTR	Presumptive TB Registers
QC	Quality Control
QI	Quality Improvement
QIT	Quality Improvement Team
RCH	Reproductive and Child Health Unit
RHMTs	Regional Health Management Teams
RTLC	Regional TB and Leprosy Coordinator
SBC	Social and Behavior Change
SOP	Standard Operating Procedures
SS	Sputum Smear
TB	Tuberculosis
TOTs	Trainer of Trainers
TPHS	Tanzania Health Promotion Services
TPT	TB Preventive Therapy
TQIF	Tanzania Quality Improvement Framework
TS	Treatment Supporter
TST	Tuberculin Skin Test
USAID	United States Agency for International Development
VCT	Voluntary Counseling and Testing

VEO	Village Executive Officer
WEO	Ward Executive Officer
WHO	World Health Organization
WIT	Work Improvement Team
ZN	Zielh Neelsen

Definitions

1. **Quality Control** - is process designed to ensure that the level of performance of a system remains stable, or in 'control' within new and agreed performance limits. Quality controls helps to elevate patient care in a health facility from adequate to excellent.
2. **Internal Quality Control** – Is A strict system of quality control that is observed at all levels such as for the collection of the specimen, its processing, instrumentation, and its maintenance and reporting of the results.
3. **Quality Improvement** – In the context if health care, quality improvement is the framework used to systematically improve the ways care is delivered to patients, whereby processes have characteristics that can be measured, analyzed, improved, and controlled.
4. **Quality Improvement Team** - is a team taking lead to implement quality improvement activities, and include individuals representing all areas of the practice that will be affected by the proposed improvement.
5. **Quality Improvement Plan** – is a formal, documented set of organizational/health facility priorities focused on quality and quality improvement objectives that provide guidance on key activities and lay out the process that will be used to improve quality through focused targets and actions.
6. **TB Focal Person** - is health care staff responsible for coordination of all TB-related activities, such as intensified TB case finding, TB health education and contact tracing of infectious index cases.
7. **External Quality Assessment** - a system for objectively checking the laboratory's performance using an external agency or facility.
8. **Intensified TB Case Finding** - is an activity, recommended by the World Health Organization (WHO), intended to detect possible TB cases as early as possible among all attendees of health facility, usually by using a simple questionnaire for the signs and symptoms of TB.
9. **Work Improvement Team** - is the small team of staff that meets regularly to solve the problems relating to their job scope or workplace .or group of people working together to achieve a common goal for which they share responsibility.
10. **QI-model** – Is a set of approaches that address barriers to TB diagnosis and case notification, making health facilities be responsive to systematic TB screening to all at all entry points.

Executive Summary

Chapter one provides an introduction covering the TB burden in Tanzania, overview of quality improvement initiative for TB case detection and its rationale; objectives of the toolkit; target group for the toolkit; methodology for development of the toolkit; and the scope of the toolkit which covers a cascade of TB services from screening for identification of presumptive TB cases, sputum collection, laboratory testing and linkage to TB care.

Chapter two provides information on how to improve access to tb case detection in health facilities. This chapter responds to the existence of a large pool of undetected TB case in Tanzania, as evidenced from WHO Global TB Report 20201. Furthermore, it follows the findings from Patient Pathway Analysis in 2018 that indicated 62% of patient, initially seek care to facilities without TB diagnostic services, hence higher likelihood of being missed. The chapter looks at barriers to TB Case Detection in Health Facilities; Approaches to Overcome Barriers for TB Case Detection in Health Facilities specifically on how to increase access to TB screening services in health facilities; how to improve organization and management of TB case finding activities; how to improve access to laboratory for TB diagnosis in health facilities and how to strengthen Health facilities outreach services to increase access to TB case detection. Moreover, the chapter explains how to implement the QI TB model Toolkit in Health Facilities by providing steps to implement QI-TB model for TB Case detection at health facility; activities to start implementing the QI-TB model at health facility level after training of QI for TB case detection; and activities to improve implementation of the QI-TB model at health facility level.

Chapter three provide information on organization of tb case detection at health facility as an important step in ensuring case finding procedures and practices within health facilities are optimized and standardized. This will ensure that TB case detection activities become part of routine standard of care and is therefore TB being ruled out to all people attending to the facility. It provides detailed roles and responsibilities of Health Management teams, Implementing Partners and TB and Leprosy Coordinators; RTLCs, DTLCs, DTHOs, Health Facility In-charge, Health Facility Management Team, Health Facility TB Focal Person, Health Facility QI Team, Health Facility Sections' WIT and Health Facility WIT-TB with agenda for WIT-TB. Furthermore, it provides roles and responsibilities of Health Providers in Different Units (OPD, IPD, CTC, RCH, and other Departments); the TB lab, the QI-TB Mentors; and activities targeting Health Providers-TB Clinicians/Physicians, DTLCs, TB/HIV, DOT Nurse

Chapter four provide detailed information on how to strengthen tb case detection in health facilities, taking into consideration the fact that TB case detection in HFs starts with identification of presumptive TB cases from among attendees at the registration/waiting area/ reception or in any other unit of the HF. The objective is to ensure that QI-TB practices for increasing TB case detection becomes a permanent and routine activity at all health service delivery points. This chapter looks at approaches to Increase TB Case Detection at Registration point and OPD. It further provides guidance on Identification of TB Presumptive Clients in Wards, RCH, HIV/AIDS Clinics (CTC, PMTCT& VCT) Diabetes Clinic and Other Specialized Clinics focusing on what health providers in the wards

[1] WHO Global TB Program Report 2020.

should do. Furthermore, the chapter provides information on approaches to Increase TB Case Detection in Children and approaches to Strengthen Health Facility Linkages with Community-Based TB Initiatives in Finding Missing People with TB.

Chapter five outlines experience and lessons learned from implementation of quality improvement model for increasing tb case finding in Tanzania. QI-model for increasing TB case detection was adopted in 2016, with main aim of improving TB case finding among missing people. The model was implemented through optimization of existing TB case detection efforts and building provider capacity with simple and clear instructions. The TB QI-model with support of GFATM was piloted in Dodoma and Mbeya regions and then scaled in 16 regions and further followed by the national roll-out. The national rollout was supported by Government and Development Partners (DPs) including Global Fund, USAID, CDC-PEPFAR to cover all 26 regions and 184 councils in Tanzania mainland. The country increased TB treatment coverage from 34% in 2015 to 59% in 2020 and notifying over 85,000 TB cases (2020). This chapter provides key Steps taken to implement QI-TB Model in Tanzania and the overview on the uptake of QI-TB Model implementation. It further provides information on the lessons learned, key gaps/challenges in implementation of QI Model in Tanzania; and the key ingredients found to contribute to successful QI-TB implementation including full involvement of health facility leadership in implementation of QI-TB model. Finally, the chapter provide details on recognition of implementation of QI-TB Model in Tanzania at international level.

Chapter six focuses on strengthening TB laboratory services since sputum examination is the corner stone for TB diagnosis. Proper diagnosis using sputum smears requires that the sputum samples produced are of good quality. It is the responsibility of health providers and Community Health Workers to make sure that clear explanation and instructions are given to TB presumptive clients on how to produce and collect good quality sputum. Sputum transportation from community level and from non-GeneXpert sites to GeneXpert sites should be emphasized and routinely monitored by health facilities. This chapter provide information on how to organize TB case detection in laboratories looking at methods and approaches for TB diagnosis. Different methods or approaches are used to diagnose TB in adults and children at different levels of health facilities, these including smear microscopy, molecular diagnostic methods TB Culture; TrueNat; Urine based Lateral flow lipoarabino-manan assay (LF-LAM) and Non-Laboratory methods/ Approaches. Furthermore, it provides information on sputum management focusing on sputum collection, sputum referral system, sputum results management, recording and reporting of results. Finally, it looks at quality control for the laboratory and provides the SOPs for collection of sputum specimen and the checklist for laboratory workers in improving quality of TB diagnosis.

Chapter seven provide information on how to strengthen TB care, treatment, and prevention. Early case finding and treatment are the corner stone of TB control. Good quality management starts with the timely and accurate notification of TB cases, including delivering appropriate treatment using standardized regimens of TB treatments as well as providing support for patients. Good quality management also ensures that patients who miss one or more doses of treatment are quickly brought back, and that their contacts especially children, and others belonging to high-risk groups are investigated or assessed to determine whether they have active TB. This chapter provide information on patient-centered TB care and treatment looking at specific roles and responsibilities for the health professionals (Clinician/Doctor, DOT Provider/Nurse, Laboratory Technician, and treatment supporter) for ensuring quality TB treatment services. The chapter further provide guidance on contact

investigations looking at approaches that the health facilities/health providers should implement for contact investigation, and how to trace TB Patients who are Lost to Follow-Up.

Chapter eight covers monitoring and evaluation of quality improvement model for increasing TB case detection. M&E is an essential component of quality improvement in TB case finding initiatives and resulting diagnosed patients. It allows the health facilities to stepwise manage the TB treatment and care cascade, utilize the data for planning and problem solving and report on key TB case detection indicators. The care cascade entails on available programmatic options to maximize the number of risky people reached, availability of efficient diagnostic technologies, people screened for TB, offering correct diagnosis, providing treatment to all in need, well planned patient monitoring modalities with proper recording and reporting. This chapter looks at M&E Activities for implementation of the QI-TB model in TB Case detection at health facility level. It further provides a list of national, regional and district and facility level Indicators. Finally, it provides a list of additional TB case detection indicators i.e., indicators for Health System Strengthening (HSS) and Tuberculosis Preventive Therapy (TPT), and additional TB Case Detection Data i.e., time from onset of symptoms to TB diagnosis, time from TB diagnosis to treatment initiation and smear grading and positivity rate at diagnosis.

FOREWORD

The Ministry of Health, Community development, Gender, Elderly and Children (MoHCDGEC) is committed to ensure that high quality health care services and especially at health facilities in particular are provided to all citizens countrywide through implementation of evidence-based interventions. The Ministry is aiming at improving the quality of services provided at health facilities and has already developed the Tanzania Quality Improvement Framework (TQIF) as a guiding document for quality improvement of health services provision in the country. In recognition of the need to improve the quality of services many stakeholders undertook initiatives geared towards improving quality of services at health facilities including the provision of quality TB control services. The impetus for this toolkit has focused on improving the TB, TB/HIV and DR-TB services at health facilities of various levels of health care system.

TB case detection rates in Tanzania is notably very low at 59% which means that over 40% of TB cases remain not identified and that the diagnostic methods currently on use are already exhaustive to bring the changes. This toolkit has been revised to strengthen the known innovative interventions to improve TB case detection in the health facilities throughout the country.

Another key area in the toolkit guidelines include dimensions of quality, whereby all activities to be implemented in any service area need to be assessed to ensure they are cognizant of the following dimensions of quality; safety, access, effectiveness, technical performance, efficiency, continuity, compassionate relations, appropriateness, participation and sustainability.

The monitoring and evaluation part of this toolkit is intended to guide health facilities self-assessments against agreed set of standards using a set of defined indicators to measure improvements in quality of TB control services in their areas. Indicators to measure progress in attaining the toolkit objectives shall be defined as part and parcel of the respective health facility quality improvement plan. Strength of taking QI-TB model for TB case detection forward lies in the self-sustaining approach of self-assessments and internal assessments facilitated through mentoring and coaching, elements that should change the landscape of the routine supportive supervision.

This toolkit provide a direction for quality service provision to most vulnerable groups at all levels in Tanzania. It will also facilitate monitoring the impact and stimulate further innovations in service provision to stop TB transmission in the country.

It is my sincere expectation that health facility in-charges and all other service providers will adhere to the toolkit guidance and use it to efficiently to detect all TB cases in need.

Prof. Abel Makubi

PERMANENT SECRETARY

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CHIEF MEDICAL OFFICER

CHAPTER 1:

INTRODUCTION

1.1 TB Burden in Tanzania

Tanzania is among the 30 high burden countries in the world, an estimated 137,000 people developed TB in 2019, with only 81,000 cases notified. Almost 41% of the people estimated to have had TB were never diagnosed posing an even greater risk of spreading the infection to family, friends, and other community members. An estimate of 33,000 people who developed TB were co-infected with HIV. Moreover, 32,000 people died because of TB in 2019.

1.2 Quality Improvement Initiative for TB Case Detection and its rationale

Since 2016, the country has adopted Quality Improvement (QI) Initiative to improve for TB case detection. This new approach utilizes facility entry points for systematic TB screening of all clients attending health facilities for different reasons. The purpose is to give opportunity to every individual visiting health facility to undergo TB screening with an ultimate goal of increasing overall TB case detection in the country.

The QI-TB model was piloted in Dodoma and Mbeya regions and then scaled in 16 regions and further followed by the national wide roll-out.

In the past five years, QI-TB Toolkit has been used to operationalize the implementation of QI activities in the facilities. This has helped to increase TB case detection by 23% from 2016 to 2019. However, the progress has not been as steep with the number of missing TB cases continued to be high annually. Some of the contributing factors include:

- Inadequate utilization of presumptive TB registers (PTR) in all facility service delivery points.
- Inadequate linkage from TB screening, detection and referral to TB care.
- Lack of TB-QI plans in health facilities in some regions, districts and facilities.
- Sub-optimal buy-in from political leaders and community influencers on QI interventions.
- Service disruption resulted from COVID-19 pandemic.
- Attitude and motivation of HCPs to implement QI-TB services.

In that view, there was a need to revise the toolkit based on five years' implementation experience and to align with the new WHO TB systematic screening guide released in March 2021 to improve implementing of QI-TB throughout the country.

