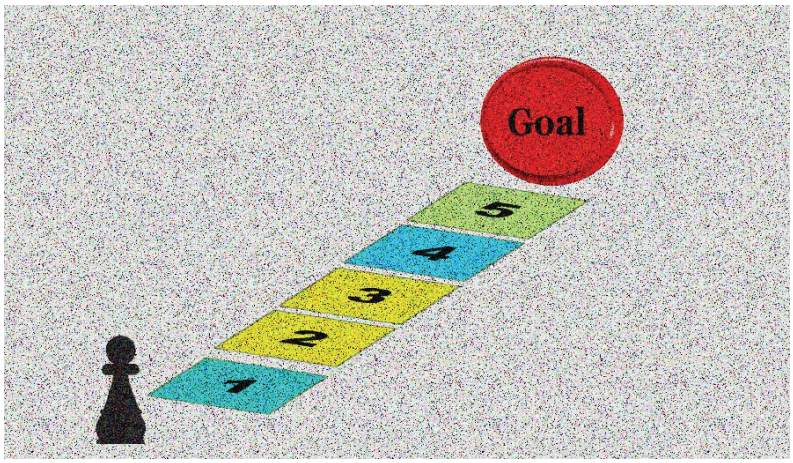
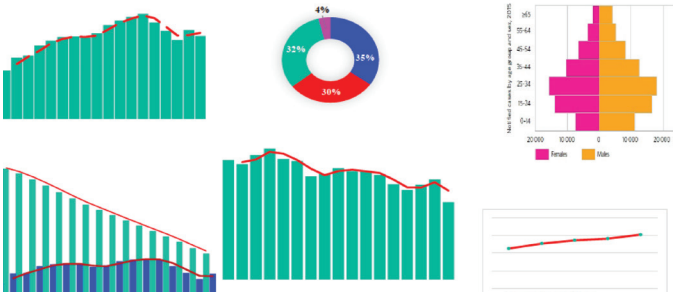
Federal Democratic Republic of Ethiopia
Ministry of Health

NATIONAL STRATEGIC PLAN TUBERCULOSIS AND LEPROSY CONTROL 2006 – 2013 EC (2013/14 – 2020)

With update – for 2010-13 (2018-20/21)





November 2017

NATIONAL STRATEGIC PLAN
TUBERCULOSIS AND LEPROSY PREVENTION AND CONTROL
2006-2013 EC (2013/14 – 2020/21)

with update – for 2010-2013 (2018-20/21)
January 2018

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ABBREVIATIONS AND ACRONYMS

ACSM	Advocacy, Communication and Social Mobilization
ADR	Adverse Drug Reaction
AFB	Acid-Fast Bacilli
AHRI	Armauer Hansen Research Institute
AIDS	Acquired Immunodeficiency Syndrome
ALERT	All Africa Leprosy and TB Centre
ART	Antiretroviral therapy
ARV	Antiretroviral (medicine)
CBO	Civil Society Organization
CDC	Centre for Disease Control and Prevention
CPT	Cotrimoxazole Preventive Therapy
CSO	Civile Society Organization
CTBC	Community TB Care
DOT	Directly Observed Treatment
DRS	Drug Resistance Survey
DST	Drug Susceptibility Testing
DQA	Data Quality Assurance
EPHI	Ethiopian Public Health Institute
EPTB	Extra-Pulmonary Tuberculosis
EQA	External Quality Assurance
FDRE	Federal Democratic Republic of Ethiopia
FDC	Fixed-Dose Combination
FMHACA	Food Medicine and Health Care Administration and Control Authority
FMOH	Federal Ministry of Health
FLD	First Line Drugs
PFSA	Pharmaceutical Fund and Supply Agency
GDP	Gross Domestic Product
GFATM	Global Fund to Fight AIDS, TB and Malaria
GLC	Green Light Committee
HDA	Health Development Army
HDI	Human Development Index
HIV	Human Immunodeficiency Virus
HMIS	Health Management Information System
HR	Human Resources
HRD	Human Resource Development
HSTP	Health Sector Transformation Plan
IPLS	Integrated Pharmaceutical Logistics System
IPT	Isoniazid Preventive Therapy
KAP	Knowledge, Attitude and Practice
LED	Light Emitting Diode
LTBI	Latent TB Infection
MDG	Millennium Development Goal
MDR-TB	Multi-Drug Resistant TB

MoH	Ministry of Health
NGO	Non-Governmental Organization
NSP	National Strategic Plan
NTP	National TB control Program
OPD	Out Patient Department
PHC	Primary Health Care
PLHIV	People Living With HIV
PSM	Procurement and supply chain management
PTB	Pulmonary Tuberculosis
QA	Quality Assurance
RHB	Regional Health Bureau
RR	Rifampicin Resistance
RRL (RL)	Regional Reference Laboratory
SDG	Sustainable Development Goals
SLD	Second Line Drugs (for treatment DR-TB)
TB	Tuberculosis
TRAC	TB Research and Advisory Committee (of the FMoH)
TSR	Treatment Success Rate
UHC	Universal Health Coverage
USAID	United States Agency for International Development
UVGI	Ultraviolet Germicidal Irradiation
WHO	World Health Organization
XDR-TB	Extensively Drug Resistant TB

FORWARD

The Ministry of Health of the Federal Democratic Republic of Ethiopia has updated the national Tuberculosis and Leprosy (TBL) strategic plan, through consultative process and with input from an external TBL programme review in 2017. Ethiopia identifies Tuberculosis (TB) and Leprosy as major public health problems, despite significant progress in the control of both diseases within the last decades.

The country has already adopted the global End TB strategies and targets, which are incorporated in this plan. For the coming years, systematic TB and Leprosy (TBL) case finding and management, including programmatic focus on key and vulnerable population; strengthening quality TB diagnostic service availability and utilization, including for early diagnosis of Drug-Resistance (DR-TB) and treatment monitoring; targeted advocacy, communication and social mobilization to address barriers and increase demand for quality services; equitable access to patient-centred TBL care, adherence support and early case detection in community care settings, through health extension programme; and engagement of CSOs and NGOs in implementing and monitoring the TBL strategic plan are strategic priorities. Annually a third of estimated TB cases are not detected by the national programme, hence this national strategic plan highlights implementation of high impact interventions to increase case notification.

HIV and the emergence of Drug Resistance are challenges for the successful control and prevention of Tuberculosis in the country. Globally, Tuberculosis is still the leading cause of mortality and hospital admission of people living with HIV. (PLHIV) This strategic plan highlights and calls for accelerated and coordinated implementation of high impact evidence-based interventions to reduce the burden of TB in PLHIV. Strengthening the prevention and management of (DR-TB) is one of the priorities for Ethiopia. Accelerating DR-TB case notification and prompt treatment should be recognized as a public health priority in the control of Tuberculosis in the country. Early diagnosis and prompt treatment with efficacious regimen are core strategies in the control of DR-TB and for an optimal patient outcome. Delayed diagnosis and treatment contributes for pre-treatment loss to follow up (LTFU), unfavourable patient outcomes including death, further transmission of DR-TB, as well as increased burden of illness to affected patients and their families. Therefore, strengthening TB laboratory services, including sample referral network, is critical for the successful control of TB in Ethiopia.

I am confident that this national strategic plan will guide Ethiopia's effort in the control and prevention of Tuberculosis and Leprosy in the coming years and is stepping stone for ending the TB epidemic and Leprosy elimination in the country. It boldly highlights accelerated implementation of evidence-based and high impact public health interventions, prioritizing programme effectiveness, efficiency and information generation and use.

Kebede Worku (MD, MPH)
State Minister for Health

ACKNOWLEDGEMENT

The Federal Ministry of Health has updated this Tuberculosis and Leprosy (TBL) national strategic plan (NSP) through consultative and inclusive processes, which many professionals and experts have contributed. The Federal Ministry of Health is sincerely grateful for their time and input.

This update is extensively informed by an external mid-term review of the national TBL programme in 2017, which has encompassed in-courtly dialogue and input from key stakeholders, including sub-national offices of the ministry of health and health workers in the field. The Federal Ministry of Health appreciates the valuable input of several international and national experts involved in the mid-term external review.

Following the external review, the Ministry has organized series of consultative workshops and electronic reviews to update this strategic plan. The in-country consultations have put together the input and joint prioritization exercise of stakeholders from the Ministry, funding agencies and implementing partners, and civil societies. The Federal Ministry of Health is thankful of the following experts for their input, support and engagement throughout the consultation process: Abayneh Admas, Abraham Alemayehu, Addisalem Yilma, Addisu Admasu, Addisu Liben, Ahmed Bedru, Andargachew Kumsa, Anteneh Kassa, Anteneh Tadesse, Asfaw Ayalew, Asfawesen Woldegiorgis, Bekele Ashagire, Beniam Feleke, Blen Ayele, Dagim Damtew, Dawit Asefa, Degu Jerene, Demelash Assefa, Dereje Habte, Endale Berta, Endale Mengesha, Endalkachew Fekadu, Ephrem Tesfaye, Eshetu Kebede, Eshetu Gezahegne, Etsegenet Getachew, Gashu Zewdu, Getachew Aga, Gonfa Ayana, Gudetta Tibesso, Kassa Ketema, Kassech Sintayehu, Kifle Sede, Lelisa Fekadu, Mintesinot Nida, Nebiyu Hiruy, Sentayehu Tsegaye, Solomon Hassen, Solomon Sisay, Tadele Kebede, Taye Letta, Tilaye Gudina, Yared Kebede, Yewulsew Kassie, and Yohannes Molla.

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The following core writing group members have facilitated the consultation process and coordinated the updating of the TBL strategic plan. The Federal Ministry of Health recognizes their contribution: Eyerusalem Negussie, Lelisa Fekadu, Andargachew Kumsa, Kassa Ketema, and Blen Ayele.

Funding for the development and printing of this updated TBL strategic plan was provided by the United States Agency for International Development (USAID, KNCV/Challenge TB Ethiopia) and the Global Fund to Fight AIDS, TB and Malaria (GFATM). The Federal Ministry of Health greatly appreciates their unreserved support.

1 .BACKGROUND

This is an update of a seven-year TB and Leprosy national strategic plan (TBL-NSP), which extends from 2013 to 2020. The update focuses on the plan covering from 2017-20 and is based on the 2017 external mid-term programme review key findings and recommendations; the global and national End TB strategies and targets; stakeholders consultation and recent revision of the national TB guidelines.

1.1 Country Context

1.1.1 Geography

Ethiopia, located in the horn of Africa, lies between 3 and 15-degree north latitude and 33 and 48-degree east longitude. With a total area of around 1.1 million KM3, Ethiopia borders six countries - Eritrea to the north, Djibouti to the east, the Sudan and South Sudan to the west, Kenya to the south and Somalia to the southeast. The country's topographic feature ranges from peaks as high as 4,620 meters above sea level to 110 meters below sea level in the Afar Depression.

1.1.2 Demography

The total population of Ethiopia is projected at 94.3 million, making the country the second most populous in the African continent (CSA, 2017). Ethiopia is home for nations, nationalities and peoples of varying population size, with more than 80 different spoken languages. Ethiopia is among the least urbanized nations in the world. Addis Ababa, the nation's capital, with 2.9 million people, is

1.1.3 Administration

The Federal Democratic Republic of Ethiopia (FDRE) is composed of nine Regional States: Afar, Amhara, Benshangul Gumuz, Gambella, Harari, Oromia, Somali, Southern Nations Nationalities and Peoples (SNNP), and Tigray; and two City Administrative councils of Addis Ababa and Dire Dawa (Figure 1). The regional states and city administrations are further sub-divided into 921 Woredas (districts), about 17,000 Kebeles, which is the smallest administrative unit in the governance system.

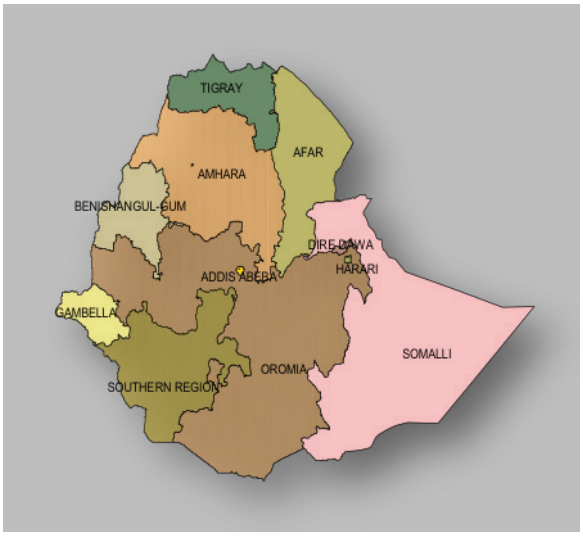


Figure 1. Map of Ethiopia

1.1.4 Economy

The Government of Ethiopia economic policy follows a market-based agriculture led industrialization. Within the last decades, there have been a number of policy initiatives taken in this

direction, including privatization of state enterprises, and rationalization of government regulation of the economy. The economy of Ethiopia heavily relies on the agriculture sector, which accounts for 83.4% of the labour force, over 45% of the Gross Domestic Product (GDP), and 80% of exports. A predominantly subsistence farming combined with poor cultivation practice makes Ethiopia's economy and livelihood of millions vulnerable to climate change.

Within the last years, Ethiopia has registered an average of double digit economic growth with steady and strong positive performance in real GDP. During the first Sustainable Development and Poverty Reduction Plan (SDPRP I) period (2002/03 - 2004/05 EC), real GDP grew on average of 5% per annum; and in 2007/8 EC, Poverty Head Count Index has declined from the 1996 level of 45.5% to 32.7%, with more pronounced gain in rural than urban areas. This steady growth marks progress, however, a per capita income of US$280 and US$870 in purchasing power parity remain below the Sub-Saharan Africa (SSA). The overall economic dependency ratio for Ethiopia is estimated at 93 per 100 persons in the age group of 15-64 years.

1.1.5 Education

Adult literacy in Ethiopia is generally low, with an estimated rate of 38% (50% for males and 27% for females) compared to the SSA average of 86%. School enrolment has been increasing in recent years, with primary school enrolment rising from 13 million in 2005/06 to 15.3 million in 2007/08 EC. During the same period, gross primary enrolment rate rose from 91.3% to 96.7% . Around 35% of women and 48% of men, age 15-49 years, have attended primary school; while 12% of women and 15% of men have attended secondary school. Only 6% of women and 9% of men have beyond secondary education .

1.2 Health and Heath sector profile

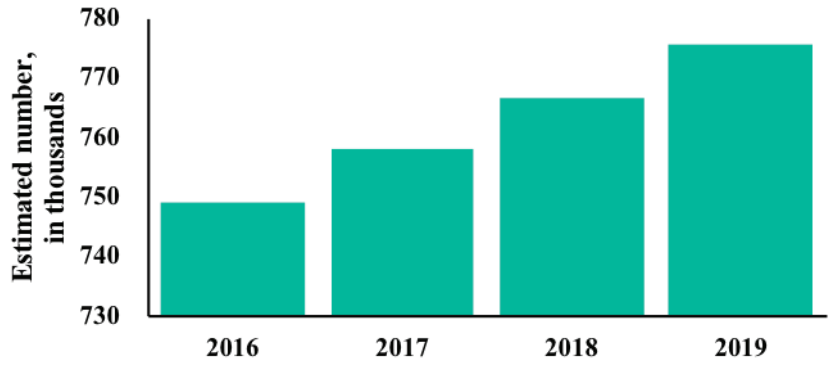
1.2.1 General health status

Ethiopia has recorded significant public health achievements within the last two decades, however, high rates of morbidity and premature mortality from potentially preventable conditions are persisting challenges. Communicable diseases and nutritional disorders are major public health problems, affecting large segments of the population. Life expectancy at birth in Ethiopia stands at 64 years (62 years for male and 66 female), with infant mortality rate (IMR) of 48/1,000 and under-five mortality rate of 67/1,000 live births, per 2016 Ethiopian Demographic Health Survey (EDHS) report. The same survey indicates significant decline in all childhood mortality rates. For instance, the under-5 mortality rate has declined from 116 deaths (2002-2006) to 67 deaths per 1,000 live births in the 0-4 years prior to the survey (2012- 2016). One in 15 children in Ethiopia die before their fifth birthday, and more than 90% of the deaths are due to pneumonia, diarrheal diseases, malaria, perinatal and neonatal problems, and undernutrition[3] .

The 2016 EDHS estimates the maternal mortality ratio at 412 deaths per 100,000 live births, indicating that for every 1,000 births in Ethiopia, there are about four maternal deaths. There is statistically significant decline from 871 that is the estimated report of the 2000 EDHS or from 676 reported in the 2011 (EDHS, 2016). Maternal death accounted for 25% of all deaths among women 15-49 years of age.

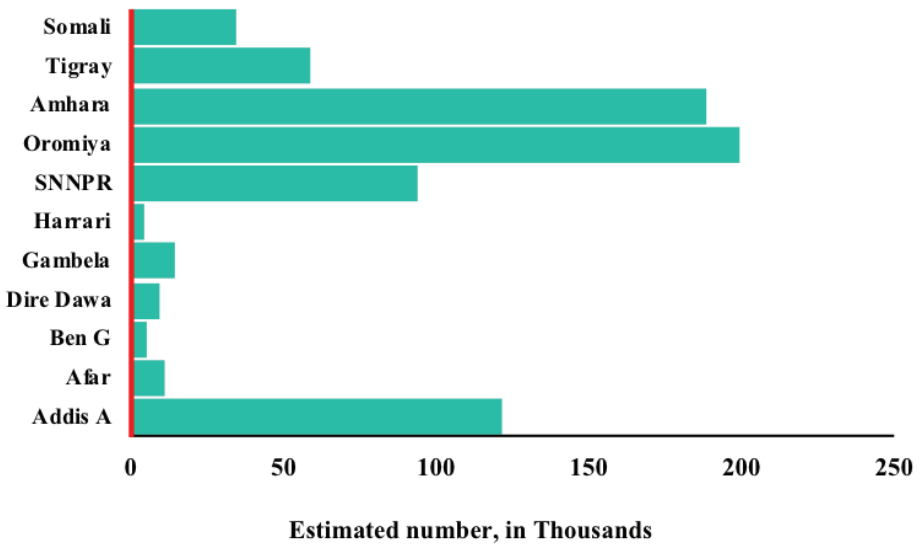
UNDP/MOPEDS. 2010. Ethiopia MDGs Country Report 2010.
CSA. 2016. Ethiopia Demographic and Health Survey.
Ibid.

Figure 2. Annual estimated number of PLHIV in Ethiopia, 2016-2019.



In 2017, the adult (15-49) HIV prevalence in Ethiopia stands at 1.19% in the general population, with an estimated 757,918 people living with the virus. There is significant variation in HIV burden across geographic settings and population in the country. For instance, out of the estimated 757,917 PLHIV in 2017 in the country, 67% reside in Oromiya, Amhara and Addis Ababa regions, which jumps to 87%, when including estimates from SNNP and Tigray regions (Figure 3). This most generally mirrors regional variation in population size and disease burden.

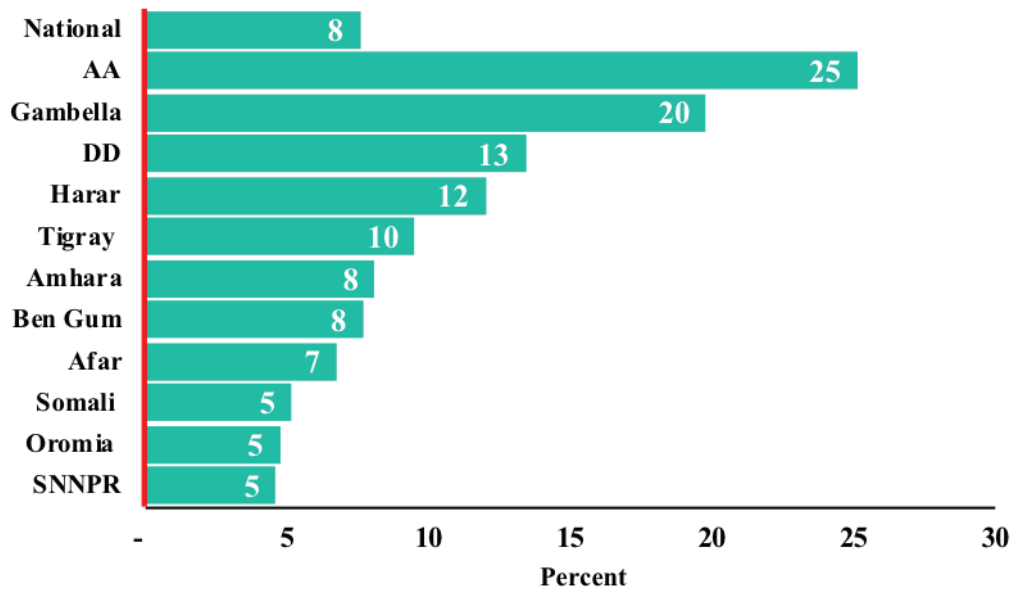
Figure 3. Regional distribution of estimated number of PLHIV, 2016.



[4] EPHI/FMoH. 2015. HIV Related Estimates and Projections for Ethiopia, 2015.

Figure 4 shows percentage of TB patients enrolled in DOTS and tested HIV+, which also shows regional variations. In 2016, among all nationally notified TB cases in the country, 8% are living with HIV. During the same year, the highest rate is reported from Addis Ababa, followed by Gambella region (Figure 4). However, caution would also be necessary as the HIV test coverage in notified TB cases also has regional variation, being as low as 26% in Somali and as high as 100% in Harari region. The same data indicates around 22% of RR/MDR-TB patients are living with HIV, which is an important factor in the successful management of both HIV and DR-TB in these patients

Figure 4. Regional variation in HIV positive rate in nationally notified TB cases, 2016.



Besides geographic variation in HIV burden, key population are disproportionally affected compared with the national average: the HIV prevalence stands at 23% in Female Sex Workers (FSW), 4.9% in long distance truck drivers, 6% in people who inject drug and 4.2% among inmates.The 2016 national STEP survey, the first of its kind in the country, indicates about 4% of respondents are current Tobacco users; while 6% had raised blood glucose and diabetes at the time of the survey .

1.2.2 Health sector policy and strategy

The vision of the Health Sector is to see healthy, productive and prosperous Ethiopia, with a mission of promoting health and wellbeing by providing and regulating a comprehensive package of quality promotive, preventive, curative and rehabilitative equitable health services (HSTP, 2015). The National Health Policy, upon which health sector strategies and plans are anchored, outlines the following as core principles: democratization and decentralization of health services; preventive and promotive health service development; health service accessibility by all; inter-sectoral collaboration and private sector involvement; and self-reliance in health development through mobilization and efficient utilization of resources.

[5]EPHI/FMoH/WHO. 2016. Ethiopia STEPS report on risk factors for non-communicable diseases and prevalence of selected NCDs.

Since the national Health Policy is issued in 1991, the Government of Ethiopia has implemented four successive Health Sector Development Plans (HSDPs). Each HSDP followed critical reviews and analysis of the nature, magnitude and root causes of public health problems, with broader consideration of emerging challenges in the country. Ethiopia is currently implementing a five-year Health Sector Transformation Plan (HSTP), from which this national TBL strategic plan emanates.

1.2.3 Health Sector Transformation Plan

The national health sector transformation plan (HSTP), which is the current five-years national health sector strategic plan of the government of Ethiopia, covers the period from 2008-2012 EC (i.e. July 2015–June 2020). It is the first phase of a 20-year plan and is recognized as, 'Envisioning Ethiopia's Path to Universal Health Care through strengthening primary care'. HSTP is prepared through an in-depth situational assessment and performance evaluation of the preceding HSDPs; incorporates relevant global and national commitments and most importantly, the goals and long-term vision of the national Growth and Transformation Plan (GTP) of the government of Ethiopia. The HSTP identifies three "Pillars of Excellence" and four transformation agendas as main focus areas for the health sector to achieve its mission, vision and goals. Table 1 summarizes these pillars of excellence, and the four transformational agendas are summarized in the following section. Both operationalizes these pillars and transformation agendas within the context of TBL prevention and control in Ethiopia.

The national HSTP visualizes Ethiopia's path to universal health coverage (UHC) through primary care.

1.2.4 Mission of national TB and Leprosy prevention and control program

The mission of the national TBL control program is to reduce morbidity, mortality and disability from TB and Leprosy by implementing evidence-based and client-centred promotive, preventive, curative and rehabilitative services in collaboration with all stakeholders.

Table 1. HSTP strategic themes and results in the context of TBL control and prevention.

Strategic themes and focus areas.	Description and key concepts in TBL control and prevention.	Priority areas for TBL control and prevention.	Strategic aims
Strategic Theme 1: Excellence in service delivery.	Provision and management of quality promotive, preventive, curative, and rehabilitative TBL services at all levels.	▪ Early diagnosis and prompt treatment of all forms of TB. ▪ Evidence-based TBL clinical practice. ▪ Appropriate treatment of both DS and DR-TB with engagement of all care providers. ▪ Comprehensive quality TBL services, including palliative care, as indicated. ▪ Integrated and decentralized patient-centred TBL care and prevention. ▪ Equitable access to TBL services. ▪ TB infection control in healthcare settings. ▪ Routine implementation of active drug safety monitoring and management, as indicated.	**Strategic Theme 1 Result:** **Equitable access to quality TBL services at household, community and health facility levels.** Community engagement in promoting TBL prevention and control activities at all levels. Engagement of all care providers. Comprehensive provision of promotive, preventive, curative and rehabilitative TBL services.
Strategic Theme 2: Excellence in leadership and governance.	Planning, policy formulation and implementation, M&E, development and implementation of evidence-based leadership and management. Effective government stewardship, high-level political commitment and enhanced resources for TBL prevention and control.	▪ Government stewardship, accountability and transparency at all levels. ▪ Evidence-based TBL prevention and control policy, programming, planning, and monitoring and evaluation. ▪ Equitable and effective resource (finance, human and infrastructure) allocation for TBL control and prevention. ▪ Leadership and community development. ▪ Harmonization and alignment. ▪ Strong coalition with communities and civil societies.	**Strategic Theme 2 Result:** Community served by accountable and transparent leadership and governance for TBL care and prevention. Evidence-based decision making, which ensures equitable and effective resource allocation and utilization. Inter-sectoral and public-private partnership in TBL prevention and care. TBL control plan harmonization and alignment, at all levels, maximizing efficiency gain.
Strategic Theme 3: Excellence in health infrastructure and resources.	Sustainable provision of adequate and quality TBL medicines and other supplies that meet standards; Community utilizes services delivered by qualified and motivated health professionals.	▪ Accurate TBL supply- planning, quantification, selection, ordering, storage, distribution and rational use. ▪ Resource mobilization and efficient utilization. ▪ Health work force – development and management. ▪ Technology transfer – adoption of new technology in TBL control, as required. ▪ Medical equipment management. ▪ Information Communication Technology (ICT) for TBL.	**Strategic Theme 3 Result:** Community access quality health services, at facilities equipped and supplied with quality pharmaceuticals, ICT networked services, and served by capacitated and motivated professionals.

The national HSTP has four priority transformational agendas, and below are as each agenda relates with TBL control and prevention in Ethiopia:

a) Transformation in equity and quality of healthcare:

- Fostering collaboration and integration across programs and services, such as TB-HIV, TB-MNCH, TB-NCD, system of integrated laboratory specimen referral and quality assurance for prompt diagnosis and treatment; coordinated patient-centred care; systematic screening of contacts and high-risk groups; timely treatment initiation; responsive health service that reaches key population.
- Using community level structures for TBL contact screening; to support lost to follow up patients to reengage in care; enhanced CTBC within the context of strengthening PHC for prompt diagnosis and care.
- Ensure and monitor equitable access to TB services by key population; monitor treatment outcome across population and geographic settings; and ensure equitable access to TB services by engaging all care providers.
- Comprehensive patient-centred TBL care, including Nutritional assessment, counselling and support (NACS); active drug safety monitoring and management.palliative care.

b) Woreda transformation:

- As a priority public health problem, ensuring sustained political commitment and resource allocation to TBL control and prevention integral to woreda level planning.
- Active community engagement, using formal and informal community structures with the aim to reach all through Kebele models; and addressing TBL-related stigma, preventing delay in accessing effective interventions and community support resources.
- Woredas implementing community health insurance (CHI) to minimize out of pocket payment before diagnosis and to provide TBL services free of out of pocket payment at point of care.
- Community health insurance coupled with covering healthcare expenditure of the poorest in the Woreda in order to mitigate financial barriers to early diagnosis and treatment, and preventing catastrophic costs to affected patients and their families.

c) Information revolution:

- Collecting, analysing and interpreting TBL data at health facility level and improving its use for informed decision in patient care, prioritization, resource allocation, programming and strategic planning and re-planning.
- Creating TBL data comparability and validation across various sources, such as triangulating information gathered through IPLS, lab services, HMIS, and population level surveys.
- Use of data and evidence generated through research, surveillance and survey to improve TBL services and program quality and efficiency.
- Progressive digitalization of information platforms patient monitoring and performance reporting, including for electronic-based active drug safety monitoring and management (aDSM).
- Routine aDSM with the aim to provide quality TBL services and monitoring adverse events.
- Implementation of the national TB research priority plan and use of research evidence to inform TB policy and practice.

d) Caring, respectful and compassionate (CRC) health workforce

- Assessment of CRC alongside patient pathway analysis and capacity building to identify barriers for early diagnosis, including health workers' skill gap resulting missed opportunities

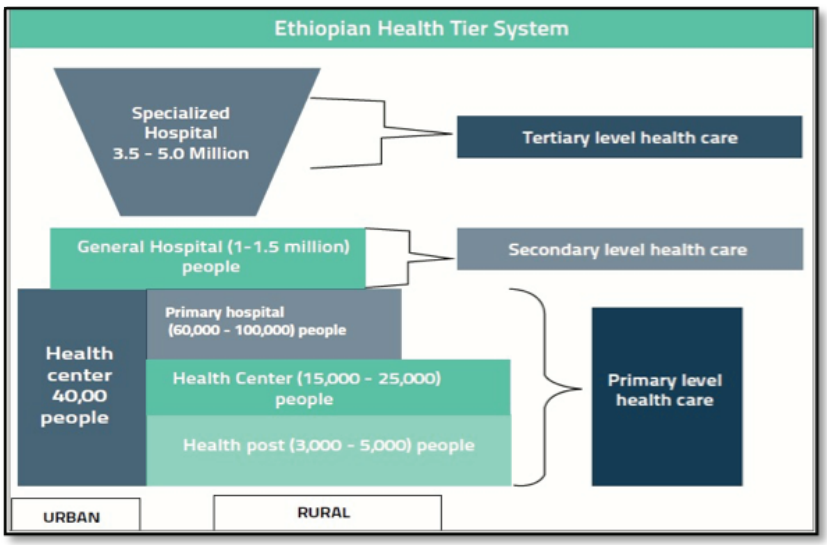
for prompt TBL diagnosis and care, support treatment adherence and continuity of care.

- Building health workforce capacity for comprehensive patient assessment and care, ensuring comor bidities are addressed through integrated services, minimizing avoidable and unnecessary repeated patient facility visits, inpatient admissions, and cost of care both for patients and the health system.
- Ethical and responsive service delivery, building public confidence on the health system and support patients to accurately report adverse events, co-morbidities, treatment interruption and discontinuity of care.
- Empowering care providers for routine assessment and implementation of priority interventions for TB-IC in healthcare settings, including health workers' prompt access to TB prevention and treatment services.
- Equipping care providers to understand and mitigate TBL-related stigma in healthcare settings, foster ing compassionate provider-patient interaction.
- Empowering TBL affected communities through dialogue and participation in health facility manage ment boards.
- Engagement of professional societies and associations to lead CRC in their respective profession.
- Engage TB ambassadors from health professionals and prominent public figures to advocate for political commitment, resource mobilization, engagement of communities and CSOs including professional societies, and mitigating TB related stigma.

1.2.5 Health system organization

Ethiopia has a three-tiered healthcare delivery system: Woreda/district healthcare tier comprising of a primary hospital (with catchment population of 60,000-100,000), health centres (1 per 15,000-25,000 population) and their satellite Health Posts (1 per 3,000-5,000 population) linked through referral systems, which forms a Primary Health Care Unit (PHCU). While PHCU in rural settings include health posts, urban areas don't (Figure 5). The second tier constitutes a general hospital, with catchment popu-lation of 1-1.5 million; while a specialized hospital, with catchment population of 3.5-5 million, forms the third tier of the healthcare delivery system. Private for profit and NGOs/FBOs augment health service coverage and utilization at all levels.

Figure 5. Healthcare delivery system of Ethiopia .



[6] FMoH. 2015. Health Sector Transformation Plan (HSTP) 2008-2012 EC (i.e. July 2015–June 2020).

