



Finding Missed TB cases in Ethiopia:

*Operational guide and National
plan for 2018-2020.*

National TB control program

FMOH

2018

ADDIS ABABA

Finding Missed TB cases in Ethiopia: *Operational guide and National plan for 2018-2020.*

National TB control program

FMOH

December

2018

ACKNOWLEDGEMENT

The ministry of health of Ethiopia would like to acknowledge all the experts and stakeholders who have put their best endeavors to develop this highly robust documents to find people who are likely to face delayed diagnosis and treatment if not missed at all by the routine health system.

It should be recognized that this document aims to incorporate overarching principles of human rights and gender promotion in the TB programming which is not often exercised in the past. The multi-sectoral responses is also reflected and advocated in this document as most interventions for key affected populations require concerted efforts of both health and relevant non-health actors for improved commitments to mobilize resources for TB responses.

The ministry would like to recognize Dr Christine Whalen and Dr Eveline Klinkenberg from USAID/Challenge TB project for their enormous technical support to develop this document along with the national level core group that consists of Estegenet Getachew (FMOH), Dr Anteneh Kassa(FMOH/PHSP), Dr Ahmed Bedru (USAID/Challenge TB), Demelash Assefa(USAID/Challenge TB) and Dr Eshetu Kebede(WHO-Ethiopia).

The following experts have contributed to the development of this documents:

Taye letta, Blen Ayele, Addisalem Yilma, Dr Eyerusalem Kebede, Dr Endale Berta, Mekdes Bekele, Mesfin Bekele, Tilaye Gudina, Dr Abraham Alemayehu, Getachew Aga, Kifle Sede, Atlabachew Luelseged, Solomon Hassen.

Dr Yared Kebede Haile, Dr Yewilsew Kassie, Dr Chala Negere, Dr Dawit Assefa, Dr Degu Jerene, Dr Getachew Wondimagegn, Dr Zewdu Gashu, Dr Lemma Ketema, Dr Ismel Hassen, Dr Andargachew Kumsa, Dr Asfawesen G/yohannes, Dr Eshetu Gezahegn, Mohammad Dawid, Wondimu G/kiros, Dr Beniam Feleke, Dr Yohannes Molla.

Last but not least, the ministry would like to thank USAID/challenge TB for supporting the workshops conducted in the development process of this document.

TABLE OF CONTENTS

Foreword.....	Error! Bookmark not defined.
Acknowledgement.....	4
Table of Contents.....	6
1. Introduction to the document.....	9
1.1 Global situation of Tuberculosis.....	9
1.2 National strategic plan to End TB 2016 - 2020	11
1.3 Rationale for Developing the operational guide	11
1.4 Objectives of this document.....	12
1.5 Organization of this document	12
1.6 who should use this document?.....	13
1.7 How to use this document?	13
2. Framework and principles of Strategic Actions	1
2.1 Framework.....	1
2.2 Overarching Principles.....	3
2.2.1 targeted response	3
2.2.2 Empowering the community ownership and participation	3
2.2.3 Multi-sectoral response	3
2.2.4 Human Rights-based and equitable access	4
2.2.5 Gender-responsive approaches	4
2.2.6 Evidence–driven and Contributing to HSS	4
3. Defining and prioritization of country-level Key Affected Population	5
3.1 lists of TB key affected populations	5
3.2 Knowing your population size and TB epidemiology.....	5
3.2.3 National level Profile of key affected population in Ethiopia.....	7
3.3 Health service delivery Assessment	8
3.4 Prioritization for targeted interventions	11
3.4.1 The STOP TB Risk prioritization Tool	11
3.4.2 Venn Diagram prioritization tool	12
3.5 Address limited available Data and need for rapid assessment	14
3.6 re-prioritization of key affected population groups	14
4. Designing Tailored comprehensive TB packages	15
4.1 key implementation levels to reach most key populations	15

4.2 Recommended TB strategies in designing targetted interventions package.....	16
4.2.1 Intensified implementation of community TB care interventions tailored for underserved and vulnerable populations	17
4.2.2 optimized application of TB screening strategies and diagnostic algorithms.	18
4.2.3 Quality of TB prevention and treatment services.....	21
4.3 Standard Tools to Design tailored comprehensive TB intervention packages	21
5. Programmatic planning for key population at local implementation level	23
5.1 Steps for developing programmatic operational plan at implementation level	23
5.2 Context of Potential Missed TB cases in the National Health Service delivery system	23
5.3 Programmatic Implementation stages	24
6. Measuring progress and results	26
6.1 Measuring the progress towards 90(90)90	26
6.2 Performance measuring framework for targeted interventions	27
7. Determining and Mobilizing Resources	28
7.1 Program coordination and management costing	28
7.2 Human resource costing	28
7.3 Health system costing.....	28
7.4 Medicine and laboratory Commodity costing	28
Section II: NAational Programmatic implementation plan 2018-20	29
8. NAationally prioritized Interventions to find and TREAT missed TB cases.....	30
8.1 Profile of priority key affected populations, service gap and suggested interventions	30
8.1.1 List prioritized KAP likely to be missed in Ethiopia for 2018 to 2020	30
8.1.2 Analysis of barriers to early Health service access and suggested interventions for the priority key affected population	31
8.1.3 National plan of finding the missed TB cases with tailored Interventions on key affected population for 2018 to 2020.....	31
8.1.4 Strategic approaches for tailored interventions to reach and missed TB from key populations	31
9 National Plan of finding and treating missed TB cases for 2018 to 2020	33
10. DESCRIPTION of prioritized Tailored interventions, OBJECTIVES AND MAJOR ACTIVITIES.....	34

Priority Intervention I: Programmatic interventions for priority key affected populations	34
Priority Intervention II. Engage 150 High volume HFs TO Optimize TB services to find missed TB cases	35
Priority Intervention III. Intesnify conTact Investigation PRACTICES in 3300 tb SERVICE PROVIDER CLINICS	37
Priority Intervention IV. reach 40 MINING WEREDA with Targeted interventions	38
Priority Intervention V. reach 40 urban slum WEREDA known for high TB risk/burden AND IMPLEMENT TARGETTED INTERVENTIONS.....	40
Proritiy Intervention VI. INDENTIFY and implement 22 PASTORAL Woreda FOR OPTIMIZED tb CARE SERVICE.....	41
Proritiy Intervention VII. IMPLEMENT TAILORED tb SERVICES in 27 wereda serving Refugees and returnees and host COMMUNITY	43
Proritiy Intervention VIII. Integrate TB services in to 200 wereda with known HIGH TB risk community structures	44
Proritiy Intervention IX. expand Comprehensive TB services at 65 prisons and universities.....	45
References:.....	48
Annexes:	49
Annex 1. Physical Implementation plan of Priority interventions.....	49
Annex 2. Budgetting for intervention 20-18 to 2020.....	50
Annex 3: TB services gaps in health delivery system in Ethiopia	58
Annex 4. Rapid Assessment.....	61
Annex 5: Suggested monitoring framework for tailored interventions	62
Annex 6: National situation, programmatic barriers and Recommended packages of interventions	64

1. INTRODUCTION TO THE DOCUMENT

1.1 GLOBAL SITUATION OF TUBERCULOSIS

Since 1991 when Tuberculosis is recognized as global emergency, the global TB program have launched the DOTS and later STOP TB strategy and managed to meet the Millennium Development Goal (MDG) set for 2015 by reducing the TB prevalence and mortality by more than 50% of the level by 1990. However, the achievement in reducing the TB incidence rate was not satisfactory enough to reach the 2015 set targets and it is also believed that with the current pace of annual decline of TB incidence by 1.5%, it is unlikely to meet the END TB target of cutting the TB incidence by 90% by 2030 from the 2015 baseline value as part of the Sustainable Development Goal (SDG) for 2030.

Global TB in 2016 reported that Tuberculosis remains to be responsible to cause illness for 10.4 million world population and claims the life of around 1.4 million people in 2015. Nonetheless, around 3.6 million (i.e. 35% of total incident cases annually) people with active TB disease continue to be not detected by health systems across the world every year leaving a serious public health problem by continuously infecting their community resulting 2/3rd of the world population to develop latent TB, which is a reserve for future TB cases.

Evidences are showing that significant portion (: an estimated 50% of total) 3.6 million people with TB remains undetected or missed by the general TB programs are disproportionally concentrated among population groups who are at increased risks of developing latent TB infection than the general population due to their current biological and behavioral conditions, living and working environments, and additional barriers faced by certain populations due to their cultural, legal and social standing within society. As evidences indicate, prevalence of TB among those specific key populations is much higher than that of the general population.

Current efforts to combat TB epidemic are also complicated by the rise of drug-resistant form of TB to core drugs used in the TB treatment. Although still comprising a relatively small proportion of all people with active TB, drug-resistant TB is more difficult and expensive to diagnose, treat and provide care and support. According to the Global TB reports for 2016, an estimated 580,000 TB cases are also resistant to at least rifampicin while an estimated 9% of the drug resistant TB cases also harbor resistance to core second line drugs that constitute the second-line TB treatment.

The Global plan to End TB 2016 - 2020

Following the endorsement of sustainable development goal and End TB strategy, the Global Plan to End TB 2016–2020 were developed to be implemented in the first five years period of the End TB Strategy. This global plan provides guidance on priority focus areas for country level policy makers and program managers towards achieving the END TB Strategy targets.

Priority areas for the Global END TB plan 2015- 2020:

- ❖ Reaching the “missed” TB cases.
- ❖ Address MDR-TB as crisis
- ❖ Accelerate response to TB/HIV
- ❖ Increase financing to close resource gaps
- ❖ Intensify research and ensure rapid uptake of innovations.

It also calls for a paradigm shift of thinking, including how TB services are organized, managed and funded, by moving:

- *From passive to active case finding with strong engagement of civil society including key population-led networks and organizations*
- *From vertical to integrated service delivery systems*
- *From small incremental to accelerated substantial financial investments*

The global Plan targets

Three targets have been set and it is estimated that if these targets are achieved by 2025 at the latest, then the goal to end TB will be met. The Global Plan therefore recommends that the targets should be achieved as soon as possible, ideally by 2020, and at the latest, by 2025.

Target 1: Reach 90% of all people with TB

At present, of the nine million people who fall ill each year globally, four million people with TB are not reached through national TB programs.

Target 1 requires reaching 90% of all people with drug susceptible and drug resistant TB and place all of them on appropriate therapy. It also includes reaching 90% of all people with latent TB infection, who are eligible for preventive therapy, and put on preventive therapy to avert the risk of progression to active TB.

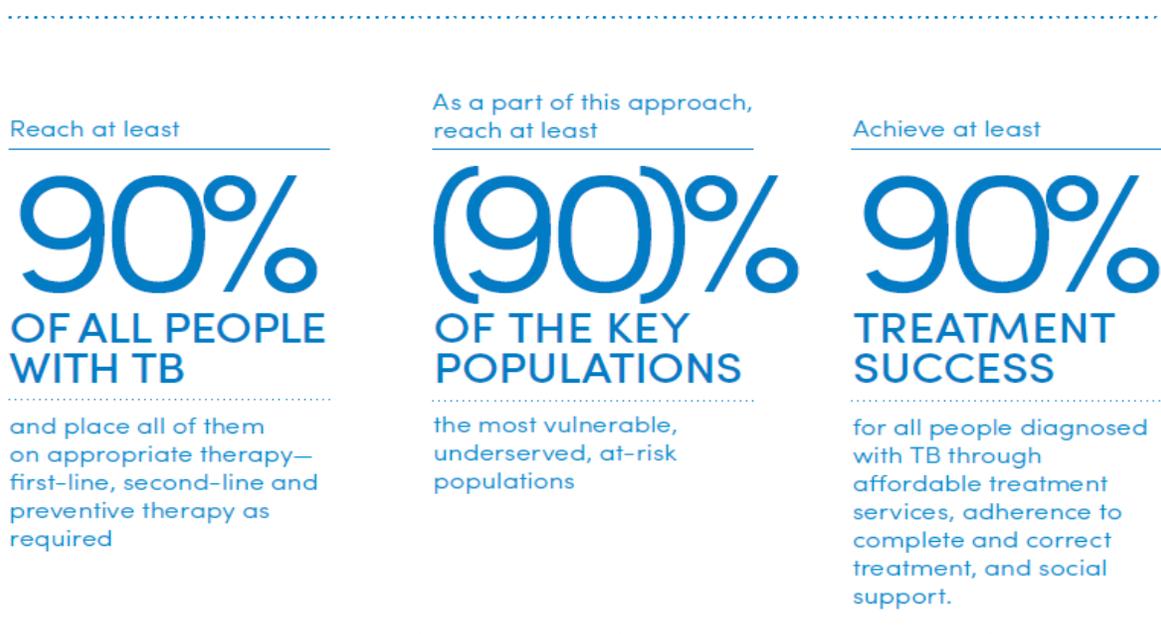
Target 2: As part of this approach reach at least 90% of the key populations

Key population refers to people who are the most vulnerable, underserved or at-risk of acquiring TB infection and develop TB disease. These population sub-groups vary depending on individual country context. But, in all cases these populations are more frequently missed by health systems. They are often unable to access health services at early stage, or suffer particularly untoward consequences as a result of TB.

Global END TB plan for 2020 advises that each national TB program should work with communities affected by TB to define its key populations, design and implement appropriate tailored TB services and measure progress towards reaching these populations.

Target 3 Achieve at least 90% treatment success for all people diagnosed with TB:

It aims to ensure the quality treatment, support and follow-up needed to achieve at least a 90% treatment success rate among people identified as needing treatment through affordable treatment services along with adherence and social support. This includes treatment for drug susceptible TB, drug resistant TB or preventative TB therapy.



Source: STOP TB partnership. 2015. *The paradigm shift. The Global plan to END TB 2016-2020.*

1.2 NATIONAL STRATEGIC PLAN TO END TB 2016 - 2020

The national TB control program, in its revised national TB strategic plan(NSP) 2017-2020, has aligned its National performance plans in line with the global END TB milestones of 90(90)90 for 2020. Furthermore, the NSP has expressed the country's commitments on bringing the paradigm shift on TB programming by recognizing the need for additional tailored programmatic interventions to find and treat the 60,000 annually missed TB cases.

1.3 RATIONALE FOR DEVELOPING THE OPERATIONAL GUIDE

- The absence of national guide for targeted TB case finding strategies for key population resulting delayed diagnosis or missing cases

- Considering the different nature of all key populations, need of designing specific patient centered treatment and care services for various key populations was critical though rarely practiced
- Catastrophic health expenditure is a common consequence of TB diagnosis, treatment and care, which can lead to a worsening of food insecurity for TB patients and their families during the course of the disease which will be more serious among key populations
- Lack of any guidance for multi-sectoral response for TB which directly addresses the issues of TB prevention and care services among key population in Ethiopia. Addressing key population is not only a responsibility of public health system; it goes beyond and needs a multi-sectoral involvement from planning to M&E.

1.4 OBJECTIVES OF THIS DOCUMENT

The general objective of this document is to compliment the national strategic plan for 2017-2020 on finding the missed TB cases to achieve the END TB 90(90)90 milestones by 2020 by providing programmatic guidance and national plan of tailored interventions to reach missed TB cases with focus to key affected population for TB in Ethiopia.

Specific objectives:

- To define national list of priority key affected population for targeted interventions
- To provide recommended TB interventions that addresses critical barriers for equitable access to essential TB services for all segment of key affected populations
- To provide programmatic guidance for TB program managers on tailored programmatic planning, implementation and monitoring at local level.
- To develop three-years budgeted national implementation plan reflecting the additional investment case

1.5 ORGANIZATION OF THIS DOCUMENT

This document is presented in two distinct sections as:

Section I- Operational guide: provides guidance on necessary strategic steps and the key actions that should be undertaken to identify and map possible key affected population groups/settings, analysis of risk drivers and barriers to early access to services, prioritize and also provides guidance on how to design comprehensive service package and process. Moreover, it assists on developing practical programmatic implementation plan, arrangements and performance monitoring framework.

Section II- Implementation plan to find missed TB cases for 2020: presents details of priority interventions planned across the different level of health service tier system

including the community structures and private providers that are likely to empower all segments of people with TB to seek essential TB services at early stage, and also reduce health system delays and provide patient-centered quality TB care and treatment.

1.6 WHO SHOULD USE THIS DOCUMENT?

This document is designed for health managers specifically working in TB program management to equip them with necessary knowledge and skills required to design and implement key populations programs in Ethiopia.

FMoH, RHBs, Zonal and Woreda health offices are expected to take the lead to ensure TB prevention and care services are integrated and coordinated between various stakeholders at all levels using this document as a guide.

Stakeholders which are directly or indirectly linked with those key populations are one of the targets of this document. They will benefit from this document on how to collaborate with the government health system and civil society organizations to effectively provide TB prevention and care services to key populations.

This document also targets civil society organizations working in the country at all levels. It can clearly guide them on how to engage with and contribute to TB prevention and care services for key populations in Ethiopia.

1.7 HOW TO USE THIS DOCUMENT?

TB Program managers working at national and/or lower program implementation levels are advised to understand and follow the step-wise approaches on key strategic actions, provided in the operational guide section, to assess their local epidemiology and develop operational plans for targeted programmatic interventions for priority key populations of interest, monitor the implementation to ensure high coverage of key populations with high-quality interventions and services. Monitoring and data use is a key component in order to continuously strengthen the reach and quality of services, and to revalidate population size estimates so that programming can be refined.

Section I: Operational guide for finding and treating people with TB with focus to key affected population

2. FRAMEWORK AND PRINCIPLES OF STRATEGIC ACTIONS

2.1 FRAMEWORK

The framework for the strategic actions are developed to guide the respective TB control program management unit to systematically assess, identify and prioritize one or more key affected population, design tailored comprehensive packages of interventions and develop programmatic implementation using evidence-driven approaches so that early access to quality assured equitable TB services is delivered to all segments of the population. A detailed description of key actions of the framework is presented in the subsequent sections of this guide.

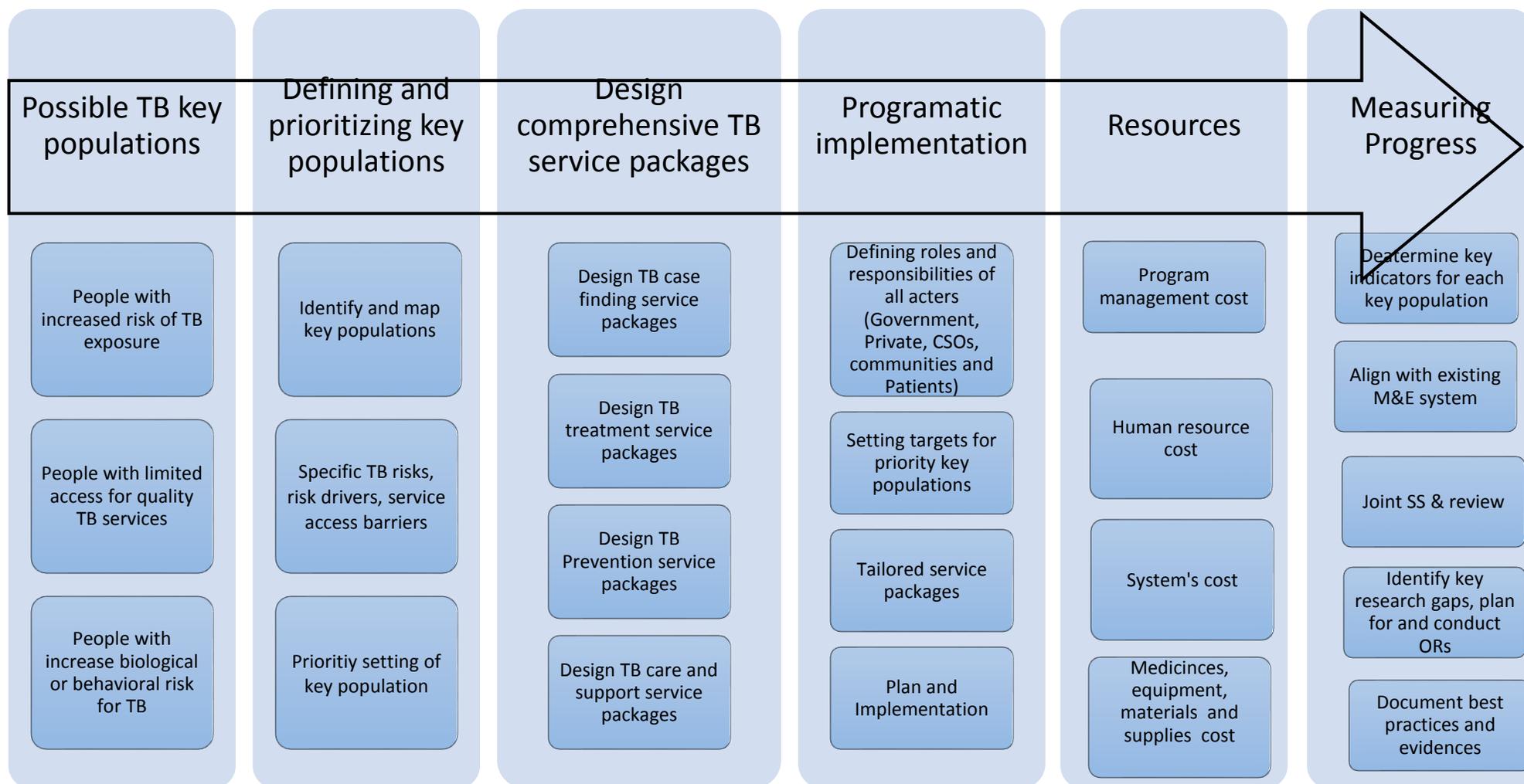


Figure: National strategic action framework for Key population programming

2.2 OVERARCHING PRINCIPLES

This section highlights key principles critical to the success of delivering TB services to key populations – Programmatic and integrated, multi-stakeholder and participatory, patient-centered, human rights-based, gender-responsive and evidence-based:

2.2.1 TARGETED RESPONSE

Ethiopia is among high TB, TB/HIV and DRTB burden countries that contributes to 80% of the global disease burden. However, developing targeted programmatic responses for the most vulnerable, underserved and at-risk population is not only an epidemiological but also human right issues for equitable service provision.

This document, in addition to the national strategic plan 2017-2020, must be referred on annual programmatic and woreda-based planning exercises to ensure comprehensive and equitable TB programming and implementation of priority interventions to all segment of the population in need.

2.2.2 EMPOWERING THE COMMUNITY OWNERSHIP AND PARTICIPATION

Ensuring community ownership and empowerment is a critical dimension of work to identify and alleviate the barriers faced by key populations in accessing services.

Civil society organizations involvement should also be encouraged to contribute freely both their knowledge of and practical experience working with key population community.

Programming of any targeted interventions requires proactive use of a *participatory approach* with all stakeholders and key affective communities or their representative to maximize opportunities in understanding of TB epidemiology and determinants, design sensible tailored TB program planning, implementation and evidence generations.

2.2.3 MULTI-SECTORAL RESPONSE

Cognizant of the prevailing socio-economic determinants of Tuberculosis fueling TB epidemic in the country, in particular among the vulnerable, under-served and at-risk sub-population, This document calls for an intensified actions from and beyond the ministry of health to mainstream TB as the core policy and functions of all relevant non-health sector actors.

The national TB program has identified key non-health sectors including mining sectors, Urban development, ARRA, agricultural sectors, Pastoral development programs, Ministry of Education, Prison administration authority, Charity and civil society organizations, Community-based organization, etc... and plans to establish an effective coordinating mechanism that defines “essential minimum TB packages” and support mainstreaming at all implementation levels.