The toolkit has been reviewed to guide health facilities, in-charge/supervisors and health care providers to optimize existing or known TB case detection strategies and efforts within facilities to improve quality of TB case detection strategies at such level. Based on this merit, the revised toolkit continues to be an effective resource that provides clear and simple guidance to health providers on how to improve TB case finding efforts at different units and sections of the health facilities.

The toolkit describes processes and provides instructions to optimize the organization and practices in improving TB case detection according to the national guidelines. This toolkit is essential in

increasing access to TB services, providing equity of care, patient safety and standardization of service provision across the country.

1.3 Objectives of the Toolkit

The main objective of the toolkit is to standardize and optimize TB quality improvement interventions. This toolkit aims to ensure TB case finding activities become part of the routine standard of care and implemented countrywide in all health facilities.

Specifically, the toolkit provides health providers with practical and operational guidance to improve organizational processes and leadership in TB case detection according to national guidelines. Furthermore, it is expected that the revised toolkit will do the following:

- Provide guidance on harmonized TB case detection practices within and across health facilities to maintain standard quality of care.
- Serve as a quick reference document for quality improvement on TB case finding in health facilities for in-charge/ supervisors and health care providers (HCPs).
- Serve as a benchmark tool for TB case detection for health facility teams and Council Health Management Teams (CHMTs) to evaluate service delivery at health facility level and reinforce performance in accordance with national guidelines.

The revision of the toolkit represents an important milestone in the national TB control effort by providing clear and simple guidance to health providers on how to improve TB case finding at different units and sections of health facilities using proven-effective strategies.

1.4 Target group for the Toolkit

The target groups of this Toolkit are health facility in-charges/supervisors and all health care providers who come into contact with clients in a health facility for any reason and at any service delivery points. This includes a wide range of health cadres working in waiting areas/record rooms, outpatient departments (OPDs), in-patients' wards, pediatrics wards, consultation rooms, laboratory, pharmacy, specialized clinics (CTC, SCD, Hypertension, psychiatric, diabetes, cancer etc.), DOT centers, Reproductive and Child Health unit (RCH) and other departments. The toolkit is also useful to the health managers at district, regional and national levels who supervise and mentor the provision of TB services at various levels of health care delivery system.

1.5 Methodology

The process of revising the toolkit involved:

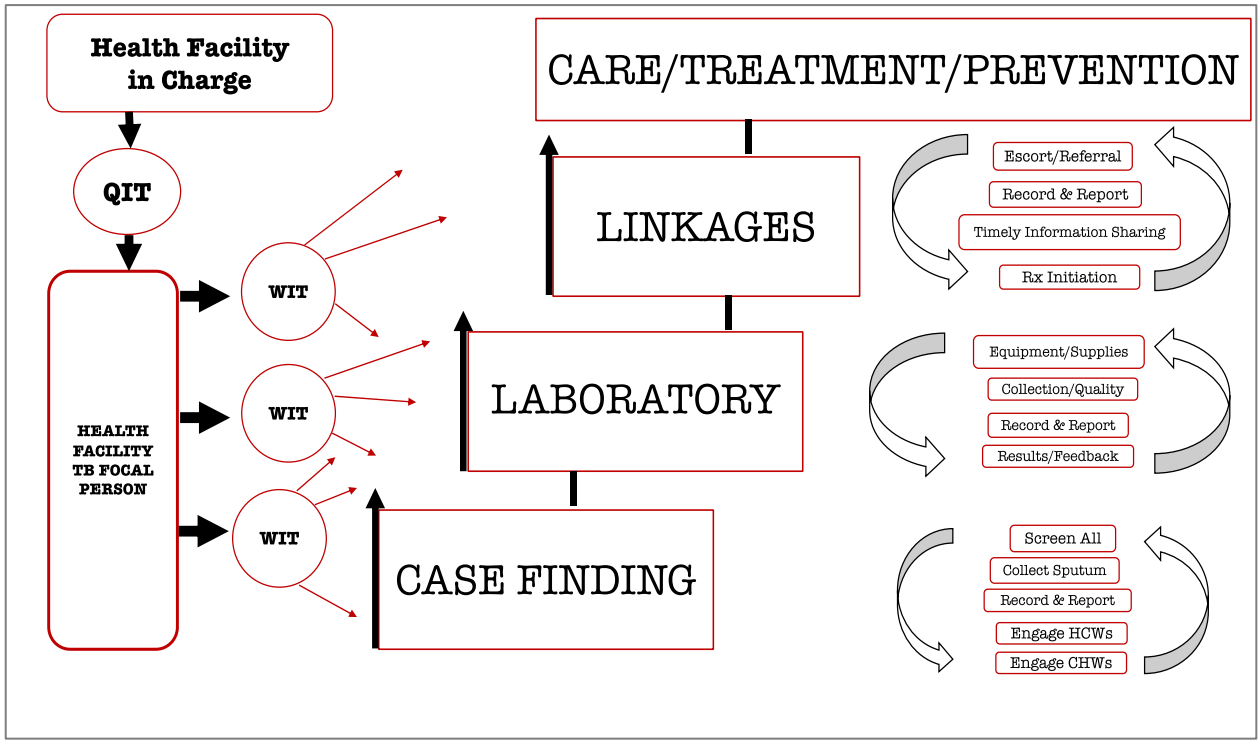
- Review of QI-TB mentorship and supervision reports from national and sub-national levels.
- Discussions with QI-TB implementers on their experience in implementing the toolkit, looking at strengths, challenges, and their suggestions on what can be improved. Implementers included were health facility managers, health providers, QI-TB mentors, implementing partners and national TB experts.
- Two stakeholders' workshops were conducted to review suggestions from the facility implementers through group discussions, experience sharing and document review.

All findings and suggestions from stakeholders were compiled and used to finalize the toolkit and associated documents including training package and job aides.

1.6 Scope the toolkit

The toolkit covers a cascade of TB services from screening for identification of presumptive TB cases, sputum collection, laboratory testing and linkage to TB care. It is complemented with diagnostic flow charts, algorithms, and other job aids. Furthermore, a selection of best practices and case studies for improving TB case detection are included at the end of the document. The toolkit should be used in conjunction with other relevant NTLP policy documents when detailed technical information on how to perform specific procedures is required.

Figure 1: Cascade on TB case detection, identification and linkage to care and treatment



Key:
QIT – Health Facility Quality Improvement Team
WIT – Work Improvement Team (in different units of the health facility).

CHAPTER 2:

IMPROVING ACCESS TO TB CASE DETECTION IN HEALTH FACILITIES

Preamble

There is a large pool of undetected TB case in Tanzania, as evidenced from WHO Global TB Report 2020[2]. The report state that 41% of all incident cases of active TB are missed. Furthermore, findings from Patient Pathway Analysis in 2018 indicated that 62% of patient, initially seek care to facilities without TB diagnostic services, hence higher likelihood of being missed. This obviously results to suffering and longer duration of infectiousness for individuals, sustains TB transmission to the public and preventable deaths.

Effective management of TB in the health facility begins with improving timely access to TB services through early identification, diagnosis and treatment of clients who present to the health facilities. However, this cascade of TB services is much affected with barriers in TB case detection.

2.1 Barriers to TB Case Detection in Health Facilities

Major barriers to TB case detection in health facilities include the following:

- Ineffective leadership for active TB case finding within facilities.
- Low TB suspicion index among health care workers.
- Low commitment among health providers in TB case detection
- Limited usage of diagnostic algorithms including pediatric algorithms/ score charts for diagnosis of TB in children by HCPs
- Low priority or attention given to sputum processing in the laboratory by lab staff in some facilities.
- Weak referral and linkages between different units within health facilities and between diagnostic and non-diagnostic centers, public/private facilities.
- Limited use of data within the facility and district level for planning and problem solving
- Inability to perform gastric aspiration or sputum induction in children in many health facilities.
- Limited availability of X-Ray services in many health facilities, and even in health facilities with X-Ray machines cost is found to be a barrier.
- Absence of TB laboratory diagnostic services in some health facilities
- Cost sharing and user fees for presumptive cases/clients/ patient's registration upon arrival at health facility, prior TB investigations and diagnosis.
- Frequent equipment breakdown due to lack of planned preventive maintenance (PPM) of diagnostic tools.

2.2 Approaches to Overcome Barriers for TB Case Detection in Health Facilities

In order to overcome these barriers, the following approaches should be done:

I. Increase access to TB screening services in health facilities.
II. Improve organization and management of TB case finding activities in the health facilities.
III. Improve access to TB diagnosis in health facilities.
IV. Strengthen Health facilities outreach activities to increase access to TB services and overcome individual direct and indirect costs.

[2] WHO Global TB Program Report 2020.

2.2.1 Increase access to TB screening services in health facilities

- Raise index of TB suspicion among health care providers during clinical meetings, Continuous Medical Education (CME), on-job mentorship and supportive supervision.
- Conduct systematic symptom screening for TB to all clients presenting at each entry point in the health facility through "Provider Initiated TB Screening" approach.
- Provide information on free TB diagnostic and treatment services in health facilities using health promotional materials to clients.
- Provide Health education to all client on TB symptoms and signs.
- Strengthen referral and linkages between different units within health facilities and between diagnostic and non-diagnostic centers, public/private facilities.
- Use of simple and efficient tools (i.e., TB screening questions/ questionnaire, presumptive TB registers, treatment cards, etc.) to collect and analyze data within district and facility levels for identify gaps and take corrective actions.
- Conduct routine contact investigation (close contacts: family members, including children in contact with adults with TB, school roommates) of all clients diagnosed with TB.
- Capacitate and monitor health care providers on the use of TB diagnostic algorithms and other tools including score charts for diagnosis of TB in children.

2.2.2 Improve organization and management of TB case finding activities

- Sensitize, orient and monitor the engagement of health facility in-charge/ supervisors and health care providers in QI-TB model activities.
- Make TB case finding a core business of health facility leadership
- Instruct health facility in-charge to appoint and supervise HF TB focal person.
- Strengthen WIT TB and health facility QI teams at all facilities
- Conduct monthly QIT and WIT TB meetings for data review, gaps identification, suggest corrective actions and documentation.
- Prepare, implement and update QI-TB work plan on quarterly basis.
- Orient and conduct mentorship on TB services to health care providers.
- Engage all health care providers in active TB screening in the health facility and rule out TB disease in among all attendees.
- Reward staff who perform better in active TB screening at the HF (i.e., motivation such as certificate of recognition, refresher training, and exposure to a different HF to share experience).

2.2.3 Improve access to laboratory for TB diagnosis in health facilities

- Expand coverage of TB laboratory diagnostic services to communities:
    - Collect and refer sputum samples from all screening points to a TB lab within the health facility
    - Refer sputum samples to diagnostic centers
    - Referral of presumptive TB cases for X-Ray and expert consultation whenever needed
    - Improve patient referral systems from departments /clinics to TB clinic
- Assign qualified staff to supervise and perform TB laboratory diagnosis.
- Maintain constant stock of laboratory supplies and other commodities.
- Develop and implement equipment preventive maintenance plan (PMP)

- Plan to engage more private health providers including private laboratories and private hospitals.

Example 1: Leadership as an essential component in Quality Improved TB case detection – Tabata Health Centre

Context: DSM region has not been progressing well in TB case detection for the year 2019 and of 2020, attaining 78% and 80% of the yearly TB notification target respectively. The overall TB notification fell from 19,480 IN 2019 to 16,625 in 2020. In Jan 2021, the DSM RTLC convened a meeting with facilities in-charge and DTLCs from high volume facilities to discuss on measures to rectify this situation especially after QI-TB trainings conducted by the NTLP in June 2020. Tabata health center facility in charge was among the participants.

What Tabata Health Centre did: The facility in charge develop a workplan for the QI-TB cased detection with the following key actions:

- TB notification targets for every department (OPD, labor, RCH, CTC, TB)
- Targets for very clinician (at least 2 TB patients per month)
- TB detection was made as an agenda in every morning meetings to discuss on the detected cases, challenges and lesson leant
- Monthly reports were discussed during the Health Management Team meeting

Results: significant increase of presumptive and patients detected with TB

Figure 2: Trends in TB case detection in Tabata Health Centre

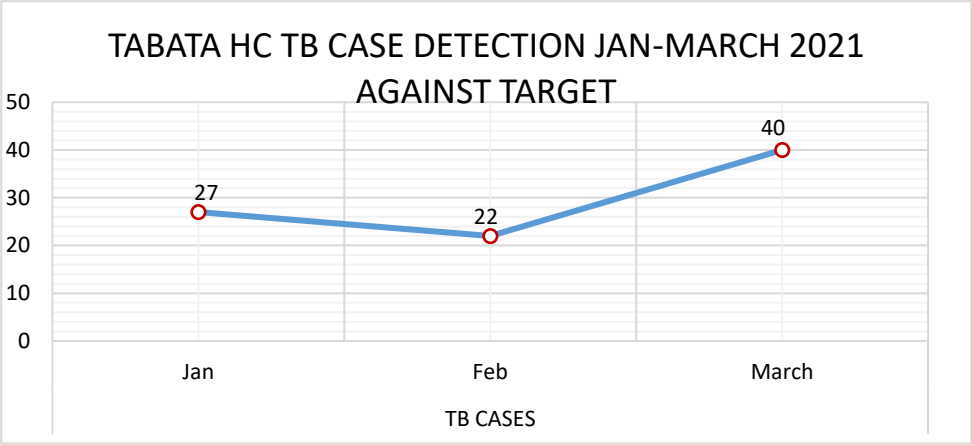


Table 1: Performance in TB case detection in Tabata Health Centre

DEPARTMENT	TOTAL CLIENTS SEEN			PRESUMPTIVE TB			TESTED FOR TB			TB CASES		
	JAN	FEB	MAR	JAN	FEB	MAR	JAN	FEB	MAR	JAN	FEB	MAR
CTC	203	296	417	4	19	17	4	19	17	3	4	5
OPD	5,142	4,197	4,942	27	25	39	27	25	39	14	12	23
RCHC	573	525	658	0	3	2	0	3	2	0	2	1
IPD	0	0	0	0	0	0	0	0	0	0	0	0
TB	449	445	569	15	8	28	15	8	28	10	4	11
Total	**6,367**	**5,463**	**6,586**	**46**	**55**	**86**	**46**	**55**	**86**	**27**	**22**	**40**

Lesson Learnt:

- Burden of TB is still high, as additional efforts to screen more people results into more patients diagnosed with the disease
- Championship for quality improvement TB case detection by the seniors and leaders is a key to success of the strategy.