1.3 TB and Leprosy control program in Ethiopia

1.3.1 The TBL control effort in Ethiopia

Tuberculosis has been identified as one of the major public health problems in Ethiopia for the past five decades. In the early 60's, Ethiopia established TB centres and sanatoria in three urban areas in the country. In 1976, the Central Office (CO) of the National Tuberculosis Control Program (NTCP) was founded, which 1992 has standardized directly observed short course treatment (DOTS) initiated in pilot areas in the country. An organized leprosy control program was established within the MoH in 1956, with subsequent development of a detailed policy. In the following decades, leprosy control was strongly supported by the African Leprosy and Rehabilitation Training Institute (ALERT) and the German Leprosy Relief Association (GLRA). This well-funded vertical program has achieved notable reduction of leprosy prevalence, particularly following the introduction of Multiple Drug Therapy (MDT) in 1983.

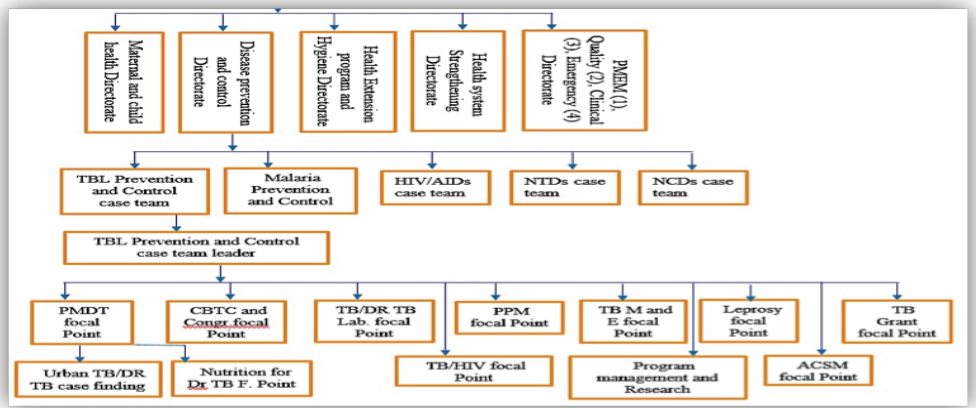
The TB and Leprosy programs were merged to National Tuberculosis and Leprosy Control Program (NTLCP), 1994. A five-year Project Development Plan (PDP), covering 1996-2000, was formulated. In June 2000, the NTLCP is integrated into the newly restructured Disease Prevention and Control Department (DPCD) of the Federal Ministry of Health (FMoH) and the former CO was renamed Tuberculosis and Leprosy Control Team (TLCT). Following the 2009 reform at the FMoH, the NTLCP is integrated with other communicable disease control programs under the Health Promotion and Disease Prevention Directorate (HPDP). In 2013, the FMoH made some organizational arrangement which resulted in the establishment of disease control directorate. The NTP is placed in the directorate with a team of TBL experts. Currently, major partners who are actively collaborating with the FMoH in TBL control activities are: GFATM; USAID and USAID implementing organizations (KNCV, MSH, PHSP/Abts Associate); WHO; GLRA; PIH; GHC; CDC and CDC implementing partner (ICAP); CUAMM; and Italian Development Cooperation.

1.3.2 Implementation arrangement of TBL program

A. Federal MoH and RHB levels

Ethiopia is a federal state, where programming and policy implementation have contextual layers. The functions of the FMoH is setting national policy and standards, providing national guidance, and technical and financial support to regional health bureaus (RHBs). At the national level, the TB and Leprosy Prevention and Control case team has a coordinator, who works with team of technical officers and experts organized within the Disease Prevention and Control Directorate of the FMoH (Figure 6). The HIV, NCD, and other disease control initiatives are positioned within the same directorate.

Figure 6. The structure of TBL control programme in the Federal MoH.



lmplementation of TBL activities is further supported by MoH agencies:

a) Ethiopian Public Health Institute (EPHI)- in laboratory services and population level studies, including surveys and surveillance.
b) Pharmaceutical Fund and Supply Agency (PFSA) - in procurement and supply management.
c) Food Medicines Healthcare Administration and Control Authority (FMHACA) for in country medicine and products registration, regulatory agency, quality of medicines, active drug safety monitoring and management (aDSM).

At sub-national level, Regional Health Bureaus (RHBs) TB and Leprosy program is managed by a TBL unit/case teams under health promotion and disease prevention core-processes. Zonal health departments and Woreda (i.e. district) health offices are programme management structures at sub-regional levels.

B. Health Facility Levels

Public Health Facilities deliver TBL prevention and care services as briefly outlined below and summarised in Box 1.

Health Posts (HPs): Health posts provide community education; identify and refer presumptive TB cases to health facilities for further investigation; refer leprosy suspects; give BCG vaccination; provide Directly Observed Therapy (DOT); do contact screening; and trace and link lost to follow up cases. Staffed by health extension workers, HPs are the first level health system in rural areas of the country.

Health Centres: Health centres carryout all activities as health posts, and additionally provide intensified case finding; sputum microscopy services; skin smear examination for diagnosis of leprosy; provide leprosy MDT short course chemotherapy (SCC) and prevention of disability (POD); provide IPT for eligible persons; diagnose and manage adverse drug reactions and other complications; carry out TB/HIV collaborative activities; identify and refer presumptive smear negative TB, EPTB and DR-TB patients to higher level facilities; support health post staff; keep patient records and manage stocks of medicines and other supplies; and plan and implement TB-IC. Selected health centres additionally provide DOTS for patients with DR-TB who are referred by treatment initiating centres. Few high-volume health centres also perform GeneXpert test at the spot, while the remaining access TB-DST services through specimen referral system.

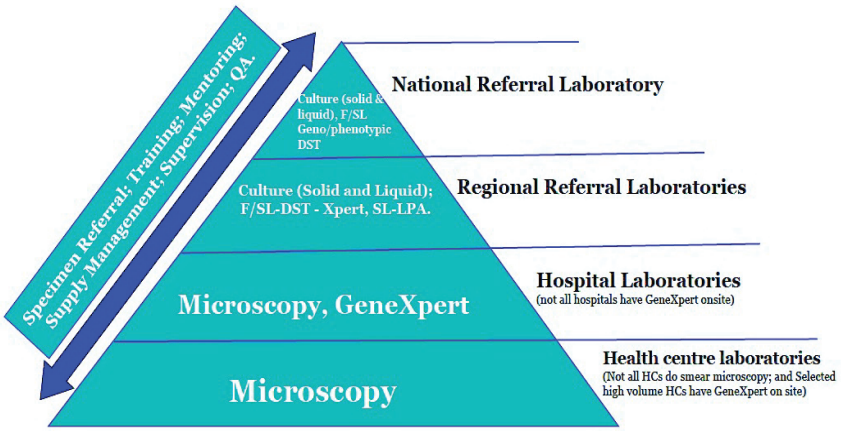
Hospitals: Hospitals carry out activities as health centres, and additionally provide referral services for TB diagnosis and treatment, and admission care as indicated. Selected hospitals provide diagnosis and treatment of DR-TB, including inpatient care. The majority of PLHIV also receive ART at hospital levels. Most GeneXpert machines in the country are installed at hospital laboratories.

Private health facilities: Private health facilities include both for and not for profit services. Private providers are engaged in TB diagnosis, treatment, and/or referral of presumptive TB/DR-TB cases, depending on individual facility capacity (i.e. Hospital, higher clinics and medium clinics).

C.TB diagnostic laboratories at different levels

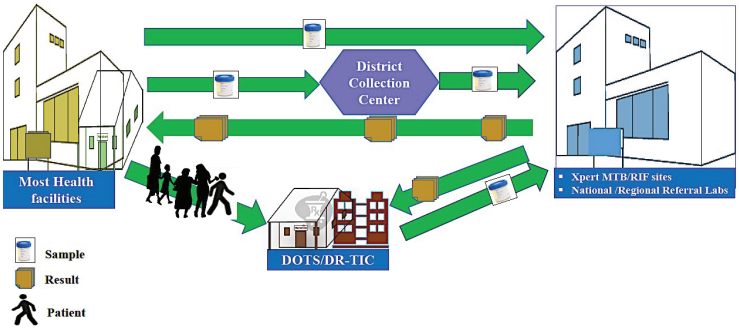
TB diagnostic laboratories are coordinated and assisted by the Ethiopian Public Health Institute (EPHI), which is one of the technical agencies of the FMoH. TB laboratory services are packaged and delivered at three levels of the health care delivery system: National referral laboratory; Regional referral laboratories; and peripheral laboratories at health centres and hospital laboratories **(Figure 7)**.

Figure 7. Package of TB public laboratory services at different levels.



The sample referral network system plays a critical role in accessing TB laboratory services to several. patients who would benefit from DST –both for rapid and conventional DST. The national TB specimen referral network links health facilities with testing sites based on geographic and logistic proximity. Trained couriers (postal office or delegated courier) collect sputum specimens prepared by laboratory personnel at TICs and deliver it to a designated laboratory for SL-LPA test. The same courier system is responsible for delivering test results to the respective specimen referring health facility (Figure 8).
If the test result is required urgently, it will be communicated through telephone,SMS or fax, until the official result is delivered to the facility. The choice of transport means used by a courier depends on proximity of the specimen referring facility to SL- LPA test site and availability of vehicle, motorbike, or public transport. To ensure laboratory performance consistency, National Standard Operational Procedures (SOPs) are developed for specimen referral networks, including for specimen collection, storage, transportation and result delivery.

Figure 8. TB laboratory sample referral system.



Box 1. Roles and responsibilities of laboratories in providing TB services at different levels.

i. Peripheral laboratories (health centres and hospital laboratories)

Primary role of peripheral laboratories is provision of basic laboratory services including:

- Perform TB smear/Fluorescence microscopy.
- Specimen referral for TB culture and DST.
- GeneXpert test at the spot, where available.
- Receive specimens and dispatch results, as designated.
- Internal quality control and assurance of laboratory services and participate in EQA.
- Keep TB smear slides for blinded rechecking.
- Equipment cleaning and preventive maintenance.
- Inventory management of AFB reagents, TB laboratory supplies and consumables.
- Designated laboratories function as quality assurance centres.
- Selected labs involved in reagent preparation.
- Recording and reporting.

ii. Regional Referral Laboratories (RRL)

Primary role of RRLs is quality control and provision of all basic laboratory services with special emphasis to:

- AFB reagent preparation and distribution to ZHD/health facilities.
- Undertake culture and DST, including GeneXpert and SL-LPA.
- Implement quality improvement and assurance for TB laboratory services in respective region.
- Participate in external quality assurance, including at national level.
- Perform blinded rechecking of TB smear slides collected from peripheral laboratories for QC.
- In-service training of laboratory professionals.
- Supportive supervision of peripheral laboratories.
- Initiate relevant TB researches in the region.
- Coordinate and facilitate integrated TB/HIV specimen referral network in respective region.
- Perform preventive and curative equipment maintenance in respective region.
- Recording and reporting

iii. Ethiopian Public Health Institute (EPHI) national TB referral laboratory.

- Provide quality TB national referral laboratory services.
- TB culture and DST (F/SLDs -phenotypic and genotypic).
- Identification of mycobacteria other than M. Tuberculosis.
- Building capacity and supervision of RRL and laboratories at Federal hospitals.
- Prepare and distribute panel testing slides to RRL and Federal hospital laboratories.
- Develop and implement TB laboratory QA/QC logs, formats and job aids.
- Technical control and maintenance services for laboratory equipment.
- Enable NRL, RRL, federal hospital's and peripheral laboratories to participate in IEQA.
- Facilitate accreditation of RRL and selected Hospitals' TB liquid culture laboratories.
- Develop and disseminate safety guidelines and protocols, and ensure adherence to them.
- Develop and disseminate evidence-based guidelines and manuals for TB laboratory services.
- Develop and disseminate SoPs/job aids for TB laboratory tests.
- Establish and update training materials and job aids for TB laboratory services.
- In-service training of TB laboratory technicians, including in equipment maintenance.
- Establish TB laboratory services at regional and health facility laboratories.
- Quantify and forecast TB laboratory supplies and equipment, at national level.
- Collaborate with NTP in defining technical specification of laboratory equipment, reagents and other materials and forecasting equipment and laboratory material needs.
- Operational and applied research as prioritized in collaboration with the NTP.

Table 2. TB diagnostic and treatment service delivery sites in Ethiopia, May 2017.

Health facility	Number	Remark
Government hospitals	156	3,491 public hospitals and health centres.
Public health centres	3335	
Health posts	15194	60% CTBC coverage; around 24% CF contribution.
AFB Microscopy	3,279 health facilities	2,891 public and 388 private HFs; around 700 LED and 2,579 light microscopes.
GeneXpert machines*	144 sites	
TB Culture	5 RRLs, 4 referral university hospitals; 1 NRL	
Laboratory EQA centres	155	
Private HFs	386	PPM-DOTS national contribution to 10% CF
RR/MDR-TB TICs	48 hospitals	
RR/MDR-TB TFCs	658	No. may vary based on patient on care
ND, and Pre-XDR/XDR-TB TICs	3	

* Excluding 16 viral load pilot and 5 research-based GeneXpert machines, which don't provide routine TB services.

Table 3. Location of regional and national TB culture and DST laboratories, May 2017.

Lab Name	Location	Current capacity	Remark
NRL	Addis Ababa	Culture (solid and liquid), F/SL- DST (F/SL-LPA, GeneXpert)	
Adama RL	Adama	Culture (solid and liquid), F/SL- DST (SL-LPA, GeneXpert)	
Bahirdar RL	Bahir Dar	Culture (solid and liquid), F/SL-DST (SL-LPA, GeneXpert)	
Mekele RL	Mekele	Culture (solid and liquid), F/SL- DST (SL-LPA, GeneXpert)	
Harar RL	Harar	Culture (solid and liquid), F/SL-DST (LPA, GeneXpert)	
Hawassa RL	Hawassa	Culture (solid and liquid), F/SL- DST (SL-LPA, GeneXpert)	
Gondar University	Gondar	Culture (solid and liquid), F/SL- DST (SL-LPA, GeneXpert)	LPA newly installed
St. Petros hospital	Addis Ababa	Culture (solid and liquid), FL-DST (LPA and Xpert)	Relocated to new building; negative pressure being installed at new site.
ALERT/AHRI	Addis Ababa	Culture (solid), Xpert	MGIT 960 under procurement
Jimma University	Jimma	Culture (solid and liquid), F/SL- DST (SL-LPA and Xpert)	

1.4 TB, TB/HIV, DR-TB AND LEPROSY IN ETHIOPIA

1.4.1 TB prevalence, incidence and mortality trends

WHO classifies Ethiopia as one of the high burden countries for TB, TB/HIV and MDR-TB . The incidence estimates for all forms of TB, in 2016, is 177/100,000 population (Table 4).

Table 4. Sumary of the TB epidemic in Ethiopia, 2016 .

Summary of the TB epidemic in Ethiopia		2016
TB Incidence	Rate = 177/100,000 (125–239) Estimated Number = 182,000 (128–245)	
	Estimated number: Females = 82,000 (55–108) Males = 100,000 (68–133)	
	Estimated number: Children 0-14 years = 24, 000 (16–31) Adults > 14 years = 158,000 (107–209)	
TB Mortality	Excluding HIV associated TB: Rate = 25/100,000 (16–36) Estimated Number = 26,000 (16–37)	
	HIV associated TB only Rate = 3.9/100,000 (2.6–5.3) Estimated Number = 4,000 (2.7–5.4)	
Estimated RR/MDR-TB case among pulmonary +	Estimated Number = 2,900 (1,800–4,000)	
Estimated % of TB cases with MDR/RR-TB	Among new cases = 2.7% (1.5–4) Among previously treated cases =14% (3.6–25)	

The TB prevalence estimates in Ethiopia shows a steady decline since 1995 with an average rate of 4% per year, which is accentuated in the last five years to annual decline of 5.4%. Likewise, the TB incidence estimate reached a peak value of 431/100,000 population in 1997, and it has been declining at an average rate of 3.9% per year since 1998, with annual decline of 6% within the last five years. Figure 7, below, indicates prevalence rate for all forms of TB has declined from 426/100,000 in 1990 to 200/100,000 population in 2014 (53% reduction). Similarly, the TB incidence rate has dropped from 369 in 1990 to 192/100,000 population in 2015 (48% reduction), after a peak of 421/100,000 in 2000. Furthermore, TB related mortality rate has been declining steadily over the last decade from 89/100,000 in 1990 to 26/100,000 in 2015 (70% reduction from 1990 level) (Figure 9).

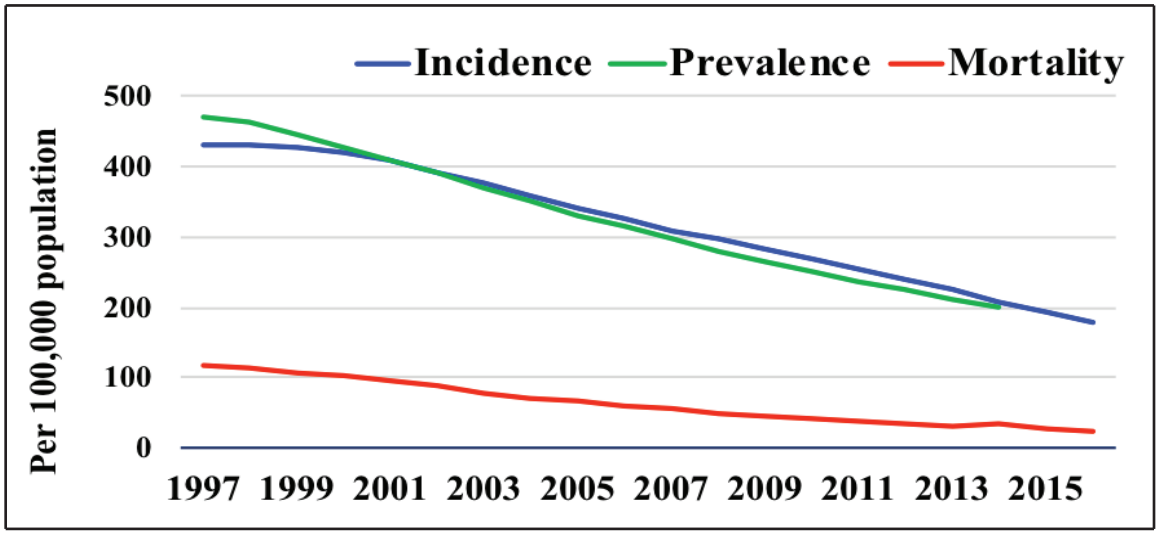
[8]WHO. 2017. Global TB report.

[9]Ibid.

In 2011, the first population based national survey shows a prevalence rate of 108/100,000 population smear positive TB among adults, and 277/100,000 population bacteriologically confirmed TB cases. In the same year, the prevalence of TB for all groups in Ethiopia was 240/100,000 populations. This finding indicates that the actual TB prevalence and incidence rates in the country were lower than the WHO estimates for the same period. Additionally, the survey showed a higher prevalence rates of smear positive and bacteriologically confirmed TB in pastoralist communities. However, consistent with its methodology, the survey does not allow further disaggregated sub-national estimates.

The declining trend in incidence and prevalence rates follow the massive expansion of DOTS centres in the country, in line with the adoption of the Stop TB strategy by the NTP. A trend of higher incidence compared to prevalence estimates for the last seven years, accompanied with progressive decline in TB mortality and high treatment success rate, would likely indicate most detected TB cases are incident cases of the same years (Figure 9).

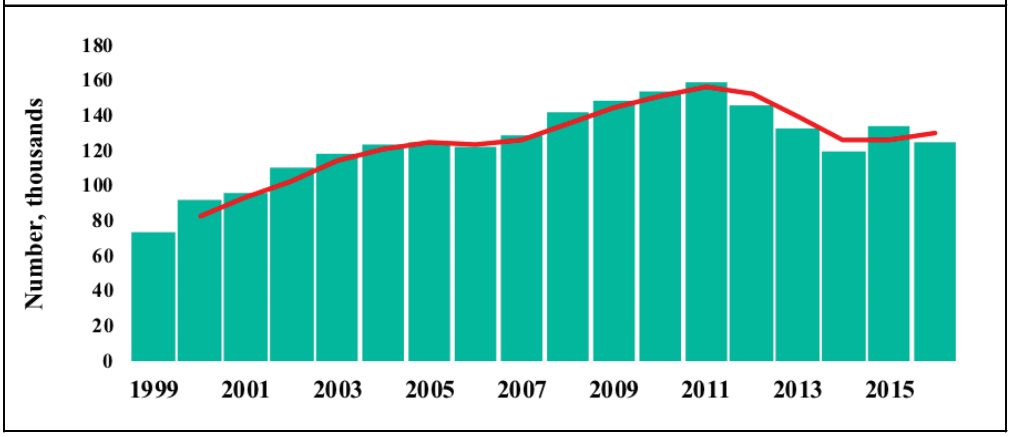
Figure 9. Trends of TB incidence and prevalence rates in Ethiopia: 1990-2015.



1.4.2 National TB case notification trend

The number of notified TB cases has been steadily increasing from 1996, with a peak of 159,017 cases in 2011 (Figure 10). It has shown a downward trend over the last five successive years, as illustrated in figure 10, below, with 8% (10,000 cases) average annual decline over the last four years.

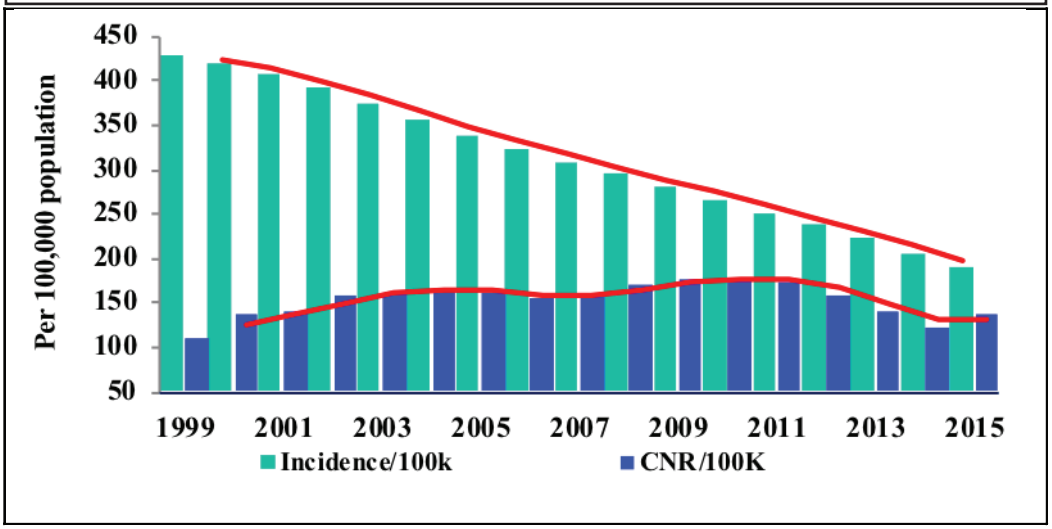
Figure 10. Trend in annual number of notified TB cases over 18 years, 1999-2016.



The abrupt drop in the number of notified TB cases over the last years, following successive increase for five-years, in the absence of a significant change in disease control strategy preceding it, is unlikely to indicate national disease burden decline. Furthermore, experience from Woredas where intensified and focused community-based TB, routine contact investigation, and key population focused interventions are implemented, show increased number of notified TB cases in the last two years compared to preceding years. The case notification rate has doubled in some of these settings, indicating that the disease burden has not declined so much to fully explain a national 8% average decline in the number of notified TB cases over the last four years.

The gap between estimated incidence and notification rate, in Ethiopia, indicates a national case detection rate of approximately 66% in 2016 (Figure 11). In 2015, the TB incidence case is estimated to be 192,000 and within the same time period, 135,951 cases were notified to the NTP. Innovative high impact public health strategies to narrow this gap will be essential for Ending TB as a public health problem in the country.

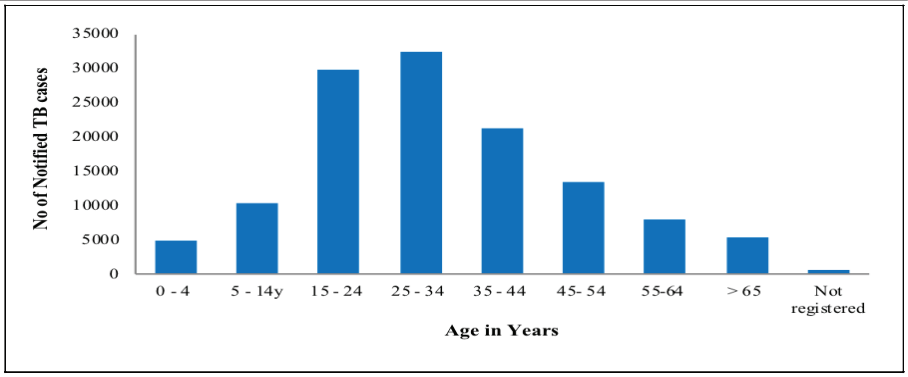
Figure 11. TB incidence and CNR per 100,000 population, 1999-2015.



1.4.3 TB burden in various population and geographic settings.

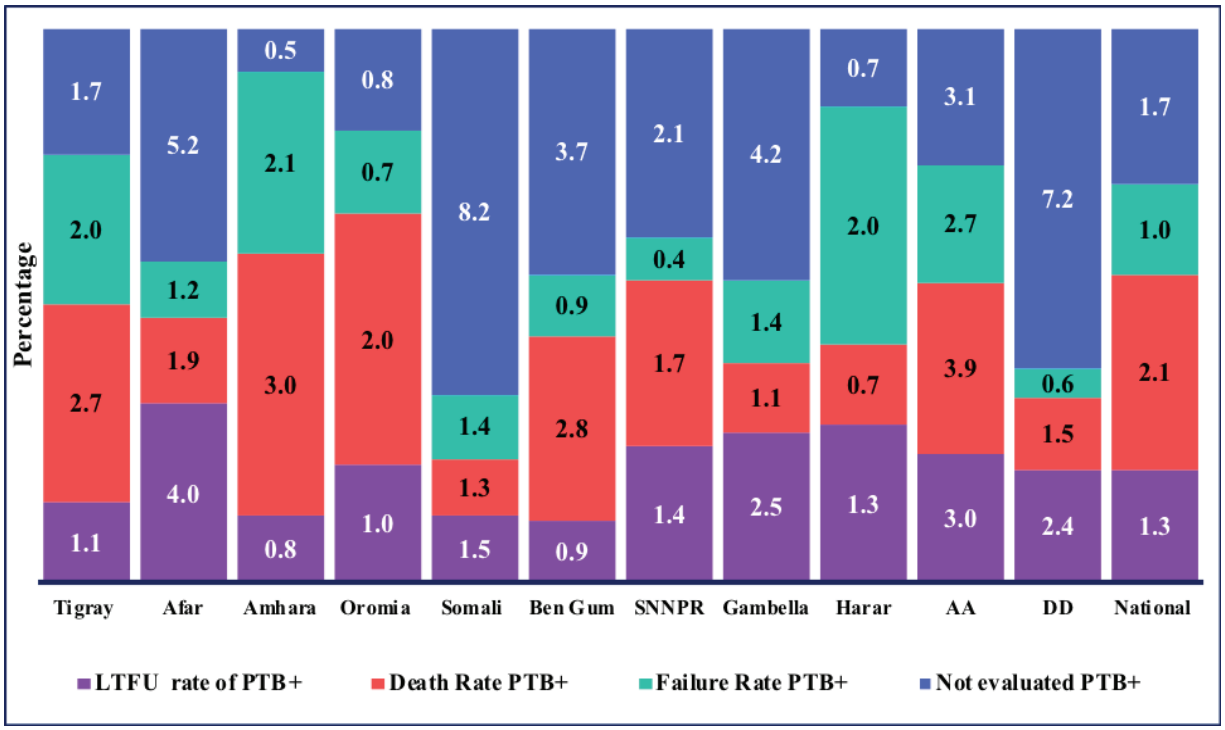
In Ethiopia, close to 70% of annually notified cases are between 15-54 years of age, while around 12% are children younger than 15. During the same year, 56% of nationally notified TB cases were male, while females constitute 44%. In both males and females, the occurrence of TB is dominated by the young, suggesting continuing infection transmission as opposed to reactivation of latent TB (Figure 12

Figure 12. Age distribution of all forms of TB notified to NTP, 2016.



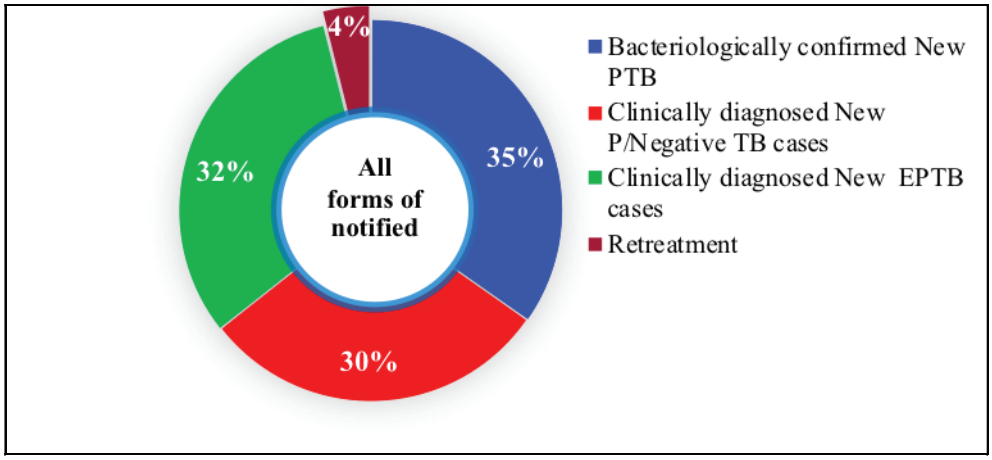
Routine TB program data indicate that the country has attained high treatment success rate (TSR) for the last five years. However, there is variation across regions, which necessitate tailored context specific interventions, including to improve data quality. Figure 13 summarizes regional distribution of unfavourable treatment outcome among notified PTB+ cases (HMIS, 2015). The report shows higher lost to follow up rates in Addis Ababa, Afar, Dire Dawa and Gambella regions compared to national average; while death rate is above national average in Addis Ababa, Amhara, Benshangul Gumuz, Gambella, and Tigray regions. During the same year, failure rate is reported above national average from Addis Ababa, Amhara, Harari, and Tigray regions. Compared to the national average, a higher proportion of not evaluated patients (at completion of treatment) are reported from Afar, Benshangul Gumuz, Dire Dawa, and Somali regions **(Figure 13).** While sub-national targeted support of population and geographic settings to achieve equitable progress is important, ensuring data quality and verification are essential first steps to exclude artificial outcome differences.

Figure 13 Unfavourable treatment outcome among PTB+ cases by region, 2015.



As high as 62% of notified TB cases in 2016 were clinically diagnosed, which includes newly diagnosed smear negative pulmonary (30%) and extra-pulmonary TB (32%) cases (Figure 14). Greater understanding of the clinical and programmatic implications of such high proportion of non-bacteriologically confirmed TB cases would be useful in further improving outcome in this category of patients. During the same year, 4% of nationally notified TB cases with history of previous treatment or are retreatment cases.

Figure 14. Nationally notified cases by type of TB, 2015.



Ethiopia is currently expanding GeneXpert test, which potentially would contribute in increasing the proportion of patients with bacteriologically confirmed Tuberculosis among all notified cases in the coming years.

1.4.4 Epidemiology and national response to TB/HIV co-infection

HIV presents a significant challenge to the control of tuberculosis, and TB remains a leading cause of mortality in PLHIV. From early 2002, Ethiopia has established a national TB/HIV collaborative mechanism, which is instrumental in resource mobilization and programme coordination, and updating national guidelines and policy. National guidelines recommend functional TB/HIV collaborative mechanism at all levels, including at national, regional, sub-regional and facility levels. The 2017 external mid-term review highlights the need to strengthen this mechanism, particularly at sub-regional and facility levels.

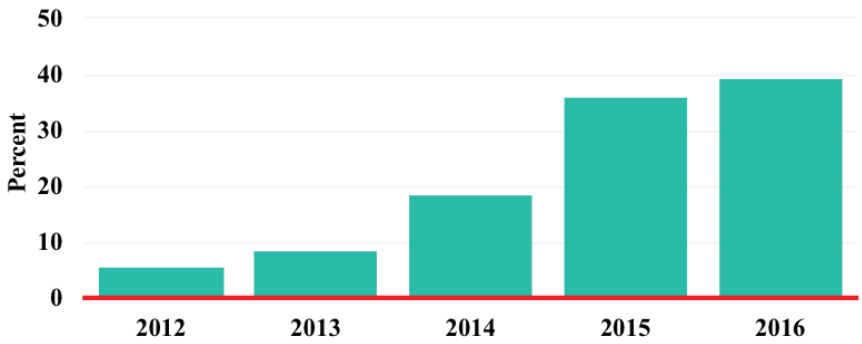
To date, more than 1189 health facilities provide antiretroviral therapy (ART), which also implements TB/HIV collaborative activities, including intensified TB case finding, HIV/TB management of co-infected patients, INH preventive therapy (IPT) for PLHIV, and cotrimoxazole preventive therapy (CPT). TB related services are provided in over 3,000 health facilities, which also offer HIV testing for all TB patients and link co-infected patients for ART, record evidence of enrolment in HIV care, and provide information on HIV prevention to all diagnosed of TB, irrespective of HIV status. In 2016, an estimated 16,000 PLHIV have developed TB in Ethiopia. During the same year, routine NTP report indicates 8,625 (54% of estimated) receiving co-treatment. Improved case finding, both by HIV and TB programmes, will contribute to narrow this gap.