Strengthening of TB service integration into relevant sister programs that serve priority key population for TB such as HIV, Child Health services, NCD, WASH, Nutrition programs is also critical in order not to miss opportunities to reach people with TB.

2.2.4 HUMAN RIGHTS-BASED AND EQUITABLE ACCESS

Human rights violations and failure to fulfill human rights obligations increase individuals' vulnerability and reduce access to diagnostic, prevention and treatment services. People affected by TB usually suffer a double burden: the impact of the disease as well as the consequential loss of other rights.

A rights-based approach to TB is founded on respect for the dignity and autonomy of people affected by TB. It articulates and protects individual freedoms and entitlements, and is built on governments' obligations to respect, protect and fulfill the right to health. The approach focuses on the underlying determinants of TB through the lens of social, economic and cultural rights.

TB services must be free of stigma and discrimination that place measures to minimize potential barriers to key populations in accessing TB and related health services.

2.2.5 GENDER-RESPONSIVE APPROACHES

Gender analysis and gender-responsive programming are comparatively new to the field of tuberculosis (TB). Yet, with TB now the leading cause of death for women globally, there is an increasingly urgent need for TB control programs to understand more about the gender dimensions of the disease in which the risks and effects of TB are determined by sex and gender roles as core component of TB interventions based on gender equality and human rights.

Designing targeted TB interventions, in particular to key affected populations, should be gender-sensitive that recognizes the gender dimensions and encourages their active participation during planning and implementations to address the gender specific vulnerabilities and needs of both men and women who are living with or at risk of TB.

2.2.6 EVIDENCE-DRIVEN AND CONTRIBUTING TO HSS

Identifying, prioritizing and designing of a comprehensive TB responses pertaining to the needs of specific key affected populations requires the program manager to gather evidences to understand biological, behavioral, social determinants of the disease as well as identifying key service barriers, human right issues and gender differences required to be addressed for an equitable early access to health services.

In addition, any targeted interventions to key populations must be attached with evidence-driven programmatic planning, monitoring and periodic evaluation to generate evidence towards developing intervention packages that is scaled-up to the general TB program strategy.

Hence, national and local level TB programs to develop a practical M & E framework for performance tracking and evaluation of targeted interventions, in addition to the need based rapid assessments of potential intervention areas.

This document advocates for:

- *early incorporation of critical data elements in the national HMIS*
- *introduce surveillance system for key affected populations*
- *conduct Intervention-based research to track implementation progress*
- Negotiate and collaborate with relevant non-health sectors, and
- Conduct rapid assessment as needed.

3. DEFINING AND PRIORITIZATION OF COUNTRY-LEVEL KEY AFFECTED POPULATION

3.1 LISTS OF TB KEY AFFECTED POPULATIONS

The Global Plan to End TB 2016–2020 document, the five-year operational plan of the 20 years’ the End TB Strategy, published a generic list of potential key affected populations to TB to guide to national programs to contextualize into the country’s own context, develop operational plan, implement and track performances towards achieving 90(90)90 milestones for 2020.

This document presented key affected populations for TB as categorized as *people with increased exposure to TB due to where they live or work, people at greater risk due to biological or behavioral factors and people with limited access to quality TB services* (see below).

TABLE 3.1. KEY POPULATIONS FOR TB

<p>People who have INCREASED EXPOSURE to TB due to where they live or work</p>	<p>Prisoners, sex workers, miners, hospital visitors, health care workers and community health workers</p> <p>PEOPLE WHO:</p> <ul style="list-style-type: none"> ➤ live in urban slums ➤ live in poorly ventilated or dusty conditions ➤ are contacts of TB patients, including children ➤ work in environments that are overcrowded ➤ work in hospitals or are health care professionals
<p>People who have LIMITED ACCESS TO QUALITY TB SERVICES</p>	<p>Migrant workers, women in settings with gender disparity, children, refugees or internally displaced people, illegal miners, and undocumented migrants</p> <p>PEOPLE WHO:</p> <ul style="list-style-type: none"> ➤ are from tribal populations or indigenous groups ➤ are homeless ➤ live in hard-to-reach areas ➤ live in homes for the elderly ➤ have mental or physical disabilities ➤ face legal barriers to access care ➤ are lesbian, gay, bisexual or transgender
<p>People at INCREASED RISK of TB because of biological or behavioural factors that compromise immune function</p>	<p>PEOPLE WHO:</p> <ul style="list-style-type: none"> ➤ live with HIV ➤ have diabetes or silicosis ➤ undergo immunosuppressive therapy ➤ are undernourished ➤ use tobacco ➤ suffer from alcohol-use disorders ➤ inject drugs

Source: STOP TB partnership. 2015. *The paradigm shift. The Global plan to END TB 2016- 2020.*

3.2 KNOWING YOUR POPULATION SIZE AND TB EPIDEMIOLOGY

The process of identifying the population groups or mapping the locations within the national and local context requires a multi-stage process of assessment, analyzing and understanding the characteristics of the key affected population.

The first step of this approach is to understand situations facing these key populations - what TB risks key populations face, factors that drive these risks, and critical gaps/barriers in providing services to key affected populations.

A better understanding of where the most profound gaps lie is the critical step to start the process of identifying and mapping the key affected population.

TB programs should lead these processes by continuous engagement of relevant stakeholders and participating the key population communities/representatives.

Subsequently, the results of these exercises about the size of the population, TB epidemiology, *health-seeking behavior*, and profile of health services delivery units should guide the prioritization, designing of interventions packages and selection of implementation arrangement aimed at closing this gap.

3.2.1 National/regional-level population size and epidemiology:

What are the national figures to estimate the sizes and level of risk/prevalence in suggested priority key populations?

- National TB programs may start from the routine performance reports collected from woreda/zonal level. Such woreda level analysis may be used to understand the variations in performances compared to the expected plan and to classify woreda as high, medium or low performing. In addition, this exercise also may help to estimate the population size to be targeted for tailored interventions.
- Determine if there are any data gaps on size of each key population prioritized?

Where these key populations are concentrated?

- Focus on which geographical broad area such as zones/woreda where most of these individuals are likely to be found

What are their TB risk drivers?

- Legal and economic (criminalization, poverty)
- Human rights and gender (stigma, discrimination)

How are their health seeking behaviors to access essential TB services?

- Preferences of the population to seek medical care at first
- Beliefs and misconception not to seek TB services

What are their TB service access barriers?

- Community level barriers
- Health system gap and barriers, at which step in the cascades of the case finding?
- Linkage and functionality of existing all service providers
- Gaps in the National policy and strategy

Stop TB Template for systematically develop specific TB risk, drivers and services barriers

TB Risks				TB Risk Drivers	TB Case Finding and Treatment Service Challenges
Environment (Over-crowded, poor ventilation)	Biology (Reduced immunity)	Behavior (Prone to transmission)	Limited Access to Services (Health, social and economic)	Legal & Economic (criminalization, poverty) Human Rights & Gender (stigma, discrimination)	
Occupational (silica) dust	Silicosis, asbestos related disease	Failure to use respiratory	Lack of (continuity of) care in and	• Cross-border migrant miners without legal	• Unavailability of TB services at or near

3.2.2 Implementation level population size and epidemiology:

Zonal/woreda TB program management level are expected to conduct similar exercise, as the national-level, to define the size and characteristics of their catchment population. This exercise should be a multi-stakeholder consultative process involving local relevant partners, CSOs, community agents and representatives of key population community. *Refer section 5 of this document for detail guidance.*

The agreed estimates would then be submitted to the national/regional TB programs to be aggregated in a final comprehensive national implementation plan tailored for priority key populations.

3.2.3 National level Profile of key affected population in Ethiopia

TB key affected populations for Ethiopian context for 2018 to 2020 is developed through multi-stage systematic processes by conceptualizing the global list by reviewing available local evidences, expert consultations and conducting multiple stakeholder consultations with key actors (see Annex 1 for the list).

Based on evidences gathered at national level exercise, an estimated 1.34 million reachable population to constitute priority key affected population with an estimated 39,479 incident TB cases annually likely to face delayed diagnosis, if not missed by routine TB programming requiring need for targeted interventions tailored to the need of each and specific population, see table below.

Table showing summary of estimated population size and expected incident TB cases per annum for selected priority key affected population in Ethiopia.

Prioritized key population groups	Estimated target population	Reachable population	%age of presumptive TB	Estimated size presumed TB	Estimated TB risk	Estimated TB cases annually
Diabetic population	381,900	229,140	10%	22,914	5%	1146
PLHIV	778,000	390,410	40%	156,164	10%	15616
Pregnant PLHIV	29,000	26,100	40%	10,440	15%	1566
PLHIV children	21,000	21,000	40%	8,400	10%	840
Malnourished population	378,778	189,389	10%	18,939	6%	1136
sick young children(U5)	209,018	125,411	2%	2,508	6%	150
ppl with COPD	4094962	37,305	60%	22,383	4%	895
PPI on LT Immosp. therapy	4094962	12,435	60%	7,461	4%	298
Elderly (>55yrs)	3378343	1,418,904	10%	141,890	3%	4257
Health care workers	300000	180,000	5%	9,000	4%	360
Adult TB Contacts	130,000	78,000	5%	39,000	2%	780
Under-five contacts	130,000	78,000	15%	117,000	2%	2340
Under-five sick at IMNCI	209,018	125,411	2%	2,508	6%	150

Prisoners and detainees	123,000	73,800	10%	7,380	10%	738
Refugees	829,925	746,933	10%	74,693	2%	1494
Universities students	150,000	120,000	2%	2,400	2%	48
Residents at holy water sites	NA			-		0
Miners	1,240,000	124,000	10%	12,400	34%	4216
Homes for vulnerable: (homeless poor, elderly or orphans)	50000	40,000	5%	2,000	3%	60
Pastoralist populations	6,879,536	687,953	10%	68,795	3%	2064
Urban poor dwellers	2,456,977	491,395.41	10%	49,140	3%	1474
	10,626,513	1,343,349		848,568		39,479

3.3 HEALTH SERVICE DELIVERY ASSESSMENT

Assessment of the health service delivery is required to document profile of existing profile health service delivery units, their TB service coverages and identify the service gap. The major assessment areas include:

- i) Mapping the existing and potential health service delivery units in the locality:
- Assess the number of public and non-public providers that offer TB services
 - Map the location of the providers
 - Determine what services the providers offer in terms of diagnostics, treatment, prevention, and care
 - Evaluate how non-NTP providers are engaged, including:
 - Public, non-NTP providers (e.g., services offered in other programs/departments (HIV, nutrition, MCH, EPI, NCDs, IPDs etc.)
 - Private providers (:hospitals, centers, specialized and medium clinics, primary clinics)
 - Not for profit providers (NGOs, FBOs etc.).

The assessment findings will be used to determine the need for TB service expansion to match the needs of the key population.

National TB service gap assessment of TB service providers by regions in 2018 showed 555 (15%) TB provider public health facilities do not provide TB diagnostic services, attributed mainly to shortage of laboratory personnel. On the other hand, despite the fact that 19% of care seekers first visits the private provider, majority of them are not engaged as PPM-TB service providers, see below:

Profiles of Health facilities providing TB care services as of June 2010 EFY

Region	Public Health facilities			Private Health facilities			
	Hospitals	Health centers	Health posts	Hospitals (all types)	Specialty clinic	Medium clinic	Primary clinic
Total TB provider(2010)	272	3484		44	0	287	47
Total functional (2009)	284	3622	16660	62	536	1308	5401
	96%	96%		71%	0%	22%	0.87%

ii) Assess quality of TB services in the health service delivery system:

Assessment of the quality of TB services identify potential gaps in accessing quality and equitable TB services from the health facilities and within the different service delivery units of a facility.

Patient care cascade and patient pathway analysis tools are recommended tools to determine where in the continuum of care that patients with TB are being missed behind:

a) patient pathways analysis (PPA):

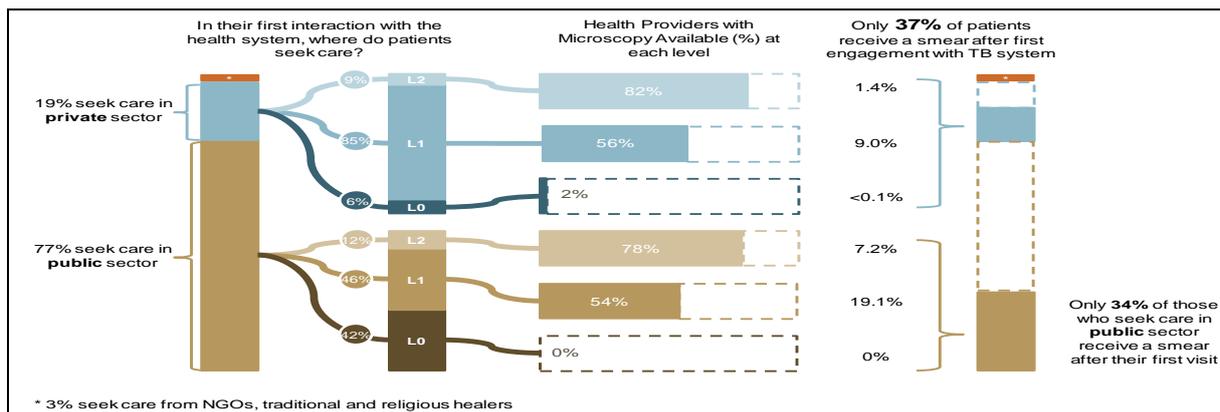
Patients' pathways analysis tool is used to assess the degree of alignment between patients' health-seeking behavior and TB service availability.

It describes the steps that persons with TB take from the first visit to a healthcare facility to a successful outcome. The results of a PPA show preferences on where to receive care and may show programmatic gaps in care-seeking, TB diagnosis, TB treatment initiation, and continuity of care.

(www.stoptb.org/assets/documents/global/.../TB_Patient%20Pathways%20Guide.pdf accessed on December 14, 2018)

The findings of PPA may be used to match the TB services by TB service levels with the patients' health seeking preferences:

*PPA analysis results in Ethiopia conducted in 2013 by Lelissa et al reported that 19% TB patient initially seek care at private sector. On same study, only 37% of patients receive TB smear diagnosis on **first engagement** with TB system due to a lack of availability of microscopy service. Care seeking patterns below are for general population, applied to availability of TB diagnosis at each level.*



The national program has a plan to update the National PPA and conduct sub-national PPA to further guide program managers on programming TB services for key population to maximize the efficiency and yield of the interventions.

b) patient care cascade– using the Onion Model

The *patient care cascade* (PCC) is presented as an “*Onion Model*” and developed as a framework for assessing the fraction of missing TB patients. It is a method to gain a comprehensive understanding of where persons with TB are missing, with the different steps in health-seeking and various levels of the health system represented by different ‘layers’ of the onion.

(https://academic.oup.com/jid/article/216/suppl_7/S675/4595547 accessed on December 14, 2018)

c) Patient journey Mapping

Patient journey mapping is an exercise that healthcare marketers can use to better understand what individuals experience throughout the entire patient journey. The patient journey map, which outlines all of the patient touch points during each stage of the care journey, aids in creating strategic outreach that improves both patient engagement and satisfaction.

The patient journey typically consists of six stages:

- **Awareness:** *The patient self-assesses their conditions and symptoms, conducts research, and reaches out to online communities (posing questions on social media, etc.)*
- **Help:** *The patient makes initial contact with a health system. This can be done via call center, email, mobile, etc.*
- **Care:** *The patient is assessed at medical facility (physician’s office, hospital, etc.)*
- **Treatment:** *The health system gives the patient on-site and follow-up care (medications, physical therapy, etc.)*
- **Behavioral/Lifestyle Change:** *The patient makes changes to their routines to reduce readmissions and promote proactive health*
- **Ongoing Care/Proactive Health:** *The patient manages their care between clinical visits. The health system fosters engagement between the patient & physicians to enable the patient to better manage his/her own care.*

(<https://www.evariant.com/faq/what-is-patient-journey-mapping> accessed on December 14, 2018)

Documenting the patient journey of various key affected populations might help in understanding the patients' health seeking behaviors, frequently encountered barriers and design strategies to empower them to early seek essential TB services.

3.4 PRIORITIZATION FOR TARGETED INTERVENTIONS

Based on the result of national, facility and woreda level assessment findings, the working group should review the preliminary findings and fine-tune the findings in a way suitable for programmatic implementation and agree on national/local level figures of the prioritize a key population.

Once reached to consensus among key stakeholders, the aggregated figures should be collated into one comprehensive national implementation plan which will be aligned and incorporated into the country's National Strategic Plan.

3.4.1 THE STOP TB RISK PRIORITIZATION TOOL

Prioritization using the STOP TB risk prioritization template is to score all potential key populations using available data or best proxy information when such information is not available. Proxy data used include administrative data from another government ministry not directly dealing with the key populations being considered, national data from another country of comparable epidemic, social, economic and political context.

For each potential key population, the working group is expected to enter agreed score points on the following six areas:

- Estimated contribution of all TB burden (active TB cases of all forms) by that key population (1-Very Low <1%, 2-Low 1-3%, 3-Medium 3-5%, 4-High 5-10%, 5-Very High >10%)
- Whether the key population is faced with any environmental risks such as being in over-crowded or poorly ventilated space (0-No, 1-Yes)
- Whether the key population is faced with any biological risks such as reduced immunity or poor nutrition (0-No, 1-Yes)
- Whether the key population is faced with any behavioral risks such as inhaling from or exhaling into one another's mouth or sharing smoking equipment (0-No, 1-Yes)
- Whether the key population is faced with any legal and economic barriers to accessing services such as criminalization and poverty (0-No, 1-Yes)
- Whether the key population is faced with any human rights and gender-related barriers to accessing services such as stigma and discrimination (0-No, 1-Yes)

Then, the simple sum of the above six scores becomes the combined score for the key population (maximum 10) to be used to prioritize from the potential list of key populations for TB.

Figure 11: Prioritizing Key Populations at National Level (also included in Annex A4)

Key Populations to Consider	Score 1	Score 2	Score 3	Score 4	Score 5	Score 6	Combined Score to Facilitate Prioritization Discussion	
	Estimated Contribution to the Country's TB Disease Burden (Active TB cases of all forms) 1 - Very Low (<1%) 2 - Low (1-3%) 3 - Medium (3-5%) 4 - High (5-10%) 5 - Very High (>10%)	Faced with Environment Risks (Over-crowded, poorly ventilated space, reside in zoonotic TB areas)	Faced with Biology Risks (Reduced immunity, poor nutrition)	Faced with Behavior Risks (In/exhaling from/into other's mouth, sharing smoking equipment)	Legal & Economic Barriers to Accessing Services (Criminalization, poverty)	Human Rights & Gender Barriers to Accessing Services (Stigma, discrimination)	Total Score (Sum of Scores 1-6, Max 10)	Prioritization Discussion and Rationale for Prioritized Key Populations
People Living with HIV								
People with Silicosis								
Miners								

Further discussion is needed to address any programmatic capacity and resource gaps of the country's health system to reach these prioritized key populations.

NB: After key populations have been systematically scored and prioritized (with rationale), further analysis is made using the WHO TB screening web-based tool on the prioritized key populations groups to estimate their potential case finding yields, risks and costs of different screening algorithms (See Section 5.4 for details).

Result of national level prioritization with Multi-stakeholder analysis

Priority 1: PLHIV, Contacts, DM, Miners, prisoners, Urban poor

Priority 2: Children, Elderly, Pastoralists, HS sites, HCW, refugees

Priority 3: Migrant workers, Residential students,

3.4.2 VENN DIAGRAM PRIORITIZATION TOOL

When the relevant key populations have been characterized for a geographic area, i.e. their size, geographic distribution, impact, relative risk and specific barriers that limit access to care, (further) prioritization may be appropriate to select those that belong to high impact AND high risk sub-populations or other combinations of impact, risk and vulnerability.

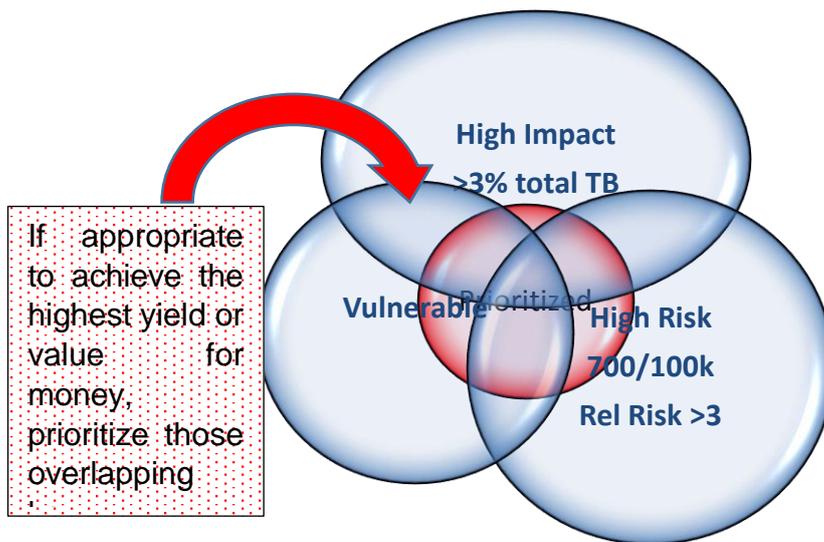


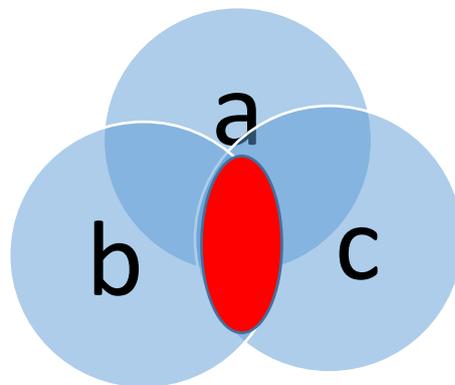
Figure 3: Prioritizing risk groups for TB screening (E. Mitchell, Country Directors meeting 2016)

Use of venn diagram prioritization tool may also be applied during program planning on the selection of intervention area (: zones/woreda/hotspots) that are highly likely to bring the highest yield of TB cases if additional interventions are implemented:

Venn diagram tool to select woreda with predominantly High risk population:

Criteria:

- a) Woreda with large **population size** of High risk population; or Woreda/kebele/catchment Area known to constitute with predominantly large proportion of high risk population groups of interest
- b) Woreda with high **TB burden** (based on 3-5 years wereda level TB performance analysis)
- c) Woreda with increased **TB risks and barriers** to early access TB services for the high risk population of interest



- Document the Prioritization Results for each identified Woreda/kebele/ catchment area; and
- Select priority woreda meeting **All three or at least two of criteria** for tailored interventions.

i. woreda: _____

List Prioritized woreda	Woreda/ kebele/ catchment area	Reason for identification			Rank
		Popn size	TB burden	Barriers	
1.					
2.					
3.					

Remark: this exercise is advised to be conducted for high-risk population groups that are known/assumed to live in large concentration by geographic areas including Miners, urban poor slums, mobile populations such as pastoral community, seasonal migrant workers, refugees and returns, internally displaced populations.