Example 2: Leadership as an essential component in Quality Improved TB case detection – Kisarawe District Council

Context: Kisarawe District Council is one of the councils in Pwani region that has been lagging behind in attaining TB case detection targets. Below graph shows the second quarter [Apr – Jun 2020] shows the significant drop of case notification. The RTLC, DMO and DTLC visited high volume facilities to identify bottlenecks to the implementation of the TB Case finding activities. Low commitment of facilities in-charge and WIT in TB case finding was found to be a a major bottleneck.

What Kisarawe DC did

- Mandatory weekly summary report of all diagnostic facilities and DOT centers was institutionalised: detailed summary report of TB activities including documentation of cascade of care i.e., number of screened clients, presumptive, those tested, diagnosed and started treatment.
- Phone calls and WhatsApp group chats were used to create awareness, timely identification of challenges and action related to TB diagnostic issues.

Figure 3: TB notification trend Jan-Dec 2020 after systematic analysis of bottlenecks to QI in TB Case detection

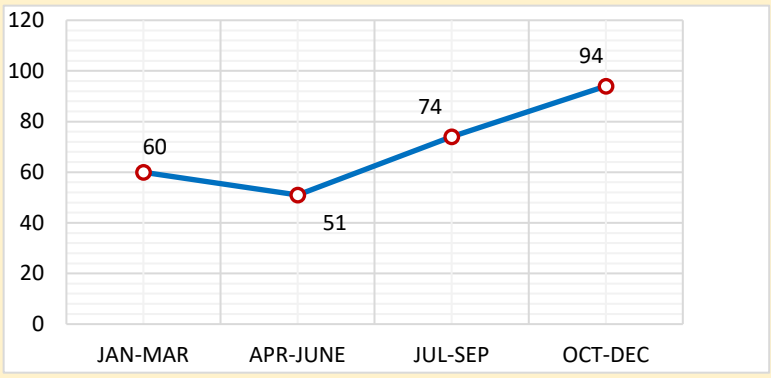
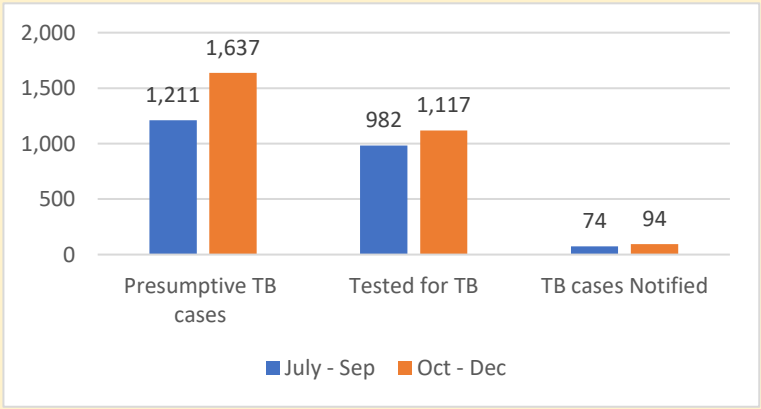


Figure 4: Performance in TB case detection in Q3 and Q4 2020



Lesson Learnt:

- Active follow up on the implementation of TB case finding activities at health facility and beyond is an important ingredient to bring success.

2.2.4 Strengthen Health facilities outreach services to increase access to TB case detection

Health facilities can perform community-based activities independently or through collaborations with community-based organizations to increase TB case detection. The activities include:

- Orient local leaders, traditional healers and ADDOs on TB case detection.
- Sensitize communities on TB signs and symptoms to raise awareness.
- Distribute and disseminate of TB SBC materials (e.g., TB posters, leaflets, etc.) in the community, workplaces, industries, mines etc.
- Engage influential people including community leaders (e.g., WEO, VEO and politicians (e.g., Village Chairperson, MPs, Councilors) and religious leaders to sensitize community on end TB services during community-based forums and meetings.
- Follow-up of TB patients who missed appointments.
- Trace all children who are in contact with bacteriological confirmed TB patients and screen for TB. TB diseased children should be started on TB treatment or TB preventive therapy for those not diseased and eligible.
- Screen for TB to all PLHIV in the community. All presumptive TB cases identified should be investigated for TB and linked to TB care and treatment.
- Conduct health education on TB, contact tracing and TB screening in the community and in congregate settings such as slams, schools, prisons, mining areas, fish camps and marketplaces.
- Coordinate implementation of TB community-based activities.

Roles of Health Facilities in coordinating Community TB services

The essential role of the health facilities in coordinating Community TB services in their catchment areas is to plan, coordinate, and evaluate community TB control and prevention efforts including finding missing people with TB. This role requires that health facilities focus and provide oversight on the following critical elements:

- Planning community TB outreach services
- Collaborate with community-based groups and CHWs to conduct contact investigation
- Provide CHWs with sputum containers and sample referral forms
- To provide guidance, training and education to the community through existing community platforms
- Clinical and diagnostic services for patients with TB and their contacts
- Surveillance data and information management for community TB services
- Monitoring and evaluation of community TB services.

Example 3: Successful Implementation of TB QI model: A case of Mkoani Health Centre, Kibaha District

Context: In 2016 The NTLP introduced a QI model in increasing TB case detection, with the aim of optimizing TB case detection activities. In 2018/2019 it was being rolled out country wide.

What Mkoani Health Centre did:
By the end of June 2020,

- Sensitization on improved TB case detection was done at the facility
- 45 health providers were oriented on QI-TB case finding tool kit
- Action plan was developed:
- Facility monthly TB/HIV sharing exchange meeting
- TB screening initiated to all clients/patient at every entry point i.e., OPD, RCH, TB clinic etc., Provision of health education to client attending facility (every department)

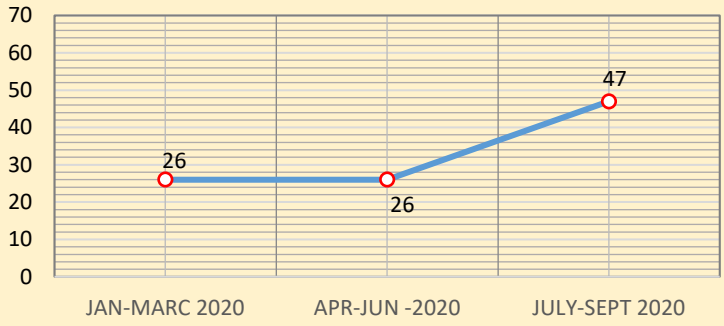
Mkoani HC TB QI Action Plan

ACTIVITY	RESPONSIBLE	TIME FRAME
Health education to client attending facility (every department)	Department i/c, TB focal person	Daily
TB screening all patient/client attending facility	All Health care worker	Daily
Documentation of TB screened patients &presumptive cases	All Health care worker	Daily
Collecting data (TB presumptive cases) and report weekly in clinical meeting (every Monday)	TB focal person	weekly

Mkoani HC TB case finding Targets

S/N	DEPARTMENT	TARGET
1	OPD	20
2	CTC	10
3	RCH	5
4	LABOR/ANTENATAL WARD	3
5	EYE	2
6	TB	5
8	DENTAL	2
9	DIABETIC CLINIC	3
10	TOTAL HOSP TARGET	50

Figure 5: Trend in TB notification after introduction of TBQI model at Mkoani HC



Lesson Learnt:

- To increase suspicious index for TB, sensitization and effective engagement of all health providers is crucial and has impact on TB case detection
- Using QI-TB case detection tool kit has impact.

2.3 How to Implement the QI TB model Toolkit in Health Facilities

2.3.1 Steps to implement QI-TB model for TB Case detection at health facility

Facility level approach to implement this toolkit follows 6 key steps that follow initial training/orientation of health facility in- charge/supervisors and some health care providers from the facility. Health facility in-charge should lead to follow the six steps to implement this toolkit:

i. Provide feedback to health care providers on Quality Improvement in TB case detection after attending training/ orientation.

ii. Conduct orientation on Quality Improvement in TB Case Detection to health care providers at the health facility.

iii. Conduct meeting with staff from different departments e.g., CTC, PMTCT, VCT, RCH, laboratory, OPD wards, Diabetic clinic, Pediatric OPD/clinic to identify barriers and opportunities for TB case detection at the health facility.

- **Barriers at different points of care:**
  - ✓ Administrative barriers
  - ✓ Patients' barriers
  - ✓ Health care providers barriers
  - ✓ Laboratory barriers
  - ✓ TB clinic/DOT center barriers.

iv. Develop a plan for implementation of the innovative model to increase TB case detection at the health facility.

v. Ensure availability of tools for TB case detection (e.g., screening questionnaire, Job Aids, presumptive TB registers).

vi. Schedule supportive supervision and routine meetings to discuss progress and problems.

2.3.2 Activities to start implementing the QI-TB model at health facility level after training of QI for TB case detection

- District set and send TB case detection targets to the HFs.
- Feedback to HF management team and unit/clinic staff on QI for TB case detection.
- Orientation of HF management team and HF staff on QI for TB case detection.
- Integrate QI-TB into QI team activities.
- Appointment of TB focal person(s) for the HF by Facility in-charge.
- Inclusion of TB case detection as a permanent agenda in the HF clinical meetings
- Set and agree on TB case detection targets for each of the units/clinics/department at the HF in line with HF targets provided by the DMO.
- Introduce presumptive TB register in all units / clinics/ departments of the HF.
- Introduce paediatric TB score chart for TB diagnosis in children.
- Units/Clinics start reporting the selected indicators specific for the unit/clinic

- Quarterly review meetings of QI team
- Conduct supportive supervision and mentorship to unit/clinic/departments staff.

2.3.3 Activities to improve implementation of the QI-TB model at health facility level

- Mentorship and coaching of health facility management team and HF staff on quality improvement in TB case detection.
- Review of the functions of QIT by the health facility management in line with QI-TB model work plan and health facility targets.
- Review tasks performed by the health facility TB focal person in line with QI-TB work plan and health facility targets.
- Review TB case detection targets for each of the units/clinics at the heath facility by the health facility management.
- Conduct DQA of the presumptive TB register and pediatric TB screening book in all units/clinics of the heath facility.
- Conduct quarterly review meetings of health facility QIT to discuss findings of QI-TB implementation and develop /revise plans accordingly.
- Inclusion of TB case detection as a permanent agenda in the health facility clinical meetings by the health facility management.

A health facility is considered to be a "QI-TB model Health Facility" if it meets the following criteria:

- There is an active QIT that meet quarterly to review implementation of QI-TB.
- There is an active WIT TB that meets weekly or monthly to review implementation of QI-TB activities
- There is an up-to-date QI-TB work plan
- There is an active health facility TB focal person
- There are TB case detection targets for each of the units/clinics at the heath facility.
- There are updated presumptive TB registers at all units/clinics of the heath facility.
- All units/clinics report agreed TB indicators specific for that unit/clinic.
- Health providers regularly receive QI-TB model mentorship and supervision.

CHAPTER 3:

ORGANIZATION OF TB CASE DETECTION AT HEALTH FACILITY

Improving the organization of TB case detection in health facilities is an important step in ensuring case finding procedures and practices within health facilities are optimized and standardized. This will ensure that TB case detection activities become part of routine standard of care and is therefore TB being ruled out to all people attending to the facility.

Key staff involved: Health management teams, Health facility in charge, health facility QIT and health facility TB focal person.

3.1 Roles and Responsibilities of Health Management teams, Implementing Partners and TB and Leprosy Coordinators

Success of QI-TB model for increasing TB case detection depends on good organization of services at different levels with clear roles and responsibilities for all key teams and implementers.

3.1.1 Roles and Responsibilities of R/CHMTs

R/CHMTs are responsible to coordinate, monitor and evaluate implementation of QI-model for B case detection in all health facilities. To ensure effective implementation of QI-TB in health facilities, the National team will orient R/CHMTs to conduct QI-TB mentorship to health facility QI teams. Key roles and responsibilities of R/CHMTs:

- Support implementation of QI-TB activities for increasing TB case detection in the region/council.
- Develop and share targets for presumptive TB cases and TB notifications with councils/health facilities.
- Build capacity of health facility and staff to efficiently implement QI-model according to toolkit
- Provision of necessary supplies for the implementation of QI-model for TB case detection
- RHMT conduct supportive supervision on QI-model for TB case detection implementation to CHMTs and some of the selected health facilities.
- CHMT conduct supportive supervision on QI-model for TB case detection implementation to Health facilities.
- Review reports for implementation of QI-model for TB case detection during quarterly data review meeting
- DMO should identify QI mentors to provide mentorship in the district.
- Formulate and implement quarterly work plan for TB case detection.
- Share feedback to the lower level on issues identified during supportive supervision and quarterly data review meeting.
- Ensure that each implementing health facilities have functional TB focal persons.