Intensified TB Case Finding (ICF) is one of the TB/HIV collaborative activities for accessing TB preventive therapy and prompt TB diagnosis in PLHIV. Per national TB/HIV surveillance data, increasing proportion of PLHIV enrolled in care are screened for TB across time. HMIS report does not fully capture this indicator since 2015 and the last three-year report is based on surveillance data. The 2014 sentinel data shows 9.2% of PLHIV had active TB at initial enrolment in HIV care. This understandably is higher compared to observations in the general population, though, caution would be necessary in generalizing this finding to national level. The sentinel sites might not be representative of various geographic settings and population groups in the country.

necessary in generalizing this finding to national level. The sentinel sites might not be representative of various geographic settings and population groups in the country.

Isoniazid preventive therapy (IPT) prevents progression of latent infection to active TB in PLHIV. The national guidelines recommend a six-month IPT for all PLHIV without active TB and has been implemented in the country since 2004. However, IPT uptake is still low though with a steady increase over the last years. Out of the total clients newly enrolled in HIV care, for which active TB was ruled out, highest IPT coverage was achieved in 2016 **(Figure 15).**

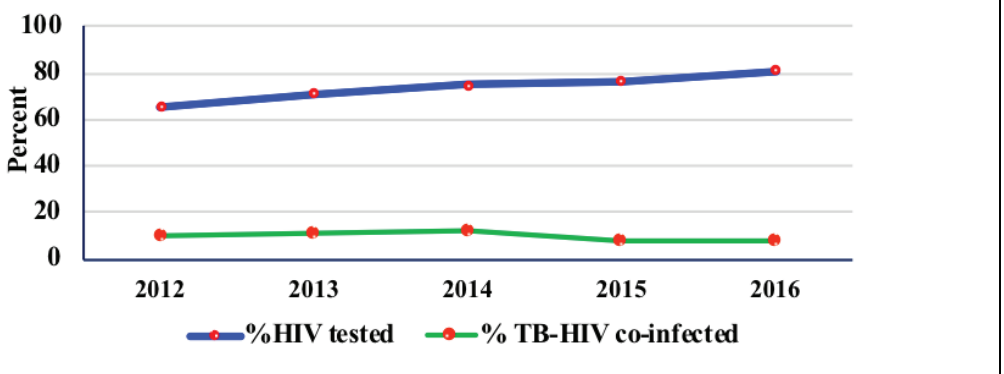
Figure15 Proportion of eligible PLHIV put on IPT at time of enrolment, 2012 - 2016.



HIV test coverage in TB patients and co-infection rate: The national guidelines recommend offering HIV test for all diagnosed of TB and presumptive TB. The national HMIS data shows a steady increase in testing rate, reaching 82% in 2015/16 **(Figure 16).** The increased rate could be the result of improved access with rapid expansion of TB and HIV services. However, there is significant regional variation in HIV test coverage among TB patients, with 26% in Somali region to as high as 100% in Harari region.

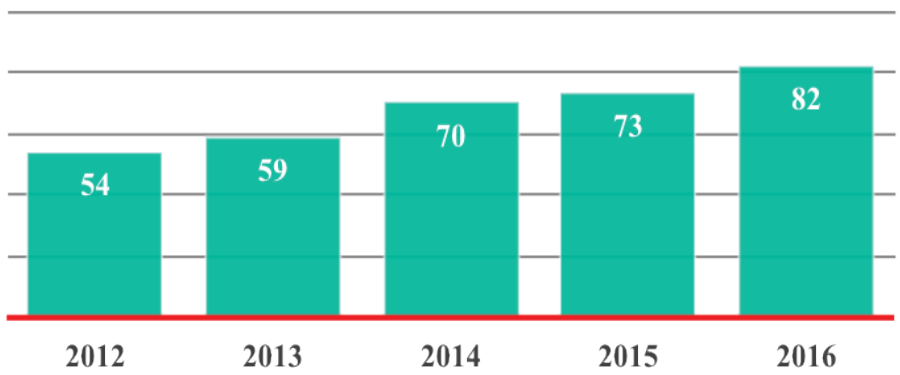
National HMIS data indicate a peak TB/HIV co-infection rate of 15% in 2009/10, among notified and tested patients with TB, which progressively declined to 8% in 2016. Generally, this trend could be due to decline in new HIV infection in the country and improved implementation of collaborative activities. In Ethiopia, the burden of HIV infection varies across geographic settings and population groups, a consideration for a differentiated approach in implementing accelerated TB/HIV collaborative activities. Despite the national guidelines recommendation to offer HIV testing to those with presumptive TB, there is lag in tracking its implementation.

Figure16 Proportion of TB patients tested for HIV and co-infection rate, 2012 - 2016.



ART for TB/ HIV co-infected patients: HMIS data indicates progressive increase in ART coverage in TB/HIV co-infected patients, up from 54% in 2012 to 82% in 2016 (Figure 17). The national guidelines recommend ART to all PLHIV, including those with TB, irrespective of CD4 count and clinical stage of HIV infection. Evidence shows that early HIV treatment has better patient and public health outcomes, including in HIV prevention and protective benefits from Tuberculosis.

Figure17 Proportion of TB/HIV co-infected patients on ART, 2012-2016.



1.4.5 DR-TB epidemiology and national response

The 2016 WHO global report puts Ethiopia among the high MDR-TB burden countries, with more than 3,300 annual estimated cases. The first national anti-TB drug resistance survey (DRS) in 2005 (EPHI/FMoH) has reported 1.6% of newly diagnosed and 11.8% of previously treated TB cases had **MDR-TB (Table 5).**

Table 5. National drug resistance survey and survillance findings, 2005 and 2013.

Newly diagnosed TB patients Previously treated TB patients	1.6 % (95% CI 0.9-2.8%) 11.8%	2.3% (95% CI 1.5-3.1%) 17.8%	Ongoing national DRS. Result expected early 2019
Previously treated TB patients	11.8%	17.8%	

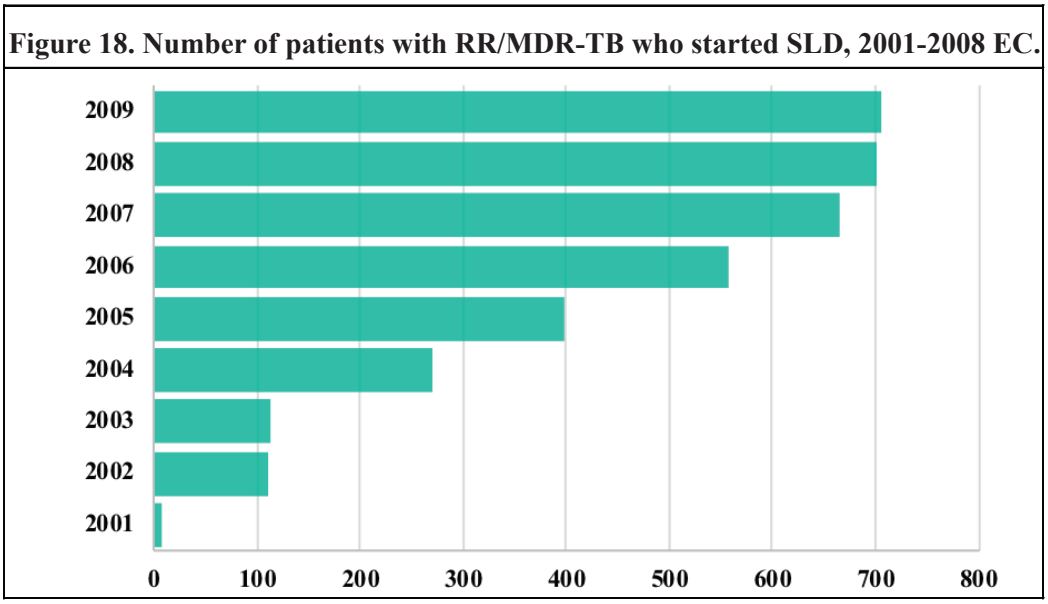
In 2016, WHO estimated 2.7% (1.5-4) of newly notified and 14% (3.6 – 25) of previously treated TB patients have MDR-TB . The magnitude of the burden of XDR-TB in the country is not known, as earlier national surveys didn't include SL-DST. However, from July 2016 to March 2017, 16 confirmed pre-XDR/XDR-TB patients were notified among 47 DR-TB patients started on new drugs (ND).

In 2009, Ethiopia started providing DR-TB treatment at St Petros hospital in Addis Ababa, with subsequent expansion to Gondar University Hospital a year later. Health facility expansion plan for the Programmatic Management of Drug-resistant TB (PMDT) was developed in 2010, taking into consideration the need to augment DR- TB diagnostic capacity along with expansion of treatment sites. Till mid 2011, there were three public (at National reference laboratory, EPHI and St. Petros hospital) and one private laboratories providing TB culture and DST services.

Between 2012 and 2013, DST services and DR-TB treatment has expanded to accelerate case finding and prompt treatment initiation. Culture DST services have expanded to Adama, Bahir Dar, Gondar, Harar, Hawassa, Jimma, Mekele, and regional laboratories. Additionally, Addis Ababa regional laboratory and ALERT hospital are in process of setting up the infrastructure (Table 2 and 3).

Ethiopia implements a decentralized ambulatory MDR-TB treatment service delivery model, where hospital admission happens when medically indicated. By the end of 2016, forty-six MDR-TB treatment initiation centres (TIC) are functional across the country, with a corresponding increase in the number of treatment follow-up centres (TFCs). In 2015/16 EFY, 700 RR/MDR-TB patients were put on second-line treatment, with 2,820 cumulative number of cases enrolled in second line treatment since 2001 (E.C). By mid 2017, three hospitals have introduced ND, with a plan for further expansion.

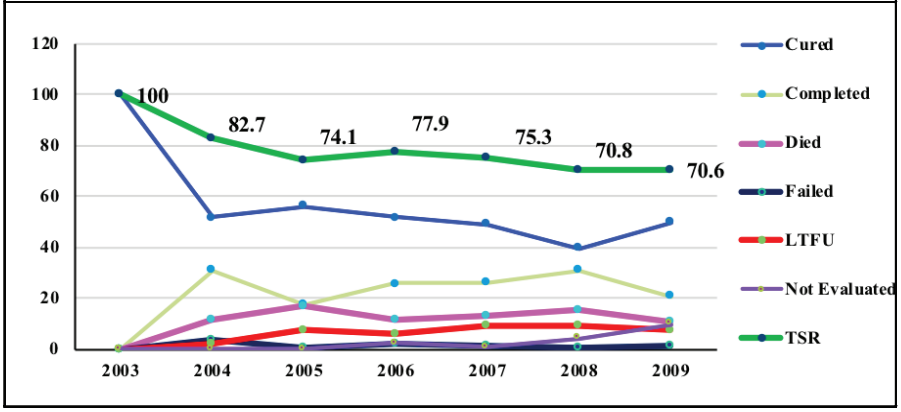
Figure 18. Number of patients with RR/MDR-TB who started SLD, 2001-2008 EC.



10WHO. 2017. Global TB report

Final 24 months outcome of cohort of RR/MDR-TB patients on SLDs: WHO report indicates a global MDR-TB treatment success rate (TSR) of 52% (WHO, 2016). On the other hand, only few high burden countries including Ethiopia achieved TSR above 70%. In 2009 EC, the national RR/MDR-TB cure rate (i.e. for cohorts put on treatment 24 months earlier) is 49.8% with treatment success rate (TSR) of 70.6%, while death rate in the same year was 10.5% and nearly 10.5% of them were not evaluated. The progressive decline in the proportion of patients who are not evaluated is very encouraging, though still emphasis need to be put for all patients to be evaluated per national TB guidelines recommendations.

Figure19. Final treatment outcome of cohort of patients with RR/MDR-TB, 2011– 2016.



As part of DR-TB service quality improvement, the NTP has:

- Established clinical panels, at each TIC, to provide technical support to respective clinical teams.
- Organized regular clinical seminars and continued medical education (CME), with case-based clinical consultation forums, building providers skill and leadership in the management of DR-TB.
- Provided regular basic and advanced clinical in-service trainings.
- Held periodic catchment area meetings (CAM) to ensure patient referral linkage and communication between TICs and TFCs.
- Facilitated clinical mentoring for regular site level technical assistance by experienced clinicians from TICs to TFCs.
- Supported facility level periodical cohort analysis to improve clinical services and data quality and use for decision making (i.e. longitudinal monitoring of treatment outcome among cohort of patients). The six-month interim and final outcomes should be analysed and reported to the program, while periodic cohort review will be used at clinical panel team level.

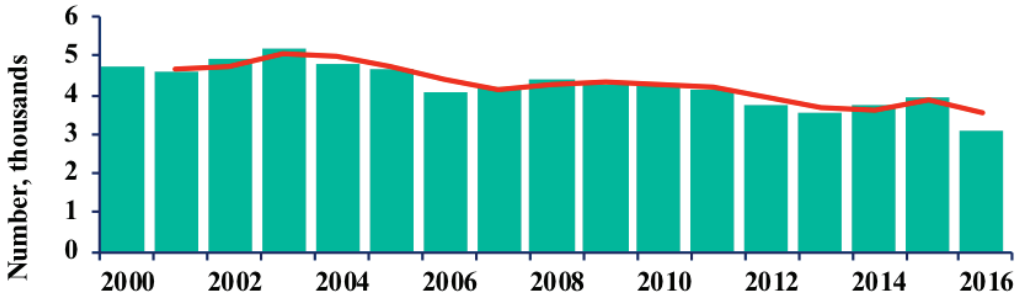
1.4.6 Epidemiology and national response to Leprosy

Globally, leprosy ranks as top cause of permanent disability among infectious diseases.
Ethiopia integrated leprosy with general health services (GHS) following the decline in disease burden and reduction in the number of patients registered for treatment. Furthermore, structural changes in the political and administrative setup of the country since 1991 has led to the decision to merge leprosy and tuberculosis control and integration with GHS.

i.Epidemiology of Leprosy in Ethiopia

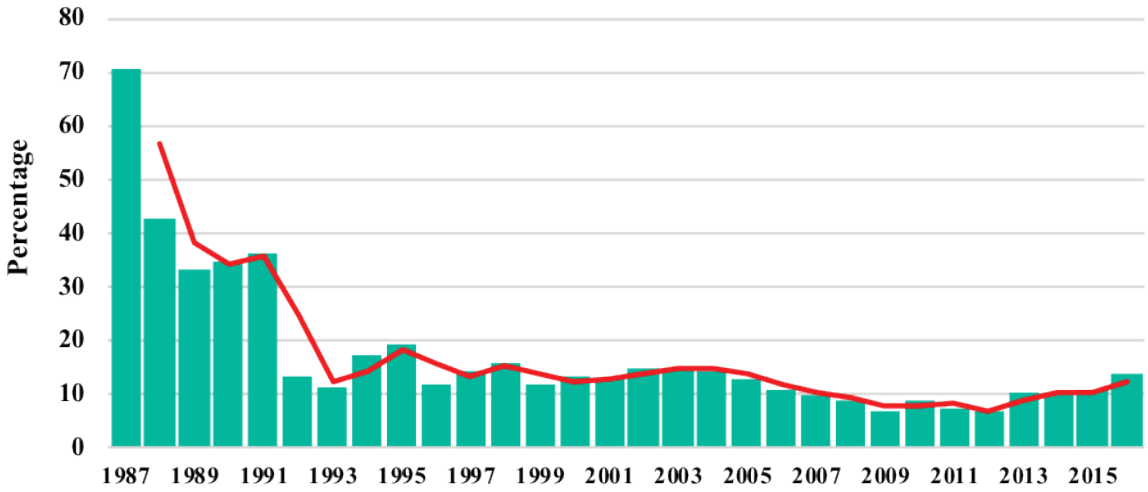
Annually, around 3000-4000 new cases have been reported and registered in Ethiopia, with no decline in incidence in the past 20 years. The Prevalence of Leprosy has sharply declined from 19.8/10,000 in 1983 to 0.3 in 2016, following the introduction of Multi Drug Therapy (MDT). The national programme data shows, after the introduction of MDT, 126,592 new cases were detected, while 149,592 patients released from treatment. New leprosy case notification has been constant over the last ten years **(Figure 20).**

Figure 20. National Leprosy case notification trend, 2000-2016.



There is significant regional variation in burden of Leprosy, ranging from 2.4/10,000 in Gambella to as low as 0.1/10,000 population in Somali region. The reason for the higher prevalence in Gambella region is not well understood, and it necessitates farther investigation. Nationally, more than 30% of new cases present with grade 1 or 2 disability at the time of diagnosis **(Figure 21).**

Figure 21. Proportion of disability grade 2 rate among reported new leprosy cases, 1987-2015.

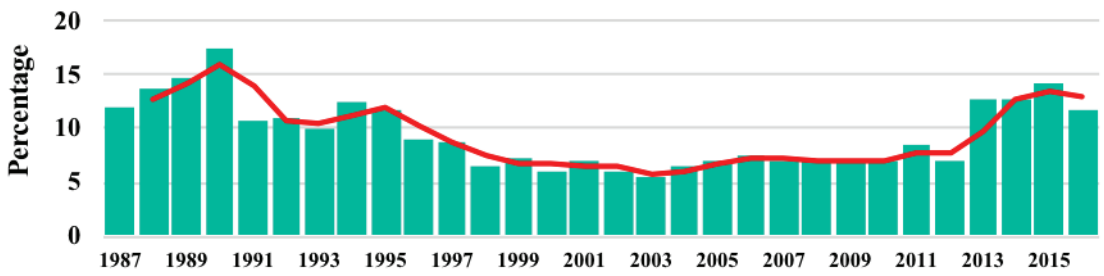


Grade 2 disability rate among new cases showed a declining trend over the earlier years, reaching below 10% in 2008 **(Figure 21)**. However, within the last recent years, it has increased, reaching 13.6% in 2016, but with a wide regional variation, ranging as high as 44.9 % in Gambella to as low as 0% in Somali region. There is no specific reason for the high rate in Gambella, but one of the possible explanations could be re-registration of previously treated leprosy patients as new cases, which requires data verification.

ii.Childhood leprosy trend

The proportion of childhood leprosy in Ethiopia has stabilized around 7%, with no declining trend since 2012, but with increasing trend from 2013-2016 **(Figure 22).** In 2016, children younger than 15 years constitute 11.7% of new leprosy cases reported nationally. This figure is higher when compared to the African region, as well as the global and national target of achieving 5%.

Figure 22. Proportion of childhood leprosy among nationally reported new cases from 1987 - 2016.



There is wide regional variation in reported childhood leprosy cases, which ranges as high as 50% in Afar and Somali regions to the least in Harari region that does not report children. Oromia region, one of the three biggest regions reporting high number of new leprosy cases, reported 198 (13.6%) childhood leprosy **(Table 6).** This regional variation could be due to better health workers, including HEW, capacity to diagnose Leprosy in children. However, this also shows high disease transmission in the community.

Table 6. Proportion of children among new cases, 2016.

Regions	All new cases	No of children new cases (%)	Grade 2 disability, new cases (%)
Tigray	58	4 (6.9%)	11 (19%)
Afar	34	17 (50%)	1 (3%)
Amhara	915	96 (10.5%)	112 (12%)
Oromiya	1452	198 (13.6%)	141(10%)
Somali	2	1(50%)	0
Benshangul G	74	15 (20.3%)	22 (30%)
SNNPR	185	16 (8.6%)	33 (18%)
Gambella	96	10 (10.4%)	26 (27%)
Hareri	14	0	1(7%)
Addis Ababa	221	2 (0.9%)	69 (31%)
Dire Dawa	25	1(4%)	3(12%)
National	**3076**	**360 (11.7%)**	**419 (13.6%)**

The high proportion of childhood leprosy and Grade 2 disability at time of diagnosis signify the need for multidimensional approaches for the prevention and control of leprosy in the country.

iii. Current Leprosy control program implementation status

In 2015/16, 3200 leprosy cases, 96.2% newly diagnosed, were notified to the national program. During the same year, among new cases, 86.3% were MB, 11.7% were children younger than 15 years, and 3.6% have Grade 2 disability at the time of diagnosis **(Table 7).** The current high proportion of childhood and MB leprosy among new cases indicate ongoing transmission.

Table 7. National leprosy indicators 2015/16.

Indicator	Performance
Number of newly detected cases	3,076
Detection rate per 100,000	3.3/100,000 population
Number of MB among newly detected cases	2,645 (86.3%)
Number of children among newly detected cases	360 (11.7%)
Number of new cases with grade 2 disability	419 (13.6%)

The proportion of new Leprosy cases with grade 2 disability at time of diagnosis is unacceptably high (13.6%). This would partially be explained by low healthcare seeking, resulting deferral until the disease progresses to interfere with day-to-day activities. Main reasons for delayed diagnosis are lack of awareness; traditional beliefs (such as, considering leprosy as something hereditary/unavoidable, a punishment "for bad family reputation", "God's curse", etc.); and fear of stigma. Furthermore, health system related issues, such as missed diagnosis, particularly in private settings; incomplete referrals and linkage to care; and poverty (i.e. unaffordable transport and other costs faced by patients) are barriers to early diagnosis. Despite on-going transmission of leprosy within the community, the current attention given to leprosy prevention and control is also less than desired, at all levels. This calls for targeted

interventions, including to address stigma and low awareness, in order to ensure prompt diagnosis and treatment of leprosy.

1.5 MID-TERM EXTERNAL REVIEW: IMPLEMENTATION PROGRESS, CHALLENGES AND GAPS

At the beginning of 2017, an external mid-term review of the national TBL strategic plan was undertaken. The synthesized key review findings are summarized in annex 1, while a separate full report provides a more detailed review finding . Table 8, below, summarizes strength, limitation, opportunities and threat (SLOT) analysis of NTL control programme of Ethiopia, which is output from the mid-term external review and subsequent stakeholders' consultation.

Though still a major public health problem, Ethiopia has made steady progress in the control of TBL. Some of the contributing factors for the gains made so far include:

- Continued government commitment, as demonstrated by including TBL control among the top priority public health programs and adoption and successful implementation of DOTS and Stop TB strategies.
- Massive expansion of services resulting improved access to quality DOTS services.
- Effective community level implementation, with inclusion of TB prevention and control in HEP packages and ACSM activities.
- Successful and effective engagement of private care providers in TB prevention and control.
- Strong funding and implementing partners support to national programmes, including in engaging all care providers.
- Successful implementation of evidence-based high impact interventions for the prevention and control of TB and HIV.

Looking forward, increasing case notification, for all forms of TB, is a major programmatic gap and priority for the National programme. This includes strengthening quality of TBL services , and programmatic focus to reach key population and engaging all care providers. Most limitations in the SLOT analysis, Table 8, are also programme gaps that need to be addressed.

Key recommendations of the midterm review are bulleted below. A detailed implementation plan, with targets, is incorporated in Annex 2.

A. Find the missing TB cases

- Adopt and scale up initiatives to increase case finding:

- Rollout updated diagnostic algorithm: use Xpert as first line test; incorporate X-ray in the algorithm for TB diagnosis.
- Expand TB diagnostic network: Improve knowledge and diagnostic skills of healthcare workers; increase number of public and private health facilities providing TB diagnostic services; expand further full package CTBC coverage through HEP; increase engagement of CSOs/NGOs in the delivery of TB services; increase coverage and frequency of sample referral systems, as feasible.
- Intensify TB case finding: in outpatient care settings, big hospitals /high volume health centers, among vulnerable and key populations, through contact tracing and screening, child and maternal healthcare settings, etc.

- Enhance government investment to increase and sustain TB control resources.

[11]FMoH. 2017. Report of an independent mid-term review of the Ethiopia TB and Leprosy control strate gic plan, 2013-20.

B. Create community demand for TB diagnostic services

- Develop and implement TB specific ACSM action plan to increase case finding in line with the National Health Promotion and Communication Strategy 2016-2020.

C. Adopt and track core SDG/End-TB era UHC and social protection indicators

- Conduct baseline assessment of catastrophic costs among TB patients and incorporate into existing system [such as NHA, DHS, etc.] for tracking trend.

D. Monitor disease trend

- NTP working with RHBs, EPHI and partners
- Conduct a repeat nation-wide community-based TB disease prevalence survey to monitor trend of TB burden by 2020/21.
- Implement data analysis for local level planning in line with the national Information Revolution Trans formation Agenda of the government of Ethiopia.
- Complete transition to electronic reporting and implement other initiatives to improve TB data quality.

Priority areas for improving case notification and access to quality TBL services:

- Systematic TBL case finding and management, including with programmatic focus on key population.
- Strengthening TB diagnostic laboratory service availability and utilization, including for early diagno sis of DR-TB.
- Expand equitable access to quality TBL services by engaging all care providers.
- Strengthen prison and other congregated settings linkage with quality TB services.
- Routine implementation of TB laboratory external quality assurance, including in private care settings.
- Targeted advocacy, communication and social Mobilization (ACSM) to address barriers and increase demand for quality TBL services.
- Patient-centred TBL care, adherence support and early case detection in community care settings, through HEP and HDA.
- Engagement of CSOs and NGOs in implementing and monitoring TBL strategic plan: community based TBL care, to address social determinants and enhance community support.
- Strengthen human resource availability and capacity through pre-service and in-service trainings on clinical and programmatic management of TBL.
- Implement TB-IC in healthcare settings, per national guidelines recommendations.
- Strengthen TBL pharmaceuticals and commodity forecasting, quantification and supply planning, distribution and management system.
- Develop system for active TB drug safety monitoring and management (aDSM).
- Improve TBL data flow and quality through implementation of HMIS at all levels, and integrated program performance monitoring, supervision, review and regular feedback at all levels.
- Strengthen resource mobilization and utilization at all levels of the healthcare delivery system.

1.5.1 SLOT ANALYSIS

Table 8, below, summarizes the SLOT analysis of the national TBL programme. This SLOT analysis is drawn from the external mid-term review and national stakeholder consultations. The Strength and Limitations look inward, while Opportunities and Threats speaks outward or about the external environment.

Table 8. SLOT analysis of national TB and Leprosy control programme.

Themes	Strength	Limitations
Political commitment	▪ TBL control is priority in HSTP. ▪ TBL are essential public health services and exempted from out of pocket payment at point of care.	▪ Limited political mobilization for DR-TB at implementation level. ▪ High TB patient out of pocket cost, at point of care[1].
Governance and program management.	▪ National TBL control structure in place; staff assigned in specific technical area. ▪ Clear structure for coordinating TBL control at all levels. ▪ TBL strategies aligned with HSTP. ▪ Program design and implementation anchored on TBL-NSP. ▪ Existence of national TWG and team for different TBL thematic areas. ▪ Leprosy high burden mapping is done, and micro-plan prepared.	▪ Insufficient TB/HIV collaboration at national, regional and service delivery levels. ▪ Weak central coordination of TB lab services: sub-optimal collaboration between national and regional laboratories; NTP and EPHI. ▪ Sub-optimal collaboration and coordination between NTP and PFSA; RHBs and PFSA hubs. ▪ Regions are not regularly supported by technical staff from Federal level. ▪ No Leprosy specific focal person at regional and zonal levels, with weak micro-plan implementation.
Human resource availability, adequacy and capacity.	▪ NTP strengthened with assignment of government staff and senior technical advisors seconded by partners. ▪ TB focal persons and officers at all levels. ▪ HWs in TB clinic are trained in comprehensive TB, TB/HIV, and TB-IC. ▪ HEWs are deployed across the country, trained and backbone for TBL control. ▪ PMDT officers at national and regional level.	▪ Inadequate number of staff at regional and sub-regional levels for effective program coordination. ▪ High staff attrition at all levels. ▪ Laboratory staff shortage. ▪ TBL not well addressed by all pre-service higher education institutions. ▪ Leprosy prevention and control not well addressed in pre-service education of GHWs.
Financial resources and management	▪ MoH grant management team tracks expenditures and reports at all levels. ▪ Regular annual resource mapping and plan alignment at national level. ▪ MoH stewardship, ensuring complementarity of donor support to TB program: principle of "one plan, one budget, one report." ▪ Health sector government contribution with marginal annual increase of approximately US$10 million. ▪ Budgeted activities of external partners are included in regional plans.	▪ TB financing, including core commodities such as medicines, has been and remains hugely from partner funding sources. ▪ Despite nominal overtime increase, government allocation to health as a proportion of total budget has been stagnating in the face of increasing demand to realize universal coverage and Ending TB. ▪ Projected TB funding gap (32%) highlights the need to mobilize additional domestic and international resources. ▪ Weak sub-national resource mapping and grant management - delaying financial liquidation and utilization. ▪ No specific government budget for leprosy programme; funding gaps and few partners support.

[12]FMOH. 2016. National health account survey.

Table 8. SLOT analysis of national TB and Leprosy control programme.

Themes	Strength	Limitations
HMIS/ programme M&E	▪ Countrywide coverage of HMIS. ▪ Single national TBL M&E framework. ▪ TB registers available at all sites, including PPM-DOT sites. ▪ Integrated and regular supportive supervision and program review at operational levels. ▪ District level TB data available at national level. ▪ Data is available based on leprosy burden area mapping, and leprosy register available at all sites.	▪ HMIS output does not capture all critical TBL indicators, retreatment outcomes, Leprosy relapse cases, leprosy retreatment outcomes. ▪ Inconsistency between facility originated quarterly reports and aggregated databases within the HMIS chain in some regions. ▪ DR-TB data, including aDSM, is not digitalized. ▪ TB/HIV reports are not routinely verified for data quality at facility levels. Data incompleteness and quality issue. ▪ Complete PPM-DOTS TB data is not consistently available in all regions.
DOTS, TB/HIV interventions and PPM-DOTS services	▪ DOTS and core TB/HIV interventions are widely implemented at facility level- with very good documentation at facility level. ▪ Adopted WHO's policy to offer HIV testing to all presumptive TB cases. ▪ Widely disseminated national guidelines. ▪ National TBL guidelines consistent with latest global recommendations. ▪ Successfully piloted and scaled up PPM-DOTS, commitment of private facilities in TB service provision with an established reporting system through WoHO. ▪ Microscopy EQA conducted by regional labs in most PPM-DOTS facilities. ▪ Functional referral linkage between public sector facilities and PPM-DOTS sites. ▪ Adopted new paediatrics first-line drug formulation. ▪ National *building design and engineering requirements for airborne infection prevention and control,* in 2014 to guide future healthcare facilities constructions and/or renovations.	▪ Sub-optimal IPT coverage in PLHIV. ▪ TB screening in health facilities, particularly in hospital settings, is done infrequently and not well documented. ▪ HIV testing in presumptive TB cases is weakly implemented and documented. ▪ TB contact investigation is not systematically done and recorded in all settings. ▪ Only limited proportion of private providers participate in PPM-DOTS initiative. ▪ Limited private sector engagement in DR-TB case finding, referral and management. ▪ Case finding and DOT strategies not tailored to urban and pastoralist communities. ▪ Limited programmatic focus to reaching key population. ▪ Limited FL-DST (at least for RR) coverage in notified TB cases at time of diagnosis. ▪ TB-IC in healthcare settings is limited: weak ownership of TB-IC, at all levels; limited use of building design standards for construction and renovation of health facilities to prevent air-borne transmission; limited facility risk assessment; no active TB surveillance in health workers; and lack TB-IC indicator in HMIS.
MDT interventions at all services	▪ MDT treatment is available at all health facilities level. ▪ Functional and smooth referral linkage between health post, health centre and Hospitals.	▪ Shortage of MDT specially child MB drug in some health facilities. ▪ Integrated supportive supervision not achieving effective in-depth review of leprosy at facility level. ▪ Leprosy contact screening at health facilities is irregular and not well documented. ▪ Contact investigation is not systematic or recorded.
Community based TB care (CBTC)	▪ Strong political, policy and sectoral commitment for community-based care, including CBTC. ▪ Expanding coverage with HPs and HEWs in all regions. ▪ Standardized manuals and CBTC guidance in place and training of HEW undertaken. ▪ Most HEWs provide elements of CBTC care package. ▪ Documented evidence of improved case notification following implementation of packages of CBTC. ▪ IRT is cascaded to sub-national levels.	▪ HP-HC sub-optimal referral linkages. ▪ Urban HEWs not fully engaged in CBTC. ▪ CBTC approach not tailored in pastoralist and urban settings. ▪ R&R system does not fully track contribution of HEWs in TB control. ▪ Woreda level capacity gap in CBTC management: in coordination, M&E, supportive supervision and use of programme data. ▪ CBTC coverage (DOT at HPs) is improving, but still lower than expected.

Table 8. SLOT analysis of national TB and Leprosy control programme.