3.5 ADDRESS LIMITED AVAILABLE DATA AND NEED FOR RAPID ASSESSMENT

Developing evidence-driven program planning and implementation is often challenged by critical data gaps that are required for tailored TB responses. Hence, program are advised to use the following steps:

- *Conducting desk-reviews for published literatures in local or settings similar to the local TB landscape might also be helpful to estimate the population estimates, the level of TB-risks, drivers of fueling the TB risk/prevalence, and common critical service gaps and barriers(: legal, equity, stigma, gender,...).*
- *To use published KAP monographs and reference documents developed by Global END TB program, STOP TB partnership and other international organizations for key affected populations programming, Or*
- *Conduct rapid Assessment: TB program, however, may need to conduct rapid assessment of their programs, health service delivery points and/or proposed geographical locations to better understand their key affected population, and determine the critical service gaps and barriers.*

Suggested KAP for rapid assessment in Ethiopian context:

- woreda with predominantly mining population
- Urban woreda hosting the poor community known to have high number of missed TB cases
- woreda with community structures known as high TB transmission risk such as holy water sites, large workplaces, ...
- woreda with mobile populations such pastoral community, seasonal migrant workers, refugees and returns, internally displaced populations...
- Wereda with weak TB performances, etc...
- Children, Elderly, Ppl with COPD, PPI on immunosuppressive therapy

Rapid assessment guidance tool: see Annex 4

3.6 RE-PRIORITIZATION OF KEY AFFECTED POPULATION GROUPS

As the key population prioritized for interventions need to be re-evaluated annually whether the expected yield is obtained and how the program is performing.

The identification and re-prioritization of the priority key population groups need to be conducted after documenting the outcome of the intervention or upon identification of a new population group or setting is reported or identified by the program.

4. DESIGNING TAILORED COMPREHENSIVE TB PACKAGES

The designing and programmatic planning for targeted TB interventions for key populations should consider:

- Sound knowledge of the population’s behavior, estimated size, living contexts and increased TB risk and epidemiology in the local context,
- Services map analysis of potential barriers to early and equitable access,
- Local program management capacity, health system capacity and need for additional resources, and
- Feasibility, acceptability and protection of human rights issues pertaining to the proposed TB case finding strategy and diagnostic algorithms.

4.1 KEY IMPLEMENTATION LEVELS TO REACH MOST KEY POPULATIONS

Considering the long list of key populations and their variability in accessing them in an effective and systematic approach, the following three intervention levels are recommended to reach most missed TB cases within the framework of current functioning NTP structure.

Besides, as most of the critical barriers commonly faced by key affected populations likely to be shared, the TB program is expected to address cross-cutting barriers with targeted interventions to be implemented at the respective program management levels.

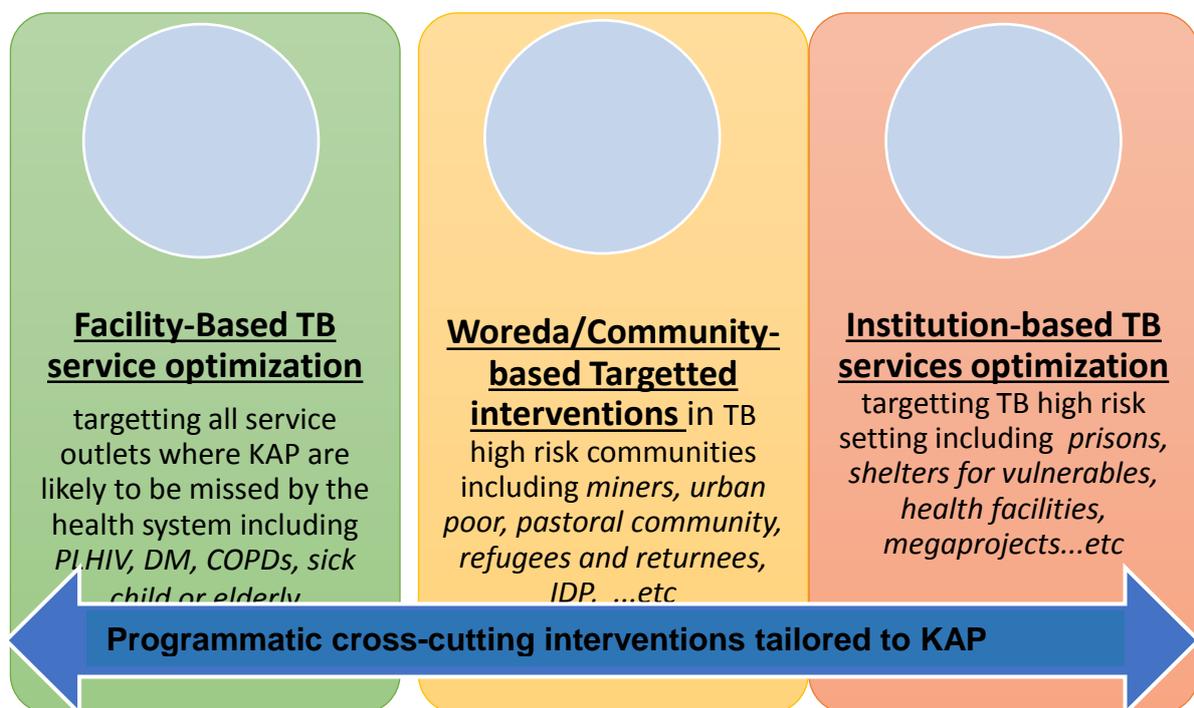


Figure: Programmatic Framework for Tailored TB service interventions to find Missed TB cases with focus to key affected population

4.2 RECOMMENDED TB STRATEGIES IN DESIGNING TARGETTED INTERVENTIONS PACKAGE

As the focus of this document is to find additional people with TB, TB/HIV and DR-TB that are not often detected by the routine TB programming, designing tailored interventions targeting specific key affected population around the following core interventions area are required to address the critical service barriers:

Intervention level	Recommended TB strategies	Recommended documents
Community	<ul style="list-style-type: none"> • Intensified implementation of community TB care interventions tailored for underserved and vulnerable populations • Expand access to community-based TB services using engage TB approaches through participation of CSOs serving to underserved and remote communities/high-risk institutions 	<ul style="list-style-type: none"> ➤ CBTC Implementation guideline ➤ Engage TB approach ➤ HEP manual ➤ IRT packages ➤ STOP TB ➤ KNCV
Health Facility	<ul style="list-style-type: none"> • Expand access to comprehensive TB services to private providers, using PPM MIX approaches, serving predominantly underserved and vulnerable populations • Promote optimized application of TB screening strategies and diagnostic algorithms, including systematic screening for active TB including contact investigation all health facilities • Improved TB/DRTB diagnostic capacity of health facilities, use of rapid molecular tests, specimen transport and patient referral systems • Promote implementation of quality TB service standards that is sensitive enough to address the needs of key affected and vulnerable populations 	<ul style="list-style-type: none"> ➤ National TB, Leprosy and DRTB guidelines ➤ ISTC ➤ HSTQ ➤ National IG on PPM Mix in TB care ➤ National NCD Guidelines ➤ National HIV care guidelines
Other institutions	<ul style="list-style-type: none"> • Promote programmatic integrations and multi-sectoral responses of TB prevention and control activities in relevant sectors 	<ul style="list-style-type: none"> ➤ National Prison SOP ➤ MSR of HAPCO, NNP, WASH....
Programmatic cross-cutting	<ul style="list-style-type: none"> • Build the TB programs' capacity on designing and implementation of tailored KAP programs • Promote evidence generation of innovative approaches 	

Important note

Choosing the most appropriate intervention packages and prioritizing actions for specific key affected population depends on the local epidemiology, critical barriers

identified and local program capacity that is to be determined during sub-national programmatic planning stages.

4.2.1 INTENSIFIED IMPLEMENTATION OF COMMUNITY TB CARE INTERVENTIONS TAILORED FOR UNDERSERVED AND VULNERABLE POPULATIONS

Expand targeted community-based TB care interventions tailored to underserved and vulnerable populations:

Health extension program of Ethiopia have been successful in decentralization of CBTC services as part the essential health services package to the rural majority population and brings improved geographic coverage of TB services.

According to HEUS 2014, among individuals who were ill in the last four weeks, over 38% of them do not seek care due to shortage of money (41%), symptoms were not severe enough (25%), self-medicated (15%), and health facility was too far away (9%).

Cognizant of this opportunity, intensifying the health extension program with focus to key underserved and high-risk communities would bring about improved participation and empowerment of key affected population in Health extension program activities to enhance the early recognition of TB symptoms and early health seeking by alleviating TB stigma and financial & legal barriers to access TB services.

In addition, strengthening patient, if possible specimen referral by HEWs for remote and underserved communities have shown to improve TB case detection.

Improve engagement, ownership and empowerment of key affected communities:

Engage the community in building on existing community systems for TB literacy, stigma reduction, patient referral, and treatment support. This will result in finding more TB patients in an earlier stage of the disease, which will contribute to reducing TB transmission, better treatment outcomes, less patient suffering, and reduction of treatment, patient, and societal costs.

Strengthen participation and engagement of community level structures:

national PPA assessment reported (Lelissa, 2014) that even though one-third of initial care seeking of TB patients is to health posts, 20% visited private sector, while the rest 2% to have visited traditional healers. This indicates the need to match the TB service provision in line with patients' preferences by strengthening community level structures such as CSOs, private providers and traditional healers including holy water sites.

Improving referral and notification practices: Key population with TB symptoms utilize a wide range of public and private providers and community level structures. Hence establishing a robust technology based referral and notification system is very indispensable to facilitate early case finding and reporting of potentially missed cases due to under-reporting.

4.2.2 OPTIMIZED APPLICATION OF TB SCREENING STRATEGIES AND DIAGNOSTIC ALGORITHMS

Considering the high burden of TB in Ethiopia, large number of missed TB cases and the potential of existence of most key populations both within the health services delivery units and also in the community and its various structures, there is a clear need for combined efforts from both patient-initiated and screening pathway guided by local evidence of effectiveness and efficiency.

Patient-initiated pathway: refers to the identification of patients with clinical features consistent with TB and provision of proper TB evaluation and access to quality assured confirmatory laboratory services.

Enhanced TB case findings: mainly used in CBTC packages to be implemented by HEWs

Screening pathway: refers to the identification of presumptive TB disease among people who do not actively seek and receive care for symptoms or signs compatible with TB.

I) Optimized TB case finding in patient-care pathway:

Main actions that should be optimized along the patient-initiated pathway include:

Improving knowledge and awareness: Peoples' health-seeking behaviors are largely influenced by the experiences and attitudes of family, the local community and peers. Community extension workers, civil society groups and key population groups such as Cured TB patients can be actively involved in increasing awareness in the community, and also be formally engaged in identifying and referring people with TB symptoms actively engaging community members.

Minimizing barriers to health-care access: Focus should be in identifying and alleviating potential barriers faced by a Key population groups as they have greater difficulties in both accessing care and fully availing themselves of such services, even if they can reach the appropriate facility.

- Interventions include but not limited to enablers targeting specific vulnerable groups and targeted outreach activities combining health information with mobile diagnostic services for vulnerable populations.
- Improve TB services access in equitable fashions to institution that mainly serve key populations.
- Advocate for human rights and gender-sensitive service provisions

Strengthening identification of patients with suspected TB

- Intensify identification of TB in clinical risk groups beyond HIV
- Integrate TB triaging in services outlets(OPDs and IPDs) for key populations
- Integrate TB screening in settings where there is increased TB exposure and transmission

II) Use of accurate and robust TB screening and diagnostic algorithms for KAP:

Detection of TB among vulnerable populations require use of sensitive screening tools and accurate robust confirmed TB diagnostic methods. The choice of screening and diagnostic algorithms for a particular risk group should be based on:

- the specific objectives of screening,
- the accuracy and yield of the screening and diagnostic tests,
- the profile of the prioritized risk groups,
- the TB prevalence in the risk groups,
- the cost, availability and feasibility of using different tests, and
- the ability to engage the population to be screened.

The national program have used the WHO screen TB tool to suggest the most appropriate screening tool and diagnostic algorithms for key affected population(see below). Nonetheless, the national TB diagnostic algorithm remains as the main tool to screen and diagnose TB among key affected population in Ethiopia due to the paucity of local level evidences and financial limitation for additional investment on TB diagnostic. Careful application of these screening tools and diagnostic algorithms may be used at local level under operational research settings when the conditions fulfills.

III) Perform Systematic screening for active TB in high-risk groups or hotspots

Active TB screening has the potential to detect additional cases of Tuberculosis among people who have not yet started or not completed the “patient-initiated pathway”. Screening should normally be targeted to pre-defined specific TB high risk and/or key affected population groups who might be missed or diagnosed late by the local health system.

Conditions for pursuing screening for Active TB:

- *Epidemiological relevance* of screening through analysis of national or subnational data.
- *Opportunities and barriers* to further improve the patient-initiated pathway analyzed, screening has been judged to be an important complement to further actions to improve passive case-finding.
- *Quality-assured TB treatment and management* is in place, capacity available to scale up treatment, ensure barriers to treatment minimized for those identified through screening.
- *Reasonable public health gains* can be expected in relation to investment (financial, human resources, etc), as compared with alternative health interventions (not only to TB control but to all public health interventions).
- *Sufficient resources* available without adverse impact on key Health system functions
- *Quality-assured diagnostic tools and strong diagnostic algorithms* (Minimize the number of false-positive TB cases)
- *Low risk of harm* to the screened population or the health system

In the Ethiopian context, considering the intense need for financial and human resources and program management capacity, programs should only be pursued as a complementary approach to actions recommended along the implementation of optimized “patient-initiated pathway” for key population groups known to benefit from active screening.

WHO web based TB screen Tool analysis

WHO recommends “risk groups” should be prioritized for screening based on careful assessment of local TB epidemiology, potential benefits and risks of harm of screening, and alternative interventions to improve early TB detection.”

This analysis can be done using WHO recommended “screen TB tool” available on ¹ [Risk prioritization tool, online WHO](#). The output from the SCEEN TB tool should be further discussed at programmatic level for feasibility of implementation.

Preliminary result of web based TB screen tool

Priority Group 1 key populations

For the priority group 1 key populations, most cases can be detected among the urban poor and PLHIV followed by DM and miners. The optimal screening and diagnostic algorithm that enables to find most TB cases differs a bit for each of the key populations although overall most cases can be detected with X-ray screening followed by GXP.

For the urban poor most cases can be detected in an algorithm starting with Xray followed by GXP even up to 25,000 cases could be detected although a substantial number of false positives would be detected. Already with symptoms screen focusing on cough >2 wks followed by GXP 5,000 to 10,000 cases could be detected with 60% reachability and 70% acceptance.

For PLHIV (in care) up to 15,000 cases could be detected if X-ray screening is followed by GXP testing although also already with symptoms screening algorithm followed by GXP around 5000 cases could be detected.

For DM depending on the algorithm up to 7500 cases could be detected (if Xray screening is added) while 2500 could be detected just using symptom screening (.2 wks cough) followed by GXP, this is under the assumption that 5% of all DM cases are reachable

Among miners an estimated 5000 cases can be detected using CXR screening while around 1000 to 1500 could be detected using symptom screening only. This is assuming that only 30% of miners are reachable as most miners are illegal miners.

For prisoners using CXR screening about 2500 cases can be detected while using symptoms 600-600 cases can be detected. For contact screening it depends on whether this is passive as per current policy or a more active approach is taken affecting the acceptability. With the current passive policy assuming 40% acceptance and symptoms screening in the facility around 200 cases can be found. However, when an active approach is taken increasing acceptability to 90% while keeping the algorithm the same double the number can be found while if the algorithm is adapted to include CXR more than 1000 could be found although risk on false positive cases increased substantially.

Priority group 2 key population:

Screening for most key populations in priority group 2 would yield lower case numbers than those in priority group 1, except for screening among the elderly and to some extent screening of pastoralist and refugees. Most algorithms in this priority group 2 yield large proportions of false positives therefore screening algorithms need to be carefully chosen. If case finding is active among the elderly and illegal refugees can partly be reached case number can increase further for these groups.

Screening among attendants at holy water sites could be done using a wide symptom screen followed by GXP to find about 250 additional cases. The numbers of participants at such site is uncertain so if number are higher than the currently assumed 100,000 actual numbers could be higher.

For severely malnourished children, refugees and HCWs the wide symptoms screen followed by GXP seems also best to avoid high numbers of false positive cases being detected, yielding 1000, 400 and 2000 TB cases.

For the pastoralist at least GXP should be used but even then with a wide symptom screen still about 30% are false positive. This is mainly due to the only slightly higher prevalence then in the general population which assumptions is based on the TB prevalence survey

results. If healthcare access in this group is limited some form of targeted screening might still be a way to reach this group.

Key populations in priority group 3:

For the remaining key populations in priority group 3, residential students and migrant workers have the same issues as those in priority group 2, the risk of many false positive cases being detected depending on the algorithm and for most screening for TB symptoms followed by GXP is the most feasible despite yield less case but to prevent large numbers of false positive cases.

For the two additional groups added, smokers and pregnant HIV+ women, pregnant women LHIV could very well be screened by a wide symptom screen followed by GXP yielding about 500 cases.

IV) Ensuring access to quality-assured TB diagnostic services: Identification and diagnosis of TB in key population requires actions to ensure equitable and affordable access.

Hence, the following intervention are required to promote early diagnosis of TB among key affected population:

- Scale-up of provision of High-quality assured AFB microscopy
- Deployment of trained laboratory professionals to perform AFB
- Improve specimen referral system from the lower level providers
- Optimization of imaging and pathology service for TB in big hospitals
- Expanded use of rapid molecular TB diagnostic tests
- Universal access to TB DST services

4.2.3 QUALITY OF TB PREVENTION AND TREATMENT SERVICES

The quality of patient-centered prevention and care, based on the **International Standards of TB Care (ISTC)**, is a key factor for success in finding, diagnosing and treating the missing persons with TB. Quality prevention and care requires clear guidelines, competent staffs who are empowered to provide patient-centered care, a learning culture, and quality management.

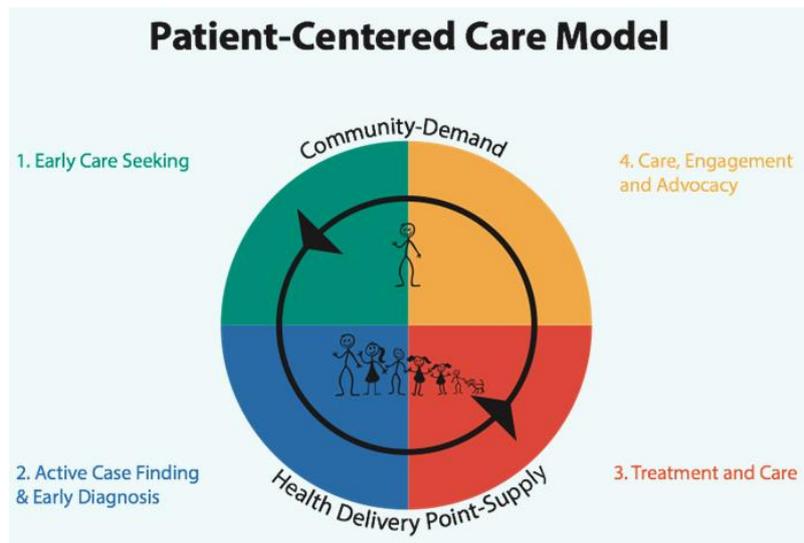
4.3 STANDARD TOOLS TO DESIGN TAILORED COMPREHENSIVE TB INTERVENTION PACKAGES

Patient centeredness enables partnership between patient and provider, resulting in TB prevention and care that is based on needs, although some key populations may not realize the need or accept any care.

4.3.1 Patient-centered Care approach (PCA): patient-centered approach considers the needs, perspectives, and individual experiences of people affected by TB, while respecting their right to be informed and receive the best quality care based on individual needs. It requires the establishment of mutual trust and partnership in the patient–care provider relationship, and creates opportunities for people to provide input into and participate in the planning and management of their own care. A patient-centered approach improves treatment outcomes, while respecting human dignity.

This approach is recommended for program planner to understand the critical barriers for early, equitable and quality TB services by key populations and to design tailored interventions packages within the integrated service delivery models. Interventions that strengthen the position of key populations are subdivided in one of the PCC quadrants as shown in figure below:

- a. Early care seeking
- b. Active case finding and Early diagnosis
- c. Treatment and Care
- d. Care, Engagement and Advocacy



See Annex 2 for proposed comprehensive TB services packages tailored to selected priority key affected populations developed for Ethiopia with multiple stakeholder engagement.

4.3.2 Self-assessment tool for health facility to deliver quality TB services

Patients, health care workers, and district health managers will plan, implement, and evaluate *quality improvement* interventions.

See Annex 2 for suggested intervention packages for prioritized each priority KAP implementation level.

5. PROGRAMMATIC PLANNING FOR KEY POPULATION AT LOCAL IMPLEMENTATION LEVEL

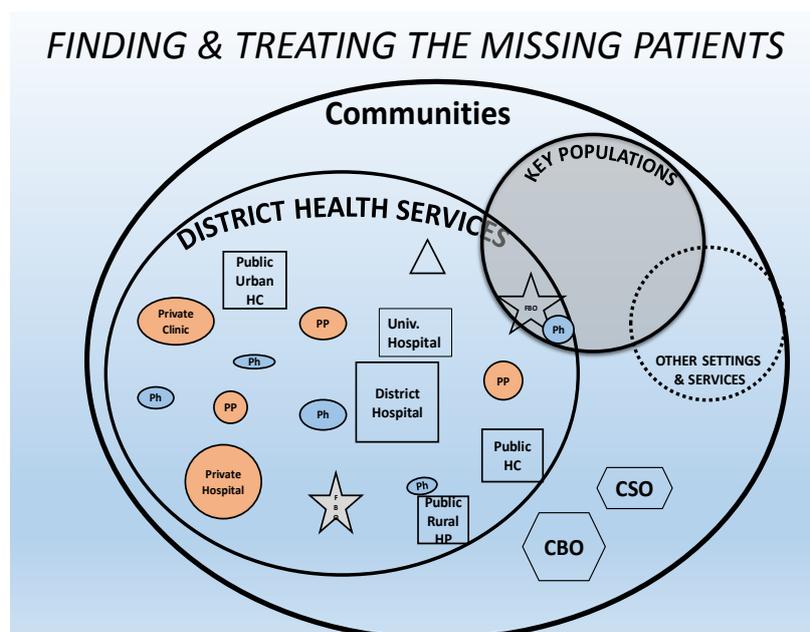
5.1 STEPS FOR DEVELOPING PROGRAMMATIC OPERATIONAL PLAN AT IMPLEMENTATION LEVEL

- Determine the prioritized KAP intended to be addressed
- Identify, map and define role and responsibilities
- Set targets for prioritized KAP for interventions
- Determine (programmatic) implementation level/approach and develop key activities
- Develop implementation plan
- Agree on performance monitoring framework
- Estimate the required additional budget and financial resources
- Implement and monitor
- Evaluate and build evidence

5.2 CONTEXT OF POTENTIAL MISSED TB CASES IN THE NATIONAL HEALTH SERVICE DELIVERY SYSTEM

Even if significant number of sick TB patients are being missed despite visiting the regular health services, both public and private institutions, another portion of them does not seek medical attention and remain behind transmitting the disease in the community.