3.1.2 Roles and Responsibilities of Implementing Partners (IPs)

- Work with R/CHMT to reach all people in need of TB services in their areas
- Support Regions and councils to mobilize adequate resources for QI-model for TB case detection implementation

- Support capacity building of health facility and staff to efficiently implement QI-model according to toolkit.
- Collaborate with R/CHMTs to plan and implement QI-model activities
- Collaborate with R/CHMTs to monitor and evaluate QI-model activities for accelerated TB case finding.

3.1.3 Roles and Responsibilities of RTLCs

RTLCs oversee implementation of TB care and prevention services in the region. In order to increase TB case detection in region, the RTLC should:

- Oversee implementation of QI-model activities for TB case detection in the Region.
- Receive annual targets of TB presumptive and TB cases notification and sharing with the council.
- Supervise and follow up of the council TB-QI mentors
- Supports development and implementation of council TB-QI work plan.
- Work closely with implementing partners and other stakeholders.
- Conduct routine TB-QI supportive supervisions to the councils.
- Share feedback to R/CHMT and implementing partners on implementation of TB-QI activities.

3.1.4 Roles and responsibilities of DTLCs

DTLCs oversee implementation of TB care and prevention services in the council. In order to increase TB case detection in district, the DTLC should:

- Oversee implementation of QI-model activities for TB case detection in the council.
- Seek annual targets of TB presumptive and TB cases notification from RTLC.
- Develop and share annual targets for TB case detection and TB presumptive cases with health facilities.
- Supervise and follow up of the council TB-QI mentors.
- Develop and implement work plan for TB case detection in the council.
- Work closely with implementing partners and other stakeholders.
- Conduct routine TB-QI supportive supervisions to health facilities.
- Share feedback to CHMT and implementing partners on implementation of TB-QI activities.

3.1.5 Roles and responsibilities of DTHO

District TB/HIV officer is responsible for coordinating TB and HIV collaborative services in the council. DTHO should:

- Collaborate with DTLC in implementation of TB-QI model activities in the council.
- Ensure:
    - All Care and Treatment Centers perform symptomatic TB screening for all PLHIV at first and every follow-up visit.
    - Job Aids and IECs materials are made available and used.
- Ensure annual targets for presumptive and TB cases detection in CTC are achieved.

3.1.6 Roles and responsibilities of Health Facility In-charge

In order to increase TB case detection activities in health facilities, the facility in-charge should:

- Support implementation of QI-model for TB case detection activities as per toolkit.
- Assign a facility TB focal person who will participate in facility QIT.
- Ensure health facility has achievable targets for TB presumptive and TB case detection.
- Authorize HMT meetings to include agendas of improving TB case finding at the facility.
- Collaborate with QIT and WIT-TB are prioritizing TB case finding activities at the facility.
- Incorporate TB case finding activities including budgets into health facility annual plan.
- Oversee implementation of work-plan for increase TB case detection.
- Ensure all contacts of notified TB cases are traced and investigated.
- Ensure TB medicines, reagents, IECs/Jobs Aid materials and all TB related supplies are available and utilized.
- Authorize follow up of TB case finding activities at the community level.
- Monitor and evaluate TB case finding activities in all sections/units/department/clinics within the facility.
- Ensure documentation and sharing of any innovation/good practices on TB case finding activities at facility

3.1.7 Roles and Responsibilities of Health Facility Management Team

- To ensure the QI-TB model is implemented according to the QI-TB toolkit.
- Oversee implementation of QI-TB plan in the health facility.
- Incorporate TB including QI-TB activities in the health facility annual plan.
- Ensuring HF QIT and WITs implement QI-TB model and all resulting TB patients are enrolled on treatment.
- Ensure availability of commodities and supplies for TB care, treatment and support.
- Ensure TB prevention is promoted in the health facility and the community.
- Monitor implementation of QI TB plans

3.1.8 Roles and Responsibilities of Health Facility TB Focal Person

The HF TB focal person is the key staff who monitors daily TB case finding activities in the health facility and is answerable to health facility in-charge. HF TB focal person should preferably not be part of the TB DOT clinic. Key tasks of the HF TB focal person include:

- Coordinate of all TB case finding, care and preventive activities at facility.
- Coordinate implementation of TB case finding plan of the health facility.
- Participate in the development of TB case finding plan of the facility.
- Assist Health facility in charge to successfully implement TB-QI model activities at the facility.
- Identify innovative TB case finding activities to be incorporated and budgeted into health facility annual plan.
- Distribution of TB case detection materials such as SOPs, flow charts, algorithms, job aids and wall posters in every department/unit/section of the health facility and community.

- Distribution of presumptive TB registers, sputum containers and sputum request forms to all entry points.
- Ensuring that all facility attendees are screened for TB and those presumed to have TB recorded in presumptive register and investigated.
- Ensure all presumptive TB registers are filled correctly, completely and timely basis.
- Ensure all presumptive TB registers are updated with results from TB investigations and final diagnosis recorded.
- Ensuring that all confirmed TB patients are initiated on treatment.
- Organize contacts tracing activities of confirmed TB cases by the facility.
- Supervise contacts tracing activities conducted by CHWs and TB survivor groups.
- Ensure presumed TB cases resulting from contact tracing or any other community-based activities and ADDO shops access TB diagnosis and treatment services at facility.
- For site with rapid molecular test, HF TB focal person should collaborate with laboratory personnel to ensure all sputum sample collected and referred are timely tested according to national guidelines and conduct regular follow up of feedback of results of all referred sample.
- Sites with no rapid molecular diagnostic tests, HF TB focal person should collaborate with laboratory personnel to ensure collection of quality sputum sample and refer to the testing site.
- Ensure provision of TPT to eligible under five contacts of bacteriologically confirmed TB patients.
- Liaise with all stakeholders implementing TB case finding activities within the health facility and catchment area.
- Collect, analyze and prepare all TB case finding activities data.
- Compilation of health facility weekly/monthly TB case detection summary report and submit to health facility in-charge.
- Attend all QIT meetings and present monthly health facility TB case finding reports.
- Organize and chair all scheduled health facility WIT TB exchange meetings
- Monitor and evaluate TB case finding activities in all sections/units/department/clinics within the facility.

3.1.9 Roles and Responsibilities of the Health Facility QI Team

- Oversee TB case finding activities at facility.
- Make TB case finding activities at facility as their core routine and priority agenda.
- Ensure TB screening is routinely conducted at all entry points of the health facility
- Receive report (s) from HF TB focal person on TB case finding activities at facility and act upon.
- Find solutions on identified challenges and bottlenecks in implementation of QI-TB at the facility.
- Ensure innovative TB case finding activities are in-cooperated and budgeted into health facility annual plan.
- Review and discuss implementation of TB case finding work plan on quarterly basis.

3.1.10 Roles and Responsibilities of the Health Facility Sections' WIT

The main objective of involving health facility WITs is to improve TB case finding in their respective working sections. WITs should ensure that TB screening is conducted to all attendee of the facility in respective department/units/sections/clinics.

At the same time, each health facility will form a WIT TB forum which will include all sections or clinics TB focal persons. This forum will be chaired by HF TB focal person and meet on weekly basis. On monthly basis, the WIT TB shall report to QIT on the progress and performance of the implementation of TB case finding activities at the facility. Heads of sections or clinics or departments are strongly advised not be selected for TB focal persons at their respective entry points.

WITs/ should:

- Ensure TB screening is routine and permanent activity at respective sections/clinics/units or departments.
- Meet regularly, at least once a month, to review achievements in TB case detection targets and discuss quality improvement issues related to TB services at the unit/section or department.
- Ensure utilization of TB case detection materials such as SOPs, flip charts, algorithms, job aids, and wall posters are available at department/unit of the health facility
- Ensure that TB case detection data are analyzed on monthly basis for targets and achievements comparison; and trends and are presented in simple graphs and tables.
- Ensure that TB issues including TB case detection activities and specific TB cases are presented at least once a month in the clinical meetings.

3.1.11 Roles and responsibilities of the Health Facility WIT-TB

- WIT-TB is a forum that include TB focal persons from each unit of the health facility. The WIT-TB meets at least once a week or once a monthly, or on ad-hoc basis.
- HF TB focal person is the chair of WIT-TB forum
- Should meet regularly, to review implementation of QI-TB and achievements in TB case detection targets of each HF section/Unit and discuss quality improvement issues related to TB services.
- Agenda for WIT-TB:
    - ✓ Opening of the meeting by the HF TB focal person
    - ✓ Review minutes of the previous meeting
    - ✓ Discuss matter raised in the previous meeting
    - ✓ Report from HF QIT
    - ✓ Receive and discuss implementation reports from HF sections / units / clinic/department
    - ✓ Make deliberations and way forward.
    - ✓ Closing and set date of next meeting

3.1.12 Roles and responsibilities of Health Providers in Different Units (OPD, IPD, CTC, RCH and other Departments)

Doctors, clinicians, nurses and any other designated person at OPD, IPD, CTC, RCH and other departments/Units should:

- Offer systematic TB screening to all attendees.
- Take attention of all clinical risk groups (section 4.1)

- Do thorough physical examination to all patients to rule-out extra-pulmonary TB.
- Fill correctly sputum request forms and collect specimen for TB test.
- Record all presumptive TB cases in TB presumptive register
- Make follow-up of TB test result at laboratory for all presumptive cases.
- Escort all newly diagnosed TB patients to TB clinic/DOTS centers for treatment
- Use TB diagnostic algorithm to all presumptive TB clients with negative TB tests.

3.1.13 Roles and Responsibilities of the TB lab

- Prepare a plan to build capacity of HCPs and CHWs on sputum sample collection cascade and components of good quality sputum
- Regularly orient HCPs during clinical meetings on how to correctly fill Laboratory Sputum Request Form and how to instruct patients and presumptive to collect good quality sputum in a safe manner.
- Ensure all sputum specimens are daily collected from all specimen collection points in the facility and timely sent to the lab
- Receive and investigate all sputum samples referred to the laboratory i.e., from the same facility, neighboring facilities or collection sites and from the community initiatives.
- Grade all new and follow-up smear positive results. Record the grades both in the laboratory register and the request form.
- Record all sputum results in the laboratory register and request form
- Ensure that all results are ready and submitted to the requesting clinic within 24hrs after receiving the sputum in the laboratory.
- Collaborate closely with HF TB focal person to ensure that:
  a. all presumptive cases produce good quality samples
  b. all sputum specimens reach the lab on time
  c. all samples are tested, and results are made available as per set turn-around-time
  d. all lab test results are delivered to respective requesting clinic
  e. district TB numbers entered into TB05 for each TB positive results
- Refer all patients to collect their results from the clinic/requesting person. DO NOT issue results to patients at the laboratory.
- Ensure that the laboratory implement both ‘internal Quality Control’ and ‘External Quality Assessment’ activities as recommended in the Guidelines.
- Ensure availability of adequate laboratory supplies and commodities
- Provide names and addresses to TB clinic of all cases with at least one smear positive results that have not completed submitting sputum specimens for immediate follow up.
- Conduct regular service and maintenance of TB diagnostic equipment to enable TB lab provide testing service without any disruption
- Ensure that TB laboratory quarterly report is completed, analyzed and utilized at the HF and submitted to the DLT and DMO.
- Regularly monitor TB screening activities and sputum collection cascade at the health facility and beyond

3.1.14 Roles and responsibilities of the QI-TB Mentors

- To prepare mentroship plan and share with DTLC and respective HFs
- To conduct mentroship to HF in-charge and the HF TB focal person and Units/Sections TB focal persons.
- Follow-up implementation of recommendations from previous mentorship visit
- To identify areas that need imporovement in implementation of QI-TB.
- Support health facilities to review QI-TB targets for different units/sections of the health facility
- Prepare mentorship report and action plan for each visited health facility.
- Provide mentorship feedback to the HF in-charge and leave a copy of the report and action plan.
- Prepare monthly mentorship report and submit to DMO.
- File all health facility mentorship reports and monthly reports.

3.2 Activities targeting Health Providers-TB Clinicians/Physicians, DTLCs, TB/HIV, DOT Nurse

In order to ensure all health care providers in the health facility are fully involved in TB case detection as part of performing their routine standard of care, the following should be done by the health facility management in collaboration with the TB clinician/doctor, DOT nurse in the facility, and the DTLC and TB HIV Officer from the district level:

- Orientation of all health care providers (doctors/clinicians, nurses, laboratory technicians, nurse assistants, cleaners, and guards) from OPD, CTC, RCH and wards on active TB case finding, TB screening sputum collection and referral for TB investigations.
- Provision of on job training and mentorship on TB to all health providers including inclusion of TB topics focusing on quality improvement and TB case detection in weekly clinical meetings and Continuous Medical Education (CME) sessions.
- Ensuring that all health providers understand how and are responsible to write/fill correctly sputum request forms and refer/escort clients to the Laboratory for TB investigations.
- Perform active TB screening to all HCPs and CHWs.

Example 4: Implementation of Standard Operating Procedures (SOPs) for Improving TB Case Detection in Meru District

Context: In 2011, MSH and PATH in collaboration with the NTLP, introduced the SOPs for improving TB case detection. Arusha was among the pilot region and Meru district hospital has been a success in increasing TB case detection through implementation of SOPs.

What Meru district Hospital did: The District Medical Offer (DMO) and the medical officer in charge of Meru district hospital took leadership and commitment in implementation of SOPs.