Themes	Strength	Limitations
PMDT	▪ Existence of a detailed scale up plan. ▪ Site expansion in line with set targets. ▪ PMDT training taking place, with standardized in-service training curriculums for various cadres of health workers. ▪ TWG for PMDT is in place at national level. ▪ LPA technology widely adopted. ▪ Implementation of GeneXpert MTB/Rif, with improving utilization rate. ▪ More DST sites functional in the regions. ▪ Routine clinical mentoring and catchment area meetings in most settings. ▪ Patient nutritional support in DR-TB care. ▪ Adapted shorter RR/MDR-TB treatment regimen, and new anti-TB drugs. ▪ National clinical review committee in place for DR-TB consultation, particularly for those who could be eligible for ND.	▪ Challenges in sputum specimen transportation from regions/facilities for C&DST for diagnosis and follow-up treatment monitoring. ▪ Delays in conveyance of or lost results - interim culture results not available for all patients on treatment. ▪ DR-TB case notification is less than program targets. ▪ No routine baseline SL-DST for confirmed RR/DR-TB cases. ▪ Lack of comprehensive bold polices and strategies for universal DST for first and second line drugs. ▪ Limited laboratory services for routine aDSM. ▪ Weak link between TICs and TFCs. ▪ Suboptimal patient support system: weak palliative care, and system for comprehensive socio-economic and legal patient support.
TBL Pharmaceutical Supply Management	▪ Expansion of modern warehouses with both electronic and paper-based stock management. ▪ Distribution of FL anti-TB medicines is integrated with other supplies as per IPLS. ▪ Anti-TB patient kits are used, and most facilities reported sufficient stocks of first line anti-TB medicines. ▪ A functioning manual and computerized inventory management system exist. ▪ In-country facilities for assessment of quality of medicines (at FMHACA).	▪ Limited RHBs & PFSA hubs communication. ▪ Intermittent stock out of INH 300mg tablet for IPT, HIV test kit, and ancillary medicines. ▪ Limited forecasting and tracking system for laboratory supplies with frequent interruption of electrolyte reagents. ▪ Data sent to PFSA for resupply is insufficient/poor quality. ▪ Infrastructure and fleet capacity gaps to directly deliver all TBL commodities to all sites. ▪ No post-market surveillance for TB medicines.
Laboratory services	▪ Expanded coverage of AFB microscopy. ▪ Existence of National TB Reference Lab, with linkage to supra-NRL in Milan. ▪ Decentralization of essential TB laboratory services (e.g. TB culture and DST, EQA). ▪ Nationwide system for annual validation and maintenance of essential biosafety equipment. ▪ Drug Resistance Survey is underway. ▪ Regional lab capacity has improved. ▪ Expansion of GeneXpert test, with power and maintenance backup; and GxAlert connectivity. ▪ Comprehensive EQA guidelines for AFB microscopy with regional and sub-regional decentralization. ▪ Included TB culture and LPA in PT-EQA. ▪ AFB microscopy manual, GeneXpert guidelines and job aids in most settings. ▪ Widely linked specimen referral network.	▪ Gaps in specimen referral and transportation. ▪ Weak laboratory information and data management system: limited routine use of standardized sample recording and reporting tools, poor test results feedback to referring facilities and lack of routine reporting of TB culture and DST results to EPHI and FMoH. ▪ Lack of enforceable technical regulatory mandate of EPHI over regional or peripheral laboratories. ▪ Equipment maintenance is centralized, with limited system for rapid response. ▪ Lack of backup TB culture and DST specialized equipment and spare parts. ▪ Gaps in reagent preparation for microscopy. ▪ Limited coordination between NTP and EPHI; RHBs and regional laboratories.

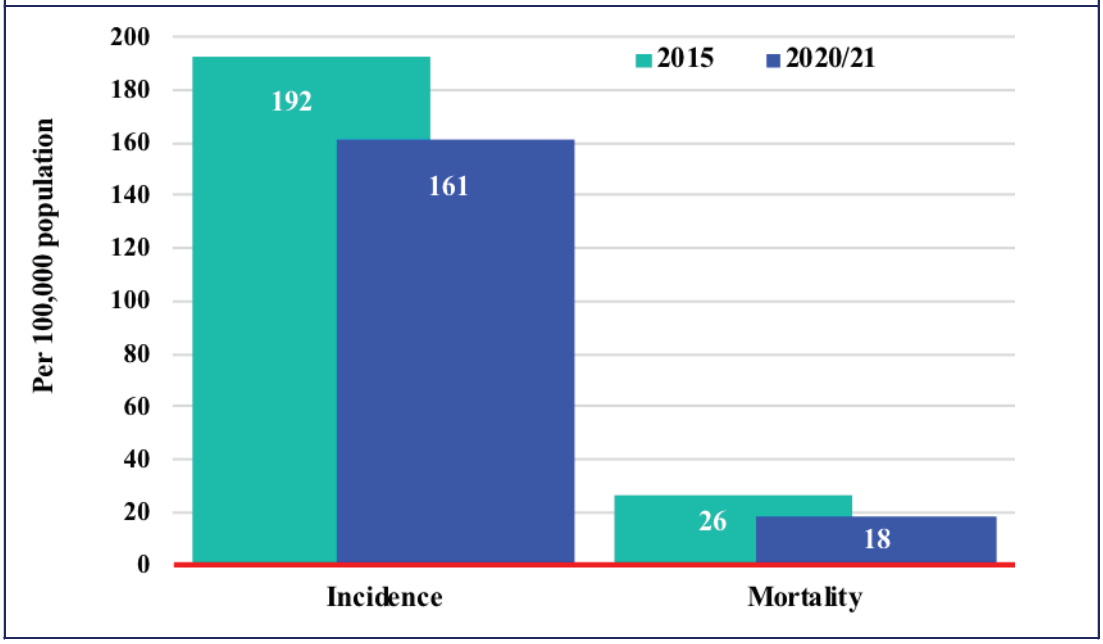
Table 8. SLOT analysis of national TB and Leprosy control programme.

Themes	Strength	Limitations
TBL control in congregated settings and key population.	▪ National assessment of TB control in prison is done; SOP is finalized. ▪ Engagement of prison services in TB control activities, with training TB focal persons and prison administration staff. ▪ Evidence of ongoing TB-DOT using treatment supporter in some prisons. ▪ IPT for eligible TB-exposed children. ▪ National roadmap for childhood TB.	▪ Most prison HCWs are not trained in TB control; most prisons have no lab, and where laboratories exist, most labs do not offer AFB services. ▪ Lack of settings to separate infectious TB cases in most prisons. ▪ Limited coverage of IPT among eligible under five TB-exposed children. ▪ Lack innovative key population strategy; TB key population and strategies to reach them not defined.
TBL ACSM	▪ TBL strategic plan includes ACSM. ▪ HEWs involved in TB community education. ▪ TB training for national and regional media and public relation staff. ▪ Mass media (national and local radio, TV, newspapers) use to raise TB awareness. ▪ IEC materials on TBL in different languages are widely available and displayed at most HFs.	▪ KAP have not been used in designing IEC with limited post intervention evaluation. ▪ Limited ACSM skills, and inadequate targeting in TB health promotion and communication. ▪ IEC needs of some settings/population groups have not been adequately addressed (key population, children, etc.). ▪ Insufficient health workers job aid for patient education, nutritional counselling, aDSM. ▪ Lack of TB and DR-TB patient counselling tools.
TB research	▪ Research is among active prongs of NTP. ▪ National TB research Network-TRAC- has promoted TB research in the country. ▪ TB research national plan in place. ▪ Research grants are availed by TRAC through partners' support.	▪ Limited and project-based funding. ▪ Low number of full time researchers. ▪ Limited capacity to use routine programme data for evidence generation, and in translating evidence to action at implementation level.
Opportunities		Threats
▪ National Growth and Transformation Plan with heightened government commitment. ▪ Conducive national health policy and HSTP. ▪ Increasing trend of government commitment to end poverty and Economic transformation, addressing social determinants of TB. ▪ Organized community engagement through HEP and HDA. ▪ Increasing engagement of the private sector in healthcare. ▪ Increasing number and type of healthcare facilities and infrastructure improvement. ▪ Declining disease epidemiologic burden for the last decade. ▪ New technologies and innovations in TB control (i.e. Diagnostics, medicines and vaccines). ▪ Renewed global commitment through SDG/End-TB, including for TB research.		▪ Urbanizations and rapidly evolving socio-demographic factors. ▪ Increasing trends of NCDs with potential NCD/TB interactions. ▪ Emergence of DR-TB. ▪ Climate change and its socio-economic and health impacts. ▪ Declining donor support.

1.5.2 Analysis of progress towards TB related SDG and HSTP targets

The TB global sustainable development goal (SDG), the End TB strategy, aims reducing TB incidence by 90% and TB deaths by 95% from the 2015 baseline, and eliminate catastrophic costs for TB-affected households by 2025. The End TB targets for Ethiopia are to reduce the incidence rate to 161/100,000 population or lower, and TB related mortality to 18/100,000 population, by 2020.

Figure23 The gap to achieving the 2020 End TB incidence and mortality national target.



For Ethiopia, to achieve the 2020 national end TB target (i.e. by end of this NSP), the TB incidence must decline by 31% from a current level of 192/100,000 population over the coming three years (Figure 23). With the current 6% average annual decline observed over the last five successive years, a 30% reduction in TB incidence rate by 2020 compared to 1990 is unattainable if the decline trend continues with same pace. Additionally, in order to attain a rate of 18/100,000 population, the TB mortality must decline by 8% overall in the coming three years or should decline around an average of 2.6% annually. With the current trend, both targets are unlikely to be achieved in the absence of focused, intensified, and robust effort for accelerated implementation of high impact interventions.

Though there has been significant progress in the control of TB in Ethiopia over the last decade, both the current and projected 2020 disease burden are enormous. This is due to the fact that incidence rate of 161/100,000 population by 2020 would imply over 161,000 annual incident cases. This shows the inadequacy of the mere achievement of the 2020 milestones for TB control in Ethiopia.

1.6 ORGANIZATIONAL CONTEXT

1.6.1 Mandate analysis

The mandate of an organization is often codified in laws, regulations, decrees, or characters. As the health sector is a collection of establishments, specific mandates are rather defined for organizations rather than for the whole sector. Mandates are formally defined in Ethiopian laws and regulations for organizations like FMoH and RHBs by the legislative body. Therefore, the following sections describe these mandates.

1.6.2 Mandates of the Federal Ministry of Health of Ethiopia

Proclamation No. 475/1995 of the Federal Democratic Republic of Ethiopia (FDRE) provides definition of authorities and duties of the executive organs. This proclamation states authorities and duties as follows:

- Initiate, formulate, ratify health sector policies and public health laws, prepare national plans and budget, and implement upon approval.
- Ensure enforcement of public health laws, standards, regulations, and directives of the Federal Government.
- Enter into contracts and international agreements in accordance with the law.
- Provide technical assistance and advice, as necessary, to regional and sub-regional health sector structures.
- Initiate national expansion of public health services.
- Establish and manage Federal hospitals, ministry of health agencies such as PFSA and FMHACA, as well as national research institutions e.g. EPHI, AHRI etc.
- Determine health service standards except when this mandate is explicitly delegated by law to another structure; issue licenses; and supervise health services managed by foreign organizations and private investors.
- Define health professionals' qualification required for providing health services at various levels,
- Issue certificate of competence for health professionals.
- Promote research on traditional medicines, organize research and experimental centres for the same.
- Devise national strategies and programmes for preventing and control of communicable and non-communicable diseases.
- Enforce quarantine and other public health laws to protect at risk population, as indicated.
- Prioritize, initiate and support public health researches at national level.

In addition to the federal ministry of health, AHRI, EFMAHCA, EPHI, HAPCO, and PFSA, are key agencies with specific mandates to ensure safety, efficacy, quality and rational use of medicines; TB laboratory referral services, setting standards, quality assurance; undertake public health research, population surveys and surveillance; and procurement and supply management. These autonomous institutions report both to FMoH and to MoFED.

1.6.3 Regional Health Bureaus Mandate

Regional Health Bureaus (RHBs) have the authorities and duties to:

- Formulate, plan and manage public health interventions for their respective region within the framework of national health policy.
- Ensure adherence to issued public health laws, regulations and directives;
- Organize and administer hospitals, health centres and clinics, human laboratories, and research and training institutions established by the respective region.
- Issue license to hospitals, health centres and clinics, human laboratories and pharmacies established by national organizations and the private sector; supervise to ensure adherence to nationally set standards.
- Ensure and supervise health professionals stationed in public health services in the region comply with set standards.
- Ensure adequate and regular supply of effective, safe and affordable essential medicines, medical supplies and equipment in the respective region.
- Promote the provision of vaccinations, and take other measures, to prevent and control communica ble diseases.
- Promote the application, together with modern medicine, of traditional medicines and treatment methods whose efficiency is ascertained.
- Participate in quarantine control undertaken for the protection of public health, per national policy recommendations.

1.7 STAKEHOLDERS ANALYSIS

The attainment of the missions and objectives of NTL control programme is largely dependent on various stakeholders' collective efforts and roles played. Stakeholders are individuals, organizations or agencies that can influence or be influenced positively or negatively by implementation of this TBL strategic plan. Stakeholder analysis is a process of scrutinizing the essence, interests, behaviours, and the nature and level of impact brought about by these stakeholders. The degree of influence from stakeholders varies depending on their:

- Span of control over resource allocation.
- Level of political influence.
- Scope of participation in the sector.
- Range of use of services provided by the sector.

Stakeholder analysis in TB strategic planning is critical and helps to define the scope of work of all actors in the system; clarifies contributions expected from each actor; and outlines areas of possible collaborative actions for achieving the TBL national strategic objectives.

Successful management of stakeholders can result:
- Better and timely decision making;
- Enhanced follow on work from stakeholders;
- End users' satisfaction and trust;
- Improved control of scope of change, avoiding unnecessary changes;
- Minimizes the impact of unproductive opinions and decisions on the project/programme.

Table 8, below, summarizes TBL programme stakeholders, and analysis of their role and degree of influence. It is important to note that key stakeholders can make or break a programme, hence, designing strategies and mechanisms for their timely engagement is important.

Table 9. Key stakeholder analysis summary.

Stakeholder	Desired behaviour	Their Needs	Resistance Issues	Degree of Influence	Institutional Response
Patients and affected families	Adoption of correct health seeking behaviour.	▪ Staying healthy. ▪ Accessing effective healthcare interventions. ▪ Affordable and accessible quality TBL services. ▪ Dignity and respect. ▪ Not catching TB in healthcare settings.	▪ Dissatisfaction. ▪ Opting unsafe alternatives. ▪ Underutilization. ▪ Interruption at any time along the TB care pathway.	High	▪ Community education and mobilization. ▪ Mitigate catastrophic cost on affected individuals and families. ▪ Quality and equitable service delivery. ▪ Mitigate stigma in healthcare settings. ▪ Implement TB-IC in healthcare settings. ▪ Caring, Respectful, Compassionate and patient-centred care.
Communities	▪ Ownership ▪ Health seeking behaviour ▪ Healthy living	▪ Accurate information ▪ Access and quality ▪ TB prevention; ▪ Affordable care	▪ Dissatisfaction ▪ Opting unsafe and ineffective alternatives ▪ Underutilization	High	▪ Community involvement, mobilization. ▪ Quality, equitable and sustainable service.
Health workers	▪ Commitment, ▪ Participation ▪ CRC	▪ Transparency; Capacity building; Safe workplace.	Poor patient-provider interaction; Attrition Low quality services	High	Motivation, Involvement. TB-IC in healthcare settings; capacity building; Equitable retention strategy.
Parliaments, Prime Minister's Office, Council of Ministers', Regional Governments	Evidence-based policy, proclamations, etc. Resource allocation	Policy implementation, proclamations, etc. Equity and quality; Plans and reports	Organizational reform	High	Put in place strong monitoring and evaluation system and comprehensive capacity building mechanisms
Line Ministries (Education; Finance; Labour, Women's Affair; Mines; Science and technology; Urban development and housing; justice; Tele corporation; Agriculture, etc.)	Inter-sectoral collaboration and response	Evidence-based plan and strategy; Reports Effective and efficient use of resources and coordination Technical support	Fragmentation Dissatisfaction Considering health as low priority	Medium	Collaboration, and information/ evidence generation and sharing Transparency Advocacy
Development Partners (bilateral and multilateral agencies; NGOs; FBOs; private philanthropic organizations)	Harmonization and alignment; Participation Additional resource Technical support	Financial fiduciary. Accountable and transparent system. Involvement	Fragmentation High transaction cost Inefficiency and ineffectiveness	High to Medium	Government leadership Transparent procedures Efficient resource utilization system Build financial management capacity
CSOs, NGOs, Professional Associations, private not for profit.	Harmonization, Participation, Equitable resource allocation	Participation in planning, implementation, TA, and M&E	Dissatisfaction Fragmented implementation Interruption of services	Medium	Transparency, Advocacy and participation Capacity building
Private for profit	Provision of Quality care; Commitment;	Partnership; Transparent rules and regulations; Capacity	Low quality; Dissatisfaction Interruption of	Medium	Transparency, Collaboration, Advocacy.

2. TBL STRATEGIC PLAN FOR 2010-2013 EC (2018 -2020/21)

2.1 Planning Process

The current National TBL strategic plan will end in 2020. Early in 2017, a mid-term external review of TBL programme was conducted. This update of TBL NSP has taken into consideration key findings and recommendations of the midterm external review, national adaptation of the End TB strategy and targets, national HSTP, and updated national TB guidelines. The external mid-term review assessed progress towards achieving set goals and targets in the plan and identification of major implementation challenges, emerging programme needs, and opportunities as well as proposing workable recommendations to attain set targets in the coming years (Table 12). Following the external review, the NTP has convened four consultative meetings with major stakeholders in order to update this NSP. A core writing team took the responsibility in drafting, circulating an initial draft for electronic review, incorporating review input and producing final version of an updated TBL national strategic plan.

2.2 Policy Framework

This updating of the strategic plan document has followed the national external review of the TB and Leprosy control programmes and key stakeholder consultation and is guided by the national HSTP and End TB strategic framework.

2.2.1 Customer value proposition of the health sector

In the context of this strategy, customer value proposition or intention is major attribute that defines some of the health sector approaches, the principles underpinning the sector's relationship with clients and communities, and how it should be perceived. This is a critical factor in developing, deepening and retaining relationship with the community towards achieving its mission and objectives. Table 10 summarizes customer value proposition of the health sector, which should be valued by the national TBL control and prevention programme.

Table 10. Customer value proposition of the health sector.

Product or service attributes	Image	Relationship
The services provided by the Ethiopian Health Sector: ▪ Accessibility–information, physical, financial, etc. ▪ Timeliness of services. ▪ Quality of health care services and information. ▪ Safety and healthy environment ▪ Empowering communities and employees ▪ Conducive environment	The image that the Ethiopian Health Sector wants to portray: ▪ Transparency ▪ Supportive ▪ Trustworthiness ▪ Professionalism ▪ Client-centeredness/ Customer-friendly. ▪ Commitment	The relationship that Ethiopian Health Sector wants to have with the community are: ▪ Complementarity ▪ Cooperative (participatory) ▪ Respectful and ethical ▪ Harmonious (Mutual Understanding) ▪ Transparent ▪ Dependable (Stewardship) ▪ Responsive ▪ Equitable

3. STRATEGIC OBJECTIVES AND MAPPING

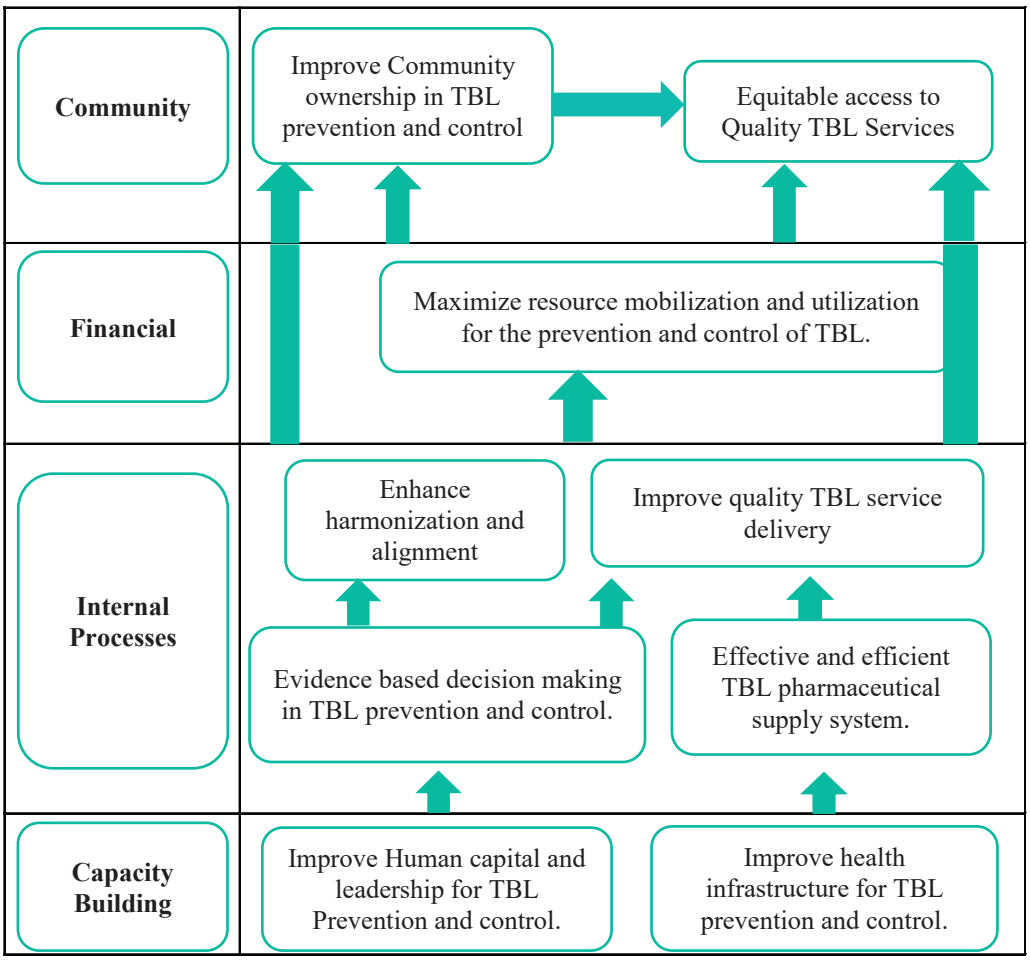
3.1 Strategic Objectives

The strategic objectives of national TBL control programme and HSTP has been harmonized, as outlined in Table 11.

Table 11. TBL control strategic objectives in relation to HSTP.

SO1- Improve access to TB, TB/HIV, DR-TB and Leprosy services	**Community**	Strategic Objective C1
SO2- Improve community ownership in prevention and control of TBL.		Strategic Objective C2
SO3- Maximize financial resource mobilization and utilization for the prevention and control of TBL.	**Financial**	Strategic Objective F1
SO4- Strengthen quality TBL service delivery.	**Internal Processes**	Strategic Objective P1
SO5- Enhance harmonization and alignment for TBL control.		Strategic Objective P2
SO6- Improve TBL pharmaceutical supply chain management system		Strategic Objective P3
SO7- Improve evidence-based decision making in the prevention and control of TBL.		Strategic Objective P4
SO8- Improve Human capital and leadership for the Prevention and control of TBL.	**Capacity Building**	Strategic Objective CB1
SO9- Improve health infrastructure for prevention and control of TBL.		Strategic Objective CB2

3.2 Strategic Map



4. DESCRIPTION OF STRATEGIC OBJECTIVES, INITIATIVES AND MAJOR ACTIVITIES

4.1 SO 1: Improve access to TB services.

Early diagnosis and prompt treatment of all cases of TB is key for successful control of TB, including prevention of onward transmission, reducing risks of DR, and preventable suffering. SO1 highlights equitable access to TB services, including referral services, and improving utilization, which are essential in achieving desired impact: Reducing TB incidence, mortality and socio-economic burden through early diagnosis and prompt treatment.

Priority service delivery areas under SO1 are:

- Implement expanded package of community-based TB services.
- Engage all care providers in TB prevention, care and treatment.
- Strengthen equitable access and utilization of TBL services by key and vulnerable population.
- Expand and improve utilization of TB diagnostic services.
- Implement client-centred integrated service delivery model.

Initiatives and activities

Initiative 1: Enhance implementation of full package community-based TB care services.

Priority Activities:

- Increase number of health posts providing full package CBTB care and prevention.
- Implement tailored TB care and prevention interventions to urban and pastoralist communities.
- Integrate CBTB care in all primary care units serving pastoralist communities and urban population.
- Expand and strengthen TB household and community preventive services through HEP.
- Pilot community DR-TB prevention and care service delivery model, to strengthen community-facility linkage and further decentralize services closer to home.
- Pilot delivery of IPT for eligible under-five children at community level.

Initiative 2: Accelerate engagement of all care providers in TB care and prevention.

Priority Activities:

- Expand TB prevention, care and treatment services in private, and other line ministries and government health facilities.
- Engage lower clinics, rural drug venders, traditional healers and religious institutions to refer presumptive TB cases.
- Map out and engage CBOs and CSOs in TB care and prevention activities.
- Implement and monitor national TB PPM action plan.

Initiative 3: Strengthen equitable access and utilization of TBL services by key and vulnerable population.

Priority Activities:

- National map-out to determine TB key population groups in Ethiopia, and design priority high impact interventions and plan to expand TB diagnostic and treatment services to these groups.
- Regional level mapping and development of feasible strategies to reach key and vulnerable population.
- Expand TB diagnostic and treatment services to Federal, Regional and Zonal prisons and detention centres, per national standard operating procedure recommendations.
- Implement focused and locally feasible strategies to strengthen equitable access to TB care and prevention services to pastoralist communities and the urban poor.

Initiative 4: Provide client-centred integrated TB services.

Priority Activities:

- Integrate TB in routine general outpatient, HIV, diabetes, IMNCI, iCCM operational tools and services, with priority focus in high volume health facilities to prevent delay and simplify TB diagnosis/care patient pathway.
- Integrate contact investigation and preventive therapy in routine TB care services.
- Expand DR-TB treatment initiation and follow up centres with equitable access to quality care.
- Design and implement feasible strategies for systematic patient-support, including linkage with community-based resources.
- Expand TB prevention, care and treatment services in newly established public health facili ties.
- Organize national consultation with patients and civil societies to further define, determine and contextualize patient-centred TB care in Ethiopia settings.
- Strengthen prompt linkage to care and treatment initiation following TB diagnosis, including DR-TB.
- Prevent TB related stigma in healthcare settings, through increased care providers understand ing of the nature of TB related stigma, its manifestation and prevention in healthcare settings.

Initiative 5: Strengthen utilization of TB diagnostic services and post-diagnosis linkage to care.

Priority Activities:

- Expand conventional AFB microscopy to public health facilities; and LED microscopy in high-patient volume health facilities.
- Strengthen TB culture and DST services in strategically selected laboratories.
- Provide scheduled and on-call based integrated TB/HIV laboratory sample referral, along with locally feasible referral backup strategies.
- Improve utilization of TB diagnostic services, with specific emphasis on GeneXpert, culture and DST.
- Regular GeneXpert and other laboratory machine maintenance, as per service agreement.
- Undertake annual equipment calibration for BSC, thermocycler etc.
- Strengthen laboratory services for active DR-TB medicines safety monitoring.
- Establish electronic laboratory information management system, with sustained connectivity of all GeneX pert machines in the country.
- Pilot electronic result delivery system for sample referring health facilities and scale up, where feasible.
- Expand histopathology (FNAC) diagnostic services at all hospitals to improve diagnosis of EPTB.
- Develop a strategy/policy guidance for use of X-ray as a TB screening/diagnostic tool.
- Strengthen tele-radiography services in university referral hospitals, and design strategies to support peripheral health facilities in X-ray interpretation.

4.2 SO 2: Improve community ownership in prevention and control of TB

This strategic objective aims to empower communities, as major drivers and producers of their own health, through active participation in the prevention and control of TB. It highlights the critical importance of involvement, engagement and empowerment of the communities through implementation of comprehensive community-based TB interventions through HEP and Health development army (HDA). An expected outcome is community empowerment and demand creation for quality TB services; and community patient support and stigma reduction.

Priority focus areas under SO2 are:

- Community TB care implementation through HEP, HAD and patient groups.
- CSOs/NGOs, key population and patient groups engagement in TB prevention and control.
- Expanded engagement in TB care and prevention, including other line ministries, religious leaders, prison administration, professional associations.
- TB focused advocacy, communication and social mobilization (ACSM).

Initiatives and activities:

Initiative 1: Engage Communities in TB Care services through HEP, HAD, schools and patient groups.

Major Activities:

- Create demand for quality TB services through community education, mobilization, and public advocacy.
- Community education and participation to mitigate TB-related stigma and discrimination.
- Engage schools in TB prevention and control.
- Develop, disseminate and monitor implementation of operational guidance for engaging NGOs and CSOs in TB prevention and control.

Initiative 2: Engagement of NGOs and CSOs in TB prevention and control.

Major Activities:

- Implement operational guidance for engaging NGOs/CSOs in TB prevention and control.
- Local level mapping of potential NGOs/CSOs to integrate TB in health development initiatives.
- Conduct orientation of selected NGOs/CSOs in TB care and prevention.
- Monitor implementation progress of engaged NGOs/CSOs in TB prevention and control.
- Document and scale up best practices of approaches in engaging NGOs/CSOs on TB prevention and control.

Initiative 3: Strengthen TB Advocacy, Communication and Social Mobilization (ACSM)

Major Activities:

- Program focused and targeted communication with engagement of relevant stakeholders.
- Ensure sustained political commitment and support through sensitizing people in position of influence, such as MPs, religious leaders, media professionals' and other promoters.
- ACSM focus to reach key population, including in congregated settings (prisons and detention centres, higher education institutions, big factories, mining areas, refugees, internally displaced person, etc.).
- Assessment of programmatic impact of ACSM.
- Regular TB/DR-TB site visits for MPs, former patients, ambassadors and others as advocacy point.
- Orient media professionals and public relation officers on TB prevention and control.
- Establish national level TB ACSM task force.

4.3 SO 3: Maximize financial resource mobilization and utilization

This strategic objective sets a proactive approach to domestic and international resource mobilization for TB control and prevention; effective and efficient use of resources; sound financial management and performance-based financing as well as equitable and evidence-based allocation and utilization of resources. Main aims of this strategic objective are ensuring adequate resource mobilization, equitable allocation, and utilization with improvement in resource absorptive capacity, avoiding resource wastage with financial protection of patients.

Initiatives and activities:

- Ensure financial mobilization from national and international sources.
- Strengthen TB grant management capacity, including at regional and sub-regional levels.
- Conduct annual resource mapping for TB program at national and regional levels.
- Promote innovative and sustained TB research financing.
- Provide regular technical support in resource management, with cascade to sub-regiona l levels.
- Advocate and linkage of TB control within the national framework of universal health cover age.

4.4 SO 4: Strengthen quality of TB services

This objective aims delivery of quality TB services, at all levels, per set standards that address: timing; harmonized, integrated, comprehensive approach to avoid missed opportunities; evidence-based effective interventions; patient safety; ethical considerations and professionalism in service delivery; and available inputs, especially human and financial resources, and commodities and pharmaceuticals. The expected outcome is a responsive and effective health system that satisfies communities healthcare needs through delivery of relevant, safe and optimum quality services in an integrated and client-centred manner.

Initiatives and activities:

Initiative 1: Alignment with national HSTQ agenda of TB quality services.

Activities:

- Strengthen NTP linkage with quality health service unit at MoH (HSTQ), at all levels.
- Define standard of care for comprehensive TB services.
- Describe TB service quality improvement framework and package, at programme and health facility levels.
- Support periodical TB quality summit.

Initiative 2: Strengthen diagnostics Quality Assurance System.

Activities:

- Finalize national TB laboratory strategic plan, which defines standard of services.
- Identify and monitor key programmatic TB laboratory quality indicators.
- Strengthen external quality assurance (EQA) assessment and feedback for all TB laboratory services.
- Expand TB laboratory quality management system towards accreditation for AFB smear microscopy sites.
- Implement quality management system in TB culture laboratories and GeneXpert sites and accredita tion by ISO 1589.

- Establish national proficiency test (PT) production centre at EPHI by ISO 17043.
- Develop national TB Laboratory service toolkit (EQA and GeneXpert implementation guidelines, lab safety manual, AFB microscopy manual, specimen referral guide, TB culture and DST manual, clini cian pocket guide handbook, job aid, SOP, log book, specimen referral tracking sheet, reporting and request forms, etc.)
- Increase EQA coverage for TB laboratory services (AFB, GeneXpert, Culture and DST).
- Expand EQA centres for service strengthening in peripheral diagnostic facilities.
- Monitor and supervise performance of FNA-TB diagnostic services.
- Maintain national TB reference laboratory EQA linkage with supra national lab.
- Ensure access to DR-TB aDSM tests at TICs and TFCs.
- Annual equipment calibration and certification for BSC, thermocycler etc.