Even at the community level, significant number of key populations are believed to be either living/working together in large number in closed spaces, such as nursing/boarding institutions, holy water areas and big large workplace where the risk of exposure and transmission is likely to high. As illustrated in the diagram below,



(Source: Reaching the key population by finding and treating missed cases. Draft. KNCV operational guide June 2017)

Figure 1: Where can the Missing Patients including key populations be found, and treated (source: Reaching the key population by finding and treating missed cases. Draft. KNCV operational guide June 2017)

5.3 PROGRAMMATIC IMPLEMENTATION STAGES

The following three stages, which are inherently iterative, need to be taken in order to systematically develop, implement and measure impact of tailored interventions for key affected population:

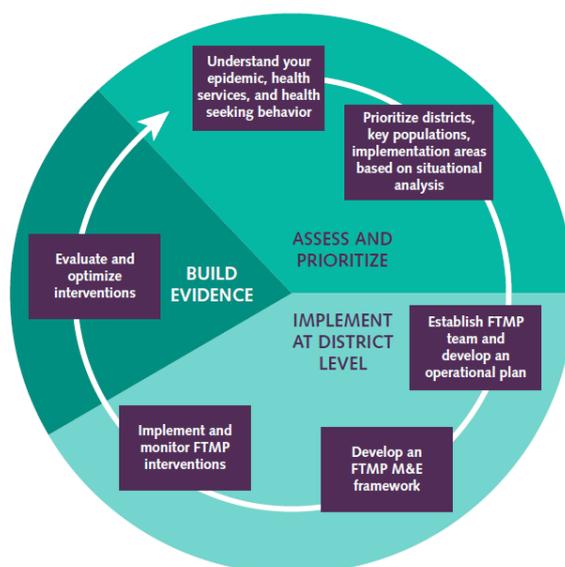


Figure 3: Stages in developing and implementing the FTMP interventions

1. Assess and prioritize

Conduct a situational analysis, on *key populations*, the health services, *community systems*, and *patients' pathways/health seeking behavior* and *TB patient care cascade*.

This starts with an assessment at (sub) national level to prioritize the districts, implementation areas, and key populations where the tailored interventions should take place followed by more detailed woreda level assessments.

These woreda level assessments should take place in every selected woreda to develop the district level intervention plans. Depending on the availability of data, this can be done as a desk review, or targeted rapid assessments can be conducted if resources allow.

2. Implement and monitor

Involve relevant stakeholders in the planning, development and implementation of tailored interventions, taking into account the country's and district's TB epidemic, the health and community systems, patient *health-seeking behavior*, and the

district's financial and human resources capacity. Stakeholders may differ by district, however, at the very least they will most likely include the woreda Health Office including relevant health programs, public & private health providers, non-governmental organizations (NGOs), patient organizations, CSOs, and CBOs from within and outside the health sector. The development of an M&E framework also forms part of the planning process.

3. Build evidence

Building evidence for optimization and scale-up by implementing an M&E framework to systematically determine the contribution, cost-effectiveness and (if resources allow) the outcome of tailored interventions, making optimal use of existing data, resources, and infrastructure. Lessons learned will be used to optimize the approach and to scale-up to other districts where applicable (see the planning cycle in Figure below).

6. MEASURING PROGRESS AND RESULTS

6.1 MEASURING THE PROGRESS TOWARDS 90(90)90

The national program has dedicated a separate column on the unit TB register to be filled out by the respective TB focal personnel for each and every TB diagnosed patient to assess for KAP at time of registration to treatment. However, there needs to be a mechanism for the collecting, compiling and collating the information towards the progress to 90% of KAP from all TB diagnosed patients either through:

- Conducting annual survey of nationally representative TB service providing facilities
- Develop a dashboard to track the performance on monthly bases as a flagship initiative, or
- Establish TB sentinel survey system for key population.

Practical tips to compute the middle 90(90)90:

- Instruct TB focal to fill the most-at risk population for each registered TB patient on unit TB register for TB treatment on column number #5,
- Orient the TB focal person for source of data to count KAP:
 - Use column #4 to check patients' age in years;
 - Use column #5 for TB most at risk population group;
 - Use column #51 for HIV test result

- Count the following registered TB patients as key population(; count one patient only once):
 - _____ Number of registered TB patients under five years of age
 - _____ Number of registered TB patients above 60 years of age
 - _____ Number of registered TB patients with Positive HIV status
 - _____ Number of registered TB patients who is health care worker including Health extension workers(coded as "1")
 - _____ Number of registered TB patients who is known DM(coded as "2")
 - _____ Number of registered TB patients who is homeless (coded as "3")
 - _____ Number of registered TB patients who is refugee or IDP(coded as "4")
 - _____ Number of registered TB patients who is a prisoner(coded as "5")
 - _____ Number of registered TB patients known miner or examiner(coded as "6")
 - _____ Number of registered TB patients from congregated settings (urban slum area, University Students, mega project workers etc) (coded as "7")

- **Compute the following equation to find the middle 90(90)90 as:**

- Sum up the total KAP registered in the reporting period and use the figure as a numerator
- Use the total number of notified TB cases in the same reporting period and use the figure as a denominator

$$\text{Middle 90} = \frac{\text{Total number of patients recognized as KAP}}{\text{Total number of notified TB cases}} \times 100\%$$

	Total number of notified all forms of TB cases
--	--

6.2 PERFORMANCE MEASURING FRAMEWORK FOR TARGETED INTERVENTIONS

The programmatic operational plan agreed at the implementation level(s) require additional minimum data-set elements to monitor the progress of implementation and results.

Regions/zones/woreda advised to adopt the suggested indicators for specific key population, to track the implementation of their own operational plan.

In general:

1. Select relevant indicators for quarterly (or more/less frequently if indicated) monitoring
2. Develop process indicators as appropriate
3. Add additional facility level indicators (if appropriate or deemed necessary)
4. Strengthen recording and reporting/surveillance systems for reporting of data:
 - Develop/adopt user-friendly data collection tools
 - Develop an integrated reporting system to ensure non-NTP programs (e.g., HIV, PMTCT, MCH, nutrition, NCDs) report data
 - Ensure routine reporting by non-public providers (for example through mandatory reporting and/or the use of simplified and/or electronic notification systems).
5. Establish baselines for the indicators
6. Set SMART (specific, measurable, achievable, relevant and time-bound) targets
7. Monitor the progress towards the targets each quarter.(source: KNCV document)

7. DETERMINING AND MOBILIZING RESOURCES

It should be noted that any interventions targeted to find additional missed cases among priority KAP group(s) would incur/require additional resources which were not originally considered in the planning and implementation of the routine TB care services. Hence, TB programs need to carefully plan for an integrated programmatic planning and implementation in order to maximize efficient use of available but scares resources.

7.1 PROGRAM COORDINATION AND MANAGEMENT COSTING

It includes resources pertaining to the programmatic organization, coordination and management cost to implement tailored intervention for targeted key population.

7.2 HUMAN RESOURCE COSTING

This helps to determine the added cost to HR in terms of additional staffs to be deployed, HR to be trained and be involved in the implementation of the targeted tailored interventions, HR required to provide programmatic support to monitor the successful implementation the package of intervention.

7.3 HEALTH SYSTEM COSTING

This refers to determining the additional cost to the health system to find those targeted TB patients among targeted key population.

7.4 MEDICINE AND LABORATORY COMMODITY COSTING

Refers to the additional cost pertaining to additional diagnostic technologies and consumables, added medicine cost and cost to support TB patient till successful outcome.

**SECTION II: NATIONAL PROGRAMMATIC IMPLEMENTATION PLAN
2018-20**

8. NATIONALLY PRIORITIZED INTERVENTIONS TO FIND AND TREAT MISSED TB CASES

8.1 PROFILE OF PRIORITY KEY AFFECTED POPULATIONS, SERVICE GAP AND SUGGESTED INTERVENTIONS

The national TB control program established small core expert groups to lead the overall multi-stage processes to identify TB risk group population in the National context, determine risk drivers, and identify barriers to early access to essential TB services through review of literature, official reports and by conducting series of consultations with national and regional level stakeholders. Besides, technical supports were received from international level expert on designing on Key affected population programs

8.1.1 LIST PRIORITIZED KAP LIKELY TO BE MISSED IN ETHIOPIA FOR 2018 TO 2020

Below is presented the list prioritized key affected populations groups/ settings in Ethiopia that are grouped in to three broad categories based on either:

- i. their **increased risk** due to biological or behavioral factors that could compromise their immune system;
- ii. Their living or working related conditions that put them at **increased risk of exposure** to undiagnosed infectious TB sources; and/or
- iii. Their **limited access** to basic health services because of limited basic infrastructures and/or facing increased barriers to access health services.

List of priority key affected populations groups/ settings in Ethiopia

Broader category	key population groups
Population groups at increased risk of TB because of <i>biological or behavioral factors</i>	PLHIV
	Miners and ex-miners
	young children
	Diabetic population
	People with COPD
	Elderly people (>55yrs)
	People on long term Immunosuppressive therapy
Population groups that have increased exposure to TB due to where they live and work	Malnourished population
	TB Contacts
	Health care workers
	Prisoners and detainees
	Refugees and returnees
	Public transport workers
Urban poor dwellers	Nursing institutions serving vulnerable population (:homeless, poor, orphans and vulnerable children , or elderly)
	Universities students
Pastoralist populations	Urban poor dwellers
	Pastoralist populations

Population groups that have limited access to quality TB services	Residents at holy water sites and monastery
	Seasonal migrant workers at megaprojects
	Internally displace people
	Gender

8.1.2 ANALYSIS OF BARRIERS TO EARLY HEALTH SERVICE ACCESS AND SUGGESTED INTERVENTIONS FOR THE PRIORITY KEY AFFECTED POPULATION

National level identification of various risk drivers and potential barriers to early and equitable access to essential health service packages, that includes TB care services, has been conducted by engaging variable relevant stakeholders and representatives of some of priority population groups. The workshop have identified various challenges for which practical tailored interventions are drawn to be considered at different programmatic implementation levels in comprehensive manner to address the health needs of these population groups and hence find the missed TB cases among them. Detailed analysis of national situations of the priority population groups along with their suggested intervention packages are presented on (Annex 2 for National Situation of selected priority populations for Tuberculosis).

8.1.3 NATIONAL PLAN OF FINDING THE MISSED TB CASES WITH TAILORED INTERVENTIONS ON KEY AFFECTED POPULATION FOR 2018 TO 2020

The national TB control program have identified certain implementation areas that contain large number of vulnerable population with increased TB risk and at highest risk of facing barriers to early access to TB care services and hence likely to be missed by the health system.

The national focus of priority key affected population for tailored interventions for the three years implementation period till 2020 include:

- 150 high volume federal, university, regional Hospitals
- 850 primary hospitals and health centers in PHCU
- 3300 TB service provider health facilities for intensified contact investigation
- 40 Gold or Opal mining woreda having seasonal mobile artisan miner population
- 40 Urban Woreda with known TB hot spot urban centers in big cities
- 28 pastoralist woreda with most underserved TB high-risk mobile communities
- 27 Refugees camps and surrounding host communities
- ?? Woreda known to host large number of Internally displaced people
- 65 correctional facilities (Prisons)
- 20 mega project sites hosting large size of seasonal migrant workers
- 44 Big boarding institutions such as Universities

8.1.4 STRATEGIC APPROACHES FOR TAILORED INTERVENTIONS TO REACH AND MISSED TB FROM KEY POPULATIONS

Strategy approaches suggested to guide the tailored interventions includes:

1. Programmatic stewardship and coordination
2. Build programs' capacity on programming tailored interventions for key affected population
3. Community mobilization and empowerment of Key affected population (for TB stigma reduction with gender sensitive, human right sensitive TB programmatic approach)
4. BCC tailored to key population for TB
5. Multi-sectoral approach for Mainstreaming of TB policy and minimum service packages in TB high-risk non-health sectors
6. Integrate TB services into PHC packages of sister health programs serving KAP (: HIV, IMNCI, NCDs, Nutrition, ...)
7. Health care financing access to prioritized key populations TB
8. Strengthen PPM engagement targeted for key populations
9. Establish M & E System and evidence based decision making capacity
10. Focus on Priority Key affected populations (: Miners and Ex-miners, urban poor slums, refugees and asylum seekers, pastoralist, prisoners, seasonal migrant workers, homes of the vulnerable, Holy water sites.....)

9 NATIONAL PLAN OF FINDING AND TREATING MISSED TB CASES FOR 2018 TO 2020

Goal: to contribute to National END TB targets of 90(90)90 for 2020 by detecting and notifying an additional 269,194 TB cases from missed TB cases including KAP and maintaining treatment success rate of 90%. In addition, the project plans cumulative of 180,756 eligible on preventive therapy and 7,268 additional DR-TB cases assuming 2.7% prevalence.

	2010	2011	2012	2013
TB CDR plan in NSP	63%	78%	85%	89%
% contribution from targeted intervention to find the missed TB cases	25%	36%	62%	94%
TSR	90%	90%	90%	90%

National KAP Targets for 2020:

- 92,503 TB cases from hospitals
- 39,128 TB cased from primary hospitals and health centers
- 111,120 TB cases from PPM sites
- 10,600 TB cases from TB contacts
- 3,563 TB cases among miners
- 4,725 TB cases from urban poor
- 1,160 TB cases from mobile pastoral community
- 182 TB cases from residents of Holy water sites
- 504 TB cases from Homeless shelters
- 4,036 TB cases from refugees and returnees
- 936 TB cases among prisoners
- 720 TB cases from seasonal migrant workplaces
- 180,756 eligible PLHIV and under five children received preventive therapy
- 7,268 cases will be detected with Drug resistant TB

10. DESCRIPTION OF PRIORITIZED TAILORED INTERVENTIONS, OBJECTIVES AND MAJOR ACTIVITIES

National TB control program has developed sets of tailored interventions with specific objectives/targets along with their major activities that enable to address the needs of these priority key affected population groups over three-year period. Below presents the descriptions of objectives with their major and detail specific activities for both cross-cutting and specific tailored interventions:

PRIORITY INTERVENTION I: PROGRAMMATIC INTERVENTIONS FOR PRIORITY KEY AFFECTED POPULATIONS

Recognizant of the current need for NTP to bring about paradigm shift in the way program managers understand their local TB epidemiology and to design, implement and monitor customized TB control responses to bring about improved performance in finding the missed TB cases requires multiple essential and cross-cutting activities to build on program capacity at each and every implementation level.

Responsible: NTP/RHBs

Implementation level: NTP/RHB TB program

BUILD TB PROGRAM RESPONSES FOR KEY AFFECTED POPULATION

Develop National operational guide and implementation plan document

- Establish working group
- Develop drafts operational guide document and conduct stakeholder Analysis
- Conduct two-days national stakeholder consultative workshop
- Finalize the operational guide and develop three-years implementation plan
- Conduct two-days national stakeholder consensus building and planning workshop
- Document and publish innovative strategies and approaches
- Support experience sharing visits
- Recognize best performing woreda on National TRAC events
- Recognize best performing facilities on National events such TRAC
- Support hospital-RHB forum to promote for QI project
- Represent TB on Hospital initiatives in Medical service quality forum

Develop necessary training curriculum and Bcc toolkits for KAP

- Develop curriculum for sensitization of program managers programming intervention for KAP
- Conduct national level sensitization for 100 program manager in three rounds
- Develop two-days curriculum for clinical seminar for TB front line workers of HF
- Conduct ToT on clinical seminars for 100 clinicians in three rounds
- Develop TB-stigma reduction toolbox
- Develop, duplicate and distribute leaflets for targeted woreda
- Develop, duplicate and distribute Additional RR forms for targeted interventions

Improve policy environment and programmatic capacity to KAP responses

- Sensitize parliamentarians and political leaders on KAP for TB

- conduct advocacy to develop TB risk surveillance policy for HCW and employees of high risk institutions
- Develop directive for re-imburement of basic Ix cost for KAP (CXR, blood glucose test....)
- Expand TB performance monitoring mechanism for KAP
- lobby for TB surveillance monitoring system for KAP
- Conduct national level annual survey to track progress towards KAP to intervention areas
- Conduct national performance monitoring workshop for targeted KAP intervention annually

Establish multi-sectoral response to END TB

- Establish National/regional coordinating body for multi-sectoral response to End TB(TOR)
- Advocate to integrate TB agenda on the National HIV/AIDS MSR platform
- Conduct and Negotiate national consensus building workshop on MSR response for TB
- Advocate to mainstream TB agenda on the respective sectoral policy
- Build the capacity of relevant sectors to strengthen sectoral TB prevention and control activities
- Periodically monitor and evaluate the progress of MSR for TB within relevant sectors
- Document and recognize best practices on TB MSR

Establish program management and coordination mechanisms for targeted interventions

- Conduct annual rapid assessment to map woreda with priority KAP(prisons, refugee camps, HWS, homeless shelters, megaproject sites and workplaces...)
- Build programmatic coordination and management capacity for KAP tailored interventions
- Conduct biannual performance monitoring to intervention areas
- Review TB KAP progress on regular programmatic TB review meetings
- Conduct Regional performance monitoring workshop annually

PRIORITY INTERVENTION II. ENGAGE 150 HIGH VOULUME HFS TO OPTIMIZE TB SERVICES TO FIND MISSED TB CASES

Objective: The main aim is to assist/support Health facilities serving large volume clients including those providing referral tertiary and secondary level care to:

- Contribute to finding missed TB cases by optimizing TB case finding practices
- deliver quality patient- centered TB care to reduce unfavorable treatment outcome and not-evaluated patients; and
- Minimizes patient- and health system diagnostic delay that commonly causes catastrophic cost for the vulnerable population.

Annual Performance Targets:

- To engage 150 tertiary and secondary level hospitals and selected high volume facilities.
 - 44 university and 6 federal Hospitals (NTP)
 - 100 regional referral hospitals (RHBs)
- To screen 90% of clients per facility per reporting period (OPD attendants, clients registered in chronic care clinics for PLHIV, DM, COPD, oncology, malnutrition, dialysis, patients admitted to medical and Pediatric ward)
- To detect TB/DR-TB cases as per the plan

Implementation level: public/Private Hospitals and large volume HCs

Programmatic implementation: (Assess and prioritize, Implement and build evidence)

1. ASSESS AND PRIORITIZE

- Conduct National/regional level mapping of Hospitals (public/private) and High volume health centers and determine their size of catchment population, document size of Outpatient visits, size of population in chronic care services, number of admissions, document TB diagnostic and infrastructure capacity, HR capacity, TB service provision capacity and annual TB performance, set facility specific target for # presumptive TB, # active TB detected and linked to treatment.
- Prioritize hospitals and large volume health centers for targeted interventions
- Conduct stakeholder analysis, and define role and responsibilities potential stakeholders
- Conduct two-day National sensitization and consensus building and planning workshop with hospital management, Medical service directorate of RHB/MoH and other stakeholders such as University management and Ministry of education, associations)
- Develop and agree on National annual operation plan and targets
- Assess and motivate/recognize the Hospital's management/staff for improved commitment

2. IMPLEMENT AND MONITOR

A. Facility-level Benchmarking and programmatic planning

- Establish Facility-level coordinating core team (or integrate with relevant task team such as MDT) for optimization of TB services
- Benchmark the level of practice of available TB services in the intervention HFs: Triage, Contact Investigation practice and ICF at high-risk clinics and TB clinic's performance
- Identify action points and agree on Facility-level annual operation plan and targets
- Define and assign role and responsibilities
- Conduct regional consensus building consensus building workshop with facility managements and respective department
- Define and incorporate additional performance monitoring framework.
- Strengthen site level data use for continuous quality and performance improvement.

B. Optimize TB case finding practice within the facility

- Strengthen routine cough triaging services at OPDs, IPDs and chronic care clinics
- Enhance Intensified TB screening practice in chronic referral clinics (DM, ART, medical referral clinics, Malnutrition clinics, chest clinics, oncology clinics...)
- Strengthen regular documentation of TB screening activities and intra-facility referral communication with TB clinic from targeted departments
- Conduct biannual out-reach TB screening service to identified TB high risk community structures (HWS, shelters, prisons, workplace...)
- Innovate and Introduce referral confirmation system (:phone and feedback paper, worda review meeting)
- Support access to digital imaging services and improved interpretation capacity using CAD4TB at selected facilities.
- Support pathology units for improved access to FNA cytology and biopsy services (Capacity building VS Access)
- Support Investigation cost for TB among KAP

C. Build clinician's capacity of TB case evaluation and management pertaining to KAP

- Provide updated TB provider tool kits
- Conduct biannual, two days on-site sensitization training for frontline workers
- Introduce PAL/ PHCU case management standards in health facilities
- Conduct clinical case symposiums to review on difficult case management (CME on TB)
- integrate TB KP related mentorship with the existing clinical mentorship support system.
- Introduce clinical audit-checklist for TB related deaths

D. strengthen the implementation of comprehensive TB infection control interventions

- Conduct periodic TB exposure and transmission risk assessment and review the minimum TB infection control packages
- Identify TB high risk departments and post signals
- Sensitize facility staffs on TB transmission risk reduction measures
- Integrate periodic monitoring of the implementation of facility level TBIC protocol/work plan
- Introduce periodic health care workers health screening programs

E. Monitor the progress and build evidence

- Provide supportive supervision support from Regional level
- Review TB KAP progress on regular programmatic TB review meetings
- Conduct Regional level annual progress monitoring meetings
- Evaluate the contribution/yield of Facility-level interventions on finding missed TB cases

PRIORITY INTERVENTION III. INTENSIFY CONTACT INVESTIGATION PRACTICES IN 3300 TB SERVICE PROVIDER CLINICS

Annual Performance Target:

- 3300 Public and private health facility(hospital/health centers) providing TB services
- To identify at least 3 contacts per index pulmonary TB patients registered to treatment
- To trace and evaluate 60% of all contacts reported by the index TB case (within two weeks of registration to treatment)
- To detect active TB in at least 3% of the evaluated contacts
- To achieve 60% preventive TB treatment coverage rate

Level of implementations:

- All Health facility (hospitals, health centers and PPM sites) providing TB diagnostic and treatment services should conduct comprehensive CI.
- HEWs and/or CSOs implementation CBTC package in the community for piloting community level active contact screening

Programmatic implementation: *(Assess and prioritize, Implement and build evidence)*

1. ASSESS AND PRIORITIZE WOREDA FOR TARGETED INTERVENTION

interventions 1: Strengthen Program, coordination and management

Major activities:

- Finalize Contact investigation standard operating procedure
- Define and incorporate performance monitoring mechanism through HMIS
- Develop, print and distribute job aids for care providers

2. IMPLEMENT AND MONITOR

A: strengthen practice of contact investigation in all TB clinics

Major activities:

- Investigate all referred contacts from the community for TB
- Administer preventive therapy for identified TB exposed PLHIV and under-five children

B: strengthen community level Contact investigation practice in HEP

Major activities:

- Provide Job aid to the HEWs for strengthening health education on TB and importance of contact investigation.
- Strengthen the communication between TB clinic and HEWs
- Assist HEWs to map the HHs of identified index TB patients
- Track the response rate for identified priority contacts referred from Community by HEWs
- Establish facility – community communication and referral mechanism for reaching contacts who cannot come to the facility for TB CI.
- Arrange expedited TB evaluation service for contacts referred with presumptive TB for TB CI.