Besides implementing the SOPs whereby, the facility has in place a TB/HIV team and a TB focal person, all health providers were given annual targets for TB case finding which were assessed during their annual appraisal. Sputum registers are uniformly implemented in all units of the hospital and data are analyzed and used to monitor performance.

Furthermore, the hospital oriented all health providers on active TB case finding and continue to equip them with TB knowledge by including TB topics and experience sharing with focus on identified TB cases in CMEs and weekly clinical meetings.

Performance: Since the introduction of SOPs in 2011, TB cases have increased by 110% over a period of 4 years between 2011 and 2014.

Key Messages:

- Uniform and consistent application of standardized methods such as SOPs including presumptive registers for increasing TB case detection are useful in increasing TB case finding in health facilities.
- Commitment and leadership at the local implementing levels (facilities, districts) are key in successful implementation of TB case finding methods.
- Use of data at the local level to is key for monitoring progress of implementation of TB case finding interventions.

CHAPTER 4:

STRENGTHENING TB CASE DETECTION IN HEALTH FACILITIES

Preamble

TB case detection in HFs starts with identification of presumptive TB cases from among attendees at the registration/waiting area/ reception or in any other unit of the HF. The objective is to ensure that QI-TB practices for increasing TB case detection becomes a permanent and routine activity at all health service delivery points.

All health facilities should rule out TB among all attendees through provider-initiated TB screening (PITS).

PITS involves screening for TB symptoms and signs in all people who attend health facilities using standard TB screening tool. These may include people who voluntarily come to HF to seek medical care following ill-health and those have been identified and referred by community groups (TB survivors clubs, CHWs, CBOs). For those screened positive, diagnosis needs to be established or several diagnostic tests and additional clinical assessments which are considered with high accuracy needs to be done.

4.1 Approaches to Increase TB Case Detection at Registration, OPD, Laboratory and Pharmacy

Health care worker should:

- Ensure TB agenda is incorporated into weekly WIT meetings of the respective department
- Display posters on TB symptoms, TB diagnosis information and promoting the use of digital self-screening platforms such as TAMBUA TB
- Display video on TB signs and symptoms, TB diagnosis and how to produce quality sputum to all clients.
- Provide health education on TB symptoms and services during morning talks to all clients.
- Screen for TB all clients
- Triage and fast track TB presumptive and instruct them on how to produce quality sputum.
- Record all presumptive TB clients in the presumptive register
- Follow up laboratory investigations results and update the presumptive TB register.

4.2 Guidance on Identification of TB Presumptive Clients in Wards

Health providers in the wards should:

- Ensure TB agenda is incorporated into weekly WIT meetings in all wards
- Display posters on TB symptoms, infection control and TB/HIV in areas of the ward.
- Actively ask for TB symptoms to all patients admitted in the ward regardless of the presenting symptoms.
- Administer TB screening tool to all client admitted.
- Instruct all TB presumptive clients to produce sputum in an open area/outside the wards and submit for laboratory sputum testing.
- Collect other specimen (body fluid, biopsies) from TB presumptive clients and submit for laboratory test
- Expedite specimen test results to be available within 24 hours.
- Patients with intra operative findings suggestive for TB should have their sputum specimens examined for TB.

- Submit specimens from surgical procedures for clients presumed to have extra pulmonary TB for TB tests.
- Ensure close contacts of pulmonary TB (bacteriologically confirmed and those not confirmed) patients are also screened for TB.
- Initiate TB treatment to all confirmed TB patients in collaboration the TB clinic.
- Use TB diagnostic algorithms to re-assess all presumptive clients with negative TB lab results.

Example 5: Diagnosis of Childhood TB in Mount Meru Regional Hospital Paediatric ward

Context: A 12yrs old boy referred to the medical ward at Mount Meru regional hospital with complains of bilateral knee and waist pain; and episodes on nasal bleeding. The boy had a history of falling down and injury of left knee. Provisional diagnosis of Pneumonia, epistaxis 2°.

Challenges

- Transferred from medical to the surgical ward following history of falling and X-ray findings.
- Mixed history
- Seriousness of the child, whereby he stopped breathing and was rescued by CPR.

Actions

- Paediatrician revealed the history of fever, night sweats, and previous contact with TB patient, which was missed.
- Pleural tap for smear microscopy was taken.

Results:

- The child was found to be smear positive for TB and was started on anti-TB
- The child was seen two weeks after initiation of anti-TB and there was slow improvement (Photo below).
- One month of TB treatment in the last week of May 2016 the child had improved and was discharged to continue TB medication at home.

Lesson Learnt:

- All children regardless of initial diagnosis should be screened for TB.
- Health care providers should be extra conscious when a child or even adult shows more than one sign of TB upon screening i.e., fever, night sweats, and history of previous contact with TB patient.

4.3 Approaches to Increase TB Case Detection in RCH

Health care provider at RCH should:

- Ensure TB agenda is incorporated into weekly WIT meetings at RCH clinic
- Display posters on TB symptoms and TB diagnosis information at RCH clinics.
- Provide health education on TB symptoms and preventive services during morning talks in RCH clinics to all clients.
- Actively screen for TB all clients at RCH.
- Triage and fast track presumptive TB clients in RCH and collect specimen for TB investigations.
- Record all presumptive TB clients in the Presumptive register and follow up laboratory investigations and results.
- Use TB diagnostic algorithms to re asses all presumptive clients with negative TB test results
- Escort all confirmed TB patients to the TB clinic to start anti TB treatment.

4.4 Active TB Case Finding in HIV/AIDS Clinics (CTC, PMTCT& VCT)

Successful implementation of TB/HIV services among PLHIV depends on effective Intensified TB Case Finding (ICF). TB is the commonest opportunistic infection among PLHIV, and the major cause of death among AIDS patients. This calls for routine and symptom-based TB screening and testing for early detection of cases and prompt treatment. Subsequently, ACF increase TB case detection rate, improve quality of life and reduce TB transmission to the community.

WHO estimates the annual risk of developing TB in PLHIVs who are co-infected with Mycobacterium tuberculosis to range from 5% to 15%. Up to 60% of PLHIV develop active TB during their lifetime compared to 10% of HIV-negative individuals. The risk of TB in HIV-infected persons continues to increase as HIV disease progresses and immunity decreases. Systematic screening for active TB among this clinical risk group will yield more cases.

Health care provider at CTC, PMTCT and VCT should:

- Ensure TB agenda are incorporated into WIT agendas of the department.
- Display posters on TB symptoms and TB diagnosis information.
- Provide health education on TB symptoms and services during morning talks to all clients.
- Ensure target setting for TB cases to be identified in HIV clinics (CTC, PMTCT & VCT) is available and shared to all staffs.

> **Example:** if your CTC is registering an average of 200 new PLHIV cases per quarter, this would be translating to 10 - 20 cases be co-infected with TB and need to be found and reported.

- Routine TB screening among all clients in CTCs, PMTCT and VCT to be done during any visit.
- Collect sample among all presumptive TB clients and submit to laboratory for TB testing.
- Trace laboratory results of all Presumptive TB clients.
- Use TB diagnostic algorithms to re asses all presumptive clients with negative TB results according to diagnostic algorithm.
- Escort all confirmed TB patients to TB clinics for initiation of treatment.

4.5 Active TB case Finding in Diabetes Clinic and Other Specialized Clinics

People with Diabetes mellitus have high prevalence of TB compared to the general population with an increased risk of about 2%-36% as shown by many studies conducted in Tanzania.

Health providers at Diabetic/specialized clinics should:

- Ensure TB agenda is incorporated into WIT meetings at diabetes clinic.
- Display posters on TB symptoms and TB diagnosis information at the clinics.
- Provide health education on TB symptoms and services during morning talks in the clinics to all clients
- Ensure target for TB case notification is available and shared to all staffs at the clinic.

> **Example:** If your Diabetes mellitus clinic is registering an average of 50 new diabetes cases per quarter; 2% – 36% translating to (1-18 people with diabetes have active TB of the total registered cases) and need to be found and reported.

- Conduct TB screening among all clients attended at the clinic.
- Sputum/specimen of presumptive TB clients are submitted to the laboratory.
- Trace laboratory results of all Presumptive TB clients.

- Use TB diagnostic algorithms to re asses all presumptive clients with negative TB test results.
- Escort all confirmed TB patients to TB clinics for initiation of treatment.

Table 2: Steps to find TB cases in CTCs, VCTs, PMTCTs, diabetes clinics and other specialized clinics

STEP	ACTION	DESCRIPTION	
1.	**Set target**	**# Of PLHIV x 10%**	
2.	**Educate**	On: TB disease, TB/HIV, TB/diabetes co- infection issues, importance of active TB screening, IPT to PLHIV, TB infection control	
3.	**Screen TB every visit**	Presumptive TB for PLHIV- is a PLHIV with any of the following symptoms: • Fever • Cough (Of any duration) • Night sweats • Weight loss or failure to gain weight • Blood-stained sputum • Chest pain • Breathlessness or breathing difficulty • Swollen lymph nodes	Presumptive TB in diabetes–is any diabetes with the following symptoms for 2 or more weeks: • Cough • Fever • Night sweats • Weight loss • Blood strained sputum • Chest pain • Breathlessness or breathing difficulty • Swollen lymph nodes
4.	**Separate**	Refer PLHIV with TB to access ART in TB clinic. Fast track presumptive cases and separate them from the general group	
5.	**Investigate for TB**	• Fill lab request and collect sputum for TB tests. • If the TB lab diagnosis is not available on site, collect sample (sputum) and refer to diagnostic site (GeneXpert sites) or establish and link a presumptive TB client to TB diagnostic center. • Follow up all specimen results from the laboratory and provide feedback to clients. • Reassess those with negative TB result for pulmonary and extra pulmonary TB using TB diagnostic algorithm.	
6.	**Treat**	• Refer all TB cases to TB clinic/DOTS center • Provide IPT to all new PLHIV who screened negative after TB screening	
7.	**Notify**	• Record, update and report TB screening information in Presumptive register. • Utilize data and see if you have reach you target.	

Example 6: Quality Improvement at CTC - Mnazi Mmoja Referral Hospital – Zanzibar

Context: Staff from care and treatment clinic (CTC) attended training on quality improvement in provision of HIV care and treatment services. Following this training CTC staff conducted a meeting to identify challenges/gaps and opportunities. Among the identified gaps included: low TB screening among PLHIV, investigations to monitor patients such as biochemistry, CD4, FBC are not done on time as per guidelines, laboratory results get lost, and it takes a long time to trace patients' files/charts.

What Mnazi Mmoja did: Staff decided to set target for addressing the above identified gaps and revised job responsibilities as follows:

- Triage nurse – performs TB screening to all PLHIV.
- Peer educators in collaboration with nurse- provide health education on TB, TB/HIV, HIV/AIDS issues.
- CTC laboratory in charge - oversee all laboratory investigations including collection of specimens (Sputum, blood & urine), submit specimens and follow up of results from main laboratory, filing of patients results in their charts/files, registering of PLHIV who TB are presumed in presumptive TB register and update the data accordingly.
- Clinicians at CTC -verify screening for TB and offer other consultation.
- Community Health Provider – provides community support to clients, and trace defaulters.
- Appointment bookkeeper - Provides dates for clients and sort out patients' files/charts before clinic day.
- Allocate an area for sputum collection.
- Conduct meeting every Tuesday to discuss progress.

Results

- Uptake of screening increased from 42 to 97%
- Less time to find files and reduced the loss of laboratory results.

Key Message:

- Quality Improvement delivery of TB services increase TB case notification at CTCs.

4.6 Approaches to Increase TB Case Detection in Children

Childhood TB indicates transmission from adult family member or household contacts with pulmonary TB. In children, risk of progression to disease is influenced by age of the child (the younger the child, the higher the risk), HIV infection, nutrition status and other infections such as measles. More often TB infection in children and clinical features as well as CXR are non-specific. In the case of uncertainty of TB infection, use score charts for TB diagnosis in children

4.6.1Guidance to health care providers

Health care provider (s) attending children at OPD, RCH, PMTCT, CTC, Nutrition and pediatric ward should:

- Screen TB to all children attending at OPD, RCH, Nutrition and pediatric ward
- Take history of:
  - Contact with pulmonary TB (bacteriologically confirmed)
  - Cough especially if persistent and not improving with antibiotics
  - Weight loss or failure to gain weight
  - Fever and/or night sweats
  - Fatigue, reduced playfulness, less active
  - BCG vaccination
- Ensure integration of childhood TB services at OPD, RCH and pediatric ward.

- Perform active TB case finding in children who are coughing, malnourished, HIV+ as well as all children who present with any chronic complaints using TB diagnostic algorithm and score chart for diagnosis of TB in children.

Note: Where appropriate use all possible alternatives as exemplified in examples # 1.

- Perform gastric aspiration/sputum induction for all children under five-year-old, to obtain specimen for laboratory diagnosis of TB.
- Perform contact investigations to relative or family member of child with TB.

*__Note:__ *National target for childhood TB (0-14) years is 15% of all notified TB cases.*

National target is to reach a ratio of 1.5 of 0-4 yrs. old Vs 5-14 yrs. old.

Example 7: Active TB case finding in pediatric ward by using TB screening presumptive book – Mount Meru Regional Hospital, Arusha.

Context: Mount Meru regional hospital is conducting active TB case finding among all children admitted in pediatric ward and the ones attending pediatric clinic using TB screening presumptive book that has included both TB screening tool and score card for TB case finding in children.

What Mount Meru regional Hospital did: Through the leadership of hospital in-charge/supervisors and the head of pediatrics unit, the hospital created a TB screening presumptive book that is being used to screen all children admitted or attending pediatric clinic in the hospital.