Initiative 3: Improve TB/DR-TB quality of care

Activities:

- Develop standardized on the job clinical reference manual on TB/DR-TB clinical management.
- Prepare and distribute TB/DR-TB patient brochures and leaflets.
- Strengthen active Drug Safety Monitoring and management (aDSM) for TB medicines.
- Provide standardized protocol for aDSM for DR-TB medicines.
- Strengthen DR-TB clinical panel at all levels, with regular site visits and consultation.
- Conduct national DR-TB clinical symposium.
- Establish telemedicine for consultation on clinical management of complex cases.
- Conduct quarterly cohort review and clinical audit of DR-TB cases.
- Promote DR-TB treatment adherence through patient to patient peer support.
- Ensure basic and advanced clinical TB/DR-TB management training for clinical teams.

4.5 SO 5: Enhance harmonization and alignment for TB control

This strategic objective primarily focuses on fostering partnership and coordination, ensuring various stakeholders working together to harmonize and align plans and resources in the framework of this strategic plan to support implementation of priority high impact interventions.

Initiatives and activities:

Initiative 2: Strengthen TB partnership at all levels to address social determinants of TB.

Activities:

- Adapt the national TBL strategic plan into region specific plan, based on local context.
- Conduct regular TB technical working group (TWG) coordination meeting at national and regional levels, with partners and stakeholders.
- Establish TB laboratory TWG at national and regional levels, to strengthen coordination

4.6 SO 6: Improve TBL pharmaceuticals supply chain management system:

This objective is designed to ensure availability of quality pharmaceuticals (i.e. medical equipment and products for prevention, diagnosis and treatment) at an affordable cost, ensuring an uninterrupted and adequate supply of efficacious medicines to relevant health facilities; and rational use of medicines minimizing wastages. The intended outcome will be adequate availability of the right TB pharmaceuticals and supplies at the right place, time and condition, and used for intended purposes.

Initiatives and activities:

- Implement standardized TB pharmaceuticals quantification system, including for TB lab supplies.
- Conduct annual quantification exercises (for 2-3 years period) for TBL pharmaceuticals; bi-annual forecast and supply planning revision in coordination with PFSA, EPHI and other stakeholders.
- Strengthen TB pharmaceuticals inventory management system.
- Support decentralized TB reagent preparation and distribution system.
- Improve quality control and assurance system for TB pharmaceuticals, including post-market surveil lance in collaboration with EFMHACA.
- Promote rational use of anti-TB medicines.
- Strengthen distribution system for TB medicines and other supplies.
- Promote registration of new anti-TB medicines, in collaboration with EFMHACA.
- Develop supply plan for transition to paediatrics new formulation and shorter RR/MDR-TB, ND intro duction and roll out.

4.7 SO 7: Improve evidence-based decision making

This strategic objective aims improving evidence-based and informed decision on TB prevention and control through enhanced data flow; generating quality TB data and use; promoting TB research and improved program performance monitoring, supervision and review mechanisms at all levels. It addresses identification of TB prevention and control bottlenecks; research; HMIS; performance monitoring; quality improvement; surveillance; and interpretation and use of evidence for policy formulation, planning, and resource allocation. The expected outcomes of the strategic objective are the generation and use of evidence at all levels of the health system to respond to critical TB related health problems.

Initiatives and activities:

- Support integration of comprehensive TB operational plan as part of woreda based annual planning.
- Establish aDSM monitoring and reporting system for TB SLDs.
- Provide package of updated TB/DR-TB recording and reporting tools for health facilities.
- Support transition to DHIS2, and strengthen TBL data quality and use, at all levels.
- Strengthen and support TB programme monitoring, at all levels:
  - Introduce DR-TB electronic recording and reporting system.
  - Quarterly district level TB programme data analysis at national and regional levels.
  - Conduct TB specific DQA at national level in coordination with PPD.
  - Provide health workers TBL support tools and M&E pocket guide.
  - Prepare and distribute updated TBL M&E framework, including End TB targets and indicators.
  - Prepare and distribute annual TB bulletin at national and regional levels.
- Strengthen program performance monitoring, supervision and review at all levels, with timely feed back.
- Promote national TB research, engaging program managers and healthcare providers; universities and research institutions.
- Undertake national DR-TB and TB prevalence surveys, in collaboration with EPHI.
- Undertake national annual TB/HIV surveillance.
- Support/promote survey on TB-related catastrophic cost to patients and affected households.
- Co-organize TRAC annual TB research conference in collaboration with RHBs, universities and research institutions, and partners.

4.8 SO 8: Improve human capital and leadership for the control of TB

This strategic objective entails TBL prevention and control leadership development; human resource planning, development and management for effective program coordination, improved case finding and quality patient management in all health facilities. The expected outcome of this SO is adequate availability of skilled and motivated staff working on TB prevention and control.

Initiatives and activities:

- Strengthen TB human resource availability, mix and skill at all levels.
- Strengthen pre-service training on clinical and programmatic management of TB.
- Strengthen in-service TB training: programme and supply managers, clinical teams, and laboratory professionals.

- Basic and advanced DR-TB training.
- Comprehensive integrated TB, TB/HIV, DR-TB training based on updated national guidelines.
- Programme managers and M&E officers on quality data management and M&E training.
- Training on DRTB medicines aDSM.
- Orientation on TB key population, TB control in prisons and other congregated settings.
- Training on AFB microscopy, GeneXpert, biosafety, biosecurity and LQMS.
- AFB smear microscopy training for newly engaged PPM-DOTs sites and public health facilities.
- Training for biomedical engineers on preventive and curative maintenance.
- National and regional sensitization on lab sample transportation and referral network, at all levels.
- Training laboratory technologists on culture and DST.
- National GeneXpert test sensitization for programme managers and clinicians.
- FNA slide preparation and specimen transportation for laboratory technologists and clinicians.
- TB infection control in healthcare and other congregated settings.
- Facilitate and support training of technician on X-ray reading.

4.9 SO 9: Improve health infrastructure for TB and Leprosy control

The expected outcome of this strategic objective is that health and health related facilities are well built, maintained, equipped, and furnished, using appropriate technologies for TB prevention and control and located within a reasonable distance from the intended target population. Priority areas under this strategic objective are:

- Expanding, equipping, furnishing, maintaining and managing health facilities for quality TB services.
- Use of relevant technologies, including health information technology, for TB prevention and control.
- Development of infrastructure for pharmaceutical supplies.
- Introduction of new diagnostic tools; and optimal system for TB infection control in health facilities.

Initiatives and activities:

- Improve health facilities' infrastructure to provide DR-TB care.
- Establish TB infection control friendly operation theatres and ICU in selected hospitals.
- Equip selected operation theatres, ICUs, bronchoscopy units, X-ray and autopsy rooms with UVG fixtures.
- Install wind driven turbines and extractor type window fans in patent waiting areas and TB laboratories at public hospitals, as appropriate.
- Strengthen TB laboratory infrastructure for quality service delivery.

4.10 Initiatives and activities for Leprosy control and prevention

The main goal of Leprosy control programme in Ethiopia is to further reduce disease burden and mitigating its consequence.

Strategic Targets:

- Decreasing leprosy prevalence rate from 0.3/10,000 to <0.1/10,000 population, by 2020.
- Reduce proportion of new leprosy cases with disability grade II from 13.6% to <1%, by 2020.
- Increase Leprosy treatment completion rate from 86.5% to 95%, by 2020.

Initiative 1: Improve Programmatic Management and Coordination of Leprosy Control

Major Activities:

- Assignment of national leprosy control focal person.
- Develop and launch national roadmap for final phase of leprosy elimination.
- Sensitization of programme managers on national roadmap for leprosy elimination.
- Leprosy epidemiologic and service mapping.

Initiative 2: Improve community demand for quality leprosy services

Major Activities:

- Prepare and communicate Leprosy specific messages using different channels.
- Prepare and disseminate Leprosy patient information kits
- Produce and disseminate video material demonstrating leprosy case finding and management for health facilities in high burden areas.
- Provide Leprosy specific orientations for HEWs from leprosy hot-spot areas.
- Commemorate world Leprosy day.
- Engage CSOs and local anti-leprosy associations in leprosy care and treatment.
- Awareness creation campaigns in high Leprosy burden Woredas (districts).
- School community awareness on leprosy using school mini-media in high burden settings.

Initiative 3: Expand and improve access to quality Leprosy services

Major Activities:

- Expand patient referral care hospitals and referral system in hot-spot areas.
- Strengthen leprosy physical rehabilitation centres.
- Identify and establish sub referral centre at each leprosy high burden Woreda.
- Provide in-service training for health workers from referral and sub referral health facilities.
- Orientation for primary school teachers on Leprosy screening.

Major Activities:

- Develop, print and distribute packages of Leprosy programmatic materials and care provider tools.
- Implement universal screening of all household contacts of leprosy cases.
- Implement annual screening of household contacts of RFT cases.
- Produce and disseminate audio-visual material on leprosy case finding and management for health facilities in high burden/hot spot areas.

- Strengthen routine household contact screening for all index leprosy cases, including investiga tion of "incident" contacts of a child with leprosy.
- Implement school based child screening for leprosy in hot spot area.
- Involve HEWs and HDA in the identification and referral of presumptive leprosy cases.
- Community based screening in hot spot areas.

Initiative 5: Improve human resource development on leprosy

Major Activities:

- Update leprosy training materials, and in service basic leprosy training for general health workers.
- In-service training for health workers from referral and sub referral health facilities.
- Training lab professionals on skin AFB.
- Expansion of leprosy training in (leprosy) referral centre.

Initiative 6: Improve financial and resource mobilization

Major Activities:

- Advocacy at higher official to give attention for leprosy service.
- Budget allocation by regional and central government.
- Encourage and support involvement of partners (internal and external).

Initiative 7: Improve physical and socio-economic rehabilitation, and stigma reduction for persons affected by leprosy

Major Activities:

- Expand physical rehabilitation centres in hot-spot areas for leprosy patients with disability.
- Support income generating activities (IGAs) for eligible Leprosy affected individuals.
- Procurement and supply of physical rehabilitation leprosy services.
- Strengthen prevention of disability from Leprosy.

Initiative 8: Strengthen Leprosy pharmaceuticals and other supplies distribution system

Major Activities:

- Design and implement effective distribution system for leprosy drugs and supplies.
- Conduct annual Leprosy pharmaceuticals and supplies quantification.
- Procure adequate supply of anti-leprosy medicines.

Initiative 9: Improve Leprosy data flow through HMIS implementation of HMIS at all levels

Major Activities:

- Print and distribute packages of Leprosy recording and reporting tools, including household contact registers.
- Strengthen monitoring leprosy control implementation at health facilities.
- Establish active surveillance system.
- Conduct Leprosy review meetings in hot-spot Zones, and mid-term review of Leprosy strategic plan.
- Incorporate leprosy contact screening indicator in updated HMIS.
- Monitor annual analysis of district level leprosy burden through HMIS data.
- Translate research conducted by AHRI.

5. PERFORMANCE MEASURES AND TARGET

Ethiopia has adopted the End TB strategy and ambitious targets of Ending the TB epidemic, by 2035. Figure 24 summarizes TB related 2020 SDG End TB targets, which is the bases for revising additional milestones (Table 12). This strategic plan does not include specific milestones for protection against catastrophic costs for TB affected households. While, the national policy exempts out of pocket payment in accessing TB services, the national health account indicates around 36% of TBfunding source is patient out of pocket payment at point of care. Furthermore, this does not include other patient costs, such as related to transport or opportunity costs.

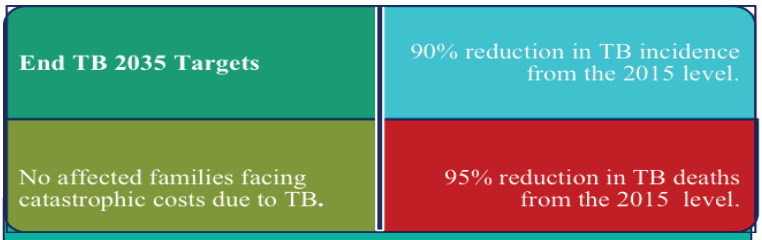


Figure 24. Overarching national End TB targets by 2035.

A national comprehensive assessment/evaluation of both monetary and non-monetary patient costs in accessing TB services, and designing strategies and targets is essential. This updated strategic plan includes studies and reviews related to costing, both programme and patient costs related to TB services.

Figure 25 illustrates planned TB incidence and mortality targets within the period of 2008-2013 Ethiopian calendar (2018-21 GC).

Figure 25. Planned national TB incidence and mortality targets, 2008-13 (EC).

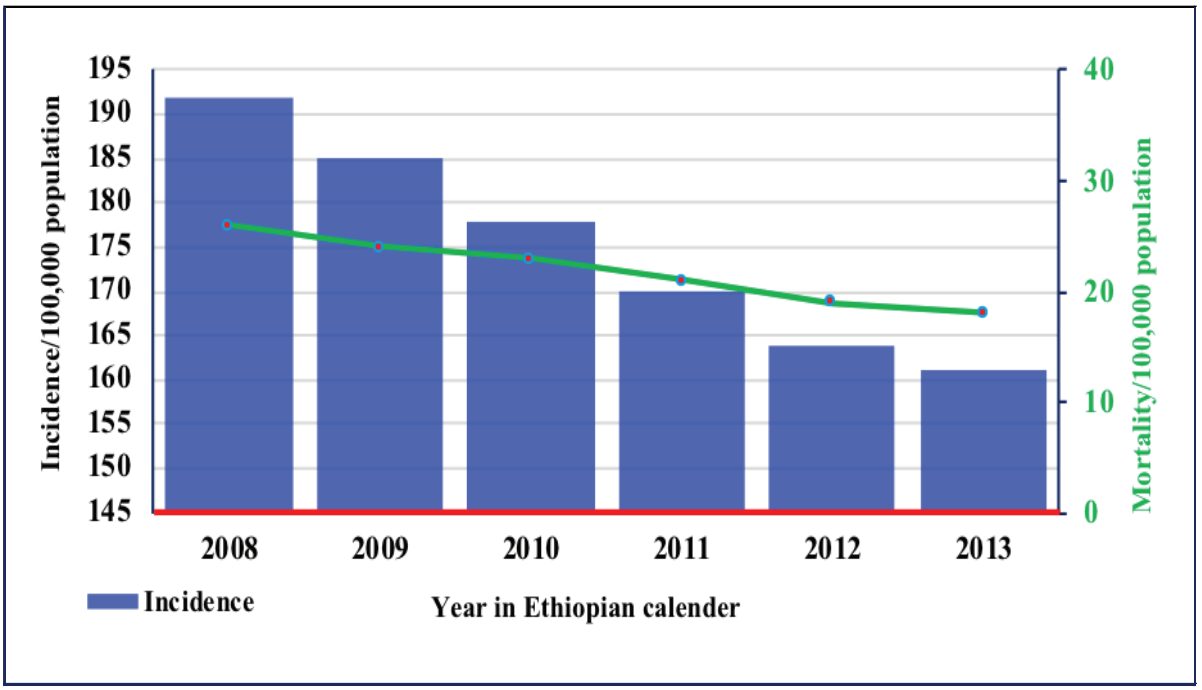


Table 12. Main indicators and targets of national TBL programme, 2018-20.

No	Category of indicator	Indicator description	Unit	BASELINE			Responsible	Frequency	ANNUAL TARGET					
				Value	Year	Source			2008 (2015/16) eMTR	2009 (2016/17)	2010 (2017/2018)	2011 (2018/19)	2012 (2019/2020)	2013 (2020/21)
1	Impact	TB Incidence rate per 100,000 population	Rate	247	2012	Global report	NTP	Annual	192	185	178	170	164	161
2	Impact	TB Mortality rate per 100,000 population	Rate	39	2011	Global report	NTP	Annual	26	24	23	21	19	18
3	Impact	TB Prevalence rate per 100,000 population	Rate	224	2012	Prevalence Survey	NTP	5 Yearly						166
4	Impact	Mortality among HIV+ new and relapse TB patients	Rate	NA	NA	Global report	NTP	Annual	4	4	3.5	3.5	3.5	3.0
5	Impact	Leprosy prevalence rate per 10,000 population	Rate	0.5	2011/12	NTP bulletin	NTP	Annual	0.3%	0.28%	0.25%	0.2%	0.15%	<0.1%
6	Outcome	Case notification rate (CNR) per 100,000 population all forms (bacteriologically confirmed plus clinically diagnosed) of TB.	Rate	152	2012/13	HMIS	NTP	Quarter	131	136	137	138	140	146
7	Outcome	Case Detection Rate (CDR) for all forms of TB	Rate	58%	2012/13	HMIS	NTP	Quarter	66%	70%	77%	81%	85%	91%
8	Outcome	Treatment success rate (TSR) for bacteriologically confirmed TB cases	Rate	0.91	2012/13	HMIS	NTP	Quarter	90%	90%	90%	90%	90%	90%
9	Outcome	Cure rate for bacteriologically confirmed TB cases	Rate	71	2012/13	HMIS	NTP	Bi-annual	81%	83%	84%	85%	87%	90%
10	Outcome	TSR for all forms of TB (bacteriologically confirmed + clinically diagnosed case)	Rate	91%	2012/13	Admin	NTP	Quarter	90%	90%	90%	90%	95%	95%
11	Outcome	TSR for RR/MDR-TB cases	Rate	70%	2012/13	HMIS	NTP	Quarter	70%	74%	78%	82%	86%	90%
12	Outcome	Cure rate for MDR-TB cases	Rate	0.1	2012/13	HMIS	NTP	Quarter	40%	48%	56%	64%	72%	80%
13	Outcome	Proportion of Disability grade 2 among new leprosy cases	Rate	7%	2011/12	HMIS	NTP	Quarter	13%	1%	<1%	<1%	<1%	<1%
14	Outcome	Leprosy Treatment Completion Rate	Rate	84%	2011/12	HMIS	NTP	Quarter	87%	95%	95%	95%	95%	95%
15	Coverage	Proportion of Bacteriologically confirmed TB cases	Prop	30%	2012/13	HMIS	NTP	Quarter	35%	38%	41%	44%	47%	50%
16	Coverage	Number of Bacteriologically confirmed DR-TB case notified among estimated cases	No	316	2012/13	Admin report	NTP	Quarter	700	732	1114	1268	1439	1590

17	Coverage	Laboratory-confirmed RR/MDR-TB cases enrolled on SL anti-TB treatment during the specified period of assessment (number)	No	220	2012/12	Admin report	NTP	Quarter	700	732	1114	1268	1439	1590
			%	100%					100%	100%	100%	100%	100%	100%
18	Coverage	DST coverage for new TB patients[1]	No	NA	New Indicator	HMIS	NTP	Quarter		10,865	63,281	71,352	78,069	90,096
			%						6%	9%	80%	85 %	90 %	100%
19	Coverage	Under-five children with TB-contact who began IPT	Number	NA	New Indicator	HMIS	NTP	Quarter	NA	NA	10,500	16,598	28,858	26,470
20	Coverage	Registered new and relapse TB patients with documented HIV status out of the total notified TB cases.	Prop	86%	2012/13	HMIS	NTP	Quarter	82%	85%	89%	92%	96%	96%
21	Coverage	HIV-positive new and relapse TB patients on ART during TB treatment out of all notified TB HIV positive cases.	Prop	51%	2012/13	HMIS	NTP	Quarter	82%	84%	87%	90%	94%	96%
22	Coverage	PLHIV newly enrolled in HIV care, started TB preventive therapy.	Prop	18%	2012/13	HMIS	NTP	Quarter	40%	51%	59%	67%	74%	80%

NA- Not Available.

Percentage of Pulmonary TB patients with DST result for at least RR divided by total number of notified pulmonary TB cases in the same year, expressed as a percentage. DST coverage includes using rapid molecular tests (e.g. GeneXpert MTB/RIF), as well as conventional phenotypic DST results.

Figures 26 and 27, below, outline planned targets of annual notification for all forms of TB and DR-TB from 2018-21. Within the last years, Ethiopia has experienced decline in TB case notification, a third of annually estimated incident cases are missed or failed to be detected. This gap is even wider in fining DR-TB cases. Achieving these planned targets require concerted multi-pronged approach to finding these cases, including defining and systematic screening in key population; engaging all care providers; community and other stakeholders' involvement for a multi-sectoral response; strengthening programme monitoring and data use for local level planning and decision making; and expanded access and utilization of diagnostics, including universal DST at time of diagnosis.

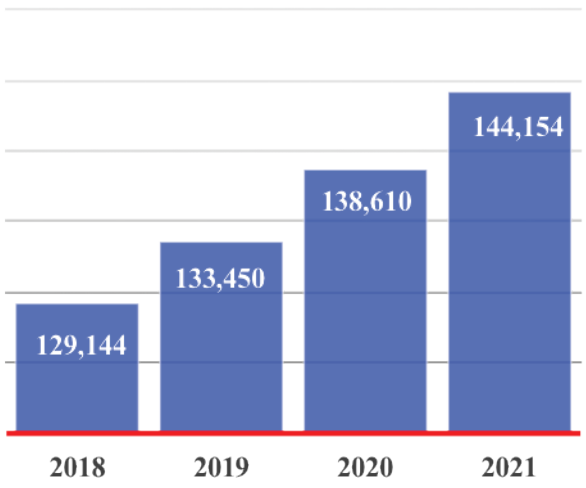


Figure 26 . Planned target of annual case notification for all forms of TB, 2018-2021.

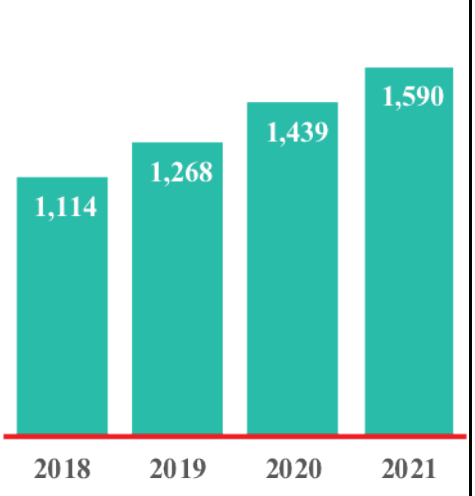


Figure 27. Planned DR-TB notification national target, 2018-2021.

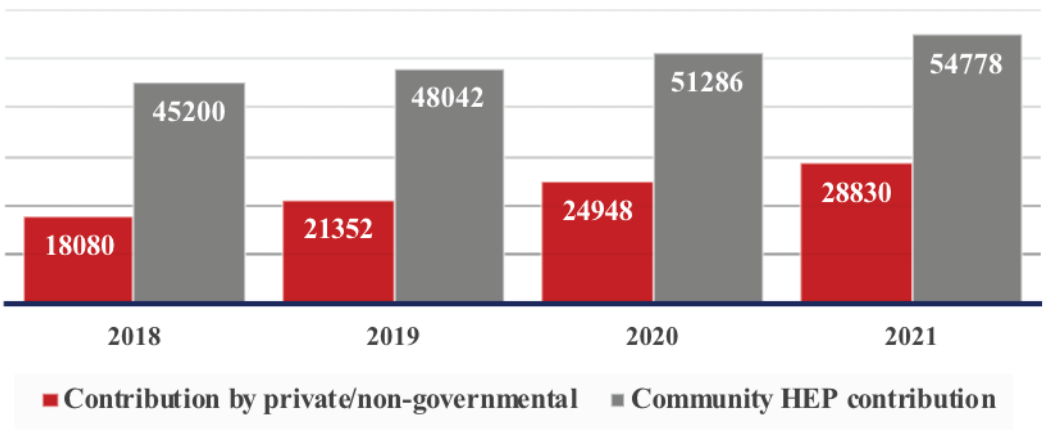
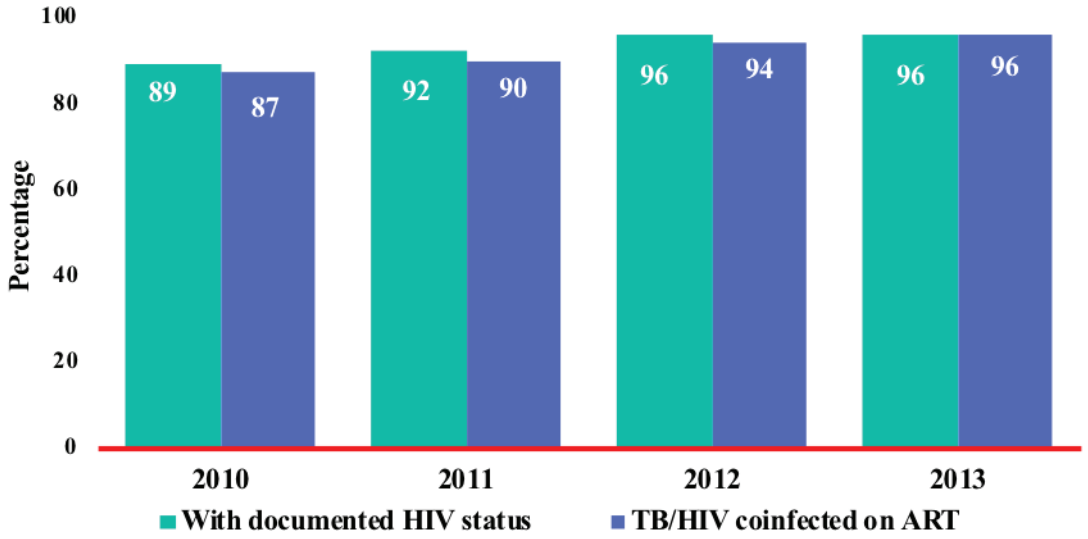


Figure 28. Planned target of private and community annual contribution of case notification 2018-21.

Figure 28, above, summarizes planned targets of annual case notification for PPM and community HEP, which together account for more than 50% of the planned annual TB case notification for respective years. Interventions, such as to strengthen 1) TB integration with HIV and diabetes care, and MCH clinics for intensive case finding; 2) TB case finding in high volume hospitals and other HFs; 3) Access to appropriate quality diagnostics, including X-ray and for diagnosis of DR-TB, and linkage to care following diagnosis; 4) TB contact investigation; 5) Focused support to underperforming Woredas and Zones; 6) Health facility linkage with congregated settings etc. are all important interventions for case finding.

Globally, TB remains to be the leading cause of mortality and hospital admission for PLHIV, despite presence of efficacious life-saving interventions. TB is curable as well as preventable, including in PLHIV. Prompt diagnosis and treatment of, both HIV and TB, are life-saving interventions. Figure 29 shows planned coverage targets of HIV testing among all notified TB cases and ART in TB/HIV co-infected patients within the period of 2010-13 (EC).

Figure 29. Planned target of percentage of notified all forms of TB with documented HIV status and TB/HIV co-infected started ART, 2010 -13 (EC).

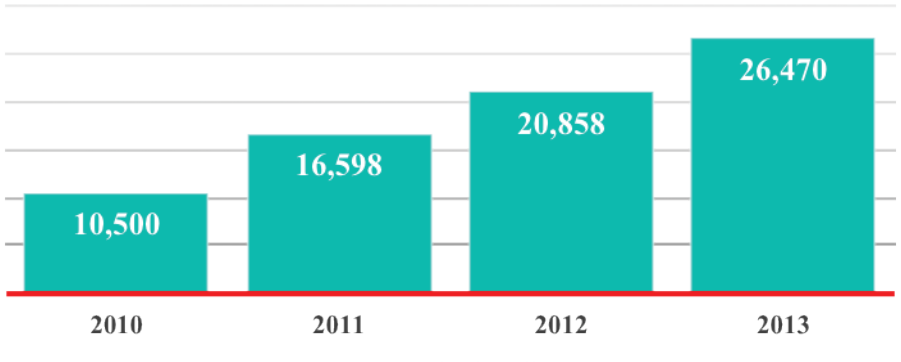


DST coverage and utilization is critical entry for prompt diagnosis and treatment of DR-TB. Table13- summarizes the planned FL- DST for RR coverage for 2009-2013 EC. Universal DST coverage for early diagnosis of RR/MDR-TB; linkage to care; and prompt treatment initiation are all critical steps to increase DR-TB case detection.

Table 13. Planned DST coverage (at least for RR) in annually notified bacteriologically confirmed pulmonary TB cases, 2018-2021.

Number of cases	2018	2019	2020	2021
Number of TB patients with DST (at least for RR) at time of diagnosis.	63,281	71,352	78,069	90,096
Number of notified pulmonary TB cases in the same year.	78,466	83,944	86,744	90,096
Planned DST coverage among confirmed pulmonary TB cases	**80%**	**85%**	**90%**	**100%**

Figure 30. Planned target of number of eligible under five children starting treatment for latent TB infection, 2010-2013 EC.



6. PHYSICAL IMPLEMENTATION PLAN

A detailed outline of implementation plan with targets is annexed with this document. An annual plan, which will further define more specific activities and timeline, will further supplement this implementation plan.

7. STRATEGIC PLAN COST

7.1 TB strategic plan cost

The financial need of this updated three years strategic plan, from 2018-2020, is estimated based on costing of detailed activities under each nine strategic objectives, using one health tool (OHT). Standardized assumptions were used for consistent and reliable budget estimation across the strategic objectives. Historical data and expert opinion was used, where there is lack of actual cost related information. Full implementation of this strategic plan will require an estimated three years budget of US$271,571,661; out of which 46% is for SO6, TB control pharmaceuticals and supplies (Table 14).

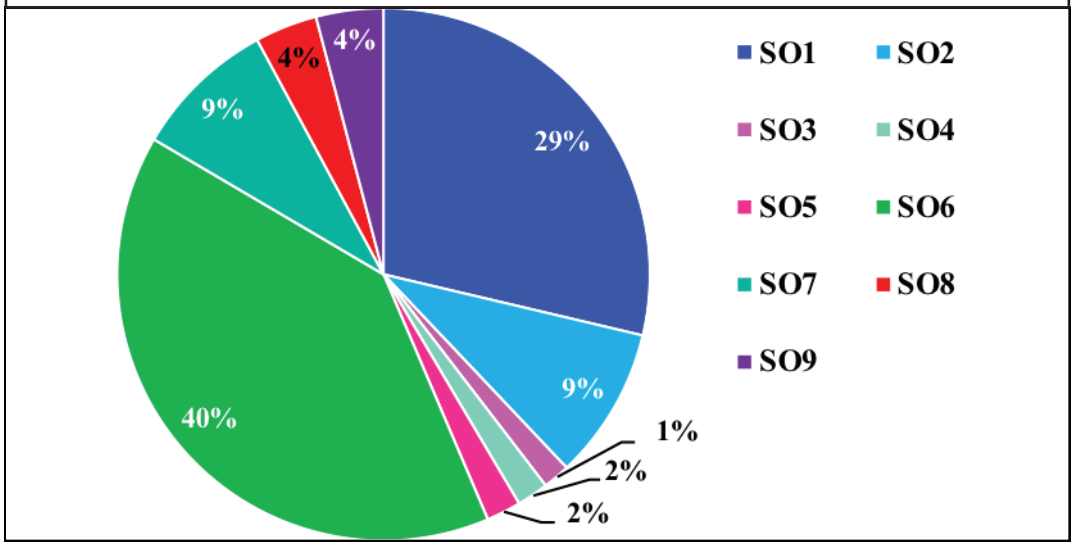
Table 14. TB control strategic plan cost for the period 2018 – 2020, USD.

TB Strategic Objectives	2018	2019	2020	Total
SO1: Improve access to TB services	23,199,721	26,887,689	27,813,415	77,900,825
SO2: Improve community ownership	8,729,651	8,145,394	8,240,860	25,115,905
SO3: Maximize financial resource mobilization and utilization	1,465,999	1,630,797	1,370,225	4,467,022
SO4: Strengthening quality of TB services	1,389,461	2,543,393	1,278,080	5,210,934
SO5: Enhance harmonization and alignment	1,898,912	1,899,912	1,898,912	5,697,735
SO6: Improve TB pharmaceuticals and other supplies	37,069,419	37,895,548	33,293,831	108,258,798
SO7: Improve evidence-based decision making	8,313,089	7,622,542	7,631,322	23,566,953
SO8: Improve human capital and leadership	2,371,037	4,966,168	2,925,987	10,263,192
SO9: Improve health infrastructure	8,199,948	2,218,619	671,731	11,090,298
Total	**92,637,237**	**93,810,062**	**85,124,363**	**271,571,661**

Strategic objectives 1 and 6 (i.e. improving access to TB services and TB pharmaceutical supplies), together, account for 69% of the total three years budget (Figure 31), while strategic objectives 2 and 9 (i.e. improving community ownership and evidence-based decision making), each account 9% of

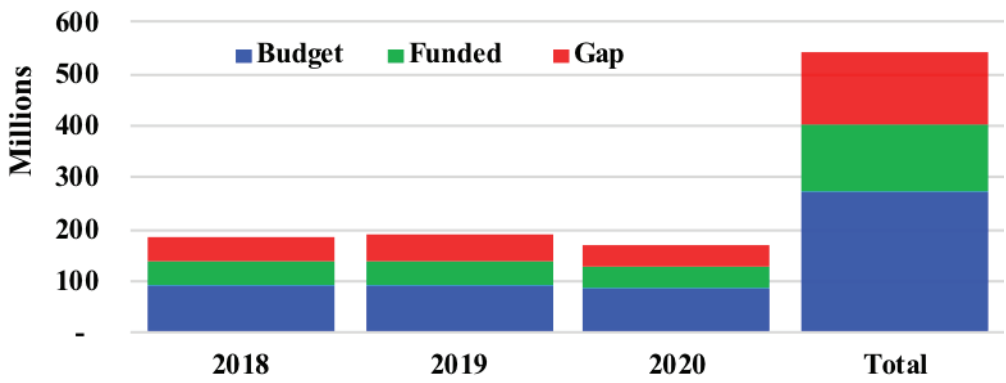
the total budget. The estimated budget of activities related to improving ownership, such as through sensitization of communities, prison administration, private providers, are all included under SO1.