C: Pilot the engagement of local CSOs and NGOs in community level contact investigation practices

Major activities:

- Map potential stakeholders to be engaged in Community level CI
- Conduct consensus building work shop and identify relevant stakeholder
- Sensitize on National CI SOP
- Engage CSOs in community awareness creation, community level identification of contacts and initial screening for TB, TB stigma reduction and social support, referral linkage for TB-High risk communities such as urban poor, miners, refugees....)
- Monitor and evaluate CI performance to general evidence

3. Evaluate and build evidence

PRIORITY INTERVENTION IV. REACH 40 MINING WEREDA WITH TARGETED INTERVENTIONS

Annual Performance targets:

- 40 woreda knowing to be main mining sites

Implementation level:

- Communities and health facilities with predominant mining population/area

Programmatic implementation: *(Assess and prioritize, Implement and build evidence)*

1. ASSESS AND PRIORITIZE WOREDA FOR TARGETED INTERVENTION

- Conduct High-risk population size estimate, determine TB risk drivers, service mapping and TB risk/burden based on TB performance and need outbreak investigation for TB based WHO threshold
- Conduct stakeholder analysis and Identify potential stakeholders (define role and responsibilities)
- Conduct one day consensus building and planning workshop(with RHB, ZHO, Woreda HO, HEP, CSOs, woreda energy and mines)
- Develop and agree on annual operation plan

2. IMPLEMENT AND MONITOR

A. Community level intervention

- Conduct annual mapping of TB hotspot households/catchment areas/community structures by HEP/CSOs
- Conduct quarterly community conversation/ HH visits/ coffee ceremony by HEP/CSO with key affected population community (& Distribute stigma and other leaflet for KAP)
- Conduct HH contact identification and referral for all index cases
- Integrate scheduled specimen referral system from the community for TB diagnosis
- Organize Biannually Community awareness creation and TB mass screening events for community level Hotspots
- Conduct TB screening using other sister programs platforms/campaigns to integrate

B. TB service expansion (to 1 public and 2 PPM based on assessment result)

- Expand at least 1 public site (dxtic and referral +/- Rx) per woreda: Training cost for HCW and Lab
- Expand at least 2 PPM sites (dxtic and referral +/- Rx) per woreda: Training cost for HCW and Lab
- Expand at least 2 Miner Association per woreda
- Link with lab EQA system
- Network all TB diagnostic labs/clinics for access to rapid molecular test services

C. Optimize facility based TB interventions

- Conduct benchmarking of available TB services in the existing HFs: Triage, Contact Investigation and ICF at high-risk clinics practice
- Conduct two days on-site sensitization training for frontline workers for TB evaluation and develop Facility based action plan for improvement
- Conduct biannual out-reach TB screening service to identified TB high risk community structures(could be with mobile van)
- Conduct annual out-reach TB screening for TB high risk subpopulation such as underground miners
- Optimize CI practice for contacts of index TB patients (also pilot feasibility of community-level screening and if possible retrograde CI)

D. Advocate for mainstreaming of TB and HSS within mining sector

- Identify and advocate for the engagement of relevant stakeholders working on mining sector(associations, professional societies, ...)
- Advocate for adoption of TB risk assessment policy (at initial employment and periodically in sectors known to have high TB risk)
- Periodically review the level and quality of integrated core TB interventions within relevant stakeholders and sectors

3. Evaluate and build evidence

- Conduct woreda-level SS for one week every Six month
- Conduct zonal level three-day biannual performance RM with stakeholders for 40 PX
- Conduct annual progress evaluation (:for yield of interventions, document best practices, and identify operational research questions)

PRIORITY INTERVENTION V. REACH 40 URBAN SLUM WEREDA KNOWN FOR HIGH TB RISK/BURDEN AND IMPLEMENT TARGETTED INTERVENTIONS

Annual Performance Target: By 2020,

- To reach 40 urban cities/towns implementing targeted TB intervention for urban poor dwellers
- To conduct quarterly community screening events in hotspot areas

Implementation Level:

The coordination and implementation depends on the administration level.

For City administrations (A.A & DD):

- Coordination: is between RHB, sub-cities and woreda HO/Kebele. Also
- Implementation: need the collaboration of HEW and health care providers at health centers. The implementation is at community level.

For Regional/zonal cities/towns:

- Coordination: is between RHB, city administration health office, and woreda HO/kebele.
- community level Implementation: the collaboration of HEW and health care providers at health centers.

Programmatic implementation: *(Assess and prioritize, Implement and build evidence)*

1. ASSESS AND PRIORITIZE WOREDA FOR TARGETED INTERVENTION

- Conduct service mapping and High-risk population size estimate and TB risk/burden based on TB performance
- Conduct stakeholder analysis and Identify potential stakeholders (define role and responsibilities)
- Conduct one day consensus building and planning workshop(with Woreda HO, HEP, CSOs, others)
- Develop and agree on annual operation plan

2. IMPLEMENT AND MONITOR

A. Community level intervention

- Conduct annual mapping of TB hotspot households/catchment areas/community structures by HEP/CSOs
- Conduct quarterly community conversation/ HH visits/ coffee ceremony by HEP/CSO with key affected population community (& Distribute stigma and other leaflet for KAP)
- Conduct HH contact identification and referral for all index cases
- Organize Biannually Community awareness creation and TB mass screening events for community level Hotspots
- Conduct TB screening using other sister programs platforms/campaigns to integrate

B. TB service expansion (2 PPM per existing 1 public health facilities based on assessment result)

- Expand at least 2 PPM sites (dxtic and referral +/- Rx) per woreda: Training cost for HCW and Lab
- Link with lab EQA system
- Network all TB diagnostic labs/clinics for access to rapid molecular test services

C. Optimize facility based TB interventions

- Conduct benchmarking of available TB services in the existing HFs: Triage, Contact Investigation and ICF at high-risk clinics practice
- Conduct two days on-site sensitization training for frontline workers for TB evaluation and develop Facility based action plan for improvement
- Conduct biannual out-reach TB screening service to identified TB high risk community structures (HWS, shelters) (could be with mobile van)
- Conduct annual out-reach TB screening for TB high risk subpopulation such as underground miners, mobile pastorals, urban hotspots
- Optimize CI practice for contacts of index TB patients (also pilot feasibility of community-level screening and if possible retrograde or follow on screening CI).

D. Promote for TB multi-sectoral response and HSS within urban Health

- Identify and advocate for the engagement of relevant stakeholders working on Urban health (associations, professional societies, CSO ...)
- Advocate for adoption of TB risk assessment (at initial employment and periodically in sectors known to have high TB risk (factories, mega projects,....)
- Periodically review the level and quality of integrated core TB interventions within relevant stakeholders and sectors

3. Monitor, evaluate and build evidence

- Conduct SS every Six month
- Conduct three-day biannual performance RM with stakeholders
- Conduct annual progress evaluation (:for yield of interventions, document best practices, and identify operational research questions)
- Cost of additional RR tools
- Document and publish innovative strategies and approaches
- Experience sharing visits
- Recognize best performing cities/towns on National TRAC events

PRORITIIY INTERVENTION VI. IDENTIFY AND IMPLEMENT 22 PASTORAL WOREDA FOR OPTIMIZED TB CARE SERVICE

Purpose: The main aim of targeted interventions at selected woreda which are identified/known to have be home for TB high risk populations.

Annual Performance Target:

- To reach 28 mobile pastoral communities
- To conduct quarterly community screening events in hotspot areas
- To detect 60 TB cases per implementation area annually

Implementation level:

- Woreda/Zones with predominantly mobile pastoral community known to be underserved despite high TB burden

Programmatic implementation: *(Assess and prioritize, Implement and build evidence)*

1. ASSESS AND PRIORITIZE WOREDA

- Conduct service mapping and High-risk population size estimate and TB risk/burden based on TB performance
- Conduct stakeholder analysis and Identify potential stakeholders (define role and responsibilities)
- Conduct one day consensus building and planning workshop(with Woreda HO, HEP, CSOs, others)
- Develop and agree on annual operation plan

2. IMPLEMENT AND MONITOR

A. Community level intervention

- Conduct annual mapping of TB hotspot households/catchment areas/community structures by HEP/CSOs
- Conduct quarterly community conversation/ HH visits/ coffee ceremony by HEP/CSO with key affected population community (& Distribute stigma and other leaflet for KAP)
- Conduct HH contact identification and referral for all index cases
- Organize Biannually Community awareness creation and TB mass screening events for community level Hotspots
- Conduct TB screening using other sister programs platforms/campaigns to integrate

B. TB service expansion (to 1 public and 2 PPM based on assessment result)

- Expand at least 1 public site (dxtic and referral +/- Rx) per wereda: Training cost for HCW and Lab
- Expand at least 2 PPM sites (dxtic and referral +/- Rx) per wereda: Training cost for HCW and Lab
- Link with lab EQA system
- Network all TB diagnostic labs/clinics for access to rapid molecular test services

C. Optimize facility based TB interventions

- Conduct benchmarking of available TB services in the existing HFs: Triage, Contact Investigation and ICF at high-risk clinics practice
- Conduct two days on-site sensitization training for frontline workers for TB evaluation and develop Facility based action plan for improvement
- Conduct biannual out-reach TB screening service to identified TB high risk community structures (HWS, shelters) (could be with mobile van)
- Conduct annual out-reach TB screening for TB high risk subpopulation such as underground miners, mobile pastorals, urban hotspots
- Optimize CI practice for contacts of index TB patients (also pilot feasibility of community-level screening and if possible retrograde CI)

D. Program leadership and coordination on pastoral health

- establish collaborative framework with HHS and HEP directorate for pastoral health
- Support mobile TB service to develop system for integrated health services for mobile communities
- Identify and advocate for the engagement of relevant stakeholders working on Pastoral health (Agricultural sector, pastoral development organizations/projects)

3. Evaluate and build evidence

- Conduct wereda-level SS for one week every Six month

- Conduct zonal level three-day biannual performance RM with stakeholders for 40 PX
- Conduct annual progress evaluation (:for yield of interventions, document best practices, and identify operational research questions)
- Cost of additional RR tools
- Document and publish innovative strategies and approaches
- Experience sharing visits
- Recognize best performing woredas on National TRAC events

PRORITIY INTERVENTION VII. IMPLEMENT TAILORED TB SERVICES IN 27 WEREDA SERVING REFUGEES AND RETURNEES AND HOST COMMUNITY

Annual Performance Target:

- To reach 27 mobile pastoral communities
- To conduct quarterly community screening events in hotspot areas
- To detect ____ TB cases annually

Implementation levels:

- refugee community in the camp and
- health facilities serving refugees and returnees population, and
- Surrounding host communities

Responsible: Zones/woreda HO and Administration for Refugee & Returnee Affairs (ARRA)

Programmatic implementation: *(Assess and prioritize, Implement and build evidence)*

1. ASSESS AND PRIORITIZE WOREDA FOR TARGETED INTERVENTION

- Conduct service mapping and High-risk population size estimate and TB risk/burden based on TB performance
- Conduct stakeholder analysis and Identify potential stakeholders (define role and responsibilities)
- Identify mechanism for cross-broader collaboration
- Conduct one day consensus building and planning workshop(with Woreda HO, HEP, CSOs, others)
- Develop and agree on annual operation plan

2. IMPLEMENT AND MONITOR

A. Community level intervention

- Conduct annual mapping of TB hotspot households/catchment areas/community structures by HEP/CSOs
- Conduct quarterly community conversation/ HH visits/ coffee ceremony by HEP/CSO with key affected population community (& Distribute stigma and other leaflet for KAP)
- Conduct HH contact identification and referral for all index cases
- Organize Biannually Community awareness creation and TB mass screening events for community level Hotspots
- Conduct TB screening using other sister programs platforms/campaigns to integrate

B. TB service expansion (to 1 public and 2 PPM based on assessment result)

- Expand at least 1 public site (dxtic and referral +/- Rx) per woreda: Training cost for HCW and Lab

- Expand at least 2 PPM sites (dxtric and referal +/- Rx) per wereda: Training cost for HCW and Lab
- Link with lab EQA system
- Network all TB diagnostic labs/clinics for access to rapid molecular test services

C. Optimize facility based TB interventions

- Conduct benchmarking of available TB services in the existing HFs: Triage, Contact Investigation and ICF at high-risk clinics practice
- Conduct two days on-site sensitization training for frontline workers for TB evaluation and develop Facility based action plan for improvement
- Conduct biannual out-reach TB screening service to identified TB high risk community structures (HWS, shelters) (could be with mobile van)
- Conduct annual out-reach TB screening for TB high risk subpopulation such as underground miners, mobile pastorals, urban hotspots
- Optimize CI practice for contacts of index TB patients (also pilot feasibility of community-level screening and if possible retrograde CI)

D. Multi-national response to TB/DRTB responses among refugees and returnees

- Negotiate with multi-countries to establish access to TB/DRTB services regardless of the country of origin/nationalities.
- Scale up TB diagnostic and DST screening capacities for refugees
- Support TB/DRTB patients to ensure optimal adherence to treatment
- Establish mechanism of patients referral and communication up on crossing borders

3. Evaluate and build evidence

- Conduct wereda-level SS for one week every Six month
- Conduct zonal level three-day biannual performance RM with stakeholders for 40 PX
- Conduct annual progress evaluation (:for yield of interventions, document best practices, and identify operational research questions)
- Cost of additional RR tools
- Document and publish innovative strategies and approaches
- Experience sharing visits
- Recognize best performing woredas on National TRAC events

PRORITIY INTERVENTION VIII. INTEGRATE TB SERVICES IN TO 200 WEREDA WITH KNOWN HIGH TB RISK COMMUNITY STRUCTURES

Annual Performance Target:

- To reach 100 Homes for the vulnerable (: elderly population, OVC, People with Mental development limitation...)
- To engage 100 holy water sites with residential spaces
- To engage with ____ traditional healers
- To reach out 20 megaproject sites having seasonal migrant workers
- 200 Community health extension worker mapped TB high-risk community structures in their annual work plan
- To conduct quarterly community screening events in hotspot areas
- To detect ____ TB cases annually

Implementation levels:

- Homes for vulnerable in the catchment community

- Holy water sites with residential spaces
- Traditional healers and CAM
- Megaproject sites
- Health posts

Responsible: Community health extension workers and woreda HO

Programmatic implementation: *(Assess and prioritize, Implement and build evidence)*

1. ASSESS AND PRIORITIZE WOREDA FOR TARGETED INTERVENTION

- Conduct service mapping and High-risk population size estimate and TB risk/burden based on TB performance
- Conduct stakeholder analysis and Identify potential stakeholders (define role and responsibilities)

Interventions:

- conduct mapping of high risk community structures by HEWs as part of CTBC
- Identify potential stakeholders in the community
- collaborate with religious leaders and representatives of TH and CAM and homeless shelters
- conduct sensitization and consensus building workshops with representatives of community structures identified as TB high risk settings

2. IMPLEMENT AND MONITOR

A. Community level intervention

- Introduce pre-entry, period TB screening program using symptom based screening algorithms
- Arrange referral network between the providers and nearby health facility
- Provide referral slips and presumptive log forms
- Conduct periodic community level mass screening event for hot spot community level settings
- Arrange biannual outreach Health screening services(including TB screening) from the nearby health facilities

3. Evaluate and build evidence

- Conduct wereda-level SS for one week every Six month
- Conduct zonal level three-day biannual performance RM with stakeholders for 40 PX
- Conduct annual progress evaluation as part of CTBC services (:for yield of interventions, document best practices, and identify operational research questions)
- Document and publish innovative strategies and approaches
- Recognize best performing woreda on National TRAC events

PRORITIY INTERVENTION IX. EXPAND COMPREHENSIVE TB SERVICES AT 65 PRISONS AND 44 UNIVERSITIES

TB high risk/prevalent Institutions prioritized for targeted TB services interventions include:

- Prisons
- Universities and boarding institutions

Responsible: woreda/zonal HD

Activities: (Assess and prioritize, Implement and build evidence)

Programmatic implementation: (*Assess and prioritize, Implement and build evidence*)

1. ASSESS AND PRIORITIZE WOREDA FOR TARGETED INTERVENTION

National/Regional:

- Mapping of woreda with Prisons and Universities and boarding institutions
- Benchmarking of current level of TB services and performance

Woreda level Interventions:

- conduct mapping of high risk community structures by HEWs as part of CTBC
- Identify potential stakeholders in the community
- collaborate with Prison administrations and boarding institutions
- conduct sensitization and consensus building workshops with representatives of Prison administrations and boarding institutions as TB high risk settings
- Develop and agree on annual operation plan

2. IMPLEMENT AND MONITOR

A. Community level intervention

- Introduce pre-entry, period TB screening program using symptom based screening algorithms
- Arrange referral network between the providers and nearby health facility
- Provide referral slips and presumptive log forms
- Conduct periodic community level mass screening event for hot spot settings
- Arrange biannual outreach Health screening services(including TB screening) from the nearby health facilities

3. Evaluate and build evidence

- Conduct wereda-level SS for one week every Six month
- Conduct zonal level three-day biannual performance RM with stakeholders for 40 PX
- Conduct annual progress evaluation (:for yield of interventions, document best practices, and identify operational research questions)
- Document and publish innovative strategies and approaches
- Recognize best performing woreda on National TRAC events

C. Optimize facility based TB interventions at prisons and boarding institutions

- Conduct benchmarking of available TB services in the existing HFs: Triage, Contact Investigation and ICF at high-risk clinics practice
- Conduct two days on-site sensitization training for frontline workers for TB evaluation and develop Facility based action plan for improvement
- Conduct biannual out-reach TB screening service to identified TB high risk community structures (HWS, shelters) (could be with mobile van)

- Conduct annual out-reach TB screening for TB high risk subpopulation such as underground miners, mobile pastorals, urban hotspots
- Optimize CI practice for contacts of index TB patients (also pilot feasibility of community-level screening and if possible retrograde CI)

3. Evaluate and build evidence

- Conduct woreda-level SS for one week every Six month
- Conduct zonal level three-day biannual performance RM with stakeholders for 40 PX
- Conduct annual progress evaluation (:for yield of interventions, document best practices, and identify operational research questions)
- Cost of additional RR tools
- Document and publish innovative strategies and approaches
- Experience sharing visits
- Recognize best performing woreda on National TRAC events

REFERENCES:

ANNEXES:

ANNEX 1. PHYSICAL IMPLEMENTATION PLAN OF PRIORITY INTERVENTIONS

Plan of prioritized interventions	Implementing units	Target	Base line (2010)	#TB notified	Expected of TB case/unit	2018/19		2019/20		2020/21		Total By 2020
						Q	#TB	Q	#TB	Q	#TB	
Facility based Tailored interventions	2 ^o /3 ^o Hospitals	150	TBD	15,062	308	50	15417	100	30834	150	46252	92,503
	primary hospital and High load health centers	850	TBD		36	192	6947	550	13391	850	18791	39,128
	PPM sites	2074	237			274		1274		2074		
1958		388	11,209	30	688	20640	1058	31740	1958	58740	111,120	
Community Contact investigation	HF	3300		795	2	1000	2000	2000	4000	3300	4600	10,600
Woreda with Mining populations	Community, Health facilities	40	6	91	38	25	938	30	1125	40	1500	3,563
Woreda with urban poor population	Community,	TBD	3	24	38	20	750	46	1725	60	2250	4,725
Woreda with mobile pastoral community	Community,	122	TBD	0	20	10	200	20	400	28	560	1,160
Woreda with High risk community structures	Holy water sites(HWS)	TBD	TBD		5	6	29	16	77	16	77	182
	shelters for poor elderly	TBD	AA + DD	92	12	10	120	16	192	16	192	504
Woreda/zones with large refugee populations(camps)	Community, health facility	928,663	0	66	71	10	711	20	1422	27	1920	4,053
prisons	Prison, catchment HF	123,000	65	157	5	65	312	65	312	65	312	936
seasonal migrant workers	community and mega Workplace	TBD		1	12	20	240	20	240	20	240	720
Health workers TB surveillance	HF	TBD	17	11	0	0	0	100	0	150	0	-
				27,508			48303		85458		135433	269,194

ANNEX 2. BUDGETTING FOR INTERVENTION 20-18 TO 2020

Table: Summary of cost per interventions and TB commodity cost by year

	<i>priority interventions</i>	implementat ion level	calendar year		
			2018	2019	2020
i	Buid the <i>Programmatic capacity for tailored intervention for KAPs</i>	NTP/RHB	301,743.23	291,882.31	287,578.15
ii	<i>Engage 150 hospitals to find missed TB cases</i>	secondary and tertiary hospitals	745,571.05	1,291,345.66	1,864,890.17
ii	<i>Engage 850 high volume HFs in PHCU (192 primary hospitals and 658 hcs) to find missed TB cases</i>	primary hospitals and large volume hcs	2,252,378.59	3,376,574.43	4,245,369.27
iii	<i>intensify contact investigation practices in 3300 TB service providers</i>	health facility, community, cso	1,465,327.78	1,588,605.82	1,681,064.36
iv	<i>reach 40 mining woreda with targeted interventions</i>	community	404,968.47	485,962.16	647,949.55
v	<i>reach 40 urban slum woreda known for high TB risk/burden and implement targeted interventions</i>	community	330,442.97	760,018.83	780,326.40
vi	<i>Identify and implement 28 pastoral woreda for optimized TB care service</i>	community	170,044.24	340,088.47	461,817.91
vii	<i>implement tailored TB services in 27 woreda serving refugees community</i>	refugee community	215,698.23	431,396.46	582,385.22
viii	<i>collaborate with 200 high risk community structures(100 hws and 100 home for vulnerable)</i>	community	548,541.97	1,073,470.23	1,073,470.23
ix	<i>Expand comprehensive TB services at 65 prisons and 44 universities</i>	prisons population and university	140,362.63	143,596.72	146,830.82
	total		3,586,096.50	4,794,062.14	5,230,818.26

Detailed Budget plan for 2018 to 2020

Major activities	Implementation level	Cost type	Implementation period in Calendar Year						
			2018		2019		2020		
			Q	budget	Q	budget	Q	budget	
Build the Programmatic capacity for tailored intervention for KAPs									
▪ Conduct two-days national stakeholder consultative workshop	National	cost per person	60	7,929.34	0	-	0	-	
▪ Finalize the operational guide and develop three-years implementation plan	National	cost per document	1000	1,793.40	0	-	0	-	
▪ Conduct two-days national stakeholder consensus building and planning workshop	National	cost per person	60	8,290.89	60	8,290.89	60	8,290.89	
▪ Document and publish innovative strategies and approaches	National	cost of a publication	1	71.74	1	71.74	1	71.74	
▪ Support experience sharing visits	National	cost per person	1	4,370.73	1	4,370.73	1	4,370.73	
▪ Recognize best performing woreda on National TRAC events	National	cost per region	11	780.13	11	780.13	11	780.13	
▪ Support hospital-RHB forum to promote for QI project	National	cost per person	60	138.18	60	8,290.89	60	8,290.89	
▪ Develop curriculum for sensitization of program managers programming intervention for KAP	National	cost per person	60	8,290.89	0	-	0	-	
▪ Conduct national level sensitization for 100 program manager in three rounds	National	cost per person	100	13,818.15	100	13,818.15	100	13,818.15	
▪ Conduct ToT on clinical seminars for 100 clinicians	National	cost per person	100	13,827.12	100	13,827.12	100	13,827.12	
▪ Develop TB-stigma reduction toolbox	National	cost per mission for a person	1	340.03	1	340.03	1	340.03	
▪ Develop, duplicate and distribute leaflets for targeted woreda	National	cost per annum	1	10,760.40	1	10,760.40	1	10,760.40	
▪ Develop, and transmit KAP targetted BCC Radio spot message	National	Biannual radio cost	1	6,025.82	1	6,025.82	1	6,025.82	
▪ Develop, and transmit KAP targetted BCC TB spot message	National	Biannual TV/ radio spot cost	1	46,850.79	1	46,850.79	1	46,850.79	
▪ Develop, duplicate and distribute Additional RR forms for targeted interventions	National	cost per woreda per annum	100	8,608.32	100	8,608.32	50	4,304.16	
▪ Sensitize parliamentarians and political leaders on KAP for TB	National	cost per px	30	772.96	30	772.96	30	772.96	