Furthermore, all children admitted in other units' i.e., surgical ward are routinely evaluated by a pediatrician whereby they also being evaluated for TB using the TB screening presumptive book.

Performance: Data analysis for the period of one year (May 2015 – April 2016) shows that a total of 100 children were identified as TB presumptive, of which 30% (30 children) were diagnosed with TB and were started on TB treatment.

Key messages

- Active TB case finding targeting all children in the health facility using mixed screening methods increases TB case detection in children.
- TB screening presumptive book is an innovation that can easily be adopted without need of extra resources, to increase TB case detection among children.

4.7 Approaches to Strengthen Health Facility Linkages with Community-Based TB Initiatives in Finding Missing People with TB

Activities for finding missing people with TB in the community include contact's investigations, specialized screening campaigns, specialized screening clinic days, targeted TB screening and through mHealth-digital – TAMBUA TB (*152*05#).

To strengthen linkages with community in finding missing people with TB, health facilities should:

- Collaborate with CHWs and other existing community platforms to:

- ✓ Sensitize the community on TB with emphasis on TB signs and symptoms to raise awareness through:
    - Households and gatherings such as markets, religious gatherings
    - Meetings at street and village level
    - Campaigns
    - Arts and sports events
    - Commemorations
    - Health education sessions in health facilities.
    - Congregate settings including schools.
- ✓ Follow-up of TB clients who miss appointments and return them to TB clinics for care and treatment.
- ✓ Trace all people who are in contact with TB patients, screen them and collect sputum samples among Presumptive TB case and facilitate transportation to Health facilities for TB investigations.
- ✓ Trace all children who are in contact with TB patients refer them for TB investigations and ensure that all children confirmed TB initiated with treatment and all under five who excluded TB start TPT.

- Distribute and disseminate TB SBC materials in the community and congregate settings.
- Ensure all referred presumptive TB cases (i.e., from ADDO, traditional healers, CHWs) have accessed TB diagnostic services.
- Ensure all sputum samples from the community (i.e., from contact screening, ADDO, traditional healers, CHWs) are investigated and results are sent back to referred entity, with a follow up of all samples that are positive.
- Ensure CHW participate in health facilities team meetings on TB case detection.
- Review quarterly community TB reports and provide feedback.
- Conduct supportive supervision on community TB case finding initiatives.

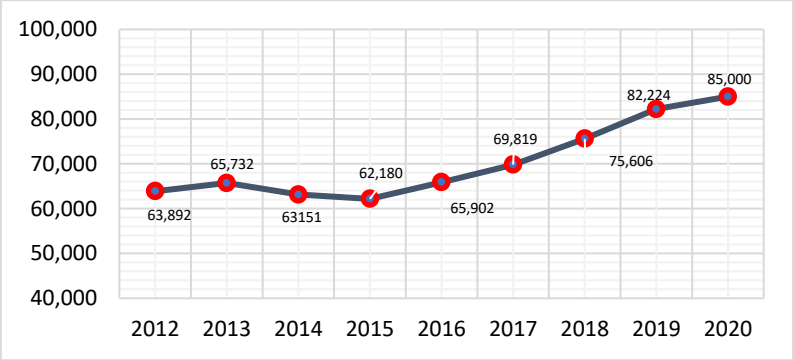
CHAPTER 5

EXPERIENCE AND LESSONS LEARNED FROM IMPLEMENTATION OF QUALITY IMPROVEMENT MODEL FOR INCREASING TB CASE FINDING IN TANZANIA

5.1 Experience in QI Model Implementation in Tanzania

QI-model for increasing TB case detection was adopted in 2016, with main aim of improving TB case finding among missing people. The model was implemented through optimization of existing TB case detection efforts and building provider capacity with simple and clear instructions. The TB QI-model with support of GFATM was piloted in Dodoma and Mbeya regions and then scaled in 16 regions and further followed by the national roll-out. The national rollout was supported by Government and Development Partners (DPs) including Global Fund, USAID, CDC-PEPFAR to cover all 26 regions and 184 councils in Tanzania mainland. The country increased TB treatment coverage from 34% in 2015 to 59% in 2020 and notifying over 85,000 TB cases (2020) as shown in figure 6 below.

Fig 6: Trend in TB Notification (All forms) from 2012- 2020



5.1.1 Key Steps taken to implement QI-TB Model in Tanzania

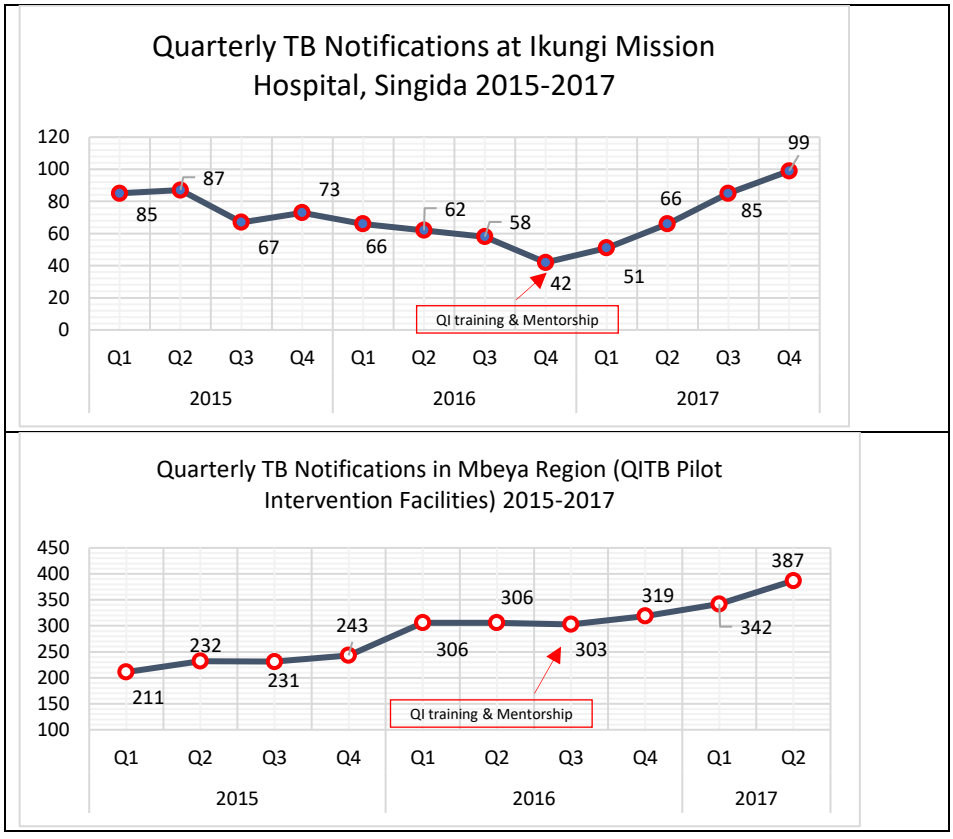
SN	STEPS	TIMELINE
1	National assessment of best practices in TB case detection (Arusha, Mbeya, Pwani, Dar es Salaam, Zanzibar, Mwanza).	April 2016
2	Development of a QI toolkit, job aids and training package for improving quality and efficiency of TB case detection practices at the health facility level.	May – June 2016
3	Training of national and regional TOTs	June 2016
4	Training of health providers in selected regions.	July 2016
5	Pilot of the toolkit—including the collection of baseline data at pilot and control health facilities in Mbeya and Dodoma regions.	July – June 2017
6	Evaluation of the uptake of QI-TB model in pilot and control health facilities in Mbeya and Dodoma regions.	June 2017
7	National Stakeholders Meeting to disseminate results of QI-TB model pilot in 2 regions	July 2017
8	Launching the QI-TB toolkit for health facility by the Ministers of Health and PORALG at the annual RMOs and DMOs meeting in Dodoma.	July 2017
9	Roll-out of the toolkit in 16 regions that included close monitoring and mentorship by National consultants.	July – Dec 2017
10	Scale-up of improved TB case detection interventions within health facilities national wide, coupled with intensified mentoring, supervision, and monitoring of activities.	Jan 2018

5.1.2 Uptake of QI-TB Model implementation

The success in implementation of QI-TB model in the country was contributed by government stakeholders and implementing partners. The government stakeholders include:

- **MoHCDGEC:** The ministry through the National TB and Leprosy Program (NTLP) under the Directorate of Preventive Services provided overall coordination of QI-TB model for TB case detection implementation including development of necessary guiding materials, capacity building to regions, councils, health facilities and HCPs, and overall monitoring and evaluation of the QI-TB model. Mentorship cascade approach using the National and District mentors was instituted by the ministry. A team of the National mentors was formed from among retired TB and Leprosy coordinators. District mentors were selected among health facility's champions in implementing the model.
- **PO-RALG**: All health facilities in the country are under the ministry of PO-RALG. The ministry provided steering role in implementation of QI-TB model by facilitating uptake of the model in health facilities and work closely with the MoHCDGEC in development, implementation, and monitoring of the initiative.
- **RHMTs**: RTLC is TB and Leprosy technical arm of RHMT which is headed by RMO. This management team provided regional level coordination and work closely with NTLP and implementing partners to introduce and roll-out the QI-TB model. They organized and oversaw QI-TB trainings and mentorships conducted.
- **CHMTs:** DTLC is TB and Leprosy technical arm of CHMT which is headed by DMO. This team provided district level coordination for the introduction and implementation of the QI-model.

Figure 7: Facility and regional examples in trends of TB case notification following QI-TB implementation



Provision of TB services in the country was organized by allocating TB implementing partners to serve specific Regions. Implementing partners supported their respective regions to implement QI-TB model included:

- Global Fund through NTLP (Dar es Salaam-partly, Kigoma, Katavi, Rukwa, Ruvuma, Songwe
- EGPAF (Tabora, Manyara, Singida and Dodoma).
- Global Fund through Amref Health Africa Tanzania/MDH (Ruvuma, Kagera, Mara, Shinyanga, Mbeya, Dodoma, Tanga, Simiyu).
- THPS (Kigoma-partly).
- Delloitte/FHI (Iringa, Njombe, Mtwara, Lindi, Morogoro).
- KNCV Challenge TB (Mwanza, Geita, Pwani, Dar es Salaam-partly, Arusha, Kilimanjaro).

5.2 Lessons Learned in Implementation of QI Model in Tanzania

5.2.1 Key gaps/Challenges observed

- Inadequate utilization of TB presumptive registers
- Inadequate utilization of GeneXpert
- Lack of TB QI formulated plans to some of the health facilities
- Inadequate system support (involvement of political figures, availability of incentives, transport and other enablers.)
- Lack of consistence on commitment among some HCPs on QI-TB services.

5.2.2 Ingredients found to contribute to successful QI-TB implementation

- Full involvement of health facility leadership in implementation of QI-TB model at the facility.
- Close monitoring and regular targeted mentorship to health facilities.
- Clear health facility level plans for QI-TB implementation
- Use of data to follow up implementation of QI-TB in health facility and among different units of health facility.
- Community participation in implementation of QI-TB in health facilities.
- Provision of incentives to QI-TB implementers i.e., QI-TB focal person, QI mentors and health facility QI teams.
- Proper and efficient support system for QI-TB implementation e.g., reliable transport for coordinators and mentors.
- Integration of QI-TB model into existing system.
    - ✓ Integration into QIT, clinical Meeting, CME and Health facility management meeting.
- Various innovations to some of the facilities in implementing of the model:
    - ✓ Tracking of Presumptive clients using presumptive registers
    - ✓ Allocating PTR to each individual clinician
    - ✓ Weekly review of PTR usage at facility.
    - ✓ Engagement of CHWs at the health facilities.
    - ✓ Assist in provision of health education, screening, escorting presumed cases, sample collection and filling of PTR.
- Provision of TB case notification targets to health facilities.
- Conduction of multiple active case findings initiatives simultaneously

5.3 Recognition of QI-TB Model at International Level

- In 2020, a manuscript on Tanzania QI-TB was published by Public Health Action (PHA) titled "*Implementation of quality improvement initiative to enhance tuberculosis case finding in Tanzania"*

- In 2019, the MoHCDGEC through the support of GF documented a Case Study titled: "*Using Quality Improvement Approaches to Increase TB Case Detection in Tanzania".* This document was disseminated internationally through different platforms.
- The country supported Kenya, Uganda, DRC and Nigeria to develop their QI-TB initiatives.
- The country shared experience on QI-TB with the West African TB region in a regional meeting held in Benin in 2018.
- The country hosted a training and experience sharing workshop with TB implementers from 7 African countries (DRC, Kenya, Uganda, South Africa, Senegal, Nigeria and Mozambique) in 2019. This training was supported by the Global Fund and the STOP TB Partnership.

CHAPTER 6:

STRENGTHENING TB LABORATORY SERVICES

Sputum examination is the corner stone for TB diagnosis. Proper diagnosis using sputum smears requires that the sputum samples produced are of good quality. It is the responsibility of health providers and Community Health Workers to make sure that clear explanation and instructions are given to TB presumptive clients on how to produce and collect good quality sputum. Sputum transportation from community level and from non-GeneXpert sites to GeneXpert sites should be emphasized and routinely monitored by health facilities.