Figure 31. TB strategic plan cost by Strategic Objective (SO) for 2018-2020, USD.



The FMoH has conducted a health resource tracking survey for 2017-2018 in order to establish financial commitment of the government of Ethiopia, partners and other relevant stakeholders for this national strategic plan. The finding of this survey and historical data is used to estimate the commitment of partners for 2019-20, which is not an obligated budget. This estimate shows a total of US$128,289,256 (47%) is committed from the Ethiopian government and partners for the remaining years of the strategic plan, 2018-2020. This indicates a significant funding gap (53%) in the national response to TB for optimum programme implementation to impact disease burden and spread of the epidemic as put forward in this NSP. The graph below summarizes the actual funding need, total commitment and the gap of this updated strategic plan from 2018–2020 **(Figure 32).**

Figure 32. Total funding need and gaps of the TB NSP for 2018-20, in USD.



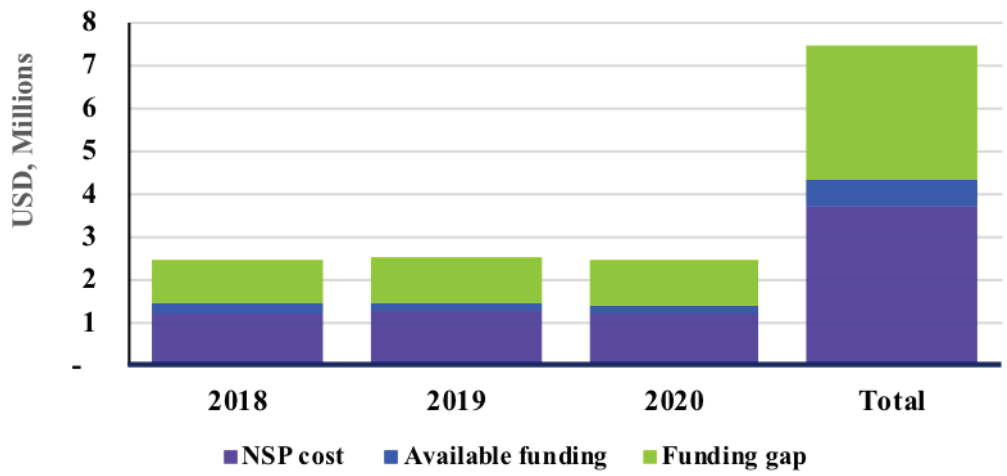
7.2 Strategic plan cost of Leprosy Control and Prevention

Figure 33 summarizes the total NSP cost for Leprosy control programme, available resources and gaps. Annually, there is significant unfunded gap for Leprosy control. A total of estimated Table 15 shows summary of US$ 3,721,640 is required by the Leprosy programme during this strategic plan period, out of which only US$ 607,119 (16.3%) is funded while 84% is unfunded.
Table 15. Cost of leprosy control strategic plan for the period of 2018 – 2020, USD.

Table 15 . Total funding need and gaps of Leprosy NSP for 2018-20, USD.

Budget source	2018 (USD)	2019 (USD)	2020 (USD)	Total (USD)
Total cost of NSP for leprosy	1,232,000	1,263,089	1,226,550	3,721,640
Available funding	201,749	218,131	187,239	607,119

Figure 33. Total funding need and gaps of Leprosy NSP for 2018-20, USD.



8. IMPLEMENTATION ARRANGEMENT, PARTNERSHIP AND COORDINATION

8.1 National policy environment

The Ethiopian government national growth and transformation plan, in which the HSTP is a part, aims cutting poverty in the country for the coming years addressing socio-economic determinants of health including TB. The national HSTP, which followed the end of the fourth phase of HSDP in 2014, emanates from the national health policy. The objective of the HSTP is to provide comprehensive, integrated and cost effective primary care services, with a focus on communicable diseases, such as TB, Malaria, HIV and STI; nutritional disorders; environmental health and hygiene; reproductive health; non-communicable diseases; and maternal and child health.

The HSTP promotes equitable access to quality comprehensive care that covers preventive, promotive and curative health services. TBL prevention and control is designed as part of this system, to deliver integrated services. The main strategies are fully aligned with the components of End TB strategies: Integrated patient-centred care and prevention that promotes early diagnosis of TB, including universal DST and systematic screening of contacts and high-risk groups; prompt treatment of all people with TB, including DR-TB and patient support; implementation of collaborative TB/HIV activities and management of comorbidities; preventive treatment of persons at high risk, including BCG vaccination. This calls for sustained political commitment and adequate resources; engagement of communities, civil society organizations, and public and private care providers. The national HSTP aims UHC, quality and rational use of medicines, and infection control in healthcare settings.

The ministry of health and the national TB research advisory committee (TRAC) promotes research and innovations in the country. The national TB research plan articulates priority agendas in the country for the coming years and aims optimization of implementation and impact to foster innovations in the national response to TB.

8.2 Institutional Framework and Responsibilities

Full implementation of this revised strategic plan requires active involvement and participation of all stakeholders from community to national levels.
Community level: The active community involvement in planning and implementing of TBL control is very crucial to create health seeking behaviour; early diagnosis and treatment; stigma reduction; and create community demand for equitable quality TBL health services. In this process, HEWs, HDA, opinion and religious leaders, agricultural development workers, teachers, women and youth associations, and community development organizations need to be involved under the leadership of elected community (Kebele) leaders for reaching communities at national scale. An important community mobilization function is to educate, inform, dialogue and participate in TBL prevention and control activities and create ownership and multi-sectoral responses. These groups will also be involved in the provision of basic TBL and TB/HIV prevention and control services, such as: awareness creation, referral of presumptive TBL cases and provision of community-based DOT services.

Woreda Level: The Woreda Health Offices (WorHO) TBL programme officers are responsible for implementation of TBL and TB/HIV control activities and coordination of partners. The district administrative council, particularly those responsible for social affairs, will be involved in the creation of functional and sustainable district level partnership, by involving all stakeholders in a multi-sectoral fashion. It will also be involved in formulating a detailed TBL and TB/HIV control work plan in close collaboration with WorHO. The main task of the WorHO TB officers is to support community level structures and health facilities. The WorHO should be strengthened with the necessary Human Resource and logistics in order to successfully guide the TBL and TB/HIV control activities and support both private and public healthcare providers.
Zonal Level: The main responsibility of the Zonal Health Department (ZHD) is to ensure the continuous availability of adequate essential supplies required for the different strategic approaches to TBL control; ensure the availability of HRH, equipment and supplies in Woredas/Districts and coordinates resources of the different partners TBL and TB/HIV prevention and control activities. The ZHDs are also expected to provide technical support to Woredas/Districts.

Regional Level: The TB/HIV case teams in the Regional Health Bureaux are responsible to coordinate all TBL and TB/HIV prevention and control activities in the Region. It is also responsible for resource mobilization, TBL control planning, implementation, monitoring and evaluation. Each RHB will translate the national strategic plan in to their respective Regional, Zonal, Woreda/District level context and regional versions of the strategic plan are expected to be developed.

National Level: The main responsibilities at federal level include: setting standards; national level coordination, capacity building, supportive supervision, resource mobilization, and partnership; formulate and disseminate TBL policy and guidelines; formulate national strategies, oversee policy implementation, monitoring and evaluation; determine priority TB research agenda and track its implementation; conduct/coordinate TB research and advocate for TB as a priority public health issue.

8.3 Partnership and Coordination

Tuberculosis, TB/HIV, DR-TB and Leprosy are major public health burdens in Ethiopia. The social and economic challenges of TB and Leprosy calls for inter-sectoral collaboration, which is guided by the principle of coordinated actions and partnerships. Establishment of effective and functional partnership is critical to achieving TBL program objectives.

In order for partnership to function and be sustainable, they must be institutionalized and recognized by political and administrative bodies at various levels. Coordination is of paramount importance within various departments of the Federal Ministry of Health and RHBs as well as ministry of health agencies. The following are partners involved in the implementation of TB, TB/HIV and Leprosy prevention and control activities:

Within the Ministry of health:

- Diseases Prevention and Control will be coordinating the NTP.
- Policy and Planning Directorate, Finance and Procurement Directorate, Resources Mobilization and alignment Directorate, Federal HAPCO, PFSA, FMHACA, EPHI, ALERT Training Centre, and ALERT Hospital, AHRI, St. Peter Specialized Hospital, Regional Health Bureaus and Regional Labora tories will be responsible for supporting the implementation of the strategic plan.Out-side the MoH structure:
- Ministry of Finance and Economic Development (MoFED): mobilization of resources and improved resource utilization.
- Ministry of Education (MoE): incorporate TB, TB/HIV and Leprosy prevention and control principles and practice into pre-service curricula.
- Communication media agencies.
- Uniformed health services (Army and Police).
- Prison administration.
- Administration of refugees and Returnees Affair (ARRA).
- Academic and research institutions: TB research.
- Private sector: the private sector plays a significant role in health care delivery by maximizing the DOTS coverage, provision of TB/HIV services and efficient use of existing resources.
- Governmental and private companies.
- Multilateral agencies: WHO, GFATM, WFP, IOM, World Bank.
- Bilateral agencies: USAID, CDC, DIFID, Italian Development cooperation.
- CDC implementing partners (ICAP).
- USAID implementing partners (Challenge TB, PSHP, PATH).
- NGOs and FBOs: professional associations, CCRDA, CUUAM, GHC, GLRA, MSF, PIH.

8.4 IMPLEMENTATION PLAN

Annual action plans will be developed at various levels (national, regional, district), which shall be tuned towards the accomplishment of objectives and targets stated in this strategic plan. There is a need for building planning and budgeting capacity for TBL and TB/HIV prevention and control at all levels. Final evaluation of the implementation status of the strategy will be carried out, as part of implementation of the plan.

9.REFERENCES

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3) FMoH. 2015. Health Sector Transformation Plan (HSTP) 2008-2012 EC (i.e. July 2015–June 2020).
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10. ANNEX

10.1 Annex 1: Implementation plan for TB control and prevention

SO	Initiatives	Major activities of the initiative	Thematic area	Unit	Baseline	ANNUAL TARGETS				
					2008	2016/17 2009	2017/18 2010	2018/19 2011	2019/20 2012	2020/21 2013
SO1	Enhance implementation of full package community-based TB care services.	**Increase number of TB cases identified through CBTB care**	CBTB	No of cases			45,200	48,042	51,286	54,778
		Increase number of health posts providing full package CBTB care.	CBTB	No. of HPs	8404	8,404	14,007	14,007	14007	
		Map pastoralist communities and develop tailored community TB service delivery approach.	CBTB	Report			1			
		TB training of HEWs assigned at health posts.	CBTB	No. HEWs			500		500	
		Expand CBTB care services in urban settings.	CBTB							
		Support health posts CBTB care full package implementation in selected woredas	CBTB	No. Woreda	400	400	400	400	400	400
		Pilot community-based management of DR-TB: Develop guides and tools, capacity building and monitoring.	CBTB	Operational guidance			1			
		Develop, print and distribute TB booklet for HDA, TB patients and communities in 5 languages.	CBTB	No copies		150000	150000	150000	50000	50000
		Print and disseminate patient charter (5 languages).	CBTB	No copies		150,000	200,000	200,000	200,000	
		Engage patients and families in TB treatment adherence support: operational guidance	CBTB	Patients			1			
		Provide health education to TB patients and community members using community structures.	CBTB	No. reached		345,500	366,000	390,000	420,000	
		Conduct community TB education through HEP	CBTB	No. of HPs		16,400	16,400	16,400	16,400	
	Accelerate engagement of all care providers in TB care and prevention	**Increase case detection by engaging all care providers**		No of cases			18,080	21,352	24,948	28,830
		Convene and facilitate joint planning with stakeholders for PPM-DOTS expansion at national and regional levels.	Engaging all care providers	No regions national	12	12	12	12	12	12
		Expand TB diagnostic and treatment services in PPM sites: Private for profit, workplace, FBO and NGO health facilities (including universities, refugee camps, uniformed forces)	Engaging all care providers	No. HFs	386	602	727	852	977	1103
		Presumptive TB case identification and referral services in 35% of existing private sites: lower clinics, etc.	Engaging all care providers	No. of HFs		250	509	1188	1769	1963
		Presumptive TB case identification and referral linkages through CSOs, NGOs and FBOs.	Engaging all care providers	No of CSO CBOs		30	35	35	35	35

	Presumptive TB case identification and referral linkages through CSOs, NGOs and FBOs.	Engaging all care providers	No of CSO CBOs		30	35	35	35	35
	Map out and sensitize informal health service providers to identify potential actors for TB prevention and care.	Engaging all care providers	No of mission			6		6	
	National consultation to determine TB key population.	Key Pop	# workshop			1			
	Sensitize MoH leadership on TB in key population.	Key Pop	# workshop		4	4	4		
	Develop national strategies and action plan for reaching TB key population.	Key Pop	National plan			1			
	Increase number of HFs providing TB diagnostic and treatment services to prison population.	Key Pop	No prisons			40	50	60	80
	Bi-annual active TB screening in all prisons and detention centres.	Key Pop	No screened			220,000	220,000	220,000	220,000
	Exit TB screening in all prisons and detention centres.	Key Pop	No. screen			10,000	10,000	10,000	10,000
	Expansion of urban TB/DR-TB case finding initiative to additional urban settings.	Key Pop	No urban areas	4	4	20	30	20	15
	Increase the number of notified children with TB	Childhood TB	No <15Yrs			19,372	20,018	20,792	21,623
	Scale up "childhood TB- IMNCI integration model" in health facilities.	Childhood TB	No of HFs.	100	200	250	300	350	400
	Annual review meeting focused on childhood TB	Childhood TB	No meetings	1	1	1	1	1	1
	Screen children with presumptive TB using Xpert	Childhood TB	No screened	106,938	104,436	112,748	115,241	124,472	125,092
Strengthen implementation of TB/HIV collaborative activities	**Increase HIV testing coverage in notified TB cases.**	TB/HIV	%age			89	92	96	96
	ART coverage in TB/HIV co-infected patients.	TB/HIV	%age			87	90	94	96
	Offer HIV testing to all TB patients.	TB/HIV	Number	126,480	123,140	129,144	133,450	138,610	144,154
	Provide ART to TB/HIV co-infected patients	TB/HIV	Number			8,000	8,840	10,008	11,070
	Provide IPT to all eligible PLHIV	TB/HIV	Number	19,913	20,400	23,600	26,800	29,600	32,000
	Supply condoms in TB clinics.	TB/HIV	No supplied		689,584	728,840	749,616	768,320	778,400
	Initiate one-stop TB/HIV service delivery in selected facilities, based on disease burden, local context and healthcare delivery system.	TB/HIV	No of HFs (Cumul)		119	251	539	567	604
Provide client-centred integrated TB services									

		Investigation of contacts of all PTB index cases.	Case detection	No screened							
		Provide IPT for TB-exposed eligible children	Childhood TB	No. on IPT			10,500	16,598	20,858	26,470	
		Provide standard operating procedure (SOP) for contact investigation and management.	Case detection	Guidance			1				
		Integrate contact investigation and preventive therapy in routine TB care services	TB integration	No of HFs	3081	3480	3616	3795	3937	4121	
	Strengthen access and utilization of TB diagnostic services and linkage to care										
		Provide AFB smear microscopy services.	TB diagnostics	No of HF	3081	3480	3616	3795	3937	4121	
		Expand GeneXpert MTB/RIF diagnostic test	TB diagnostics	No of Xpert	165	242	152	152	152	137	
		TB culture and DST services to regional laboratories.	TB diagnostics	No of HF	9	1	2	3	3	2	
		TB histopathologic diagnostic services in hospitals	TB diagnostics	No of hosp	0	0	25	35	45	55	
		Establish tele-radiography services in hospitals	TB diagnostics	No of hosp	0	0	25	25	25	25	
		Implement scheduled integrated specimen referral system based on laboratory network schedule	TB diagnostics	No of HFs networked	1147	1157	1167	1177	1188	1199	
		Implement on-call-based integrated specimen referral system based on laboratory network schedule	TB diagnostics	No HF networked	1000	1600	2300	2644	2807	2872	
		Provide backup currier system for TB specimen referral	TB diagnostics	No of region	11	11	11	11	11	11	
		Establish eBased result delivery to sample referring sites	TB diagnostics	No of HF	0	10	165	2644	2807	2872	
		Establish electronic laboratory information management system, & sustained connectivity of Xpert machines.	TB diagnostics	No Xpert connected	165	242	152	152	152	137	
SO2	**Engage communities in TB care services through HEP, HDAs, schools and patient groups.**	Develop, print and distribute booklet on TB for HDA, TB patients and communities in 5 languages.	CBTB	No of copies		150,000	150,000	150,000	50,000	50,000	
		Print and disseminate patient charter (5 languages).	CBTB	No of copies		150,000	200,000	200,000	200,000		
		Provide national guidance for engaging patients/families in treatment adherence support.	CBTB	Guidance				1			
		Provide health education to TB patients and community members through home to home visits.	CBTB	Psns		345,500	366,000	390,000	420,000		
		Conduct community TB education through HEP.	CBTB	No. of HPs		16,400	16,400	16,400	16,400	16,400	
		Engage schools and higher education institutions in TB prevention and control.	CBTB	No of schools			500	600	700		
		Develop, print and distribute TB booklets for students and school communities.	CBTB	No of copies	120,000		160,000		160,000	160,000	

	Engage school mini-media for TB educational message delivery.	CBTB	No of schools		800	200	200	200	200
Engage NGOs and CSO engagement in TB prevention and control.	Disseminate national operational guidance for engaging NGOs and CSOs in TB care and treatment.	CBTB	No of copies			5000			
	CBOs, CSOs and NGOs experience sharing of TB prevention and control.	CBTB	No of events			1	1	1	
	Co-organize world TB day commemoration with partners, including NGOs and CSOs at national and regional levels.	ACSM	No of events		1	1	1	1	1
	Document and scale up CBTB care best practice.	CBTB	Document			1		1	
Strengthen TBL Advocacy, Communication and Social mobilization (ACSM)	Ensure political commitment and support through sensitizing influential persons, media professionals' and other promoters, at all levels.	ACSM	No of sessions		65	130	130		
	Support TB caucus initiative, provide engagement framework /disseminate Barcelona declaration.	ACSM	ACSM		1	1	1		
	Sensitize TB stakeholders, media professionals', regional governments, and others.	ACSM	ACSM		1	1	1		
	Engage TB Good Will Ambassador to support TBL control efforts and patients.	ACSM	No event	1	1	1	1	1	1
	Sensitize Woreda and Kebele political leaders on role of HEWs in empowering communities.	ACSM	No of workshops	0		900			
	Strengthen/establish TB media forum in all Regions.	ACSM	No of forum	6	7	8	9	10	10
	Periodic assessment of impact of ACSM	ACSM	No of asses.			1	1	1	1
	Print and disseminate TB ACSM operational plan.	ACSM	No of copies			1000			
	Annual inventory of communication channels and print and electronic materials at Federal and Regional levels.	ACSM	No of assessments	1	1	1	1	1	1
	Annual message & material harmonization with partners.	ACSM	No. events	1	1	1	1	1	1
	Daily radio spot for four weeks in 5 different languages.	ACSM	No spots	1200	600	600	600	600	600
	Produce four different 60 sec. each TV spots in five languages on TBL control and prevention.	ACSM	No spots	15	20	20	20	20	20
	Print billboards in different congregate settings.	ACSM	No billboard			2	3	2	
	Print and distribute public educational leaflets.	ACSM	No leaflets		150,000	150,000	150,000		
	Provide HWs TBL patient education flipchart.	ACSM	No	1500	3000	4000	5000	3000	3000

	Provide TB/HIV prevention health workers tools.	ACSM	No of copies	3081	3480	3616	3795	3937	4121
Strengthen grant management capacity at regional and sub-regional level	Annual resource mapping for TBL program at national and regional levels.	Program management	No Mapped	12	12	12	12	12	12
	Provide regular technical support on grant management from FMoH to RHBs.	HSS	No of visits	22	22	22	22	22	22
	Provide technical support on grant management from RHB to Zonal health offices.	HSS	No of visits	198	198	198	198	198	198
	Orient national, regional and sub-regional TB programme mangers on GF grant					1		1	
	Integrate grant management in routine programme supportive supervision tools				1				
	Provide SOP for TB programme managers on tracking grant utilization and liquidation				1				
Strengthen TB, TB/HIV and DR-TB service quality	Disseminate National Guidelines for programmatic management of TBL.	National guide	No of copies			7000		4448	
	Prepare, duplicate and disseminate clinical reference manual on TB and DR-TB care.	Treatment	No of copies		2000		2000		
	Prepare and disseminate DR-TB patient brochures for introduction of new treatment regimens.	Treatment	No of copies	1200	1350	1710	2630	3000	3375
	Prepare and distribute pocketbook/protocols for aDSM.	Treatment	No of copies	500		920	2351	1255	
	Maintain national DR-TB consilum/clinical panel.	Treatment	No	0	1				
	Regular DR-TB consilum site visits.	Treatment	No of visit	4	4	4	4	4	4
	National clinical symposium on DR-TB.	Treatment	No sympos.	2	2	2	2	2	2
	Telemedicine consultation for management of complex DR-TB cases.	Treatment	No sessions	1	1	1	1	1	1
	Quarterly cohort review and use of data for quality improvement.	Treatment	No of reviews		4	4	4	4	4
	Clinical audit and data use for quality improvement.	Treatment	No of audits	1	1	1	1	1	1
	Advanced clinical training for DR-TB consilum.	Treatment	No trainees	40	60	90	90	90	90
	Develop and distribute standardized treatment support handbook for patients & their families.	Treatment	No of copies		2000	4000	5000		
	Facilitate patient peer adherence support at HF.	Treatment	No of event		13002	14322	15468		
	Assess adequacy of existing system for aDSM.	DR-TB	No of HFs	0	20	20	20	20	20
	Update and disseminate aDSM tools for HFs	HSS		2	60	12	10	9	8
	Health workers orientation and sensitization on aDSM	DR-TB	No session	1	2	22	22	22	22

		Experience sharing to countries with aDSM system.	DR-TB	No of visits			1	1	1	1
		Expand baseline SL-DST for RR/MDR-TB patients.	DR-TB	No of pts.	700	1,515	1,931	2,167	2,381	2,578
		Expand DST access, at least for rifampicin, for notified TB cases.	DR-TB				63,281	71,352	78,069	90,096
		Integrate counselling/psychosocial support in comprehensive TB health workers training.	HR	No of trainees	0	100	100	100	100	100
		Provide psychosocial, economic and nutritional support to eligible DR-TB patients.	Patient support	No of patients	700	1515	1931	2167	2381	2578
		Develop and disseminate adherence counselling and patient education tools.	Patient support	No of copies						
		Develop and disseminate standardized provider job aids on TB diagnosis and treatment.	Cross-cutting	Packages of materials	687	4205	386	429	392	312
		Conduct DR-TB clinical mentoring.	DR-TB	No of TICs	40	48	48	50	50	50
		Conduct DR-TB catchment area meetings.	DR-TB	No of TICs	40	48	48	505	50	50
		Develop, distribute, and implement DR-TB/TB-IC SOP package in HFs.	TB-IC	No of HFs	687	811	298	265	283	303
		Identify and monitor key TB laboratory indicators relevant for service quality monitoring.	TB Laboratory				1			
		Implement of TB QI at program and facility levels.	TB quality		1	1	1	1	1	1
		Support annual TB service Quality summit.	TB Lab quality		1	1	1	1	1	1
	Strengthen Laboratory Quality Assurance System	**Sustain adequate performance in EQA for smear microscopy**	TB Lab quality	No of HFs		2016	2621	2752	3032	3032
		Expand TB lab quality management towards accreditation for AFB smear microscopy sites.	TB lab quality	No of HFs	1	1	10	15	15	20
		Implement quality management system in TB culture labs towards ISO 15189 accreditation.	TB lab quality	No of HFs	0	1	2	2	2	4
		Implement quality management system in GeneXpert facilities towards ISO 15189 accreditation.	TB lab quality	No of HFs	0	0	15	20	20	20
		Support establishment of national PT production centre at EPHI by ISO 17025.	TB lab quality	No of HFs	1	0		1		
		Conduct regular EQA for regional TB culture and DST laboratories.	TB lab quality	No of visits	2	2	2	2	2	2
		Update, print and disseminate integrated TB lab diagnostic test, QA and biosafety guidelines.	National guide	No of copies			7000		4448	

		Sustain adequate performance in EQA for smear microscopy	TB Lab quality	No of HFs		2016	2621	2752	3032	3032
		Expand TB lab quality management towards accreditation for AFB smear microscopy sites.	TB lab quality	No of HFs	1	1	10	15	15	20
		Implement quality management system in TB culture labs towards ISO 15189 accreditation.	TB lab quality	No of HFs	0	1	2	2	2	4
		Implement quality management system in GeneXpert facilities towards ISO 15189 accreditation.	TB lab quality	No of HFs	0	0	15	20	20	20
		Support establishment of national PT production centre at EPHI by ISO 17025.	TB lab quality	No of HFs	1	0		1		
		Conduct regular EQA for regional TB culture and DST laboratories.	TB lab quality	No of visits	2	2	2	2	2	2
		Update, print and disseminate integrated TB lab diagnostic test, QA and biosafety guidelines.	National guide	No of copies			7000		4448	
		Provide TB Laboratory service toolkit[1].	TB lab quality	No package	0		5000		2000	
		Expand EQA coverage for TB laboratory diagnostic tests (AFB, GeneXpert, Culture and DST).	TB lab quality	No of HFs	3467	4205	4591	5020	5411	5724
		Expand EQA centres.	TB lab quality	No centres	136	166	190	220	270	300
		Update, print and disseminate GeneXpert guidelines.	TB lab quality	No of copies	3000		4591		5412	
	Strengthen Laboratory Quality Assurance System	Monitoring and supervision of the performance FNA-TB diagnostic services.	Diagnostics quality	No of supervision	15	0	25	35	45	55
		Expand access to DR-TB adverse event monitoring lab tests at TICs and regional laboratories.	TB lab monitoring	No of HFs	40	20	12	10	9	8
		Implement EQA in all diagnostic health facilities	TB Lab quality	No of HFs						
		Quarterly onsite supervision from regional laboratories to hospitals.	TB quality	No. visits		13	13	13	13	13
		Quarterly onsite supervision from EQA centres to health facilities.	TB quality	No. visits						
		External QA linkage of national TB reference laboratory with supra national laboratory.	TB Lab quality							
		Service contract agreement for TB culture laboratory equipment (MGIT machine, LPA machines, centrifuge, pipettes).	TB quality	No of agreements	2	2	2	3	2	2
		Regular calibration of refrigerated centrifuge, autoclave, balance, micropipettes, incubators, oven, thermometers.		No of agreements	9	10	12	15	18	20
SO5		SPM launching to share with RHBs, partners and other stakeholders.		Program Round			1			
	Improve evidence based planning for TBL control program at all levels	Adopt National TBL NSP to region specific strategic plan based on local context.	Program management	No Regions	11	11	11	11	11	11
		National and regional comprehensive annual TBL operational plan in line with the National TBL SPM	Program management	No of plan	12	12	12	12	12	12
		Comprehensive annual TBL operational plan as part of woreda based annual plan by engaging TBL focal persons from 920 woreda, 99 zones, and eleven regions at zonal level.	Program management	No of Woreda TBL plans	1176	1176	1176	1176	1176	1176
		Quarterly TBL-TWG coordination meetings at national and regional levels.	Programme management	No of meetings	4	4	4	4	4	4

[1] EQA guideline, GeneXpert implementation guidelines, safety manual, AFB microscopy manual, specimen referral implementation guide, TB culture and DST manual, clinician pocket guide handbook, job aid, SOPs, quantification, log book, specimen referral tracking sheet, sample transportation, reporting format, supplies request and distribution.