▪ Conduct and Negotiate national consensus building workshop on MSR response for TB	National	cost per participant	30	1,023.13	30	1,023.13	30	1,023.13
▪ Build the capacity of relevant sectors to strengthen sectoral TB prevention and control activities by defining minimum TB packages	National	cost per participant	150	20,092.36	150	20,092.36	150	20,092.36
▪ Periodically monitor and evaluate the progress of MSR for TB within relevant sectors	National	cost per participant	30	2,726.69	30	2,726.69	30	2,726.69
▪ Conduct Annual rapid assessment to map woreda with priority KAP setting/populations	National /Regional	cost per region per yr	14	83,402.90	14	83,402.90	14	83,402.90
▪ Build programmatic coordination and management capacity for KAP tailored interventions	National /Regional	cost per region per annum	11	4,544.48	11	4,544.48	11	4,544.48
▪ Conduct national level annual survey to track progress towards KAP to intervention areas	National /Regional	once per annum	1	7,295.55	1	7,295.55	1	7,295.55
▪ Conduct regional level performance monitoring workshop for targeted KAP intervention annually	National /Regional	cost per region per annum	11	49,989.24	11	49,989.24	11	49,989.24
Subtotal				301,743.23		291,882.31		287,578.15
<i>Engage 150 High volume HFs to Optimize TB services to find missed TB cases</i>	2 nd / 3 rd hospital			-		-		-
▪ Conduct two-day National consensus building and planning workshop with hospital management and other stakeholders	TB case detection	cost per person	50	6,697.45	100	13,394.91	150	20,092.36
▪ Conduct regional consensus building workshop with facility managements and respective department	TB case detection	cost per session per region	11	49,989.24	11	49,989.24	11	49,989.24
▪ Innovate and Introduce referral confirmation system (:phone and feedback paper, woreda review meeting)	TB case detection	once on Yr 1	1	9,835.90	0	-	0	-
Support cost of cartilage for Xpert MTB/Rif assay services for the additional TB cased from KAP(25% of the need)	TB diagnostics	cost per a TB case detected	15417	376,029.27	30834	752,058.54	46252	1,128,087.80
▪ Support service cost imaging services and reading cost for improved interpretation capacity	TB diagnostics	cost per facility per year	50	53,802.01	100	107,604.02	150	161,406.03
▪ Support pathology units for improved access to FNA cytology and biopsy services	TB diagnostics	cost per facility per year	50	43,041.61	100	86,083.21	150	129,124.82

<ul style="list-style-type: none"> Conduct biannual, two days on-site sensitization training for frontline workers 	TB case detection	cost for of 4 session per HF per yr	100.00	85,007.17	200	170,014.35	300	255,021.52
<ul style="list-style-type: none"> Conduct clinical case symposiums to review on difficult case management (CME on TB) 	TB case detection	cost for of a session per region	11	33,398.49	11	33,398.49	11	33,398.49
<ul style="list-style-type: none"> Health care workers Health screening (reimburse cost of laboratory screening tests (Blood Glucose screening test, CXR, Xpert tests...as per the protocol) 	TB-IC	cost of 2 round program per facility per year	50	17,934.00	0	-	0	-
<ul style="list-style-type: none"> Provide supportive supervision support from Regional level 	Regional	cost for a team per zone	11	10,879.66	11	10,879.66	11	10,879.66
<ul style="list-style-type: none"> Conduct Regional level annual progress monitoring meetings 	Regional	cost per session	11	49,989.24	11	49,989.24	11	49,989.24
<ul style="list-style-type: none"> Support access to digital imaging services and improved interpretation capacity using CAD4TB at selected facilities. 	TB diagnostics	cost on yr one	50	8,967.00	100	17,934.00	150	26,901.00
Subtotal				745,571.05		1,291,345.66		1,864,890.17
Engage 850 High volume HFs in PH unit (192 primary hospitals and 658 HCs) to Optimize TB services to find missed TB cases	primary Hospitals and HCs			-		-		-
Support specimen referral cost from 700 non-xpert sites	HC		1	2,066.00	2	4,131.99	2	4,131.99
Support cost of cartilage for Xpert MTB/Rif assay services for the additional TB cased from KAP(25% of the cost)	TB diagnostics	cost per a TB case detected	6947	42,357.07	13391	81,649.76	18791	114,576.59
<ul style="list-style-type: none"> Conduct biannual, two days on-site sensitization training for frontline workers 	TB case detection	cost for of 4 session per HF/yr	192	582,955.52	550	1,669,924.68	850	2,580,792.68
<ul style="list-style-type: none"> Support access to digital imaging services and improved interpretation capacity using CAD4TB at selected facilities. 	TB diagnostics	cost onf digital Xray	65	1,625,000.00	65	1,625,000.00	62	1,550,000.00
Subtotal				2,252,378.59		3,376,574.43		4,245,369.27
Priority Intervention III. Intensify contact Investigation PRACTICES in 3300 TB SERVICE PROVIDER CLINICS	HF/ community			-		-		-

▪ Administer preventive therapy for identified TB exposed PLHIV and under-five children	TB treatment	Cost of PT per case	55797	1,415,338.54	60657	1,538,616.59	64302	1,631,075.12
▪ Conduct sensitization on National CI SOP	TB case detection		11	49,989.24	11	49,989.24	11	49,989.24
Sub-total				1,465,327.78		1,588,605.82		1,681,064.36
Reach 40 MINING WEREDA with Targeted interventions				-		-		-
Conduct baseline assessment of popn size, TB burden, access to Health services and local level stakeholder analysis	CBTC	cost per zone to visit 10 woreda	25	45,373.03	30	54,447.63	40	72,596.84
Conduct consensus building workshops with stakeholders to develop operational plan	CBTC	one per target woreda	25	53,667.50	30	64,401.00	40	85,868.01
Sensitization of HEWs, HCW and stakeholders including KAP representative	CBTC	one per target woreda	25	115,629.48	30	138,755.38	40	185,007.17
§ Conduct HH level contact identification and referral for all index cases monthly basis	CBTC		25	-	30	-	40	-
▪ Train one clinician and 1 laboratory personnel per facility to 2 PPM sites (dx tic and referral +/- Rx) per woreda:	Engaging all	cost per 1 PPM site	25	16,170.49	30	19,404.59	40	25,872.79
▪ Conduct quarterly out-reach TB screening for TB high risk subpopulation such as underground miners	community	4 community event per yr	25	31,205.16	30	37,446.20	40	49,928.26
Support cost of cartilage for Xpert MTB/Rif assay services on community events	TB diagnostics	cost per a TB case detected	938	23,706.51	1125	28,447.81	1500	37,930.42
Support service cost imaging services and reading cost for improved interpretation capacity on community events	TB diagnostics	cost per facility per yr	25	3,586.80	30	4,304.16	40	5,738.88
Conduct zonal level annual performance review meeting to evaluate the agreed operational plan	CBTC	Zonal level RM for 50Px	25	115,629.48	30	138,755.38	40	185,007.17
Sub-total				404,968.47		485,962.16		647,949.55
reach 40 urban slum WEREDA known for high TB risk/burden AND IMPLEMENT TARGETTED INTERVENTIONS				-		-		-
Conduct baseline assessment of popn size, TB burden, access to Health services and local level stakeholder analysis	CBTC		20	36,298.42	46	83,486.37	60	108,895.27
Conduct consensus building workshops with stakeholders to develop operational plan	CBTC	one per target woreda	20	42,934.00	46	98,748.21	60	128,802.01

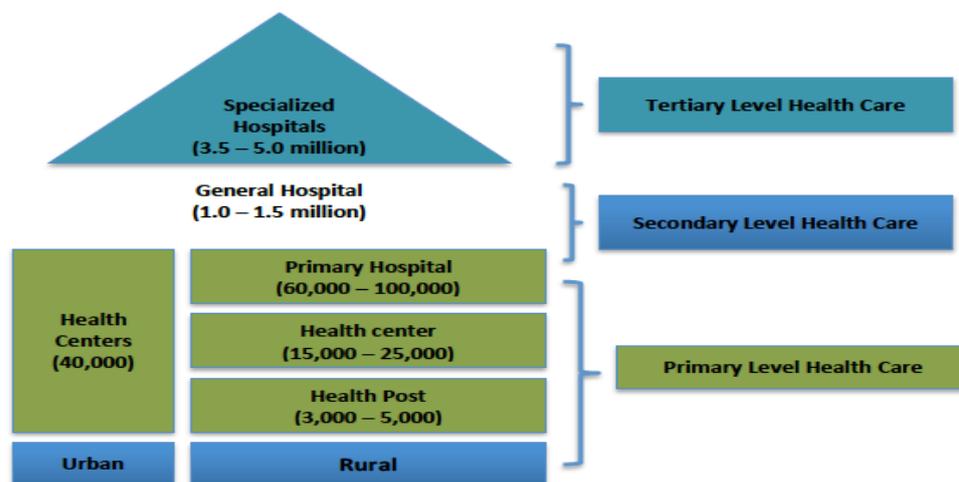
Sensitization of HEWs, HCW and stakeholders including KAP representative	CBTC	one per target woreda	20	92,503.59	46	212,758.25	60	277,510.76
§ Conduct HH level contact identification and referral for all index cases monthly basis	CBTC		0	-	0	-	0	-
▪ Train one clinician and 1 laboratory personnel per facility to 3 PPM sites (dxtic and referral +/- Rx) per woreda:	Engaging all	cost per 1 PPM site	20	19,404.59	46	44,630.56	60	58,213.77
▪ Conduct quarterly out-reach TB screening for TB high risk subpopulation	community	community event per yr	20	24,964.13	46	57,417.50	60	74,892.40
Support cost of cartilage for Xpert MTB/Rif assay services on community events (25% of the need)	TB diagnostics	cost per a TB case detected	750	18,965.21	1725	43,619.98	2250	56,895.62
Support service cost imaging services and reading cost for improved interpretation capacity on community events	TB diagnostics	cost per facility per yr	20	2,869.44	46	6,599.71	40	5,738.88
Conduct zonal level annual performance review meeting to evaluate the agreed operational plan	CBTC	Zonal level RM for 50Px	20	92,503.59	46	212,758.25	15	69,377.69
				330,442.97		760,018.83		780,326.40
Proritiy Intervention VI. IDENTIFY and implement 28 PASTORAL Woreda FOR OPTIMIZED tb CARE SERVICE Programmatic implementation: (Assess and prioritize, Implement and build evidence)				-		-		-
Conduct baseline assessment of popn size, TB burden, access to Health services and local level stakeholder analysis	CBTC		10	18,149.21	20	36,298.42	28	50,817.79
Conduct consensus building workshops with stakeholders to develop operational plan	CBTC	one per target woreda	10	21,467.00	20	42,934.00	28	60,107.60
Sensitization of HEWs, HCW and stakeholders including KAP representative	CBTC	one per target woreda	10	46,251.79	20	92,503.59	28	129,505.02
Conduct one week TB screening events quarterly	CBTC	4 com event per yr	10	12,482.07	20	24,964.13	28	34,949.78
§ Conduct HH level contact identification and referral for all index cases monthly basis	CBTC		10	-	20	-	28	-
§ Train one clinician and 1 laboratory personnel per facility to 2 PPM sites (dxtic and referral +/- Rx) per woreda:	Engaging all care providers	cost per 1 PPM site	10	6,468.20	20	12,936.39	28	18,110.95
§ Conduct quarterly out-reach TB screening for TB high risk subpopulation	TB case detection	4 com event per yr	10	12,482.07	20	24,964.13	28	34,949.78

Identify and advocate for the engagement of relevant stakeholders working on Pastoral health	CTBC								
Support cost of cartilage for Xpert MTB/Rif assay services on community events	TB diagnostics	cost per a TB case detected	200	5,057.39	400	10,114.78	560	14,160.69	
□ Support service cost imaging services and reading cost for improved interpretation capacity on community events	TB diagnostics	cost per facility per yr	10	1,434.72	20	2,869.44	25	3,586.80	
Conduct zonal level annual performance review meeting to evaluate the agreed operational plan	CBTC	Zonal level RM	10	46,251.79	20	92,503.59	25	115,629.48	
				170,044.24		340,088.47		461,817.91	
Priority Intervention VII. IMPLEMENT TAILORED tb SERVICES in 27 wereda serving Refugees and returnees and host COMMUNITY Programmatic implementation: (Assess and prioritize, Implement and build evidence)	refugee camp and host communities, health facilities			-		-		-	
Conduct baseline assessment of popn size, TB burden, access to Health services and local level stakeholder analysis	CBTC		10	18,149.21	20	36,298.42	27	49,002.87	
Conduct consensus building workshops with stakeholders to develop operational plan	CBTC	one per target woreda	10	21,467.00	20	42,934.00	27	57,960.90	
Sensitization of HEWs, HCW and stakeholders including KAP representative	CBTC	one per target woreda	10	46,251.79	20	92,503.59	27	124,879.84	
Conduct one week TB screening events quarterly	CBTC	4 comm event per yr	10	12,482.07	20	24,964.13	27	33,701.58	
§ Conduct HH level contact identification and referral for all index cases monthly basis	CBTC		10	-		-	27	-	
§ Train one clinician and 1 laboratory personnel per facility to PPM sites (dxstic and referral +/- Rx) per woreda:	Engaging all care providers	cost per 1 PPM site	10	3,234.10	20	6,468.20	27	8,732.07	
§ Conduct quarterly out-reach TB screening for TB high risk subpopulation such as underground miners	TB case detection	4 community event per yr	10	12,482.07	20	24,964.13	27	33,701.58	
Support cost of cartilage for Xpert MTB/Rif assay services on community events	TB diagnostics	cost per a TB case detected at nonXPert site	711	53,945.48	1422	107,890.96	1920	145,652.80	
□ Support service cost imaging services and reading cost for improved interpretation capacity on community events	TB diagnostics	cost per facility per yr	10	1,434.72	20	2,869.44	27	3,873.74	
Conduct zonal level annual performance review meeting to evaluate the agreed operational plan	CBTC	Zonal level RM for 50Px	10	46,251.79	20	92,503.59	27	124,879.84	

					215,698.23		431,396.46		582,385.22
	Subtotal								
	<i>Collaborate with 200 high risk community structures(100 HWS and 100 Home for vulnerable)</i>				-		-		-
	Conduct consensus building workshops with stakeholders to develop operational plan	CBTC	one per target woreda	11	23,613.70	11	23,613.70	11	23,613.70
	Sensitization of HEWs, HCW and stakeholders including KAP representative at zones level	CBTC	one per target woreda	100	462,517.93	200	925,035.87	200	925,035.87
	Conduct one week TB screening events at the permises of high risk community structures on quarterly basis	CBTC	2 comm events per yr	100	62,410.33	200	124,820.66	200	124,820.66
	Conduct HH level contact identification and referral for all index cases identified from community level high risk settings	CBTC		0	-	0	-	0	-
	Subtotal				548,541.97		1,073,470.23		1,073,470.23
	<i>Expand Comprehensive TB services at 65 prisons and 44 Universities</i>	Prison & University			-		-		-
	Conduct baseline assessment of popn size, TB burden, access to Health services and local level stakeholder analysis	TB case detection		11	19,964.13	11	19,964.13	11	19,964.13
	§ engage University student clinic as PPM Site (Train one clinician and 1 laboratory personnel per facility PPM sites dxtic and referral +/- Rx)	Engaging all care providers		24	7,761.84	34	10,995.93	44	14,230.03
	Conduct baseline benchmarking of Tb services in the selected Health facilities	TB case detection		65	-	65	-	65	-
	Conduct sensitization workshop with prison administration and catchment Health facility to develop operational plan	TB case detection		11	23,613.70	11	23,613.70	11	23,613.70
	Conduct HH level contact identification and referral for all index cases from prison setting	TB case detection		65	-	65	-	65	-
	Conduct quarterly integrated outreach TB-HIV and mental screening and care for prisoners from nearby facility	TB case detection		65	81,133.43	65	81,133.43	65	81,133.43
	Support cost of cartilage for Xpert MTB/Rif assay services	TB diagnostics	cost per a TB case detected at non XPert site	312	7,889.53	312	7,889.53	312	7,889.53
	Subtotal				140,362.63		143,596.72		146,830.82
	Total				3,586,096.50		4,794,062.14		5,230,818.26

ANNEX 3: TB SERVICES GAPS IN HEALTH DELIVERY SYSTEM IN ETHIOPIA

Ethiopia implements three tier health care delivery system whereby hospitals are organized under secondary and tertiary level to provide referral care services for primary care units that are providing first line services in the peripheral and community level, see below.



TB services delivery Organization in the secondary and tertiary care facilities

In the decentralized health service care model in Ethiopia, most hospitals are mainly engaged in the identification, evaluation and diagnosis of sick patients with TB, who usually get referred by health care workers in the primary care levels. Once the diagnosis of TB is established, the provision of DOT for TB patients is often handled by the primary health care units by health centers and health posts.

Hospitals also serve as treatment initiating centers for patients with diagnosis drug resistant TB.

According to Annual performance report in 2009 EFY by FMoH, by the end of EFY 2009 EC, there are 266,3622 & 16660 functional hospitals, health centers and health post while there were 62 private hospitals of all types, 536 specialty clinic, 1308 medium clinics and 5401 primary clinics delivering health services to the population, see the table below for details by regions.

i) TB services delivery expansion level by functional health services:

As of June 2018, there were 156 Hospitals, 3300 health centers, are providing comprehensive TB services while 54 of them additionally provide comprehensive DR-TB treatment services. The regional distribution of hospitals is shown in table below.

By the end of 2017, the number of PPM-DOTS health care facilities throughout the country reached around 700 private, 130 other governmental and 50 workplace health care facilities (PPM IG 2017: 9)

However, the access to TB services at Private health facilities is far below the national PPM action plan that targeted to engage more Private HFs with the aim to find detect 26% of the national target which could close the missed TB cases gap.

Profiles of Health facilities providing TB care services as of June 2010 EFY

Region	Public Health facilities				Private Health facilities			
	Hospitals	Health centers	Health center with no functional AFB service	Health posts	Hospitals (all types)	Specialty clinic	Medium clinic	Primary clinic
Tigray	17	238	0		1	12	19	17
Afar	6	85	0		0	0	15	0
Amhara	75	843	285		8	17	63	75
Oromia	79	1281	171		1	10	54	74
Somai(2017)	11	132	0		0	0	0	0
Benishangul Gumuz	3	47	3		0	0	15	0
SNNPR	61	714	66		8	1	70	47
Gambella	4	27	0		0	0	13	0
Harari	4	8	0	30	2	2	0	4
Addis Ababa	6+4feder	94	0	0	19	14	26	16
Diredawa	2	15	0		5	1	13	4
Total TB provider(2010)	272	3484	525		44	57	288	237
Total functional (2009)	284	3622	3484	16660	62	536	1308	5401
	96%	96%	15%		71%	11%	22%	4.4%

ii) The Quality of TB services to detect TB cases from OPD visitors and admitted sick clients

In the past, the national program of Ethiopia has heavily relied on identification and detection of TB patients among OPD visitors and admitted sick clients using patient-initiated case pathways. However, the yield of this intervention seems to be stagnated beyond decades despite incremental programmatic investment for TB service expansion.

As literatures report up to 50% of the missed TB cases have had visited health facilities,

optimizing quality standards of TB services in Health facilities continues to be the main interventions area in Ethiopia.

National Health Service utilization in 2009:

Indicator	Definition	Total number /yr	Performance in 2009
Outpatient (OPD) attendance per capita	Average number of outpatient visits (including new and repeat visits) per person per year.	71,065,160	0.8(0.2:1.8)
Admission rate:	number of inpatient admissions per 1000 population.(per yr)	1,144,522	12.1(4.9:72.8)
Bed occupancy rate:	Average percentage of occupied beds during the period under review (usually one year).		38.3% (15.7%:44.1%)
Average length of stay (in days):	of patients in an inpatient facility during a given period of time.		4(3:6)
National Popn size in 2009 was 94,228,814			

Source: Health and health related indicator 2009EFY.

Current gaps
TB screening practice for all OPD visitors and IPDs(<2%)
TB evaluation quality for presumptive TB cases identified(2%)
Access to rapid diagnostics xpert(150K test per annum/1.5m presumptive cases), improve use of imaging (only hospitals have Radiology services) and pathology service
Improve inter and intra-facility referral of diagnosed TB cases
Sub-optimal engagement of private providers(only 44/62 private hospitals and 297 medium clinics out of 1504 are engaged but contributed in excess of 10% of TB cases report by NTP)
Sub-optimal RR implementation in big referral hospitals

Suggested package of interventions:
<ul style="list-style-type: none"> ▪ TB awareness creation and empowerment of KAP within facility ▪ Enhanced TB case findings in service outlets(:Triaging, ICF +/- systematic screening) ▪ Optimization of contact investigation practices around index TB cases ▪ Integrations TB screening service in relevant programs ▪ Inter-and intra-facility TB patients referral & communication system ▪ Support TB diagnostic service capacity ▪ TB and comorbidities case-management capacity building ▪ Facility level TB infection control practices ▪ Programmatic organization, coordination and management

ANNEX 4. RAPID ASSESSMENT

A rapid assessment is a useful way of filling some data gaps and deciding on how to properly sample a key population. A rapid assessment is typically used in situations where data are needed quickly to develop, implement, monitor or evaluate health programmes.

It involves focusing on the characteristics of the health problem (TB related exposure and risk), the population groups affected, key settings and contexts, and social environment.

Rapid assessments commonly use qualitative data collection methods to measure perceptions, beliefs, opinions, and behaviors of populations using in-depth interviews, group discussions, mapping or observation.

overview of steps and methods for conducting a rapid assessment:

Identifying Data Gaps

Data gaps can be identified as you complete the Key Population TB Risks, Risk Drivers and Service Challenges Template (Appendix A1) and National Key Populations Prioritization Template.

These templates will help you to identify what types of data are still needed to understand and prioritize your efforts in combating TB in your country.

Target population

It is important to be certain about which target population(s) to investigate. You may identify that more than one group needs to be researched. Focusing on more than one population will require more resources and time.

Mapping

Mapping is an important data collection tool in a rapid assessment. Mapping uses graphics (such as maps, drawings and pictures) to: to collect data about individuals, social groups and the wider environment; to present data so that complex or large amounts of information are reduced into clearer, simpler graphical overviews; to understand data by highlighting trends or relationships that were not previously obvious or fully understood; to plan action, including where to conduct future quantitative research.

Using Rapid Assessment for Programmatic Interventions

One of the aims of the rapid assessment is to fill data gaps. Another aim is to plan programmatic interventions. The aim of an assessment in this framework is to develop interventions that will help you reach key populations at risk of TB infection and transmission and to scale up the access of TB services for TB key populations. Data from the assessment can be used to help develop an Action Plan. An Action plan will:

- bring together key information;
- focus and facilitate discussion to reach a consensus on what can be achieved;
- recommend interventions;
- help plan, promote and implement interventions;
- use information to be applied in planning further assessments;
- serve as the basis for developing funding proposals.