6.1 Organizing TB case Detection in Laboratory

6.1.1 Methods and approaches for TB diagnosis

Different methods or approaches are used to diagnose TB in adults and children at different levels of health facilities, these including:

i. Smear Microscopy
   - Conventional light microscopy with Ziehl–Neelsen (ZN) staining
   - Light Emitted Diode (LED) Fluorescence Microscopy

ii. Molecular diagnostic methods
   - GeneXpert (Xpert MTB/Rif and/or MTB/Ultra for TB diagnosis and detection of Rifampicin resistance and
   - Line Probe Assay such as HAIN.

iii. TB Culture
   - Lowenstein Jensen (LJ)- solid media
   - Mycobacterium Growth Indicator Tube (MGIT) on liquid media

iv. TrueNat

v. Urine based Lateral flow lipoarabino-manan assay (LF-LAM)

vi. Non-Laboratory methods/ Approaches
   1. X-ray for diagnosis of smear negative and or extra- pulmonary TB (EPTB).
   2. Tuberculin skin test (TST) – mainly for children.
   3. Algorithm for TB diagnosis for both adults and children.
   4. Score chart (for children).
   5. Ultrasound

All samples collected are to be processed using molecular technologies such as GeneXpert MTB/Rif or sputum smear microscopy if GeneXpert not accessible.

Health facilities should ensure the following in the laboratory to increase TB case detection:

- Availability of essential laboratory supplies and commodities.
- Use of sensitive and specific laboratory techniques and laboratory algorithms.
- Adhere to laboratory Standard Operating procedures (SOPs).
- Regular service and maintenance of TB diagnostic equipment.

6.2 Sputum Management

6.2.1 Sputum collection

- Prepare all basic facilities for sputum collection including containers, marker pen, test request form, an area for collection, hand washing items and a presumptive case ready
- Provide clear and simple instructions are to the patient on how to collect good quality and adequate sputum in a safe manner.
- Fill properly the Sputum request forms for all presumptive TB cases and follow up TB cases to facilitate traceability of the address of the patient including physical address and mobile telephone number.
- Collect sputum away from other people in a well-ventilated space identified by the Health Facility.
- Collect good quality and adequate sputum specimen under the assistance of a qualified medical personnel.
- Label the container with name of patient, identification number and date of specimen collection
- Collect one Spot sputum sample for GeneXpert testing, two sputum sample (Spot/Morning) for AFB smear microscopy testing.
- Reject all unsuitable samples and request for another sample after giving clear instructions to the patient.
- Prepare test sample or smears correctly according to the existing SOPs.

6.2.2 Sputum referral system

- Specimen referral system refers to transportation of specimens from facility without testing capacity to another facility with the testing capacity and results to be sent back to the requesters.
- Sputum referral system has the following component:
    i. **Spokes** are the primary specimen collection points which collet and refer specimens to the Hubs. Most of these do not have capacity to perform initial processing for AFB smear microscopy, MTB/Rif/Ultra, HVL/HEID or other diagnostic tests.
    ii. **Hubs** are designated second level health care delivery level that receive specimens from referring facilities (Spokes). However, some Hubs can be used as testing facilities if testing services are available.
    iii. **Testing laboratories** is the third level where specimens are received for testing.
- Sputum packaging and transport should follow existing standards (triple packaging) whenever available.
- The local currier system is responsible for shipping specimen to the referral testing laboratory and return the test results to the spoke.

6.2.3 Sputum Results Management

- The local currier system is responsible for shipping specimen to the referral testing laboratory and return the test results to the spoke.
- Sputum results from a testing laboratory should be transmitted via electronic management system to the referring sites (Hubs)
- AFB microscopy results should be ready and be submitted to the requesting clinic within 24hrs after receiving the sputum in the laboratory.
- When GeneXpert is used for diagnosis of TB, results should be ready within 2 to 24 hrs.

- All results from the laboratory are not provided to patients/clients and rather brought to the referring doctor/clinician or nurse.
- Enclose all results in a sealed envelope to maintain patient confidentiality

6.2.4 Recording and Reporting of Results

- Grades are recorded both in the laboratory register and laboratory request form and also ensuring that all columns in the TB Laboratory Register are properly and correctly recorded.
- Ensure that all smear/Xpert positive results are recorded in the lab register, are assigned the District TB number to make sure that clients with positive results have been put on treatment.
- All smear/Xpert positives recorded in unit register are notified and initiated treatment.
- Laboratory Quarterly reports are completed, utilized at the local level and submitted to the DTLC and DLT.

6.2.5 Quality control for the laboratory

Quality control in laboratory is a key component for quality TB diagnosis. In order to provide the quality of laboratory services for TB diagnosis, health facilities should ensure the following:

- Different laboratory guidelines and SOPs for different lab processes are available and used.
- Appropriate Job Aids/SOPs are displayed at relevant smear microscopy and other diagnostics processing points in the laboratory and should include relevant infection control steps for each process.
- Both 'internal Quality Control'(IQC) and 'External Quality Assessment'(EQA) activities for TB microscopy, GeneXpert and other technologies are implemented as recommended in the Guidelines for Quality Assurance for TB Diagnosis.
- Known positive (+1 or scanty) and negative samples are used as controls.
- Collect 10 slides for EQA using Lot Quality Assurance System (LQAS) and send them to 1st Controller.
- Collect the slides with discordant results, the reading should be done by the 2nd controller.
- Ensure exchange of slides (inter laboratory comparison) for reading within different labs. DTLC/TB/HIV officer or DLT collects slides bring them to a different Health Facility for reading. Compare the results after reading.
- For quality control of GeneXpert, the cartridges are accompanied with the in-build controls; ensure that always the machine is in good condition to avoid module break or machine malfunction.
- Ensure that lab results turnaround time is maintained within 24 hours i.e., clients receive their results the day they go for the 2nd sputum collection.
- Ensure that a laboratory quality officer is available to foresee all lab quality issues
- Provide regular CMEs to Laboratory staff to equip them on all new innovations and ensure quality of the lab services provided.

6.3 SOPs for Collection of Sputum Specimen

- Ensure that sputum request forms for AFB are available and are duly filled with all required information.
- Give clear instructions to clients on how to produce sputum.
- Instruct the clients to collect the specimen in an open isolated space (s) identified by the facility away from other patients.
- Ensure that all presumptive TB clients submit 2 sputum specimens: spot and morning for diagnosis.

- Label the sputum container on the side and the lid with lab number and sample sequence (1 or 2) meaning 1= spot and 2 = morning sample.
- Ensure that one follow-up sputum sample is submitted for all smear positive patients at 2 or 3 and at 5 or 6 months for follow-up.
- Saliva is not suitable but examine saliva if a better specimen cannot be produced especially for follow-up examinations.
- A specimen mainly containing blood should be examined and the patient immediately referred to the doctor for assessment and management.
- Verify the quality and quantity of the sample, by looking at it through the clear sides of the container. Never try to open the container holding the sputum.
- Ideal sputum volume should be 3-5 ml if specimen will be processed by smear microscopy or 1-4 ml is sputum will be processed by GeneXpert.
- Wear disposable gloves for any manipulation of a sputum sample.
- Wash hands with running water and soap following each collection of a sputum sample or after handling containers with sputum samples, and at the end of the working day.
- Discard all materials contaminated with sputum in 10% Sodium hypochlorite/ JIK solution.

6.4 Checklist for Laboratory Workers in Improving Quality of TB Diagnosis

A check list for laboratory for sputum smears should be observed and used by staff working in the laboratory to ensure quality of the laboratory services rendered.

1) Recording and Reporting:

a. Check if TB lab register (TB05) is available.

b. Check that the correct TB registration numbers have been recorded in the laboratory register for all smear positive patients.

c. Check examination request form (TB/Lep01).

d. Check if slides are kept for rechecking.

e. Check that the diagnosis and results of follow-up sputum examinations have been recorded specimen request form and lab. Register accurately.

f. Check that test results and laboratory identification numbers have been accurately recorded in the TB treatment register at the basic management unit.

2) Logistics:

a) Laboratory Reagents:

- Quantify and order reagents and other lab materials (reagents).
- Check the amount of reagents available, are they adequate based on the workload?
- Check that lab receives reagents supply for 6 months.

b) **Other Materials:**

- Check the availability of equipment required for the lab, e.g., wood applicator, slides, gas burner, lead/diamond pencil, forceps, slides stand, immersion oil, funnel, filter paper, etc.
- Check availability of NTLP lab manual, internal QC in place and performed, effective communication between lab and other persons at the facility.

3) Biosafety:

- Check following points; separate space for smear preparation, room cleanliness, disposal of contaminated materials (materials used), condition of disposal place, appropriate soap available, type of disinfectant used.

4) Microscopy:

- Check the condition of microscopy for TB examination; make (Brand name), storage, lens cleanness, protection measures from high humidity.

5) Smear examination (by a technical person from the lab):

- Check examined slides (both positive and negative) as follows:

CHAPTER 7:

STRENGTHENING TB CARE, TREATMENT AND PREVENTION

Preamble

Early case finding and treatment are the corner stone of TB control. Good quality management starts with the timely and accurate notification of TB cases, including delivering appropriate treatment using standardized regimens of TB treatments as well as providing support for patients. Good quality management also ensures that patients who miss one or more doses of treatment are quickly brought back, and that their contacts especially children, and others belonging to high-risk groups are investigated or assessed to determine whether they have active TB.

Adherence by the patient to the full treatment regimen is a critical factor in curing TB. This can be difficult when the patient is no longer feeling ill or if the anti-TB medicines cause side effects. Adherence is best when the treating facility has a patient-centered approach which facilitates access to treatment, cooperates with the patient in arranging supervised administration of drug doses, and provides support services, such as legal rights and social services such as food and transportation.

7.1 Patient-Centered TB Care and Treatment

In 2006 a novel approach called "Patient centered TB Treatment (PCT)" was introduced in Tanzania. Patient centered approach enables the patient "to exercise their rights and fulfill their responsibilities with transparency, respect and dignity". Patients are treated not as a mere passive recipient of supply-side curatives, but as partners in their access to care as a recipient of services. Patient centered care is an aspect of the quality of care. All TB patients need to take drugs daily under observation - directly observed treatment (DOT). The treatment takes 6 months or more depending on the type of TB and in line with the national guideline. The daily observation can be done at the health facility (HF-DOT) by health care worker or at home (HB-DOT) by a family or community member chosen by a patient. Under home supervision, they choose a person of their own choice to supervise their daily drug intake. The person chosen by a patient is called treatment supporter (TS). There is no restriction on the choice of TS; she/he can be a spouse, family member, neighbor, relative, or a friend. For further guidance on quality management of TB patients refer to national guidelines.

Role in Care and Treatment by Different Health Care Providers

Below are some of the suggested specific roles and responsibilities for the health professionals for ensuring quality TB treatment services:

1. Clinician/Doctor:

- Educate and advice the TB patient about TB care and prevention
- Establish an appropriate clinical-patient relationship
- Determine the treatment according to the standardized NTLP treatment guidelines
- Link with DOT and community providers (such as CHWs, TB survivors' groups etc.) to carry out the contacts investigations of TB patients and to trace patients who are loss to follow up.
- Prescribe the preventive therapy to the contacts of TB bacteriological confirmed under 5 years of age.
- Regularly monitor the condition of the patient's treatment outcome
- Determine and properly manage any occurring adverse effects of anti-TB medicines
- Determine the initial seriousness, risk of dying of TB, and attention to complications that may arise.
- Refer complicated TB patients to the hospital (if the patient is at a lower-level health facility).

2. DOT Provider/Nurse:

- Receive a patient in a friendly manner and establish an appropriate clinical-patient relationship
- Enroll on treatment all newly diagnosed TB patients at the health facility and those referred
- Discuss with the patient on treatment modalities and available options
- Educate and advice the TB patient about TB care and prevention
- Educate and advise the TB patient and treatment supporter on importance of treatment adherence and of DOT.
- Carry out the proper recording and reporting of treatment including use of the TB treatment card, patient ID card and unit register.
- Administer and monitor the treatment, according to the medical indication and standardized treatment outlines
- Identify patient's risks in order to avoid the abandonment of treatment
- Link with community providers to organize for domiciliary visits
- Organize the TB treatment card box at TB clinic for a scheduled drug refill, treatment monitoring, drugs ordering and case reporting matters.

3. Laboratory Technician:

- Coordinate with clinician and DOT provider for the reception of the sputum samples for follow up of TB patients in treatment.
- Carry out the necessary sputum smear examination for follow up of TB patients in treatment
- Inform the DOT provider about the results of the sputum investigations in the format of bacteriological examination request form
- Coordinate with the zonal TB laboratory on the referral of samples of sputum that require culture and DST
- In the event of investigating samples of another health facilities, should send the results within 24hours
- Carry out proper recording of all variables in the TB laboratory register. and plan timely reporting as per national guidelines

4. Role of treatment supporter:

The treatment supporter should support the patient to complete a full course of treatment. In particular, the supporter should:

- Be known to health facility and registered as per corresponding related TB patient on treatment
- Remind /encourage the patient to take their drugs every day and to attend monthly follow up visits
- Watch the patient take their drugs everyday as instructed by DOT nurse and report any missed dose
- Mark the treatment card after the drugs have been taken
- Safely keep all used empty blisters and handle them to DOT nurse during next scheduled drug refill
- Give his/ her word for the drug intake to the health worker
- Accompany patients to collect drugs every week (7 days) from the health facility during intensive phase and twice a month (14 days) during continuation phase
- Inform the health worker of any problems encountered including any drug side- effect
- Accompany the patient to the health facility when needed
- Make sure the patient goes for the follow-up sputum examination (if bacteriologically confirmed).

7.2 Contact Investigation

TB is an infectious disease; patients who are bacteriological confirmed and not put on treatment are at higher risk of transmitting the disease to other family members or people who live closely with them. Children under the age of five years old are more prone to getting infection and developing the disease since their immune is not yet well developed and not strong enough to contain the infection, hence need to regularly be screened and put on treatment if they have TB or put on TB Preventive Therapy (TPT) in case of no evidence of TB disease.