		Convene TB laboratory TWG at national and regional levels for programme coordination.	Programme management	No of meetings	4	4	4	4	4	4
		Strengthen and functionalize DSM TWGs at national and regional levels in collaboration with PFSA and regional HUBs and incorporate TB aDSM agenda.	Programme management	No. of meetings	4	4	4	4	4	4
		Establish national level ACSM taskforce for coordination.	ACSM	No meetings	1	1	1	1	1	1
		Establish joint task force at regional level: RHB, prisons, congregated settings and key stakeholders.	Partnership coordination	Program management						
		Annual TB surveillance among health workers.	TB prevention				1	1	1	1
		Joint planning and implementation: FMoH/RHB, prisons, congregated settings and key stakeholders.	Partnership coordination	No of sessions	1	1	1	1	1	1
		Establish active drug safety monitoring and reporting system for SLDs.	Partnership coordination	No of TICs	45	60	72	82	91	99
		Establish national level taskforce to oversee new TB drugs & STR introduction and implementation.		Taskforce meetings	NA	1				
	Improve TB data quality	Revise, print and distribute package of TB recording and reporting (RR) materials for HFs.	M and E	No of copies distributed	3467	959	5009	14	7021	406
		Print and distribute package of RR providers support tools for HFs.	M and E	No of HF receive tools	4940	4940	4205	386	429	392
		Print and distribute package of leprosy RR tools.	M and E	No of HF	3081	519	4878	232	5302	239
		Update, print and distribute DR-TB RR for TICs and TFCs.	M and E	No of HF	703	1422	4292	129	104	264
		Introduce electronic case based information system for aDSM in all DR-TB TICs.	M and E		0	10	10	10	10	10
		Introduce DR-TB electronic RR.	M and E		0	10	10	10	10	10
		Conduct TB specific DQA at national level in coordination with national and regional PPD.	M and E	No of rounds	12	12	12	12	12	12
		Conduct zonal level TB specific DQA in coordination with HMIS unit.	M and E	No of rounds	198	198	198	198	198	198
		Prepare and distribute TBL M & E pocket guide	M and E	No of copies		6934	8410	9182	10040	10824
		Prepare and distribute TBL M&E framework.	M and E	No of event			1			
		Print and disseminate annual national TB bulletin	M and E	No of copies	1000	1000	1000	1000	1000	1000
		Print and disseminate annual regional TB bulletin	M and E	No of copies	10245	10245	10245	10245	10245	10245
	Improve program performance monitoring, supervision and review at all levels	Biannual TB program supportive supervision SS) from FMoH to RHBs.	Program mgt	No of visits	2	2	2	2	2	2
		Quarterly TB program SS from RHBs to ZoHOs	Program mgt	No of visits	44	44	44	44	44	44
		Quarterly TB program SS from ZoHOs to WoHOs	Program mgt	No of visits	396	396	396	396	396	396
		Quarterly TB program SS from WoHOs to HFs quarterly	Program mgt	No Round	3680	3680	3680	3680	3680	3680
		SS from EQA hospitals to health facilities	Program mgt	No of visits	272	332	380	440	540	600

		SS from regional lab to EQA centre hospitals	Program mgt	No of visits	26	26	26	26	26	26
		SS from EPHI to regional labs	Program mgt	No of visits	2	2	2	2	2	2
		TB EQA review and specimen transportation	Program mgt	No meeting	26	26	26	26	26	26
		Annual External Technical support, GLC, GDF	Program mgt	No of visits	2	2	2	2	2	2
		Biannual national level TB program specific review	Program mgt	No review	2	2	2	2	2	2
		Bi-annual regional level TB program review	Program mgt	No review	22	22	22	22	22	22
		Quarterly Zonal level TB program review	Program mgt	No review	356	356	356	356	356	356
		Quarterly Woreda integrated programme review	Program mgt	No review	3680	3680	3680	3680	3680	3680
		Integrated SS from HFs to HP	Program mgt	No of visits	3081	41759	43394	45538	47242	49452
		Comprehensive external TB program review	Program mgt	No review	1					1
	Promote TB research by engaging program managers and other health care providers	Support development of TBL regional research plan	TB research	No regions	0		4	7		
		Support and facilitate systematic evidence review in TBL priority areas	Evidence review	No reviews			2	5	5	2
		Support dissemination of key TB research finding through journal publication and newsletter.	Evidence review	No publication				5	10	7
		Conduct annual TRAC conference	Research	No of conf.	1	1	1	1	1	1
		Conduct second round TB prevalence survey	M and E	No survey					1	
		Stakeholder consultation to monitor implementation progress of national TB research plan.	M and E	No meeting				1		1
		Conduct national TB Drug Resistance Survey	M and E	No survey		1				
		TB/HIV annual surveillance	M and E	No survey		1	1	1	1	1
		National geographic mapping of DR- TB patients.	Epi assessment				1		1	
		Evaluation of implementation new TB diagnostics.	Op research							
		Assess programmatic impact of new TB lab diagnostic technologies.	Op research							
		Assess impact of national TB lab EQA scheme implementation on program performance.	M and E							
		Assess performance of national TB/HIV integrated specimen referral system.	M and E							
		National geographic mapping of DR- TB patients.	M and E				1		1	
		Conduct special studies (New techs, regimens, ND) and survey.	Op research	No of study						
	Improve TBL pharmaceutical quantification and procurement system	Regular annual quantification (for 2-3 yrs) for TBL pharmaceuticals and bi-annually revised forecast and supply planning in coordination with PFSA, EPHI and other stakeholders.	PSM	No of quant.	1	2	2	2	2	2
		Develop/adopt and utilize standard forecasting and supply planning tools for TBL pharmaceuticals	PSM	Report	2	2	2	2	2	2
		Training on forecasting and supply planning for PFSA/PFSA hubs, FMOH staffs, RHBs	PSM	No of trainee	30	30	35	35	35	35
		Procure and distribute FL anti-TB drugs	PSM	No patient	187712	196139	160785	166146	172569	175815
		Procurement of first line paediatrics anti-TB drugs	PSM	No patient	38447	40173	32933	34031	35346	36011

		Procure and distribute SL anti-TB drugs	PSM	No patient	700	1,515	1,114	1,268	1,439	1,590
		Procurement of new drugs for treatment of DR-TB	PSM	No patient	67	77	80	217	238	258
		Procurement of INH for childhood TB prevention	PSM	No patient	4,758	42,096	58,385	69,155	61,034	81,714
		Updated national ancillary drugs list for management of anti-TB SLDs adverse reactions	PSM	Updated national list	1		1		1	
		Cohort review to design quantification system based on incidence of adverse effects of anti-TB SLDs.	PSM	No review	1		1		1	
		Procure and distribute ancillary medicines for management of DR-TB adverse reactions	PSM	No patients	700	706	1,114	1,268	1,439	1,590
		Procure therapeutic foods for DR-TB patients with severe acute malnutrition.	PSM	No Patients		644	821	921	1,012	1,096
		Procure therapeutic foods for DR-TB patients with moderate acute malnutrition.	PSM	No Patients		485	618	693	762	825
		Procure and distribute Binocular LED-FM Microscope	PSM	Pcs	700	300	300	-	300	-
		Procure and distribute triple package for sputum sample transportation.	PSM	Pcs	2,000		500	500	500	500
		Procure and distribute reagents, and consumables for AFB microscopy	PSM	No. of HFs	3,000	-	4,591	-	5,412	-
		Procure/distribute equipment's for TB Culture and DST	PSM	No of labs	1	2	2	3	2	2
		Procure and distribute reagent and consumables for Culture and DST	PSM	No of labs	9	11	13	16	18	20
		Procure and distribute GeneXpert machines	PSM	Pcs	146	490	681	815	917	1,000
		Procure and distribute calibrators and warranty for GeneXpert machines	PSM	Pcs	146		681	815	917	1,000
		Procure and distribute invertor with sealed maintenance free battery	PSM	Pcs		242	152	152	152	137
		Procure and distribute falcon tube	PSM	Pcs	63,206	282,059	307,842	375,540	356,951	369,931
		Procure and distribute cartridges for GeneXpert test	PSM	Pcs	63,206	82,000	329,141	362,056	398,262	438,088
		Procure and distribute UVG fixtures	PSM	Pcs	0	40	40	40	40	40
		Procure and distribute audiometry machine	PSM	Pcs	11	60	72	82	91	99
		Procure electrolyte analysers with reagents	PSM	Pcs machine	20	60	72	82	91	99
		Procure and distribute ECG machine	PSM	Pcs machine	2	60	72	82	91	99
	Strengthen TBL pharmaceutical inventory management system	Strengthen IPLS supportive supervision for need based distribution of anti-leprosy drugs in health facilities	HSS DSM	No of visits	4	2	2	2	2	2
		Strengthen supply management TWGs at national and regional levels in collaboration with PFSA.	HSS DSM	No. of meetings	4	6	6	6	6	6
		Supportive supervision to PFSA regional hubs, WoHOs and HFs to strengthen IPLS and APTS implementations.	HSS	No of visits	1	2	2	2	2	2

		TB supply management training to TICs, NTP, PFSA and RHB	HSS	No trainee		100	100	100	100	100
		TB focal supply and programme managers IPLS training	HSS	No trainee			150	150	150	150
		Health workers training on APTS.	HSS	No of HFs			50	50	75	75
		Support reagent distribution at regional/EQA laboratory through mentoring and supportive supervision.	Case detection	No of visits	2	2	2	2	2	2
	Improve TB laboratory reagent preparation and distribution system	Procure and provide equipment for EQA centres (Balance, Distiller and measuring cylinder etc.) for microscopy reagent preparation.	PSM	No of HFs	13	30	48	65	82	100
		Procure and distribute standard reagent containers for AFB reagent to HFs.	PSM	Pcs	4000	12,000	12,000		64,942	68,688
		Update specification complying with international and national standards to meet acceptable quality for all TB related drugs, supplies, equipment and reagents.	HSS DSM	No of updates	1	1	1			
	Improve quality control and assurance of anti TB Pharmaceutical	HCW training on rational use of anti-TB medicines	HSS DSM	No trainee			100	100	100	100
		Conduct post market surveillance for anti-TB medicines	HSS				1		1	
		Expand and strengthen preventive and curative medical equipment maintenance of TBL program	HSS	DSM						
	Enhance HR capacity for TBL control Program management and Coordination	Maintain GF assisted 5 national TB advisors.	HRH	No	4	4	5	5	5	5
		Maintain GF assisted 22 regional TB program advisors.	HRH	No	22	22	22	22	22	22
		Maintain GF assisted 3 TB officers at national and regional labs.	HRH	No	18	18	18	18	18	18
		Recruit/retain CBTC officers at Zonal levels	HRH	No	26	26	26	26	26	26
		NTP management and leadership training manual	Program Mgt	Pcs			1			
		TB program management and leadership training for ZHDs and WoHOs TB officers	Program Mgt	No of trainee	2,236			2,236		
		HMIS focal persons and regional program officers ToT on TB data management and M&E	M&E	No of trainee			30			30
		HMIS zonal and woreda focal persons and program officers training on TB data management and M&E	M&E	No of trainee			2,236			2,236
		Training RHBs TB programme in conjunction with finance personnel on grant management	Grant management	No trainee			22		22	
		Comprehensive TBL for nurses and clinicians providing diagnosis and treatment services (public and private)	Engaging all care providers	No trainee	3467	8410	9182	8296	10824	7706

		Comprehensive TBL and HIV program coordinators and service providers TOT.	HRH	No trainee	120		120		120	
		Pre-service training on clinical and programmatic management of TBL.	HRH	No institution	13	13	15	15	15	15
		Conduct TBL training for clinical students in medical schools using blended modules	HRH	No trainee	2600	2600	3000	3000	3000	3000
		AFB smear microscopy and EQA training for medical students using blended modules	HRH	No trainee	1300	1300	1500	1500	1500	1500
		Support integration of TBL, TB/HIV and DR-TB in health sciences pre-service curriculum	HRH	No schools						
		HCWs PMDT training of trainers	HRH	No trainee	30		30	30	30	30
		Basic and advanced PMDT training for HCWs	HRH	No trainee	753	50	1784	484	2096	562
		Sensitization on updated national guidelines on diagnosis and management of DR-TB.	HRH	No trainee	50	60	60	60	60	60
		GeneXpert and TB diagnostics training HWs	HRH	No trainee	30	60	398	432	466	500
		Onsite orientation on TB-IC and DR-TB for TIC.	TB-IC	No trainee	82	99	120	150	175	200
		TB and TB/HIV training to prison and other congregated selected settings	HRH/ Key Population	No trainee	60	210	120	120	210	120
		AFB smear microscopy training of lab experts from newly engaged PPM-DOTs and public facilities	HRH/ Key Population	No trainee	5000	8410	9182	2296	3,000	2706
		Training biomedical engineers on curative maintenance	HRH/Lab	No trainee	100		120		120	
		National and regional sensitization workshops on sample transportation and referral network lab personnel and TB program focal persons at all levels	HRH/Lab	No trainee	1089	2102	2755	4016	5412	6869
		GeneXpert training for lab professionals	HRH/Lab	No trainee	30	60	398	432	466	500
		Audiometry and ECG reading capacity building for HWs	HRH/DR-TB	No trainee	10	40	40	40	20	20
		Laboratory professionals and clinicians training on FNA slide preparation and transportation	HRH/Lab	No trainee	25		20	20	20	20
		Facilitate and support training on X-ray reading.	HRH	No trainee	50		50			
		Sensitization workshop on PPM DOTS service provision	HRH/engaging	No session			4	4	4	4
		National assessment & supportive supervision to regions	Prog Mgt	No asses.			11		11	
		Provide training on TB research	Research	No trainee	60	60	120	180	200	240
		IRT for HEWs in all regions to initiate DOT in all HPs	HSS	No of HEW	35000			35000		38000
		Train media professionals and PR officers on TBL	HRH/ACSM	No trainee	90	90	90	120	120	120
		Training skills on HW-patient communication for healthcare providers and program managers	HRH/ACSM	No trainee	60		60		60	
		Sensitization workshop for MPs (social sector committee members from federal and regional government)	HRH/ACSM	No particip	30			30		
SO9	**Build regional capacity to support TB services**	Support establishment of lab equipment maintenance workshops in each region.	Lab services	No regions	0	0	7	10	11	11
		Procure and install Digital X-ray	Diagnostics	No of HFs	45	15	12	10	9	8
		Renovate and install TB culture and DST equipment	Lab services	No of labs	9	2	2	3	2	2
		Renovate rooms, install negative pressure system and BSC Level II	Lab services	No of labs	9	2	2	3	2	2
		Install equipment for culture and DST	Lab services	No of labs	9	2	2	3	2	2
		Install LPA machines at regional laboratories	Lab services	No of labs	9	2	2	3	2	2
		Procure and distribute IT equipment	Lab services	No of labs	9	2	2	3	2	2
		Culture and DST equipment calibration and maintenance	Case detection	No of labs	9	10	12	15	18	20
	Improve health facility infrastructure to provide DR-TB services	Furnish and equip newly established DR-TB TICs	HSS	No of HFs	45	15	12	10	9	8
		Assess infrastructure capacity to identify health facilities with renovation need.	HSS	No assessed		11		11		
		Support establishment of TB IC friendly operation theatres and ICU in selected hospitals.	TB prevention	No HFs			6	13		
		Equip selected operation theatres with UVG fixture.	HSS	No of HFs	0	2	2	2	2	2
		Equip selected ICUs with UVG fixtures care.	HSS	No of HFs	0	2	2	2	2	2

Initiatives	Major activities of the initiative	Unit	ANNUAL TARGETS							
			2006 (2013/14)	2007 (2014/15)	2008 (2015/16)	2009 (2016/17)	2010 (2017/18)	2011 (2018/19)	2012 (2019/20)	2013 (2020/21)
Improve Programmatic Management and Coordination of Leprosy Control	Assignment of national leprosy control focal person		X							
	Develop and launch national roadmap for final phase of leprosy elimination.	No session		1						
	Sensitization on national roadmap for leprosy elimination for at national level	No participant		100						
	Conduct baseline and final assessment for epidemiologic and Service mapping on Leprosy	No of districts mapped	368	184				380		
	Increase case finding through community awareness	**Number of cases**	**3534**	**3590**	**2918**	**2965**	**2824**	**1913**	**972**	**987**
Improve community's demand for quality leprosy services	Prepare and disseminate leprosy specific messages in different channels		4	4	4	4	2	2	2	2
	Disseminate leprosy spot messages 3X a week for 52 weeks		156	156	156	156	156	156	156	156
	Leaflet on leprosy for General public		20000	20000	20000	20000	20000	20000	20000	
	Prepare and distribute Leprosy patient information kits (Booklets)	No of booklet	10000		10000		10000		10000	

		Procure and distribute triple package for sputum sample transportation.	PSM	Pcs	2,000		500	500	500	500
		Procure and distribute reagents, and consumables for AFB microscopy	PSM	No. of HFs	3,000	-	4,591	-	5,412	-
		Procure/distribute equipment's for TB Culture and DST	PSM	No of labs	1	2	2	3	2	2
		Procure and distribute reagent and consumables for Culture and DST	PSM	No of labs	9	11	13	16	18	20
		Procure and distribute GeneXpert machines	PSM	Pcs	146	490	681	815	917	1,000
		Procure and distribute calibrators and warranty for GeneXpert machines	PSM	Pcs	146		681	815	917	1,000
		Procure and distribute invertor with sealed maintenance free battery	PSM	Pcs		242	152	152	152	137
		Procure and distribute falcon tube	PSM	Pcs	63,206	282,059	307,842	375,540	356,951	369,931
		Procure and distribute cartridges for GeneXpert test	PSM	Pcs	63,206	82,000	329,141	362,056	398,262	438,088
		Procure and distribute UVG fixtures	PSM	Pcs	0	40	40	40	40	40
		Procure and distribute audiometry machine	PSM	Pcs	11	60	72	82	91	99
		Procure electrolyte analysers with reagents	PSM	Pcs machine	20	60	72	82	91	99
		Procure and distribute ECG machine	PSM	Pcs machine	2	60	72	82	91	99
	Strengthen TBL pharmaceutical inventory management system	Strengthen IPLS supportive supervision for need based distribution of anti-leprosy drugs in health facilities	HSS DSM	No of visits	4	2	2	2	2	2
		Strengthen supply management TWGs at national and regional levels in collaboration with PFSA.	HSS DSM	No. of meetings	4	6	6	6	6	6
		Supportive supervision to PFSA regional hubs, WoHOs and HFs to strengthen IPLS and APTS implementations.	HSS	No of visits	1	2	2	2	2	2
		Revise LMIS tools for IPLS implementation	HSS	Copies			15,000		15,000	
		TB supply management training to TICs, NTP, PFSA and RHB	HSS	No trainee		100	100	100	100	100
		TB focal supply and programme managers IPLS training	HSS	No trainee			150	150	150	150
		Health workers training on APTS.	HSS	No of HFs			50	50	75	75
		Support reagent distribution at regional/EQA laboratory through mentoring and supportive supervision.	Case detection	No of visits	2	2	2	2	2	2
	Improve TB laboratory reagent preparation and distribution system	Procure and provide equipment for EQA centres (Balance, Distiller and measuring cylinder etc.) for microscopy reagent preparation.	PSM	No of HFs	13	30	48	65	82	100
		Procure and distribute standard reagent containers for AFB reagent to HFs.	PSM	Pcs	4000	12,000	12,000		64,942	68,688
		Update specification complying with international and national standards to meet acceptable quality for all TB related drugs, supplies, equipment and reagents.	HSS DSM	No of updates	1	1	1			
	Improve quality control and assurance of anti TB Pharmaceutical	HCW training on rational use of anti-TB medicines	HSS DSM	No trainee			100	100	100	100
		Conduct post market surveillance for anti-TB medicines	HSS				1		1	

	Improve quality control and assurance of anti TB Pharmaceutical	HCW training on rational use of anti-TB medicines	HSS DSM	No trainee			100	100	100	100
		Conduct post market surveillance for anti-TB medicines	HSS				1		1	
		Expand and strengthen preventive and curative medical equipment maintenance of TBL program	HSS	DSM						
	Enhance HR capacity for TBL control Program management and Coordination	Maintain GF assisted 5 national TB advisors.	HRH	No	4	4	5	5	5	5
		Maintain GF assisted 22 regional TB program advisors.	HRH	No	22	22	22	22	22	22
		Maintain GF assisted 3 TB officers at national and regional labs.	HRH	No	18	18	18	18	18	18
		Recruit/retain CBTC officers at Zonal levels	HRH	No	26	26	26	26	26	26
		NTP management and leadership training manual	Program Mgt	Pcs			1			
		TB program management and leadership training for ZHDs and WoHOs TB officers	Program Mgt	No of trainee	2,236			2,236		
		HMIS focal persons and regional program officers ToT on TB data management and M&E	M&E	No of trainee			30			30
		HMIS zonal and woreda focal persons and program officers training on TB data management and M&E	M&E	No of trainee			2,236			2,236
		Training RHBs TB programme in conjunction with finance personnel on grant management	Grant management	No trainee			22		22	
		Comprehensive TBL for nurses and clinicians providing diagnosis and treatment services (public and private)	Engaging all care providers	No trainee	3467	8410	9182	8296	10824	7706
		TB supply managers training at HFs, PFSA and hubs, and health administrative units, MOH	HRH/PSM	No trainee	3647		2872	2872	1353	1353
		Comprehensive TBL and HIV program coordinators and service providers TOT.	HRH	No trainee	120		120		120	
		Pre-service training on clinical and programmatic management of TBL.	HRH	No institution	13	13	15	15	15	15
		Conduct TBL training for clinical students in medical schools using blended modules	HRH	No trainee	2600	2600	3000	3000	3000	3000
		AFB smear microscopy and EQA training for medical students using blended modules	HRH	No trainee	1300	1300	1500	1500	1500	1500
		Support integration of TBL, TB/HIV and DR-TB in health sciences pre-service curriculum	HRH	No schools						
		HCWs PMDT training of trainers	HRH	No trainee	30		30	30	30	30
		Basic and advanced PMDT training for HCWs	HRH	No trainee	753	50	1784	484	2096	562
		Sensitization on updated national guidelines on diagnosis and management of DR-TB.	HRH	No trainee	50	60	60	60	60	60
		GeneXpert and TB diagnostics training HWs	HRH	No trainee	30	60	398	432	466	500
		Onsite orientation on TB-IC and DR-TB for TIC.	TB-IC	No trainee	82	99	120	150	175	200
		TB and TB/HIV training to prison and other congregated selected settings	HRH/ Key Population	No trainee	60	210	120	120	210	120

		AFB smear microscopy training of lab experts from newly engaged PPM-DOTs and public facilities	HRH/ Key Population	No trainee	5000	8410	9182	2296	3,000	2706
		Training biomedical engineers on curative maintenance	HRH/Lab	No trainee	100		120		120	
		National and regional sensitization workshops on sample transportation and referral network lab personnel and TB program focal persons at all levels	HRH/Lab	No trainee	1089	2102	2755	4016	5412	6869
		GeneXpert training for lab professionals	HRH/Lab	No trainee	30	60	398	432	466	500
		Audiometry and ECG reading capacity building for HWs	HRH/DR-TB	No trainee	10	40	40	40	20	20
		Laboratory professionals and clinicians training on FNA slide preparation and transportation	HRH/Lab	No trainee	25		20	20	20	20
		Facilitate and support training on X-ray reading.	HRH	No trainee	50		50			
		Sensitization workshop on PPM DOTS service provision	HRH/engaging	No session			4	4	4	4
		National assessment & supportive supervision to regions	Prog Mgt	No asses.			11		11	
		Provide training on TB research	Research	No trainee	60	60	120	180	200	240
		IRT for HEWs in all regions to initiate DOT in all HPs	HSS	No of HEW	35000			35000		38000
		Train media professionals and PR officers on TBL	HRH/ACSM	No trainee	90	90	90	120	120	120
		Training skills on HW-patient communication for healthcare providers and program managers	HRH/ACSM	No trainee	60		60		60	
		Sensitization workshop for MPs (social sector committee members from federal and regional government)	HRH/ACSM	No particip	30			30		
SO9	**Build regional capacity to support TB services**	Support establishment of lab equipment maintenance workshops in each region.	Lab services	No regions	0	0	7	10	11	11
		Procure and install Digital X-ray	Diagnostics	No of HFs	45	15	12	10	9	8
		Renovate and install TB culture and DST equipment	Lab services	No of labs	9	2	2	3	2	2
		Renovate rooms, install negative pressure system and BSC Level II	Lab services	No of labs	9	2	2	3	2	2
		Install equipment for culture and DST	Lab services	No of labs	9	2	2	3	2	2
		Install LPA machines at regional laboratories	Lab services	No of labs	9	2	2	3	2	2
		Procure and distribute IT equipment	Lab services	No of labs	9	2	2	3	2	2
		Culture and DST equipment calibration and maintenance	Case detection	No of labs	9	10	12	15	18	20
	Improve health facility infrastructure to provide DR-TB services	Furnish and equip newly established DR-TB TICs	HSS	No of HFs	45	15	12	10	9	8
		Assess infrastructure capacity to identify health facilities with renovation need.	HSS	No assessed		11		11		

		Support establishment of TB IC friendly operation theatres and ICU in selected hospitals.	TB prevention	No HFs			6	13		
		Equip selected operation theatres with UVG fixture.	HSS	No of HFs	0	2	2	2	2	2
		Equip selected ICUs with UVG fixtures care.	HSS	No of HFs	0	2	2	2	2	2
		Equip selected health facilities operational theatres with negative pressure for advanced lung surgeries.	HSS	No of HFs	0	2		2		2
		Support establishment of TB IC friendly operation theatres and ICU in selected hospitals.	HSS	No HFs			6	13		

10.2 Annex 2: Implementation plan for Leprosy control and prevention

Initiatives	Major activities of the initiative	Unit	ANNUAL TARGETS							
			2006 (2013/14)	2007 (2014/15)	2008 (2015/16)	2009 (2016/17)	2010 (2017/18)	2011 (2018/19)	2012 (2019/20)	2013 (2020/21)
Improve Programmatic Management and Coordination of Leprosy Control	Assignment of national leprosy control focal person		X							
	Develop and launch national roadmap for final phase of leprosy elimination.	No session		1						
	Sensitization on national roadmap for leprosy elimination for at national level	No participant		100						
	Conduct baseline and final assessment for epidemiologic and Service mapping on Leprosy	No of districts mapped	368	184				380		
	Increase case finding through community awareness	**Number of cases**	**3534**	**3590**	**2918**	**2965**	**2824**	**1913**	**972**	**987**
Improve community's demand for quality leprosy services	Prepare and disseminate leprosy specific messages in different channels		4	4	4	4	2	2	2	2
	Disseminate leprosy spot messages 3X a week for 52 weeks		156	156	156	156	156	156	156	156
	Leaflet on leprosy for General public		20000	20000	20000	20000	20000	20000	20000	
	Prepare and distribute Leprosy patient information kits (Booklets)	No of booklet	10000		10000		10000		10000	

Initiatives	Major activities of the initiative	Unit	ANNUAL TARGETS							
			2006 (2013/14)	2007 (2014/15)	2008 (2015/16)	2009 (2016/17)	2010 (2017/18)	2011 (2018/19)	2012 (2019/20)	2013 (2020/21)
	Improve awareness of school community on leprosy though using school mini-media in high burden area	No of schools					310	310	310	
	Orientation for primary school teachers on screening	No teachers					310	310	310	
Expand and improve Access to quality Leprosy Services	Expand Leprosy referral care centers and referral system in hot-spot areas.	No	5	4	4	2				
	Strengthen leprosy physical rehabilitation centers.	No	1	4						
	Identify and establish sub referral centre at each leprosy high burden Woreda (one HF at hot spot area)	No HF					20	20	20	
	Improving diagnosing capacity and reduce grade 2 disability	**Grade 2 disability proportion**	**10.2%**	**9%**	**8%**	**6%**	**5%**	**4%**	**2%**	**1%**
	In-service training of health workers from referral and sub referral health facilities	No					20	20	20	
	Improve leprosy case finding and reduce child hood leprosy	**Proportion childhood leprosy**	**12.8%**	**10%**	**8%**	**7%**	**6%**	**4%**	**2%**	**1%**
Improve Leprosy Case finding and management	Develop, print and distribute packages of Leprosy programmatic materials and provider support tools.			1500		1500		1500		1500
	Implement universal screening of all household contacts of leprosy cases at diagnosis.	Number	20000	20000	20000	20000	20000	20000	20000	20000
	Implement annual screening of household contacts of leprosy cases	Number		20000	20000	20000	20000	20000	20000	20000
	Produce and disseminate audio-visuals demonstrating leprosy case finding and management for health facilities in high burden areas.	Number	2000		2000					

Initiatives	Major activities of the initiative	Unit	ANNUAL TARGETS								
			2006 (2013/14)	2007 (2014/15)	2008 (2015/16)	2009 (2016/17)	2010 (2017/18)	2011 (2018/19)	2012 (2019/20)	2013 (2020/21)	
	Advanced leprosy clinical care training of clinicians from referral centers	No HFs		2	2	2			2	2	
	Clinical leprosy trainings for GHWs from OPDs in hot-spot areas	No HFs		8	16	16			16	16	
	Strengthen routine house hold contact screening for all index leprosy case	No contact case						12000	12000	12000	
	"Incident" investigation of extended contacts of a child with leprosy	No HH						6000	6000	6000	
	Conduct school children screening for leprosy in hot spot areas.	No school						310	310	310	
	Actively involve HEWs and HDA in the identification and referral of leprosy suspect cases.	No Woreda						93	93	93	
	Community screening camping in specific hot post areas	No Woreda						5	5	5	
	Improve quality of leprosy service	**No of human resource**						**221**	**221**	**221**	**221**
Improve human resource development on leprosy	Revise leprosy training materials	Train mat						1			
	Conduct basic leprosy training for general health worker	No trainees						200	200	200	
	Identify and establish sub referral centre at each leprosy high burden Woreda (one heath facility at leprosy hot spot area).	No HF						20	20	20	
	Provide in-service training for health workers from referral and sub referral health facilities.							20	20	20	
	Training lab profession on skin AFB							20	20	20	
	Expend leprosy training in referral centre.	No trainees						1	1	1	
Improve financial and other resource mobilization	Advocacy at higher official to give attention for leprosy service	No session						X	X	X	

Initiatives	Major activities of the initiative	Unit	ANNUAL TARGETS							
			2006 (2013/14)	2007 (2014/15)	2008 (2015/16)	2009 (2016/17)	2010 (2017/18)	2011 (2018/19)	2012 (2019/20)	2013 (2020/21)
Improve financial and other resource mobilization	Advocacy at higher official to give attention for leprosy service	No session					X	X	X	
	Budget allocation by regional and central government	No regions					11	11	11	
	Encourage involvement of partners (internal and external).	No part					X	X	X	
Physical and socio-economic rehabilitation, and stigma reduction for persons affected by leprosy	Support the IGAs for leprosy affected individuals with disabilities									
	Procure and supply leprosy physical rehab (Canvas shoes) equipment		10000	10000	10000	10000	10000	10000	10000	10000
	Increase patient satisfaction and Improve patient treatment out come	**Completion rate**	**85%**	**86.2%**	**89.0**	**90%**	**91%**	**92%**	**94%**	**95%**
Strengthen Leprosy pharmaceuticals distribution system	Implement effective distribution system for leprosy drugs and supplies.		X							
	Annual Leprosy supplies and pharmaceuticals quantification.		1	1	1	1	1	1	1	1
	Procure adequate supply of anti-leprosy medicines.		5000	5000	5000	5000	5000	5000	5000	5000
	Procure adequate prednisolone for leprosy patients		500	500	500	500	500	500	500	500
	Increase information based decision	**No of evaluation conducted**	**2**	**2**	**3**	**2**	**3**	**2**	**3**	**2**
Improve Leprosy data flow through HMIS implementation of HMIS at all levels	Print and distribute Leprosy recording and reporting materials on leprosy.		1		1		1		1	
	Active surveillance system for leprosy in hot-spot areas									
	Leprosy programme review in hot-spot Zones		1	2	2	2	2	2	2	2

	Include contact screening indicator in HMIS.						X			
	Monitor status leprosy burden by district through HMIS annual data analysis						1	1	1	
	Promote and utilize relevant Leprosy research					1	1	1	1	

10.3 Annex 3: Summary findings of external mid-term review of 2017 TBL programme.

Intervention area	Expected status at the end of the NSP period in 2020	Comment on status at midterm external review
High-Quality DOTS expansion and enhancement		
TB Diagnostic Laboratory Service Expansion	All public Hospitals and HCs will have functional AFB Microscopy Services.	Number of public hospitals and HCs with functional AFB microscopy services has increased from 3,100 to at least 3,500 at the time of the review. Despite this significant increase, the program is not on track to attain the set target of "all public hospitals and health centres". **Review recommendation**: Revise the TB diagnostic service expansion plan as per the new WHO methodology for calculating country-specific targets for microscopy, WRDs (including Xpert MTB/RIF), and culture/DST.
	LED microscopy services will be available in additional 400 public HFs.	369 LED microscopes procured and commissioned, with significant increase in number of LED microscopes in the country. **The program is well on course to achieve the set target** of 400 additional sets.
	FNAC (Histopathology diagnostic services) will be available in 125 hospitals and FNAC slides referral system will be established for EPTB diagnosis.	Parameter **not assessed** during the mid-term external review.
	GeneXpert MTB/RIF tests will be established in 400 public health facilities.	A total of 146 GeneXpert sites established so far. Number is increasing, but at current rate, **program is unlikely to achieve** the target of 400 public facilities.
Strengthen TB Laboratory Quality Assurance System	EQA coverage for AFB microscopy services will reach 100% from current baseline.	This objective is **partially on track** from available reports. While coverage has been increasing, not all PPM-DOTS sites are participating in EQA schemes.
	95% of AFB microscopy centres will show adequate performance on EQA.	This objective **is on track,** from available reports. EQA microscopy performance for those participating is above 90%.
	EQA centres will be increased from a baseline of 50 to 400.	This **is partially on track**. There are now 135 EQA centres against a target of 400 by 2020. There is need to accelerate establishment of additional centres, in order to achieve the target by 2020.
	All TB culture and DST labs will participate in EQA scheme.	**This objective is on track**. There are nine culture DST laboratories at the time of this review: all are participating in EQA for microscopy; except for 2 culture and DST laboratories (i.e. Mekele and St. Petros hospital), 7 laboratories are functional and all of them are participating in TB culture and 1st line LPA EQA scheme since 2015.
Improve TB reagents preparation and distribution system	Equipment for reagent preparation will be procured for all Regional Labs.	**No progress made during the first leg of NSP implementation.** Indications are that it is planned for the next leg of the NSP.

Intervention area	Expected status at the end of the NSP period in 2020	Comment on status at midterm external review
High-Quality DOTS expansion and enhancement		
Improve TB reagents preparation and distribution system	Equipment for reagent preparation will be procured for all Regional Labs.	**No progress made during the first leg of NSP implementation.** Indications are that it is planned for the next leg of the NSP.
	Standard reagent containers will be procured for 4000 HFs.	**This objective is on track:** AFB reagent bottles have been purchased and delivered to more 2000 health facilities.
Strengthen implementation of systematic TBL case finding and management.	Total of 1,533,132 TB cases will be detected and treated.	**This objective is not on track**, with declining notified cases compared to estimated cases. This probably is due to sub-optimal triage in outpatient care settings in high volume facilities such as hospitals; low level of contact investigation; lack of strategic approaches targeting key populations, such as sub-optimal screening/triage practices for presumptive TB cases; and underutilization of more sensitive molecular technologies for diagnosis in presumptive cases.
	CDR will reach 87% from baseline of 59% in 2013.	This objective is **not on track**. Currently, CDR is estimated at 66.3%, which is 7% above the baseline. **Recommendations:** Unless there is increased effort with triage, and additional innovative strategies focused on molecular testing, key population, contact screening, and additional tools like digital X-rays for screening, the program is unlikely to achieve the 87% target by 2020.
Expand and enhance TB treatment services	DOTS service will be in 1926 new public health facilities.	
Strengthen patient-centred TB treatment adherence strategy.	1) All health posts (HPs) will provide DOT services. 2) TB-TSR for all forms of TB will reach 95% and maintained. 3) Cure Rate for all forms of TB will reach 87%.	HPs coverage objective **is not on track**, and stands at 60% at midterm review. **TSR objective is on track,** and stands at 92.2%. **Cure rate objective is partially on track**, and stands at 81.2%
Enhance HR capacity for TB, TB/HIV, DR-TB and Leprosy program management and coordination	1) 12 DR-TB officers, 22 regional Lab officers and 20 TB program officers will be recruited and maintained. 2) 90 program coordinators will receive ToT on program management. 3) 1,188 Zonal TBL program coordinators and officers, 5520 Woreda TBL program coordinators and officers will be trained on TB program management.	**The recruitment and training objective is on track**. 22 of the 26 planned TB/HIV and MDR-TB officers are employed; 11 of planned 18 TB Lab EQA officers and 15 of 15 Zonal CBTC officers are employed, at time of the review. Two rounds of in-country trainings on programmatic control and management were conducted by Sondalo team (Prof. G.B.).
Strengthen Pre-service trainings on clinical and programmatic management of TB, TB/HIV, and DR-TB and Leprosy.	1) All Medical schools will have at least one trained instructor on clinical and programmatic management of TB/MDR-TB. 2) A total of 19,800 students from medical schools will receive pre-service trainings on TBL. 3) National e-Curriculum series on fundamentals of management of TB and leprosy will be introduced in schools.	Objective #1 **is on track**. AAUMF, St Paul, Jimma, University of Gondar, Mekele, Adama, Hawassa, Arbaminch, Haromaya have trained instructors on clinical and programmatic management of TB/DR-TB. Objective # 2: participants from some medical schools were trained in advanced PMDT organized at St. Petros hospital through CDC Grant and GF support. Objective # 3 **is not on track**. eCurriculum series that is developed by Mayo clinic was introduced during an CME, though record is not kept on number of medical schools that further used the link, took the courses and get certified.