ANNEX 5: SUGGESTED MONITORING FRAMEWORK FOR TAILORED INTERVENTIONS

Intervention area	Priority population	Interventions	Implementation level	Responsible	Result	Performance monitoring measure
Community-based interventions	<ul style="list-style-type: none"> ▪ miner population ▪ Urban Woreda ▪ pastoral mobile communities, and ▪ Refugees and returnees ▪ Internally displaced people 		<ul style="list-style-type: none"> ▪ Community ▪ Community informal health providers (holy water sites, CAM and AM) ▪ Health facilities (public and private) ▪ Community structures and association of KAP ▪ Institutions 	woreda/zones		<ul style="list-style-type: none"> ▪ Number of woreda implementing intensified community TB services ▪ Number of woreda achieving the annual TB cases detection target among selected KPIs ▪ Number of contacts screened at household level ▪ Number of contact from whom TB is diagnosed ▪ Preventive therapy supported in the community ▪ Delay in diagnosis and treatment for patients identified from community structures ▪ Documenting patients journey for selected key population groups from the community
Facility-based interventions	<ul style="list-style-type: none"> ▪ Sick people visiting outpatient dept; ▪ Sick people admitted to In-patient dept; ▪ Clients of chronic care clinics for HIV, DM, COPD, renal diseases, Malignancy ▪ Under-five clinics 	<ul style="list-style-type: none"> ▪ ICF at service delivery points ▪ Targeted screening at service outlets for prioritized key populations including PLHIV, DM, COPD, elderly, under-fives...) ▪ Intensified Contact investigation ▪ Active periodic TB surveillance for HCWs 	Hospitals, Health centers, and private providers	NTP/RHB/ZHD		<ul style="list-style-type: none"> ▪ Number of health facilities implementing National TB service standard packages ▪ Number of health facilities achieving the annual TB cases detection among selected KPIs ▪ Number/proportion of contacts screened ▪ Number of contact from whom TB is diagnosed ▪ Preventive therapy coverage ▪ Number of TB cases notified among prioritized key populations per facility ▪ Documented patients journey for selected key population groups
Institution-based interventions	<ul style="list-style-type: none"> ▪ Inmates ▪ Seasonal (economic) migrant workers at mega project sites ▪ Refugees and returnees and host community ▪ vulnerable poor populations and OVC ▪ Residents of Boarding institutions such as universities, colleges... 		<ul style="list-style-type: none"> ▪ Health facilities (public, private, instructional clinics) serving prisoners, refugees and returnees, university students and seasonal immigrant workers 	Regional/Zonal / woreda health offices		<ul style="list-style-type: none"> ▪ Number of Prisons/Refugees camps/university clinics/workplaces implementing minimum standard of TB packages ▪ Number of health facilities achieving the annual TB cases detection among selected KPIs by facility type

		<ul style="list-style-type: none"> ▪ Community health posts serving the host communities ▪ Sector organization and administrative units for identified key affected population ▪ Prisons and detention centers ▪ Refugees camps and surrounding host communities ▪ Workplace clinics serving seasonal migrant workers ▪ Big boarding institutions such as Universities ▪ 		<ul style="list-style-type: none"> ▪ Number of TB cases notified among prioritize key populations by type, age, sex by provider type ▪ Delay in diagnosis and treatment ▪ Documenting patients journey for selected key population groups 	
--	--	---	--	--	--

ANNEX 6: NATIONAL SITUATION, PROGRAMMATIC BARRIERS AND RECOMMENDED PACKAGES OF INTERVENTIONS

key population groups	Barriers to early TB case finding and Treatment services	Suggested Responses
Diabetic Mellitus		
<p>National prevalence of DM: According to 2015 IDF study, there were over 1,333,200 estimated cases of diabetes in Ethiopia with estimated national DM prevalence of 2.9% among 20-79 yrs of population. However 951,300 adult populations remains undetected and not enrolled in care. Hence, from an estimated 381,900 adults who knew their diabetes, around 60%(229,140) are believed to be reachable attending chronic care services in either public and private facilities.</p> <p>Burden of TB Among patients with DM: WHO estimates that 15% of annual TB cases globally may be linked to diabetes (WHO, 2014). WHO also reported (WHO, 2013: pp75) that DM patients are known to have 3.1X increased risk to develop active TB while the risk of TB treatment failure or death is 1.69X and risk to relapse of TB to be 3.89X the general population. Workneh et al in 2017 published a systemic review that reports a global median prevalence of 16% (IQR, 9.0% - 25.3%) DM among TB patients while global median prevalence of TB among DM patients were 4.1%. Based on locally published evidences, around 5% of DM patients are reported to have Active TB while 8% of newly diagnosed TB patients to have DM (reference from ppt). Multi-site study in Amhara also (Workneh,2016) reported an increased risk of TB morality with AHR of 3.96.</p> <p>Target population:</p> <ul style="list-style-type: none"> ▪ All newly diagnosed and those in chronic care for DM in the unit. And ▪ TB patients not responding to treatment at second month, if not at baseline. 		
<p>Barriers and limitation to TB services for DM patients:</p> <ul style="list-style-type: none"> ▪ No national guidance for TB-DM integrated service ▪ Lack of Integrated services ▪ Policy gap to use sensitive screening tool and access to highly accurate diagnostics such as Xpert ▪ High out of pocket expenses ▪ Patient compliance to the complex of treatment ▪ No preventive policy for DM patients presumed to have latent TB ▪ Limited data at national and population level 	<p>I: Establish national policy, coordination and management framework for TB-DM</p> <ul style="list-style-type: none"> ▪ Advocate for national TB-DM policy, leadership, and resource allocation ▪ Define national packages of TB-DM collaborative services and program management framework ▪ Conduct service mapping to identify health facilities providing chronic care service for DM patients <p>II: Integrate comprehensive TB care for DM patients at chronic care services in Health facility</p> <ul style="list-style-type: none"> ▪ Integrate TB screening and early diagnosis of TB among DM patients ▪ Provide effective TB treatment for DM patient with TB ▪ Consider preventive therapy for DM patient presumed to have latent TB ▪ Scale up access to imaging services for sick/admitted DM patient at affordable price ▪ Ensure early access to Xpert services for DM patients presumed to have TB <p>III: Integrate DM screening and referral linkage to DM care for TB patients at Health facility</p> <ul style="list-style-type: none"> ▪ Integrate diabetic risk screening and diagnostic services for at risk TB patients(i.e. critically sick/ admitted TB patients, non-responding TB patients at second and fifth month of TB treatment and patient with TB relapse) ▪ Conduct clinical seminars and mentorship on clinical care of TB-DM ▪ Establish intra- and inter- facility patient referral and communication system between TB and DM care clinics. <p>IV: engage all care providers and TB Integration in DM care packages</p> <ul style="list-style-type: none"> ▪ Integrate minimum TB service packages in NCD program interventions ▪ Integrate TB screening services in Private providers providing chronic DM care services ▪ Identify and advocate for the engagement of stakeholders working on DM (associations, prof. societies) 	

PLHIV

National Prevalence of HIV/AIDS:

Adult HIV prevalence in Ethiopia in 2016 was estimated to be 1.1% (718,500). There is substantial prevalence variation by region (6.6% in Gambella, 5.0% in Addis Ababa, and 0.7% in SNNPR). Rates are higher urban settings, bridging small towns and among certain priority population groups. According to ARM 2016 report, 390,410 HIV population are active receiving comprehensive HIV care in 1000 ART service providing health facilities. In addition, it is estimated that 30,000 newly diagnosed people are enrolled to care annually. In 2016, 62% of the estimated people know their status while 65% are on ART. 29,000 HIV positives women who are expected to get pregnant annually (HHD2016). Only around 21,000 (5%) HIV infected children are in HIV care who at higher risk of developing TB if exposed to infectious TB cases.

Burden of TB among people living with HIV:

PLHIV's risk of developing TB is about **30 times** greater than for those who do not have HIV. TB is the most common condition among PLHIV, including those on ART (19). In 2014, 400 000 people died of HIV-associated TB, making TB one of the major causes of death among PLHIV worldwide. In addition, one third of the world's population is estimated to be living with latent TB infection (LTBI), and the risk of LTBI progressing to active TB can be up to 50 times greater for PLHIV than for those without HIV, for whom the risk is 5–10% over their lifetime; **5–15% of** PLHIV who are also living with LTBI develop active TB yearly in the absence of ART. STOP TB on its country tracking report, 50%(7,500 of 15,000) of TB cases among co-infected PLHIV are missed annually in Ethiopia. Studies conducted in Zambia, Ethiopia and South Africa demonstrates a 20-fold increase in TB incidence among children living with HIV compared to HIV negative children. (NTP annual performance report in 2017, 0.4% of HIV population in care developed active TB while 8% of TB patients are co-infected with HIV with higher reports of **25% from AA and 35%** Gambella. Preventive therapy coverage for eligible HIV populations is 45% while ART coverage for HIV positive TB patients **is 82%**.(Stop TB brief 2015 on PLHIV and children, NTP report,2017)

Recommended Services (quality statement):

All health facilities providing chronic HIV care services for people living with HIV/AIDS should:

- All newly enrolled and those in care for HIV service must receive intensified TB screening service;
- All HIV positive pregnant women needs to be screened for TB(2-4X) during ANC follow up visit to mch clinic
- PLHIV who meet presumptive TB criteria should submit appropriate specimen for bacteriologic test using Xpert on same day and within 48 hours of if referral site for Xpert testing.
- At enrollment to HIV care, all HIV positive people who do not meet presumptive TB criteria should receive preventive therapy.
- MARPS for HIV are also recommended to have TB screening services and to access bacteriologic test using Xpert.

Barriers to early TB case finding and Treatment services:

- Variable implementation status of TB-HIV collaborative activities
- Professional compliance with the existing IPT prescribing trend
- Sub-optimal coverage of Preventive therapy for PLHIV presumed to have latent TB
- Sub-standard TB infection control practices at Health facilities
- Limitation of data quality on TB screening practice and access to Xpert for PLHIV in care
- Only one-third of TB service providing facilities have comprehensive HIV care services within the same facilities
- Limited integration of TB in the national HIV campaigns focused to MARPs

Suggested Responses:

- I: TB/HIV joint program planning, coordination and management
- Revitalize TB and HIV joint programming at program management and service delivery levels(national and lower)
 - Advocate for joint TB-HIV mentoring, performance monitoring and resource allocation
 - Conduct rapid assessment to Assess quality of HIV and TB in High volume health facilities
 - Pilot integration of HIV services packages into TB services of Non-ART service provider facilities
 - Advocate for joint TB/HIV multi-sectoral response
- II: strengthen Quality of Facility level comprehensive TB/HIV care
- Intensify Quality TB screening in ART clinic, OPDs, ANC and IPDs
 - Optimize TB screening and access to Xpert for PLHIV and MARPs
 - Scale up coverage preventive therapy and TB treatment for HIV
 - Introduce shorter regimens for preventive therapy for PLHIV
 - Scale up access to imaging services for sick PLHIV patients
 - Ensure access to Xpert services for PLHIV presumed to have TB
 - Conduct joint TB-HIV clinical seminars and mentorship
 - Scale up minimum TB IC measures in health facilities

		<ul style="list-style-type: none"> ▪ Introduce Annual TB risk assessment and screening services for HCWs in high TB-HIV volume facilities <p>III: Targeted community-level comprehensive TB/HIV care</p> <ul style="list-style-type: none"> ▪ Engage community HEP in community level joint TB and HIV screening in known high risk settings such as Prisons, miners... ▪ Targeted joint HIV-TB services in urban settings and Gambella ▪ Integrate TB screening services with community level HIV-targeted interventions by CSOs and PLWA associations. ▪ Strengthen community TB contact tracing and screening for PLHIV who are reported to have recent TB contact history
--	--	---

young children

Operational definition:
Children: in TB programming are generally refers to population age group below 15 years. However, due to the underlying increased risk, increased burden and difficulty in detecting TB in young children, this section refers to children of under-five years of age.
According to the 2007 CSA report, 14% of the total Ethiopia population are estimated to be under-five that appx. Constitute ~2 under-five per each HH size of 5 person.

Burden of TB in children:
An estimated 74 000 children die from TB each year and account for around half a million new cases annually.
The National Roadmap for Childhood TB developed in 2015 expresses its commitment for the goal of reaching zero TB deaths among children. It describes key actions and an urgent needs for enhanced investments in order to ensure that the goal is met. The roadmap capitalized on TB service integration to IMNCI/ICCM of the national child survival strategy and on intensified implementation of contact investigation around index PTB cases.

Recommended interventions for childhood TB are presented on the national roadmap document ([see reference section for the document](#)).

	<ul style="list-style-type: none"> ▪ Suboptimal integration of routine TB screening service to IMNCI and other service outlets of children ▪ inconsistent practice of contact tracing In TB clinics ▪ low IPT uptake for children with presumed latent TB ▪ No information on IPT coverage of eligible children. ▪ diagnosis of DRTB in children barely practiced ▪ Limited skill in sputum sample collection in children ▪ Limited engagement of private facilities in the childhood TB service ▪ Absence of strict follow up for pneumonia cases. ▪ Under-utilization rate of rapid diagnostic services ▪ Limited confidence and skill of frontline workers to management of TB in children 	<p>I. National/regional Policy and guidance level:</p> <ul style="list-style-type: none"> • Rollout national childhood TB road map initiatives to regions and lower levels • Support enhanced hospital based childhood TB in the hospital initiative (Capacity building of HCW, managers etc) • Strengthen the engagement of the health private sector • Guidance/direction on integration of childhood TB into other sick baby platform (Road map+ training manual) • Collaboration with other departments (such as MCH, nutrition, EPI etc...), sectors (ministry of women and children Affairs), OVCs <p>II. Intervention packages at service delivery/lower implementation level:</p> <ul style="list-style-type: none"> • Onsite-NGT aspiration demonstration and use of clinical childhood TB diagnostic alorisms • Strengthen a routine TB screening and diagnosis at other sick baby clinics. • Implement the enhanced pediatric TB care services for pediatric hospital • Orientation/training of high load private hospitals/clinics • Strengthen referral linkage between hospitals and PHU • Develop counseling tool for on preventive therapy • Inclusion of IPT completion indicators into HMIS <p>IV. Potential stakeholder at community level:</p>
--	---	---

	<ul style="list-style-type: none"> ▪ Increased barrier to access services for children living in urban poor slums, pastoral settings ▪ Weak linkage to access TB services for children living in nursing institutions 	<ul style="list-style-type: none"> • OVC, day care centers, CSO, former TB patients, VHS (Volunteer health service), community leaders (Religious leaders, IDIR, IKUB, clan leaders etc....)
Elderly (>55yrs)		
<p>Operational Definition: UN definition older persons are those people whose age is 60 years and over. And Same definition applies in Ethiopian context as it coincides with the country's official retirement age.(National plan of action for old)</p> <p>According to the estimate of the UN, the number of people aged 60 and above was 200 million in 1950, 590 million in 2000 and is projected to reach 2.1 billion in 2050. In Ethiopia, the 2007 Central Statistical Authority report shows that 3,565,161 (4.8 per cent) of the total Ethiopian population are 60 years. Of these, about 532,093 (14.9 per cent) live in urban areas, whereas the rest 3,033,068(85.1 per cent) live in rural areas of the country. (state of health and aging pp 4-5)</p> <p>Economic and health access situation to elderly population in Ethiopia: According to Helpage report,</p> <ul style="list-style-type: none"> • 4.8 million People over the age of 60. Under 19% of older people in Ethiopia receive a pension. • Over 75% of people over 60 live in chronic poverty. • 75% of older people have health problems. The most prevalent are eye problems, arthritis and hypertension. (source: Helpage) <p>63 per cent (65 per cent in rural areas and 60 per cent in urban areas) of older people find it hard to access health-care when they need it (state of health and aging pp7-8). From study conducted in Oromia, amhara and SNNPR, 42-48% of the elderly population received some medical treatment in the nearby institution in the six month period(source:vulnerability of older ppl in three regions pp22-23).</p> <p>Burden of TB in elderly: TB burden among elderly is estimated to be 2X that of general population (TB among older ppl 2014), and believed to be mainly associated with economic barrier to early access medical care and higher burden of NCDs that compromises the already aged immune system to aggravate the vulnerability to develop active TB. Elderly living in congregated settings further experiences increased risk of exposure to potential TB source cases. NTP performance report in 2017 shows 3% of TB cases were among patients older than 60 years of age.</p> <p>Target population:</p> <ul style="list-style-type: none"> ▪ OPDs attendants elderly population and Elderly population attending chronic care services(esp for DM and COPDs) in high volume health facilities ▪ Elderly Households contact of Known TB patients ▪ Residents of geriatric care centers 		
<p>Recommended Services package (quality statement): Health service delivery: ensure older people have access to effective, safe and quality health services that are standardised and follow accepted protocols and guidelines (“age-friendly” services). Organise access to health services at primary and secondary levels, as well as the referral system between the two levels. Make sure that a family member or a carer accompanies the referred older person.</p>	<ul style="list-style-type: none"> ▪ Lack of national policy for intensified TB screening in elderly service outlets and at geriatric institutions ▪ No separate geriatric TB screening and diagnosis guideline and SoP ▪ Elderly in nursing institutions may have limited access to available services ▪ Elderly may have economic barriers, could not generate income ▪ Limited mobility, some are debilitated ▪ Elderly usually do not seek medical attention due to lack of community support and stigma 	<p>I. National/regional Policy and guidance level:</p> <ul style="list-style-type: none"> • Emphasize old ages as priority risk group for TB in national policy guidelines • Guidance on targeted active TB screening and diagnosis • Make TB among the package of geriatric care centers, • Multi-sectorial collaboration should be established <p>II. Intervention packages at service delivery/lower implementation level:</p> <ul style="list-style-type: none"> • Systematic TB screening for all old ages focusing on the old ages with co-morbidities such as DM, malignancies, chronic renal failure • Prioritize this group of population for active case findings • Community awareness creation • Home to home care and TB screening for the old ages • Period screening for TB in Institution admitting poor geriatric people <p>III. Suggest Performance monitoring mechanisms:</p>

<p>Integrate care for older people in the general health system at primary and secondary levels by building partnerships with public or private health facilities and international or national non-governmental organisations.</p> <ul style="list-style-type: none"> ▪ 		<ul style="list-style-type: none"> • Screening activities should be recorded and reported, including community and geriatric care centers screening activities • Analysis of HIMIS report with age disaggregation <p>IV. Potential stakeholder at community level:</p> <ul style="list-style-type: none"> • Geriatric care centers, CSO, former patients, VHS (Volunteer health service), community leaders (Religious leaders, IDIR, IKUB, clan leaders etc....)
---	--	---

People with COPD

Operational definition:
Chronic Respiratory Diseases (CRD), include Bronchial Asthma, chronic pulmonary disease such as chronic obstructive pulmonary diseases (COPD), occupational lung diseases and chronic interstitial lung diseases.
chronic obstructive pulmonary disease (COPD) is defined as ‘a preventable and treatable disease...characterized by airflow limitation that is not fully reversible. The airflow limitation is usually progressive and associated with an abnormal inflammatory response of the lungs to noxious particles or gases’ (GOLD 2008).
Prevalence of COPD in Ethiopia:
 NO population based study to document prevalence of COPD; however, Step 2015 survey reported that 3.5% of adult population 15-64 yrs in the survey to be current smoker of tobacco on daily basis which is a proxy predictor for subsequent COPDs (steps factsheet 2015). Amsalu et al also reported that 4.6% (69) of patients registered as having COPD among 1495 patients attending chest referral clinic at Tikur Anbessa Hospital from 1986 –1988 (Source NSPfor NCD pp 6).
TB in patients with COPD:
 Tobacco smoking (and passive smoking) and indoor air pollution from burning biomass fuels in poorly ventilated kitchens and homes are major risk factors for TB. According to some estimates, up to 20% of TB cases worldwide are linked to tobacco smoking. Since smoking and burning biomass fuels indoors are highly prevalent practices 85% rural part of Ethiopia, prevalence of COPD should not be under-estimated. These practices increase the risk of not only becoming infected with TB, but also developing active TB disease, experiencing poor treatment outcomes, and relapsing.(global end TB plan 2020:59)
 COPD and TB have common risk factors such as smoking, low socioeconomic status and dysregulation of host defense functions. COPD is a prevalent co-morbid condition, especially in elderly with TB. Risk of Pulmonary TB in COPD patients is increased especially for those receiving higher doses of oral corticosteroids and other COPD medications.(Chih-Hsin Lee.2013 Risk factors for pulmonary tuberculosis in patients with chronic obstructive airway dise)
 Population-based study comprised of a large number of COPD patients shows COPD patients had **a three-fold increased** hazard ratio (HR) of developing active TB. (Inghammar M, Ekblom A, Engström G, Ljungberg B, Romanus V, et al. (2010) COPD and the Risk of Tuberculosis - A Population-Based Cohort)
 Among 144 chronic obstructive pulmonary disease patients at tikur anbessa hospital, 40% were ever smokers, and 26% had history of prior tuberculosis treatment. (tola 2017. Profile and risk factors for COPD)

	<ul style="list-style-type: none"> ▪ 	<p>Reducing the number of people who smoke and reducing indoor air pollution are therefore key interventions for ending TB. Despite the fact that tobacco smoking is such a high risk factor for TB, smoking cessation efforts are not routinely integrated into TB programmes. Advice and support for giving up smoking could form part of TB-related counselling and care on initial diagnosis. (global end TB plan 2020:59)</p>
--	---	--

Miners and Ex-miners

Operational definition:
 An **artisanal miner** or small-scale **miner (ASM)** is a subsistence **miner** who is not officially employed by a **mining** company, but works independently, **mining** various minerals or panning for gold using their own resources.

mining sectors in Ethiopia has a huge potential of various mineral resources, However, at present it contributed only to 1.5% of the GDP. The country plans to massively increase the investment in the sector to contribute 10% of the GDP by 2025. In 2016, artisan mining significantly contributes to the employment of at least 1.26 million people (1.24 million involved in gold mining) and supports the livelihood of over 7.5 million populations in 40 woreda distributed in Five regions of the country (see table below). The proportion of formally organized (licensed) artisan miners is only about 6%,i.e. about 94% of the total miners are unlicensed, and hence are informally operating.

Table. Major Mining Locations and estimated Number of Artisan Miners

Region	Zones	Number of woredas	Estimated Miner popn	Major Minerals mined
Amhara	N/wollo, N/shewa	5	18660	Opal
BGR	All Zones	13	110,950	Gold
Oromia	Guji, Borena, W/wallage, K/wallaga	13	650,200	Gold, Tantalum
SNNPR	Mizan, Sidama	4	320,200	Gold
Tigray	N/W Tigray	5	160,000	Gold
Total		40	1,259,910	

Source: regional and woreda Energy and Mines report

The majority of the artisan miners are between the ages of 18 and 45 years; economically very active and moreover they are at the at the peak of the productive/reproductive age. Artisan miners are usually not full time workers and might not be accessible throughout the year as most are migrant workers from the neighboring woredas to the mining communities of Tigray, Amhara and BGR. Mining is practiced during the day and sometimes during the night (with the help of flashlights). Mining is heavily practiced during the rainy season as water is available for washing.

TB Situation in miners

The mining community has long been associated with an exceptionally high prevalence of various lung diseases. TB rates, in particular, are very high partly as a result of the high prevalence of silicosis resulting from prolonged exposure to silica dust in sub-surface mining shafts – especially on gold mines.

The high TB rate is also associated with other several factors, including confined, humid, poorly ventilated working and living conditions, High rates of HIV transmission, health care disruptions, low socio-economic status of the workers and the seasonality of the mining period. Their mobility may also facilitate the transmission of TB to the general community. In addition, ex-miners also tend to have an increased risk of TB due to previous exposure to silica dust [11]. (TB in **mines of Zambia**). The risk of silicosis and hence TB is higher among miners who working in Sub-surface mining which consists of digging tunnels or shafts into the earth to reach buried gold ore deposits. Although the practice is not common for artisan miners, it is increasingly practised in BGR, Oromia, and SNNPR.

TB incidence among mineworkers is estimated to be as much as **three to eight times** higher than in the populations from which they originate.(framework **for TB in mining sector of SA 2014:10**). Report from USAID/HEAL TB project in Ethiopia showed the TB prevalence was 1,756 per 100,000 screened miners which is **10X higher** for TB incidence for general population in Ethiopia.