- Active investigation of household contacts of adults with bacteriological confirmed TB is desirable to identify newly infected adults and children under 5 years old.
- If children under 5 years who are living with bacteriological confirmed patient are symptom - free they should receive preventive treatment with isoniazid 5 mg/kg daily for 6 months.

Systematic literature review of studies assessing the effects of TB contact investigations in low- and middle-income countries has shown that 4.5% of identified household contacts had active TB (8.5% of children less than five years old). The Prevalence of bacteriological confirmed TB was 2.3%. Example in Morocco data collected on routine basis has shown that 4 to 8% of TB cases registered annually by the NTP were identified among household contacts. In children less than 10 years of age, approximately 20% of TB cases registered were identified in household contacts.

These findings show that contact investigations can give high yield of active TB cases particularly children.

The health facility should implement the following approaches for contact investigation:

- Set targets for TB cases identified through contact investigation.
- Develop a list of all TB patients for contact investigation
- Plan for health education of household with bacteriologically confirmed cases and people at most risk
- Screen all contact of bacteriological confirmed TB patients and when feasible screen contacts of all forms of TB patients
- Ensure availability and use of contact investigation register and community tools 12 and 13A.
- Structure a routine contact investigation mechanism:
  - ✓ Involve Community health care worker to assist you in conducting contact investigation.
  - ✓ Schedule efficient household visits and repeated interval household contact TB screenings
  - ✓ Organize and conduct facility outreach contact investigations.
- All contacts that are traced and diagnosed with TB should be recorded and put on treatment.

- All children under the age of 5 years who are TB contacts should receive at least 6 months of IPT.
- Record all children less than 5 years put on IPT into IPT register.
- Report achievement, challenges and provide recommendations.

Example 9: Active TB screening in Secondary Schools

Context: In 2019, the GF – Amref – MDH Community TB project conduct active TB screening in 15 boarding schools across 5 regions (1 in Kagera; 3 in Mara; 1 in Shinyanga; 8 in Ruvuma; and 2 in Tanga.

Action: This activity was implemented after issuance of official letter from DMO to the District Education Officer explaining the need for and importance of the activity to the students and community at large.

- The DTLC arranged a team that included DOT Nurse, Lab Tech and CHW's to undertake the activity.
- General health promotion including TB infection and disease was provided to all students, followed by TB screening to identify presumptive cases.
- A total of 7,927 students were screened of which 1,594 (20%) were presumptive. 809 (51%) sputum samples were collected and transported for examination under GeneXpert machine.

Note: There were two students in one of the boarding schools who were smear positive PTB on treatment during the screening exercise and one student in another boarding school who had completed treatment just one month prior to the screening exercise.

Results: 23 (2.8%) TB case were detected.

Picture: Students of Msamala Secondary School receiving TB education during TB screening exercise.

Lessons Learned:

- Boarding school students are at high risk of contracting TB especially where there are students who are confirmed to have TB.
- It is important to conduct periodic TB screening in boarding schools and other congregate settings.

7.3 Tracing TB Patients who are Lost to Follow-Up

TB patients are to be made to adhere to TB treatment and take their medication regularly until they complete all prescribed doses for six or more months. At times for some reasons patients do not adhere to the treatment schedule. The question is: Is there a system for contacting patients who do not collect their medication or present to a health facility when requested? If yes, how is default tracing carried out?

At the time of TB treatment initiation, patients together with their treatment supporter or relative who escort the patient to the health facility are given clear information by health care worker (DOT provider or clinician) on the importance of proper adherence and completing treatment.

The health facility/health providers should:

- Ensure information on what may occur if the patient does not adhere or complete treatment should clearly be explained, including poor treatment outcomes, development of drug resistance, treatment failure, transmission of the infection to other people and even death.
- Ensure proper and clear contact information for the patients, including ten cell leaders (where applicable), street name/ number, and telephone numbers is recorded in the register for follow-up.
- Establish linkage with the Community health care providers (CHCPs), Home-based care providers (HBCPs), groups of Ex-TB patients, different non- government organizations (NGOs) working in the area for patient tracing and provision of health education on the importance of treatment adherence.
- Identify and establish links with these different groups to support or trace patients who do not adhere to treatment (defaulters).
- Organize seminars/ regular meetings with these groups on TB and other issues related to TB treatment and prevention to enable them support contact investigation.

CHAPTER 8:

MONITORING AND EVALUATION

Monitoring and Evaluation is an essential component of quality improvement in TB case finding initiatives and resulting diagnosed patients. It allows the health facilities to stepwise manage the TB treatment and care cascade, utilize the data for planning and problem solving and report on key TB case detection indicators. The care cascade entails on available programmatic options to maximize the number of risky people reached, availability of efficient diagnostic technologies, people screened for TB, offering correct diagnosis, providing treatment to all in need, well planned patient monitoring modalities with proper recording and reporting.

The Presumptive register and/or DHIS2 ETL shall be used at all health facilities for routine recording and reporting key indicators on regular basis. The information collected should be analyzed, interpreted and utilized to make decisions at health facility level and at higher levels.

The purpose of the M&E for improved TB case detection, is to measure performance, track changes and assess the outcome for continuous improvement of ending TB in the country.

8.1 M&E Activities of the Implementation of the QI in TB Case Detection

The following are M&E activities for implantation of QI-TB model at health facility level:

- Development and implementation of quarterly work plans for TB case finding
- Supportive supervision and mentorship on TB case detection by health management teams/coordinators/district TB mentors/HF i/c/TB focal person at health facility.
- Weekly Health facility WIT TB exchange meetings and QIT monthly meetings to discuss TB case finding progress.
- Use of TB data collected for improvement of services; problem solving; and monitoring performance; of TB case finding in the facility.
- Consistent and correctly recording of all TB presumptive in the presumptive register.
- Use of data to develop trends in TB cased finding in the facility and dissemination to health providers.
- Displaying of graphs and data tables on TB case finding at facility level using but not limited to the following parameters: monthly/quarterly trends; referring sections/ source; targets Vs Achievements etc.
- Capacity building to health providers on data management and M&E
- Conducting operational research to assess performance for the improvement of TB case detection.

Figure 8. Presumptive TB register

Date	Time	Patient Name	Age	Sex	HIV status	Address /TelNo	OPD/in-patient	Presumptive criteria 1,2,3,4,5,6,7	Type of investigation 1,2,3,4,5,6,7	Result	Confirmed TB case	Date started anti-TB	Remarks
								1. Hx of TB 2. Cough 3. Fever 4. Night sweat 5. Loss of wt. 6. Lymphadenopathy 7. Others	1. X-ray 2. Sputum 3. Culture 4. Biopsy 5. TST 6. TB score chart 7. Any other				

Figure 9: Quarterly work plan template for intensified TB case finding

No.	Activity	Requirements	Time frame	Responsible

8.2 National, Regional and District Level Indicators

Table 3: National, Regional and District level indicators for QI-TB model

SN		Description	Data source
1	%	**Indicator 1:** Proportional of people screened among those eligible	
	N	Number of presumptive TB clients identified	Presumptive register, DHIS2ETL
	D	Number of people attended	OPD, RCH, CTC, IP registers, GOTHOMIS, Afya care (Hosp. EMR)
2		**Indicator 2:** Proportional of presumptive TB clients identified among those screened (C/B)	
	N	Number of presumptive TB patients	Presumptive register, DHIS2 ETL
	D	Number of people screened for TB	Tally registers/forms
3		**Indicator 3**: Proportional of presumptive TB clients investigated among presumptive TB identified	
	N	Number of Presumptive TB clients investigated for TB	Presumptive register, DHIS2 ETL
	D	Number of Presumptive clients identified	Presumptive register, DHIS2 ETL
4		**Indicator 4:** Proportional of people diagnosed with TB among those screened	

SN		Description	Data source
	N	Number of people diagnosed with TB	Presumptive register, TB unit register, DHIS2 ETL
	D	Number of people screened	Tally registers/forms
5		**Indicator 5:** Proportional of people diagnosed among investigated	
	N	Number of people diagnosed with TB	Presumptive register, TB unit register, Laboratory register, DHIS2 ETL
	D	Number of people (presumptive TB) investigated for TB	Presumptive register, TB unit register, Laboratory register, DHIS2 ETL
6		**Indicator 7:** Proportional of notified TB cases among all diagnosed TB cases.	
	N	Number of notified TB cases	Presumptive register, TB unit register, DHIS2 ETL
	D	Number of diagnosed TB cases	Presumptive register, TB unit register, Laboratory register, DHIS2 ETL
7		**Indicator 6:** Proportional of people with TB initiated on treatment among those diagnosed with TB	
	N	Number of people diagnosed with TB who were initiated on treatment	TB unit register
	D	Number of people diagnosed with TB	Presumptive register, TB unit register, Laboratory register,
8		**Indicator 08:** The ratio of Pediatric TB patients of 0-4 to 5-14 years	
	N	Pediatric TB patients of 0-4 years	TB Unit register, DHIS2 ETL
	D	Pediatric TB patients of 5-14	TB unit register, DHIS2 ETL
9		**Indicator 09:** Proportion of newly notified TB cases whose contacts were investigated for TB through CHWs	
	N	Number of newly notified TB cases whose contacts were screened for TB through CHWs	Community TB Register (TB 13)
	D	Total number of newly notified TB cases by community (community referrals)	Community TB Register (TB 13) Tuberculosis Unit Register (TB 03)
10		**Indicator 10:** Proportion of Bacteriologically confirmed TB cases	
	N	Number of TB cases bacteriologically confirmed	TB Unit register, DHIS2 ETL
	D	Number of all diagnosed TB cases	Presumptive register, TB unit register, Laboratory register, DHIS2 ETL
11		**Indicator 11**: Proportional of patients successfully treated among diagnosed TB patients	

SN		Description	Data source
	N	Number of TB patients successful treated (cured + treatment completed)	TB unit register, DHIS2 ETL
	D	Number of all diagnosed TB patients	TB unit register, Presumptive register, Laboratory register, DHIS2 ETL

8.3 Health Facility Level Indicators

The following indicators should be collected at health facility level:

Table 4: Health facility indicators for QI-TB model

Indicator	Source	Monitoring tool	Frequency	Responsible
Existence of the functional TB focal person	Supervision/ mentorship report	Supervision/Mentorship Appointment letter	Quarterly	Facility in charge
Proportion/number of staff trained/oriented in Quality improvement model for TB case detection.	Training reports	Supervision/Mentorship	Quarterly	DTLC
Presence of TB agenda in the monthly QI Team meetings	Minutes of the QI Team meeting	Supervision/Mentorship	Quarterly	Facility in-charge
Presence of a functional WIT TB	TBFP monthly reports	Supervision/Mentorship	Quarterly	Health facility TB Focal person
Presence and use of toolkit and job aids for improving TB case detection in all designated/ important departments of health facility	TBFP monthly reports	Supervision/Mentorship	Quarterly	Health facility TB Focal person
Presence and use of TB algorithms, wall posters and TB screening tools	TBFP monthly reports	Supervision/Mentorship	Quarterly	Health facility TB Focal person
Presence of health facility QI-TB case detection monthly reports	TBFP monthly reports	Supervision/Mentorship	Quarterly	Health facility TB Focal person
Proportion TB patients notified who are community referrals	TBFP monthly reports	Supervision/Mentorship	Quarterly	Health facility TB Focal person

Indicator	Source	Monitoring tool	Frequency	Responsible
Rate of TB Presumptive Identified	TB presumptive register /TB Laboratory/ AFB register	Case finding report	Quarterly	Health facility TB Focal person
For diagnostic facility: Presence of feedback report on EQA	Laboratory EQA reports	Supervision/Mentorship EQA forms (1-4)	Quarterly	Laboratory personnel
Presence of documentation of Internal Quality Control (IQC)	Laboratory reports	Supervision/Mentorship IQC logbook	Quarterly	Laboratory personnel
Presence of specified sputum collection site	Physical confirmation	Specimen containers/ Lab. Request forms	Quarterly	Health facility in charge
Presence of Laboratory SOPs for sputum preparation and reading	Laboratory files/notice boards	SOPs and Algorithm for screening, diagnosis and manage. of TB	Quarterly	Health facility in charge
Completeness of laboratory request forms and registers	Lab. Request form Lab. Register	Request form Register	Quarterly	Laboratory Quality Officer
Conduct orientation/on job training to all HCPs on sputum collection for TB diagnosis to all entry point for patients	Health Facility reports	Orientation/ training report	Quarterly	Health facility in charge
Sputum samples are collected and referred to the health facilities with laboratory diagnostic services	Number of specimens collected vs number specimen referred	Laboratory register Unit register	Quarterly	Health facility in charge
Sputum samples are collected and received at the health facilities with WHO approved molecular diagnostic services	Number of specimens collected at the HF vs number specimen referred	Laboratory register Unit register	Quarterly	Health facility in charge
Ensure feedback for lab tests and EQA are availability	EQA and lab results	EQA reports Lab. test results	Quarterly	Laboratory Quality Officer

8.4 Additional TB case Detection Indicators

Indicators for Health System Strengthening (HSS) and Tuberculosis Preventive Therapy (TPT):

- Laboratories performing smear microscopy that show adequate performance on EQA (Number and Percentage)
- Number of children <5 years in contact with TB patients who were initiated on TPT
- Number of PLHIV initiated on TPT at the facility.

8.5 Additional TB Case Detection Data

- Time from onset of symptoms to TB diagnosis
- Time from TB diagnosis to treatment initiation
- Smear grading and positivity rate at diagnosis.