Intervention area	Expected status at the end of the NSP period in 2020	Comment on status at midterm external review
High-Quality DOTS expansion and enhancement		
Strengthen Pre-service trainings on clinical and programmatic management of TB, TB/HIV, and DR-TB and Leprosy.	1) All Medical schools will have at least one trained instructor on clinical and programmatic management of TB/MDR- TB. 2) A total of 19,800 students from medical schools will receive pre-service trainings on TBL. 3) National e-Curriculum series on fundamentals of management of TB and leprosy will be introduced in schools.	Objective #1 **is on track**. AAUMF, St Paul, Jimma, University of Gondar, Mekele, Adama, Hawassa, Arbaminch, Haromaya have trained instructors on clinical and programmatic management of TB/DR-TB. Objective # 2: participants from some medical schools were trained in advanced PMDT organized at St. Petros hospital through CDC Grant and GF support. Objective # 3 **is not on track**. eCurriculum series that is developed by Mayo clinic was introduced during an CME, though record is not kept on number of medical schools that further used the link, took the courses and get certified.
Strengthen in-service trainings on TB, TB/HIV, PMDT and Leprosy	1) TB, TB/HIV, DR-TB and basic leprosy training strategy will be in a blended approach. 2) 480 ToT sessions, and total of 32,000 general health workers will be trained on comprehensive TBL and TB/HIV using blended approach. 3) 28,125 laboratory professionals from newly established DOT sites will be trained on AFB Microscopy, LED and EQA. 4) 390 biomedical Engineers and technicians will be trained on TB diagnostic equipment maintenance.	Objective # 1: Blended TB, TB/HIV, DR-TB and basic leprosy training strategy and material is developed but implementation **did not progress** as planned. Objectives # 2 and #3 on track: National level ToT have cascaded to regional and facility level trainings. Objective #4: not on track.
Improve TBL pharmaceuticals and supplies forecasting, quantification and supply planning system	Procure FLDs to treat 1,803,451 patients.	Progress on this objective is **ongoing and has remained well on track**. Adequate amounts of first line anti-TB medicines have always been available at national level. The country has also moved to patient- kit supply.
	Procure SLDs to treat 10,491 MDR-TB patients.	Progress on this objective **is ongoing and has remained well on track**. Adequate amounts of second line anti-TB medicines for diagnosed RR/MDR-TB cases have always been available at national level. New drugs, Bedaquiline and Delamanid, are formally introduced through a managed set up.
	Procure AFB reagents to detect 1,803,451 TB patients and 10,491 DR-TB patients.	**This objective is partially on track**. There were reports of occasional stock out of some laboratory reagents.
Strengthen TB supplies management system	Reliable TB supply management system will be in place and supply interruptions and stock outs will be avoided.	This objective is **generally well on track**. There is a reliable supply management system in place throughout the country. Stock outs were rare, happened in few items, especially INH for IPT and ancillary medicines.
	0% stock out of major tracer anti-TB -FL and SL drugs at all levels of the supply chain system.	Objective is **generally on track**, no major stock outs of FLDs and SLDs were reported or verified. However, there were reports of expired SLDs and the supply management system for SLDs is not reliable and sustainable. In some cases, patients and health workers are transporting/distributing SLDs to TFCs. Previously, SLDs were distributed every six months to TICs through their respective PFSA hubs, which created drug stock out and expiry in few areas. Therefore, the distribution system has been revised to a two-monthly requesting and reporting timing that enables close monitoring. SLDs distribution (from TICs to TFCs) is mostly done by TICs' pharmacy personnel, but in most facilities the drugs go directly to the TB clinic (TFCs) rather than through the facility (TFCs) pharmacy. This newly revised (started January 2017) system has not yet found its rhythm and not been perfected.

Intervention area	Expected status at the end of the NSP period in 2020	Comment on status at midterm external review
High-Quality DOTS expansion and enhancement		
TB Patient Kits (PKs) to all DOT centres.	FLD for TB treatment will use TB PKs.	This expected result has already been **fully achieved**, and PKs have been rolled out throughout the country.
Strengthen TBL pharmaceuticals (FLDs, SLDs and anti-Leprosy drugs) distribution system.	100% of DOTS HFs will directly receive anti-TB drugs through IPLS.	**This objective is on course for 2020**. At the time of the review, coverage with IPLS was estimated at 78%. It is feasible to reach 100% by 2020.
Improve TBL data flow through implementation of HMIS at all levels.	1) ERR for TB and DR-TB will be scaled up to all DOTS and DR -TB treatment centres. 2) ERR for TB and Leprosy will be introduced and scaled up. 3) All the recommended indicators on TBL program will be included in the revised HMIS & tracked at national level.	**This objective is on course for 2020**. At the time of this review, ERR coverage is estimated at 78% for TB, and there is no ERR for Leprosy. Not all TBL indicators are captured in the HMIS. The newly introduced indicators within the context of SDGs/End TB targets are not yet incorporated in the HMIS, though, the remaining earlier indicators are generally incorporated. **Recommendation:** Incorporate all END TB targets and indicators in the routine HMIS data system.
Improve TBL data quality at all levels.	1) TBL data quality will be improved at all levels. 2) National and Regional e-TB data Manager/database will be established	**It is feasible to achieve this objective in the remaining NSP period.** There has been gradual improvement in data quality with specific initiatives. 78% of the data is now electronic (i.e. reporting) in nature. e-TB data Manager is not yet established at national and regional levels.
Improve program performance monitoring, supervision and review mechanisms at all levels	Program monitoring and review mechanisms will be strengthened at all levels.	This objective **is on track**. Regular sub-national level reviews were being undertaken, as well national level mid and end-term reviews. There is regular reporting of data at scheduled intervals**.** **Recommendation:** strengthen data quality and use at sub-national levels.

Intervention area	Expected status at the end of the NSP period in 2020	Comment on status at midterm external review
High-Quality DOTS expansion and enhancement		
Improve program performance monitoring, supervision and review mechanisms at all levels	Program monitoring and review mechanisms will be strengthened at all levels.	This objective **is on track**. Regular sub-national level reviews were being undertaken, as well national level mid and end-term reviews. There is regular reporting of data at scheduled intervals. **Recommendation:** strengthen data quality and use at sub-national levels.
Address TB in key and vulnerable population		
Address the burden of TB/HIV co-infection	1) Universal HIV testing for TB patients will be attained. 2) All HIV positives on care will be screened for TB regularly. 3) All HIV positives with presumptive TB will be tested using Xpert MTB/RIF as first diagnostic test. 4) ART coverage in TB/HIV will increase to 100% coverage. 5) 80% of eligible PLHIV will receive IPT.	**Objective # 1 is on track**, but needs rapid scale up to attain set target by 2020. 82% of TB patients are being tested for HIV at the time of the review. **Objective # 2 and #3 are on track**. 93.5% of PLHIV are screened for TB, and national guidelines recommend GeneXpert test for all PLHIV with presumptive TB. **Objective #4 is on track**. 82% of co-infected are started on ART. **Objective # 5 is not on track**; 40% eligible PLHIV are on IPT.
Improve access to DR-TB diagnostic and treatment services.	1) DR -TB treatment sites will be expanded to 400 TICs. 2) Four additional TB Culture and DST labs will be established. 3) GeneXpert MTB /RIF test will be expanded to 400 HFs (50% of hospitals). 4) DST for SLDs will be established at NRL and RRLs.	**Objective #1 is not on track, and is unlikely to be met**. At the time of the review, there were a total of 48 TICs, a far cry from the target set for 2020. **Recommendation:** Revise the target, as 400 TICs is impractical. **Objective #2 is partially achieved and is on track**. Eight regional culture labs have been established and all of them were reported to be functional, except Mekele regional laboratory. The laboratory infrastructure has been expanded, but the services are not in place due primarily to gap in technical capacity, basic commodities and specimen referral. Overall, there is under-utilization of existing services in DR-TB case finding using GeneXpert and liquid culture.
		Objective #3 is on track. During this review, 146 GeneXpert sites are already commissioned while additional 142 GeneXpert machines are under procurement, which will bring the total to 288 (72%) at midterm.
		Objective # 4 is not on track. SL-DST is established and functional at NRL, but under consideration for RRLs.
Improve Quality of MDR-TB patient care.	1) Updated PMDT guidelines printed and distributed. 2) MDR-TB patients' clinical care will be optimized.	**Objective # 1 is on track**. National TB guidelines, which takes into consideration latest WHO recommendations on shorter RR-/MDR-TB treatment regimen, is being revised.
		Objective #2 is not on track. Decentralization of TFCs has progressed well, but quality of care and patient monitoring tests are still incomplete. Regular clinical review panel system is not in place to deliberate patient care, in some settings.

Improve programmatic management of Drug Resistant TB.	1) FL-DST will be performed for 89,057 presumptive MDR -TB cases. 2) 10,421 DR-TB cases will be detected and enrolled to treatment. 3) FL-DST for new TB cases at diagnosis will be phased in gradually. 4) Final outcome for RR/MDR-TB cases will be improved to 75%.	Objective **#1 is partially on track**, with 55,215 tests (62%) performed at time of the review. Objective **#2 is not on track and perhaps unrealistic to begin with**. Only 700 RR/MDR-TB cases were detected in 2016, and 1923 cases overall during the first leg of the NSP. Diagnostic services are underutilized; there is reported periodic stock out of diagnostic commodities; GeneXpert machines are too few compared to size of the country and is underutilized; there are issues with specimen referral system; and diagnostic algorithm was too restrictive until recently. Use planned DRS data to inform best estimate of incident RR/MDR-TB cases and adjust program target accordingly. **FL-DST for new TB cases at diagnosis (objective # 3) is not on track**. Until recently, Xpert testing is primarily used to high risk DR-TB cases, PLHIV, and children; and its utilization stands at only 29% at time of this review. **Final TSR for MDR-TB is on track**. Final TSR currently (2017) stands at 77.7%, achieving the regional and global target of 75%.
Strengthen pre-service training on clinical and PM of DR-TB.	Training on PMDT will be integrated into pre-service trainings of medical schools.	

Intervention area	Expected status at the end of the Strategic Plan period in 2020	Status at midterm review
Empower people with TB, and Communities through Partnerships		
Strengthen Community based TB Care (CBTC) services through HEP and Health Development Army.	1) CBTC expansion to all HPs. 2) Two rounds of IRT for HEWs.	**The objective of CBTC expansion is partially on track.** So far, only 60% of HPs are delivering a full package of CBTC services. **The objective on IRT for HEWs is ongoing and on track**.
Strengthen TBL Advocacy, Communication and Social Mobilization (ACSM).	1) Targeted TBL ACSM activities will be conducted. 2) TBL ACSM Activities impact evaluation will be conducted.	**The objective on ACSM activities is only partially on track**. There is a national ministry wide ACSM strategy that accommodates aspects of TB, but does not cover all areas of interest for the program. **Objective on ACSM impact evaluation is not on track**. No KAP survey has been planned or undertaken, and latest DHS did not include questions on TB as was done in a previous DHS.
Strengthen in-service trainings on PMDT	1) 5400 GHWs will be trained on PMDT. 2) 920 clinicians will be oriented on GeneXpert MTB/RIF test. 3) At least one laboratory professional from all TB Diagnostic centre will be trained on GeneXpert MTB/RIF assay. 4) 160 laboratory professionals will be trained on TB Culture and DST.	**This objective is on track**. GeneXpert sensitization was undertaken for a total of 4617 staff (1,467 at National and 3150 at Regional levels through HEAL-TB Support) GeneXpert training was conducted for a total of 562 laboratory professionals, including regional and facility levels staff by HEAL TB.
Enhance health facility infrastructure for optimal MDR-TB services.	25 HFs will be renovated for DR-TB treatment services.	**This objective has already been achieved at midterm**. An additional 27 TICs have been established since the last review, when there were only 21 TICs. There are currently 48 TICs.
Address the needs of vulnerable populations and TB in congregate settings: Address Childhood TB	1) National Roadmap for the prevention and control of TB in Children will be developed and implemented. 2) Proportion of childhood TB cases among notified all forms of TB cases will reach 20%.	The **objective on roadmap for childhood TB is partially achieved**. A draft exists and objective is well on track. **Objective # 2 is not on track and probably unrealistic**. This currently stands at 12% for 2016. Further, while the NSP mentions various other vulnerable population, so far, specific strategies to address these are lacking, except for prisoners.
Improve access to and quality of TB, TB/HIV and MDR TB services in prison settings.	1) National protocol for the prevention and control of TB in prison settings in Ethiopia will be developed 2) 108 prison HFs will provide TB diagnostic and treatment services. 3) MDR-TB treatment service will be established in Federal Prison Admin Referral hospital.	**The objective on TB in prisons is partially on track**. Standard Operating Procedures for the implementation of TB prevention and control activities in prisons/correctional facilities, detention centres and Police stations in Ethiopia is developed and endorsed. Federal army/ *Torhayloch* and Police hospital in Addis Ababa are TICs for DR-TB.

Service area	Expected status at the end of the Strategic Plan period in 2020	Status at midterm review
Engaging all care providers		
Engaging all care providers in Comprehensive TB Care	PPM –DOTS service expansion to 2074 sites.	**This objective is not on track.** At the time of the review, only 395 of an estimated 4,000 private health facilities are participating in PPM-DOTS activities.
Engagement of CSOs and NGOs in community based TB care	TB Prevention and control activities will be streamlined to the regular activities of selected CSOs and NGOs.	**This objective is on track.** An Engage TB strategy is under development to facilitate engagement of CSOs and NGOs in TB control activities.
Enable and Promote Research on TB, TB/HIV and DR-TB		
Promote TB Operational research by Engagement of program managers and other health care providers.	1) TB OR roadmap will be updated 2) OR on the priority agendas as per the revised roadmap will be conducted. 3) Annual TRAC conferences will be conducted 4) Second round TB prevalence survey will be conducted	**Objectives on TB research are fully on track,** with many research studies undertaken and published over time. TRAC conferences have been convened every year. A national TB research plan is developed. Objective # 4 on second round of TB prevalence survey is being discussed but is not yet due.
Contribute to Health Systems Strengthening based on Primary Health Care		
Enhance HR capacity for TB, TB/HIV, MDR TB and Leprosy Program management and Coordination	1) 12 MDR TB Focal persons, 20 TB program officers, 17 Finance officers, 22 TB laboratory officers will be recruited and maintained. 2) All regional, Zonal and Woreda TBL Officers will be trained on TBL Program management training curriculum. 3) All regional, Zonal and Woreda TBL officers and HMIS officers will be trained on Revised HMIS, TBL data management and TBL M&E system.	**The recruitment and training objective is on track**. Twenty-two of planned 26 TB/HIV and MDR-TB officers were employed; 11 of planned 18 TB Lab EQA officers and 15 of 15 Zonal CBTB care officers were employed. Two rounds of in-country trainings on programmatic control and management were conducted by Sondalo team (Prof. G.B.).

Service area	Expected status at the end of the Strategic Plan period in 2020	Status at midterm review
Revised National Leprosy Elimination Strategic Plan		
Improve Programmatic Management of Leprosy.	Develop national roadmap for final phase of leprosy elimination. Conduct epidemiologic and Service mapping for Leprosy.	Objectives on leprosy mapping and roadmap for leprosy elimination are only partially on track. Mapping was completed but the roadmap is not yet developed.
Improve community demand for quality leprosy services.	Prepare leprosy specific messages using different channels. Prepare and distribute Leprosy patient information kit.	These objectives are not on track. There have been no new materials developed on leprosy.
Improve Leprosy case finding.	Provide Leprosy specific orientations for HEWs from leprosy hot-spot areas. Implement screening of all household and close contact screening off or all leprosy cases using HEWs and HDA.	These objectives are not on track as these activities have not been actively pursued as yet.
Improve access to quality Leprosy Services.	Expand Leprosy referral care centres. Strengthen referral services for leprosy. Provide advanced leprosy clinical care trainings for GHWs from hot spot areas identified through mapping. Provide clinical leprosy trainings for GHWs. Develop and distribute provider support tools on leprosy. Procure adequate anti-leprosy drugs and supplies. Design and implement effective distribution system for leprosy drugs and supplies.	These objectives are only partially on track. Leprosy medicines are available and distribution system exists. But other aspects, such as referrals, trainings and expansion of care centres have not yet been put into effect as planned. Development and implementation of microplans not yet happened.
Improve leprosy data flow through HMIS.	Print and distribute all package of recording and reporting materials on leprosy.	This objective is on track. Key global Leprosy elimination indicators are included in the HMIS.

10.4 Annex 4: Indicator Reference

Tuberculosis case detection rate (all forms)		
Definition	Proportion of all forms of TB (New & relapse) cases detected during a specified time period	
Formula	Number of all forms of TB (New and Relapse) cases detected during the reporting period	X 100
	Estimated number of all forms of TB cases in the population during the same period*	
Interpretation	TB case detection rate is one of the key indicators in evaluating effectiveness of TB control programme. The highest priority in TB control is the identification of the infectious cases, i.e. patients with bacteriologically confirmed pulmonary tuberculosis (PTB+). However, identification and treatment of all forms of TB cases, i.e. bacteriologically confirmed, and clinically diagnosed pulmonary tuberculosis (PTB-), extra-pulmonary tuberculosis (EPTB) and other previously treated TB cases with unknown and undocumented treatment outcome is important to measure disease burden and monitor effectiveness of TB treatment and the program. TB case detection rate is calculated as the number of detected new all forms of TB cases (including bacteriologically confirmed, clinically diagnosed and all relapse cases) divided by the total number of TB cases estimated to occur in the area during a given time period. *The denominator is provided by annual WHO-Estimates for the whole country. There may be real geographical differences in TB epidemiology in urban, Agrarian and pastoralist settings, though this indicator tells annual trend in TB detection of the country. However, over and under achievement of this indicator should be interpreted by considering existing factors including disease burden, and other factors. NOTE: TB cases diagnosed by Smear microscopy, Culture, or any WHO approved Rapid diagnostics (WRD) such as Xpert MTB/RIF are classified under **Bacteriologically Confirmed** TB cases.	
Treatment Success Rate (TSR) among bacteriologically confirmed NEW PTB cases		
Definition	Proportion of new bacteriologically confirmed PTB cases registered during specific cohort period that successfully completed treatment (cured plus completed treatment).	
Formula	Number of cohort of new bacteriologically confirmed PTB cases registered during the same period of the previous year that were cured plus the number completed treatment	X100
	Total number of New bacteriologically confirmed PTB cases registered during the same cohort period	
Interpretation	Successful completion entails clinical success with or without bacteriological evidence of cure. This indicator measures the program's capacity to retain patients through a complete course of chemotherapy with a favourable clinical result. Treatment success rate measures the effectiveness of the program in settings where it may not be possible to perform a sputum test at the completion of treatment. The TB treatment success can be estimated and monitored at Health Centres and hospitals that provide DOTS services, Woredas, regions, and FMOH.	
Treatment success rate among clinically diagnosed new TB cases		
Definition	Percentage of new clinically diagnosed (pulmonary and all EPTB) cases who completed treatment	
Formula	Number of new clinically diagnosed cohort of pulmonary PTB and all EPTB cases registered during the same period of the previous year that completed the treatment	X100
	The total number of new clinically diagnosed PTB and all EPTB cases registered during the same cohort period	
Interpretation	As this group of TB patients accounts for about 50 -60% of all TB cases notified annually, the status of their treatment outcome should be assessed. The only favourable treatment outcome for this group of patients is completing the whole course of anti TB treatment. Thus, this indicator measures the program's capacity to retain all patients through a complete course of chemotherapy with a favourable clinical result. High treatment completion rate indicates the effectiveness of the program as well as completion of TB treatment with favourable clinical result. TB treatment completion rate for new clinical diagnosed pulmonary and all EPTB cases can be estimated at all Health Centres and hospitals that provide DOTS services. Treatment success rate at woredas, zones, regions, and FMOH can also be calculated by aggregating the reported data from health facilities that provide DOTS. Note that New clinically diagnosed TB cases refer to P/negative TB and all EPTB cases (Diagnosed by clinical symptoms and bacteriologically confirmed EPTB)	
Latent TB Infection (LTBI) treatment coverage for under five years children who are contacts of pulmonary TB cases		
Definition	Proportion of children aged <5 years who have history of contact with of pulmonary TB cases started on LTBI treatment	
Formula	Number of children aged <5 years who are contacts of pulmonary TB cases on LTBI treatment	X100
	Total number of children aged <5 years who are contact of pulmonary TB cases eligible for LTBI treatment	

Interpretation	Children exposed to contacts of TB case have a high risk of being infected and acquired TB. The risk is particularly high among infants and small children aged less than 5 years. The risk is increased if the index case is bacteriologically confirmed, and if the index patient is the mother of the child. So children who are contacts of pulmonary TB cases should be screened for TB and those children who are eligible (free from TB symptoms at the time of screening) should start and took LTBI treatment for six months. They should be followed up at the TB clinic and information should be recorded both in the TB register and TB contact screening and LTBI treatment follow up register. This indicator provides no information on the number of individuals who adhere to or complete the course of treatment. It is preferable to have TB contact screening and LTBI treatment follow up register to regularly monitor the quality of the service in terms of adherence to LTBI treatment and evaluate the patients after completion of preventive therapy. Therefore, TB contact screening and LTBI treatment follow up register included to TB program. The register is kept in TB Unit to record contact of Drug susceptible and Drug Resistant-TB index cases that comes to TB screening service. This register also serves to monitor treatment adherence of under five children who are enrolled to LTBI treatment (IPT) and as a data source to report TB contact screening coverage.
Drug Susceptibility Test (DST) coverage for TB patients	
Definition	Percentage of Pulmonary TB (new and retreatment) cases and presumptive DR-TB cases with documented DST result during the reporting period
Formula	Number of pulmonary TB (new and retreatment) cases and contacts of DR-TB cases with documented DST results Total number of Pulmonary TB (new and retreatment) cases and contacts of DR-TB cases in the same period*
Interpretation	Early detection of resistance is intended to ensure an appropriate drug regimen from the start and presumably increase likelihood of success and alleviate amplification of resistance patterns. This indicator measures the availability and access to drug susceptibility testing for at least rifampicin for TB patients registered in TB unit. Culture and drug susceptibility tests (DST) for at least rifampicin are indicated for all eligible clients including:- • New and all retreatment (Relapse, after lost to follow up, after failure of new regimen) pulmonary TB cases, • New pulmonary TB patient cases who remain sputum smear positive at 2nd month of treatment, • Presumptive/confirmed TB cases from congregated settings (prison, homeless shelters, refugee camps, high DR-TB prevalent area), • Presumptive or confirmed TB cases working in Health facilities including support staffs, • Presumptive TB who have contact with confirmed Drug Resistant -TB cases and • Patient in HIV care with symptoms of TB. DST coverage includes results from molecular (e.g. Xpert MTB/RIF) as well as conventional phenotypic DST results. *The denominator includes all notified pulmonary TB (new and retreatment) cases, presumptive TB/DR-TB cases who have contact with confirmed Drug Resistant -TB cases and patient in HIV care with symptoms of TB.
Number of Drug Resistant (DR) TB cases detected	
Definition	The Number of DR-TB cases detected during the reporting period
Formula	Number of DR-TB cases detected during reporting period
Interpretation	Culture and Drug susceptibility tests (DST) for at least rifampicin are indicated in patients presumed to harbour drug-resistant TB strains. This indicator is useful to estimate the burden of DR-TB in the country. Furthermore, it helps national TB control program for planning of DR-TB treatment expansion, forecasting, quantification and procurement of second line drugs (SLDs) and reagents. *NB: All detected DR-TB cases are expected to be reported by health facilities including DR TB Treatment initiating centers where they were first detected. The detection could be completed within the facility or with the support of external laboratory facility (after sample is sent for detection). In order to avoid double reporting of detected cases, treatment initiating centers should not include DR-TB cases detected and referred by other facilities for DR-TB treatment in their DR detection report*
DR-TB cases enrolled on DR-TB Treatment (Second Line Drugs)	
Definition	Number of DR TB cases started on DR -TB treatment during the reporting period
Formula/	Number of DR-TB cases registered and started on a prescribed DR-TB treatment regimen during reporting period

Interpretation	This indicator measures the capacity of programs to enrol DR-TB cases on appropriate treatment. The program manager is responsible for ensuring that all cases in which DR-TB is detected are placed on appropriate treatment in the shortest time possible. Early detection of resistance is intended to ensure a correct drug regimen from the start and lower risks of further amplification of drug resistance. A comparison of the number of enrolled DR-TB cases to those detected gives an indication of access to care. It is a crude indicator given that patients started on treatment during a given period may have been detected prior to the period of assessment.	
Final Outcome of DR-TB cases		
Definition	A cohort of DR-TB cases for whom final outcome (cured, completed, failed, died, lost to follow up, not evaluated) has been determined among those enrolled on DR -TB treatment during the year of assessment	
Formula	Number of cohort of DR-TB cases enrolled on second-line anti-TB treatment during reporting period for whom final outcome has been determined	X100
	Total number of DR-TB cases enrolled on second-line anti-TB treatment during the same cohort period	
Interpretation	This report shows the final treatment outcomes for patients enrolled to DR-TB treatment. Final treatment outcome of cohort of DR TB patients report should be reported based on the timeline recommended for specific regimen type. Generally final outcome of the patient both in short and long-term regimen should be compiled at 24 months after the last patient in the cohort starts treatment. Most of the patients will finished their treatment within the first evaluation periods. However, there are patients who will continue their treatment longer than the majority group especially patient enrolled to long term regimen. Therefore, the final outcome of these cohort cases are compiled and monitored twice at 24 and 36 months. Thus, written document of the final outcome of DR-TB patients on long term regimen should be recorded in DR-TB Register and reported once again to the National TB program at 36 months.	
TB case detection contributed by community		
Definition	Proportion of TB cases detection contributed by the community out of all TB cases identified during reporting period	
Formula	Number of TB cases detection contributed by the community	X100
	Total number of TB cases (all forms) notified during the same period	
Interpretation	The indicator is intended to measure the extent of community involvement in TB case detection. Efficient community involvement translates into early detection of cases, one of the main and most effective strategies for reducing the transmission of TB. The community in the context of community TB care refers to trained community volunteers, Health Development Army, health extension workers or, community members supporting patients (treatment supporter). NB: the denominator of this indicator "all forms of notified TB cases" refers to the number of all forms of TB (New + relapse) cases registered in TB unit. The numerator of this indicator doesn't include those presumed TB cases referred by the community for further investigation and diagnosis.	
Leprosy case notification		
Definition	Proportion of leprosy cases detected among estimated number of leprosy cases in the population	
Formula	Total number of leprosy cases detected during reporting period	X10,000
	Estimated number of population in the catchment area	
Interpretation	The number of leprosy cases reflects on the performance of the leprosy control program. This indicator is a proxy for leprosy incidence in a given area. It has to be calculated at national and subnational level up to population size of 10, 000. It has also been shown that the number of cases detected increases with the frequency of examinations: very frequent examinations will identify a number of self-healing cases that would otherwise never have come forward. The indicator should be compared with leprosy estimates which are updated annually by Ministry of Health and mapping data of the respective administrative level. Having the total number of relapse cases will reflect the quality of treatment service provided and also the number rises, it indicates magnitude of transmission of leprosy and circulation of drug resistant strain of leprosy.	
Grade II disability rate among new cases of leprosy		
Definition	The proportion of new cases of leprosy with disability grade II at the time of diagnosis.	
Formula	Total number of new leprosy cases having disability grade II at time of diagnosis during reporting period	X100
	Total number of new leprosy cases detected during the same period	
Interpretation	This indicator measures the quality and effectiveness of the case-finding activities. A high disability rate among new cases signals that cases are detected late during the course of the disease. If the rate is high, it is essential to strengthen case-finding activities and develop health education in order to encourage the population to seek treatment before disabilities appear.	
Leprosy treatment completion rate		

Definition	Percentage of a cohort of leprosy cases registered in a specified period that successfully completed the treatment.	
Formula	The number of leprosy cases who completed treatment successfully during specified cohort period	X100
	The total number of leprosy cases registered during the same *cohort period*	
Interpretation	Treatment completion rate (both for PB and MB types of leprosy) measures the program's capacity to retain patients through a complete course of chemotherapy with a favourable clinical result.	
HIV screening for TB patients		
Definition	The proportion of TB patients enrolled in DOTS who have documented HIV result	
Formula	The number of TB patients enrolled in DOTS who have documented HIV result in the reporting period	X100
	The total number of TB patients enrolled in DOTS during the same period	
Interpretation	This indicator measures the HIV status among TB patients. TB is the leading cause of morbidity and mortality among people living with HIV. Ensuring that TB patients receive HIV testing and counselling services should be a high priority. Knowledge of HIV status enables HIV-positive TB patients to access the most appropriate HIV prevention, treatment, care and support services. Ideally, all TB patients with unknown HIV status should be offered an HIV test, and preferably within the context of the TB service provider, in which case the HIV test can be recorded in the patient record and the TB register. Patient confidentiality must be maintained. The following point are crucial for effective HIV Screening of TB patients. 1. Where HIV counselling and testing is carried out in a different part of the same facility or even at a distant site, the TB program needs to record when a TB patient is referred for an HIV test and receives the result. 2. TB patients should preferably be tested at the start of TB treatment so that they can benefit from appropriate care throughout TB treatment. 3. The numerator should include all TB patients who were previously known to be HIV-positive (documented evidence of enrolment in HIV care) or their negative documented HIV result from previous testing acceptable to the health care provider (such as performed in the past 3–6 months from a reliable laboratory). This indicator measures the combined services' ability to ensure that TB patients know their HIV status under program conditions.	
Latent TB infection (LTBI) treatment for HIV positive clients newly enrolled to care		
Definition	Proportion of newly enrolled HIV-positive people started on LTBI treatment during the reporting period	
Formula	Total number of people living with HIV newly enrolled in HIV care who are started on treatment for latent TB infection during the reporting period	X100
	Total number of LTBI treatment eligible HIV positive clients newly enrolled in to HIV care during the reporting period.	
Interpretation	IPT is provided to ensure eligible HIV-positive individuals are given treatment for latent TB infection and thus to reduce the incidence of TB in people living with HIV. People living with HIV should have their TB status assessed at each scheduled visit. Those found not to have evidence of active TB will be offered TB preventive therapy according to national guidelines. All those accepting TB preventive therapy and receiving at least the first dose of treatment should be recorded. This information is recorded in a column in ART registers. The proportion of clients likely to start IPT depends on the health care providers' capacity to rollout active TB using standard screening algorithm and the type of facility at which HIV diagnosis is made. **N.B**. Number of clients who will not meet the eligibility criteria for LTBI treatment should be excluded from denominator counting. For example, patients with active TB or on TB treatment at time of enrolment to HIV care should be excluded from the denominator. This indicator can be estimated and monitored at HC and Hospital level, woreda, zone, region and national level on a quarterly basis. The program should aim to achieve more than 60% in starting isoniazid *preventive* therapy for the eligible group as this indicator does not capture some group of patients may be started on LTBI treatment lately after reporting period	
Anti-Retroviral Therapy (ART) for HIV positive TB patients		
Definition	Number of HIV-positive TB patients who are started on or continue previously initiated ART during their TB treatment, expressed as a proportion of all HIV-positive TB patients	
Formula	*All HIV-positive TB patients, registered over the reporting period, who Received ART (are started on or continue previously initiated ART)*	X100
	Total no. of HIV-positive TB patients registered during the reporting Period	

Interpretation	This is an outcome indicator to measure commitment and capacity of TB services to ensure that HIV-positive TB patients are able to access ART, measure the degree to which health-care providers encourage ART as a part of routine care, and the success of TB and ART health services in referring, managing and tracking registered TB patients eligible for ART (i.e. the strength of the referral process). In settings where TB patients are referred to chronic HIV care unit or other care services to be assessed and started on ART, a system must be established to ensure that the TB Program is informed of the outcome of the referral, i.e. whether or not TB patients are started on ART or not. The information on outcome of the referral should be recorded in the TB register (TB/HIV columns). This is important not only for Program management but also for individual patient care. TB Program personnel need to be aware of a TB patient starting on ART so that they can manage drug reactions and interactions appropriately. Note that irrespective of the CD4 cell count, ART should be provided as soon as possible to HIV positive TB patients and no later than eight weeks after TB treatment begins. It should be given as a matter of emergency within the first two weeks of TB treatment among HIV-positive TB patients with profound immune-suppression (i.e.CD4 count < 50 cells/mm3). ART significantly improves the quality of life, reduces morbidity, and enhances the survival of people with advanced HIV infection or AIDS. HIV-positive TB patients are one of the largest groups who are likely to benefit from ART, and efforts should be made to identify and treat those who are eligible. This indicator measures the extent to which HIV-positive TB patients are provided with ART during TB treatment. TB and HIV programs should aim to achieve TB treatment and ART in more than 90% of HIV positive TB patients. Therefore, reconciliation of the information between the TB and ART registers at facility level should be done regularly. However, this indicator may miss patients diagnosed towards the end of reporting period whose ART treatment status may not be updated in the TB registers. Also, this indicator does not capture timeliness of ART initiation.