<ul style="list-style-type: none"> ▪ Lack of TB specific national policy and guidance for miners ▪ Majority of miners are artisan type ▪ Unavailability of Health services at or near mining sites. ▪ Multi-linguistic population ▪ High out of pocket cost, usually catastrophic ▪ Delayed health seeking due to fear of work Dismissal ▪ treatment Interruption related to high mobility ▪ High HIV prevalence rate ▪ Poor living status ▪ Weak referral system 	<p>I. National/regional Policy and guidance level:</p> <ul style="list-style-type: none"> • Recognize miners and Ex-miners are TB high-risk & prevalent setting • Develop targeted TB intervention packages tailored for mining sector • Mobilize resource to implement targeted intervention tailored for miners and ex-miners • Advocate recognition of TB as sectoral policy and Agenda by ministry of Mines & energy • Conduct Annual Mapping of mining sectors with increased TB risk <p>II. Targeted community based intervention packages tailored to mining sector</p> <ul style="list-style-type: none"> • Comprehensive, ongoing education on TB, HIV and silicosis targeted at miners' communities. • Education on cough hygiene for TB patients
---	--

	<ul style="list-style-type: none"> ▪ Occupational pulmonary disease caused by exposure to silica dust ▪ High Silicosis both in current and ex-miners 	<ul style="list-style-type: none"> • Provision of IPT for eligible HIV positive miners • Providing respiratory protective devices to prevent silicosis and lower TB risk • Sensitize HEWs on TB among miner communities • Conduct periodic community based TB screening for most at risk sub-populations • Conduct community based contact tracing around Index Tb cases <p>III. Targeted facility based systematic screening for miner communities</p> <ul style="list-style-type: none"> • Awareness creation activity for miners and investors • Optimize TB screening at outpatient and in-patient departments • Support access to Xpert service for presumed TB miner cases • Test all miners with TB for HIV and provide comprehensive care for HIV positive miners including preventive therapy • Support implementation of patient centered DOT as most are mobile • Screen close all contacts of index PTB case among miner community <p>IV. Multi-sectoral collaboration with Relevant stakeholders</p> <ul style="list-style-type: none"> • Identify and advocate for recognition of high TB risk in Mineral and energy sector and Artisan miners' associations working as Mining cooperatives, Small and Micro Enterprises and Mining Development Groups.
--	--	--

Urban poor	▪	
-------------------	---	--

Operational Definition:

Urban:

A slum: according to UN habitat a slum is an area that combines to various extents the following characteristics: inadequate access to safe water, inadequate access to sanitation and other infrastructure, poor structural quality of housing, overcrowding and insecure residential status.

Urban poor dwellers refers to population living in urban settings below poverty line as defined as population below lower quintile represents 20% of the country population(poverty line for the country is 29.6% in 2017 from CSA report).

People living in slum-like conditions are defined based on three core livability indicators: access to improved water supply, access to improved sanitation and overcrowding. And the population living in slum-like conditions in Ethiopia is **estimated at 12 percent**, with no significant difference across the urban space. **Urban poverty in Ethiopia. World bank 2008 report says:** (PP10-15)

urban cities and population in Ethiopia

According to CSA, in 2017, 20% of the total population is living in urban areas. The urbanization rate in Ethiopia is alarmingly growing very fast at 3.8% per year and the urban population is projected to nearly triple from 15.2 million in 2012 to 42.3 million in 2037. (source: CIA 2017 worldbook and urban review world bank).

In Ethiopia, 35 percent of the urban population live in the seven major urban centers. Among them, Addis Ababa accounts for 25 percent of the urban population, with an estimated population of 3.6 million people in the city proper and a metro population of more than 4.6 million. (CSA and urban poverty worldbank 2006). Other major cities include Dire dawa(478,595), Adama (324,000), Gondar (324,000), Mek'ele (324,000), and Hawassa (302,000).

Tuberculosis among the urban slum

In general, TB rates are higher in urban areas than in rural settings. The health risks related to unchecked urban expansion are disproportionately carried by the urban poor. In urban slum area, overcrowding, poverty, malnutrition and suboptimal access to health care, low health seeking behavior, low socio-economic status and comorbid

conditions are commonly occurred to make them vulnerable for TB compared with the general population. Moreover, TB is able to spread from the slums and other informal settlements including people who are homeless to other parts of the urban environment, rural areas and across the nation.

More than four times higher prevalence of pulmonary TB cases are estimated in study from Dhaka, Bangladesh. Similar scenario is expected in the urban centers of Ethiopian big cities where the poor segment of the population concentrates in specific urban slum areas. (STOP TB monograph)

Target population:

- Communities living in urban centers of big cities that is recognized as slum-like with large proportion of economically deprived community and higher TB burden or risk.

	<ul style="list-style-type: none"> no strategic approach Lack of patient-centeredness High out of pocket cost which is usually catastrophic Treatment and follow-up interruption Undeveloped urban HEP 	<p>I. National/regional Policy and guidance level:</p> <ul style="list-style-type: none"> Develop TB control strategic approach to big cities Support programmatic leadership capacity in priority woreda Support scale up of insurance scheme to reduce high out of pocket cost Re-vitalize Role and Responsibility of Urban HEP Engage all potential partners <p>II. Intervention packages at service delivery/lower implementation level:</p> <ul style="list-style-type: none"> Expand TB services into privates and FBOs serving the urban poor Implement service quality improvement package at all health facilities in urban settings Optimize TB case finding practice in HFs serving urban poor area Intensify TB contact tracing by engaging HEWs Organize outreach TB screening program to hotspots <p>III. Intervention packages at community level</p> <ul style="list-style-type: none"> Map TB spot communities and community structures in big cities: areas of poor dwellers, nursing institutions, holy water sites, homeless shelters... Strengthen engagement of urban HEP in TB Strengthen HP-HF linkage Conduct period HH Community TB screening in hotspots Organize Urban TB community events in hotspot areas <p>IV. Suggest Performance monitoring mechanisms:</p> <ul style="list-style-type: none"> Map KAP in urban settings and develop KAP specific data collection system <p>V. Potential stakeholder at community level:</p> <ul style="list-style-type: none"> Faith Based Organizations (FBOs) and CSOs Community volunteers Private sectors
--	---	--

Health care workers

Background: Airborne infection control measures are integral part of the TB infection control measures in Ethiopia which advocate for periodic health surveillance of health care workers working in departments that are in close contact with TB high-risk health facilities such as TB clinics, MDRTB wards, in-patient departments, OPDS and chronic care clinics. When resource allows, expanding the services to remaining relevant health care workers who are not in frequent contact but working in institutions known to carry increased risk of exposure and transmission to Tuberculosis.

TB burden among health care workers:

Health care workers (HCWs) are at an increased risk of acquiring TB compared to the general population ranging from 69 to 5,780 per 100,000 Populations. The risk is higher in low-resource, high-TB-burden settings, where HCWs are in more frequent and prolonged contact with people in an infectious stage of active TB (10). Moreover, inadequate TB infection control practices in health care facilities

A systematic review of 21 studies on 30961 HCWs across 16 countries showed prevalence of LTBI among HCWs was 37% and 2.94 (95% CI, 1.67–5.19) increased risk of Active TB compared to general population [Lydia Uden risk of TB among HCWs an updated meta analysis 2017](#). Practice of TB IC measures in west Gojam showed The proportion of proper TB infection control (TBIC) practices was 38 %. Qualitative data showed that administrative, environmental and personal respiratory protection control measures were not practiced well. Practice is influenced by Knowledge on the presence of TBIC plan [AOR = 4.25, 95 % CI: 2.46 - 7.35], knowledge on the presence of national guideline [AOR = 8.95, 95 % CI: 4.35 - 18.40] ([Kassahun Tamir 2016](#)) HCWs at 2 university hospitals in Addis Ababa TB infection control knowledge was excellent (more than 90% correct). Most HCWs felt that they were at high risk for occupational acquisition of TB (71%) and that proper TB infection control can prevent nosocomial transmission (92%). Only 12% of HCWs regularly wore a mask when caring for TB patients. Only 8% of HCWs reported that masks were regularly available, and 76% cited a lack of infrastructure to isolate suspected/known TB patients. ([Adamsu Tenna AAU](#))

Practice of TB screening program:

Purpose: This screening program is designed to be implemented as package of periodic health risk assessment of Tuberculosis along with NCD screening for DM, HTN, nutrition, smoking, HIV and other risk factors for cardio-vascular diseases. The program is planned to be implemented on annual basis at all implementing health facilities. This package of intervention is developed based on implementation experience from Dire dawa city administration health bureau in collaboration with CDC-Ethiopia.

Based on the DD's experience(unpublished),

- The TB screening package was delivered by integration with screening for NCD as (TB SX/CXR screening, DM screening with blood glucose level, BP measures for HTN, BMI for nutritional status and documenting history of risk factors for CVDs such as smoking, physical activities, veg and fruit intakes, rapid test for HIV...)
- All HF in the region are practicing integrated screening for health for staffs working in
- Participation rate at baseline was 70% which later increased to 90 and 97% on subsequent rounds
- 3% of total screened(1240) identified to meet the presumptive TB criteria
- Total of 5 TB cases were detected on three rounds (0 on baseline, 3 and 2 cases on subsequent rounds); calculated to be 442 TB cases/100,000(**2.5X** increased risk as compared to general population)
- 89% accepted HIV test offers

	<ul style="list-style-type: none"> ▪ No Package for TB screening defined to be delivered for health care ▪ Periodic/regular TB screening program for HCWs is not being practiced in even in TB high risk settings ▪ Issue of willingness to disclose disease status in for fear of TB stigma ▪ TB in HCWs is not tracked regularly 	<p>I. National/regional Policy and guidance level:</p> <ul style="list-style-type: none"> ▪ Design a package with regulations to conduct periodic Tb screening for Hcws working in high TB risk settings as part of infection control policy ▪ Secure required additional funding for implementations ▪ Implement nationwide periodic TB screening program for HCWs <p>II. Intervention packages at service delivery/lower implementation level:</p> <ul style="list-style-type: none"> ▪ Optimize implementation of TB infection control standards in health facilities., including periodic TB screening for HCWs: avail necessary resources <p>III. Suggest Performance monitoring mechanisms:</p> <ul style="list-style-type: none"> ▪ Monitoring TB incidence rate in HCWs <p>IV. Additional responses</p> <ul style="list-style-type: none"> ▪ Institute Protective health insurance scheme for HCWs comparable to exposure risk ▪ Conduct Operational Research to determine true TB burden among HCWs in Ethiopia.
--	--	--

TB Contacts

--	--	--

Background: Many studies in countries with a high TB incidence have shown that the prevalence may reach 5% or more among contacts, particularly among household members. Other data suggest that contact investigations could be particularly useful for identifying childhood TB. Furthermore, contact investigation can help identify people

who require careful follow-up, such as those who were exposed to an index case of multi-drug-resistant or extensively drug-resistant TB or people infected with HIV, whose risk for rapid progression to active TB is very high.

WHO estimates show that, worldwide, highly infectious, smear-positive pulmonary TB develops in over 4 million people annually. If we assume that each of these patients has at least three close contacts, such as in their household, and that the prevalence of active TB among the close contacts is 2.5%, the number of early TB cases that could be identified among close contacts is at least 300 000 per year.

systematic reviews of published studies show that a pooled average of 3.5–5.5% (the equivalent of a prevalence of 3500–5500 per 100 000 population) of household members or other close contact with a person who has infectious TB are themselves found to have previously undiagnosed, active TB, although there is considerable heterogeneity in these results .

The yield and feasibility of implementing contact investigation (CI) under routine care conditions has been well documented in the Ethiopian setting.¹⁻³ In Amhara and Oromia regions where CI has widely been implemented since 2013, **2.5%** of contacts of PTB+ve patients had TB. The yield was therefore over **10 times higher** than TB prevalence estimates for the general population².

Evidence on current level **of CI practice in Ethiopia from** published data 40%

Target population:

- Household and other close contacts of registered infectious index TB cases 3 months before commencement of TB treatment.
- Household contacts of a TB patients who receive treatment within the past two years(retrospective CI)

	<ul style="list-style-type: none"> ▪ Variable implementation of Contact investigation ▪ sub-optimal community level screening practices ▪ Lack of standard operating procedure on CI ▪ Lack of standardized recording and reporting system ▪ Lack of institutional policy to improve infection control conditions in high risk and closed settings. ▪ suboptimal implementation of preventive therapy ▪ limited involvement of HEWS and CSOs in community level Contact investigation practices 	<p>I. National/regional Policy and guidance level:</p> <ul style="list-style-type: none"> ▪ Develop/Adopt SOP of contact investigation ▪ Consider additional on approaches contact investigation (prospective /follow-up contact investigation, reverse contact investigation, retrospective contact investigation) ▪ Revise algorithms for contacts as screening with CXR and Xpert as confirmatory, whenever feasible ▪ Emphasize community based CI in community based TB care packages <p>II. Intervention packages at service delivery/lower implementation level:</p> <ul style="list-style-type: none"> ▪ Expanded Targeted contact investigation recommendation for additional TB high risk population (key populations including HIV, malnutrition, extreme ages, DM. ▪ Implement a minimum packages of TB IC at health facility level and community level <p>III. Suggested Performance monitoring mechanisms:</p> <ul style="list-style-type: none"> ▪ Incorporate CI and preventive therapy performance monitoring in HIMIS system <p>V. Potential stakeholder at community level:</p> <ul style="list-style-type: none"> ▪ Engage CSO, former patients, other community level actors <p>Additional Innovative Responses:</p> <ul style="list-style-type: none"> ▪ Consider preventive therapy for other high risk groups such as DM ▪ Adopt shorter and better regimens to promote better adherence and completion rate
Prisoners and detainees	▪	

Operational Definition:

Prisoners: refers to

Detainees: refers to

Recommended Services package (quality statement):

Justification: (insert references)

Since 2000 the estimated world prison population has increased by almost 20%. It has risen by about 6% from 136 per 100,000 of the world population in 1998 to 144 in 2013 (4).

Tuberculosis incidence rates in prison settings of Latin American and Caribbean countries are 20 times higher than those in the general population. The highest incidence rates in prison population are found in African countries. Literature review done by WHO showed as high as 3,797 to 4,000 incident cases per 100,000 prison population in some African countries (5). A study conducted in 10 Cameroonian prisons revealed tuberculosis incidence rate of 1,700 cases per 100,000 populations which was 9.4 times higher than the general population (6).

Similarly, the prevalence of TB among Ethiopian Prisoners was found to be high compared with the general population though the degree is varies from prison to prison ranging from **3 up to more than 14** times (7) (8) (9).

Prisons provide ideal conditions for TB transmission. The bacterium causing TB is distributed by very small aerosol droplets that are produced when someone with active TB coughs, sneezes, spits or speaks, enabling one person to infect many others. Therefore, the risk of TB being transmitted in settings in which people are in close contact like prisons is particularly high. Numerous other risk factors, such as poor health services, poor nutrition, drug addiction, poor ventilation and the presence of other conditions, such as HIV infection, predispose imprisoned people to a high risk of TB incidence. The combination of overcrowding, poor ventilation and lack of screening for TB turns prisons into breeding grounds and incubators for TB. This also leads to the transmission of the disease among prison staff and the general population.

Studies done in many countries showed that larger proportions of prisoners are from low socio economic and educational status which predisposes most of them to under nutrition, homelessness, excess alcohol use, and narcotic drug use; all factors having negative effect on immunological function and increases susceptibility to infection and TB disease before or after admission to correctional centers. Incarceration may also result treatment interruption and partial TB treatment, if patients do not continue receiving TB treatment following detention.

The National TB control Program (NTP) of Ethiopia has developed separate Standard Operating Procedures for Ethiopian Prisoners considering that improving TB prevention and care services among inmates can also reduce the burden of TB in the general population.

- Current implementation issues include limited prison facilities and detention centers are regularly implementing systematic TB screening, Lack of isolation facilities for inmates showing symptoms of TB, collaboration gaps between prison administration and TB programs, limited arrangement of referrals upon discharge or inter-facility transfer
- No defined packages existed yet for "integrated TB, HIV, and other harm reduction interventions for inmates". And lack reliable data to understand TB situation in local prisons.

Target population:

- Inmates of prison institutions and detention centers

Suggested intervention packages are presented on the National Prison SOP document.

Refugees and IPDs

Operational Definition:

Refugee: A person who "owing to a well-founded fear of being persecuted for reasons of race, religion, nationality, membership of a particular social group, or political opinion, is outside the country of his nationality, and is unable to or, owing to such fear, is unwilling to avail himself of the protection of that country...".

Internally displaced person (IDP): Persons sharing the characteristics of refugees (see above), but displaced within the boundaries of their own country. (**UNHCR 2007 refugees and internally displaced ppl TB GL ppXII**) (**source: TB in refugees and IDP by interagency group 2007: 1-10**)

Population size estimates, geographic locations in Ethiopia:

According to UNHCR 2017 update, 829,925 refugees are registered in Ethiopia, originating from South Sudan (44%), Somali (29.7%), Eritrea(20.3%), and other nationalities. (Ethiopia Factsheet UNHCR 2017). In Ethiopia, there are **27 camps, 2 settlements, 4** temporary settlements, 4 transit/reception centers situated in Tigray, Ethio-somali, Afar, Gambella, Benshangul-Gumuz and Oromia regional states governments.

TB burden in refugees and returnees:

The incidence of new infectious TB patients in camps was 4 times the rate in the local population. In two camps in eastern Sudan in 1990, 38% and 50% of all adult deaths were due to TB. (UNHCR 2007 refugees and internally displaced ppl TB GL pp2). MDR TB has also been reported to have crossed borders in Somalis living in Kenya, among others. (refugees in cross border East Africa)

Current situation overview of internally displaced people in Ethiopia:

As of April 2018 report by OCHA, a total of 1,613,436 people are displaced by climatic, conflict and other factors in 950 sites across the country. Sixty six per cent of these IDPs have been displaced by conflict or social tensions. (source: Ethiopian humanitarian dashboard 2018) Health situations for IDP: Out of the 1.48 million IDPs in need, 778,000 IDPs have no or difficult access to public health services. Main reasons, lack/shortages of free of charge medicines, and /or remoteness, lack/insufficient staff. .(source: Ethiopian humanitarian dashboard 2018)

TB burden in internally displace population:

IDPs are at particularly high risk of developing TB due to crowded living conditions and the co-existent illness, particularly HIV and poor nutritional status aggravating their vulnerability to developing active TB. The situation is often complicated by lack of access to health services resulting in delayed diagnosis and increased risk of transmission to susceptible.

IDPs, unlike refugees, may not have the same level of protection from the international community and national authorities may not address their needs. Hence, increased collaboration between the NTP and NGOs can increase population coverage and improve the efficiency with which TB care and control activities are implemented in displaced populations. Proactive measures should be taken, including the use of community health workers and mobile clinics. Source Tuberculosis care and control in refugee and displaced populations. Source: Interagency manual 2007: page 60.

Relative TB burden: In Ingushetia in 2000, the TB notification rate for displaced Chechens was **almost twice** as high as the resident Ingush population.

Pastoralist mobile populations

Operational Definition: Pastoralists are people who derive more than 50 per cent of their incomes from livestock and livestock products, while **agropastoralists** are people who derive less than 50 per cent of their incomes from livestock and livestock products, and most of the remaining income from cultivation. (pastoralist livestock toolkit for project design)

Pastoral and agro pastoral areas of Ethiopia are largely located in the lowlands which cover about 60 per cent of the territory (over 500,000 km²). They mostly reside in border areas in northeastern, eastern and southeastern parts of the country. Pastoralist communities constitute 12million, i.e. 12- 15% of the country's total population. (pastoral community development report 2016 #3).

Of the total pastoral communities, 56% are pastoral (:population to be targeted for TB), 32% are agro-pastoral and the remaining 22% are urban areas. It is estimated that the Somali pastoralists constitute 53 per cent of the pastoral population followed by the Afar 29 per cent, the Borana 10 per cent. The remaining 8 per cent are found in Gambela, Benishangul and Tigray regions (pastoral community development report 2016 #5). Pastoralists are found distributed over 122 districts of the country. (pastoralism in Eth_tev pp9). About 2.7 million people are still expected to be dependent on emergency food aid and another 7 million people are estimated to be chronically food insecure in 2013/14 in the pastoral, agro pastoral and some drought prone areas. (pastoral community development report 2016 #5).

Region	Number of pastoral districts	Population size
Afar	29	1,301,000
Benishangul_gumuz	3	40,600
Dire dawa	1	108,600
Gambella	5	133,600
Oromia	34	4,007,900
SNNPR	6	219,700

Somali	44	4,002,200
Total	122	9,813,600

Source EEA 2005, Pastoralism in Ethiopia.

TB burden in Pastoral communities: According to the national TB prevalence survey conducted in 2011, the prevalence of smear positive TB cases is much higher in pastoralist communities (170/100,000 population) than that observed in other rural communities (109/100,000 population).

Pastoral communities face longer median delay to seek medical care as compared to Agrarian communities (Studies conducted in Bale zone and in Eth Somali).

	<ul style="list-style-type: none"> ▪ Usually lives in draught affected areas and prone to be malnourished ▪ Inaccessibility of basic health services aggravated by seasonal mobility due to rough environmental conditions ▪ Community HEP do not establish well ▪ Lack of health service tailored to their behavior and mobility ▪ Lack of TB specific program strategy to address pastoralists ▪ Limited awareness about basic TB information ▪ Treatment adherence and monitoring is often difficult to achieve due to their high mobility ▪ Lack of flexibility and incentives for provision of health services ▪ Weak Logistic supply and management system 	<p>I. National/regional Policy and guidance level:</p> <ul style="list-style-type: none"> ▪ Developing guideline and operational manual : Specific implementation of the strategy at the pastoralist health facilities ▪ Strengthening of the pastoralist health system <p>II. Intervention packages at service delivery/lower implementation level:</p> <ul style="list-style-type: none"> ▪ Awareness creation of the community: Volunteers, leaders ▪ Enhance community active case finding ▪ Mobile clinic integrated with other services ▪ Strengthen adherence and treatment follow up: tracking and ▪ Strengthen TB infection control practice at both community and facility level ▪ Financial and nutrition support ▪ Ensuring sustainable supply and logistics management system <p>III. Promote multi-sectoral response for TB integration in to other Potential stakeholder at community level:</p> <ul style="list-style-type: none"> ▪ Community volunteers, different community structures ▪ Agriculture ministry for Pastoral community
<p>Seasonal workers at megaproject sites</p>	<ul style="list-style-type: none"> ▪ 	

Operational definitions:

- internal economic migrants workers, (Source: Ethiopian poverty assessment 2014: read pp96-> on migration and poverty.)
- A migrant is defined as “working” if he or she was employed in productive activities during the last 12 months even if partially.
- Nearly all migrants in Ethiopia (86%) are working migrants. Nearly half of all migrants are rural-to-rural migrants. Migrants from rural to urban areas comprise about 25% of all migrants in Ethiopia. As shown in Figure 7.1,
- Short-term migrants who are in their current residence for less than five years, account for 40% of all and 43% of all migrants to urban areas.
- Addis Ababa accounts for 4% of Ethiopia’s population but 10% of all migrants (all those not residing in the woreda or city of their birth) and 22% of urban migrants.
- Most migrants are women(50%), but men account for a larger share of working migrants (62%).
- In most cases—80% of the time—migration is of a child within the family, and the average age of a migrant is 23–26 years at time of migration.
- Migrants live in smaller houses after migration, but this may indicate smaller household sizes rather than higher levels of poverty, as access to electricity and tap water is higher among recent migrants than non-migrants. (may not reflect overcrowding due to smalee HH sizeamong recent migrants)
- 48% of recent migrants live in one room houses compared to 32% of non-migrants in urban areas and 50% of recent migrants compared to 52% of non-migrants in rural areas.
- **As no reliable sufficient data is available at time of review of this document, it is advised to conduct rapid assessment to map internal migrants at mega project sites, determine their population size and design the minimum TB package based on the findings.**

