REPUBLIC OF KENYA

MINISTRY OF HEALTH

NATIONAL STRATEGIC PLAN

FOR TUBERCULOSIS, LEPROSY AND LUNG HEALTH

2023/24 - 2027/28

Ministry of Health
National Tuberculosis, Leprosy and Lung Disease Program

NATIONAL TUBERCULOSIS, LEPROSY AND LUNG DISEASE PROGRAM

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NATIONAL TUBERCULOSIS, LEPROSY AND LUNG DISEASE PROGRAM

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Abbreviations

6H	6 Months of Isoniazid
ACCE	Advocacy Communication and Community Engagement
ACF	Active Case Finding
ADE	Adverse Drug Events
ADR	Adverse Drug Reaction
aDSM	Active Drug Safety Monitoring and Management
AFRO	WHO African Regional Office
AIDS	Acquired Immunodeficiency Syndrome
AWPs	Annual Work Plans
BCC	Behaviour Change Communication
CAD	Computer-Aided Detection
CBO	Community-Based Organization
CDC	Centre for Disease Control and Prevention
CHEW	Community Health Extension Worker
CHP	Community Health Promoters
CIDPS	Chronic Inflammatory Demyelinating Polyneuropathy
CLM	Community-Led Monitoring
CoE	Centre of Excellence
COPD	Chronic Obstructive Pulmonary Disease
CrAg	Cryptococcal Antigen
CRG	Community Rights and Gender
CSO	Civil Society Organization
CSS	Community System Strengthening
CTLC	County TB and Leprosy Coordinator
CXR	Chest X-Ray
DADR	Daily Activity Drug Register
DAT	Direct Antiglobulin Test
DHIS2	District Health Information System
DM	Diabetes Mellitus
DNTLD-P	Division of National Tuberculosis, Leprosy and Lung Disease Program
DR TB	Drug Resistant TB
DRS	Drug Resistance Survey
DSD	Differentiated Service Delivery
DST	Drug Susceptibility Testing
DS-TB	Drug Susceptible Tuberculosis
ECG	Electrocardiogram
EID	Early Infant HIV Diagnosis
EMR	Electronic Medical Record
EQA	External Quality Assessment
ETR	End-of-Term Review
FAO	Food and Agriculture Agency
FBO	Faith-Based Organization
FCDRR	Facility Consumption Data Report and Request
FIND	Foundation for Innovative New Diagnostics
FLD	First Line TB Medicines

FQ	Fluoroquinolones
FY	Fiscal Year
G2D	Grade 2 Disabilities
GBV	Gender-Based Violence
GDF	Global Drug Facility
GDP	Gross Domestic Product
GESI	Gender Equality and Social Inclusion
GINA	Global Initiative for Asthma
GLC	Green Light Committee
GNI	Gross National Income
GOK	Government of Kenya
HAART	Highly Active Antiretroviral Therapy
HCW	Health Care Worker
HF	Health Facility
HIS	Health Information System
HIV	Human Immunodeficiency Virus
HMIS	Health Management Information System
HPT	Health Products and Technologies
HRG	Human Rights and Gender
ICC	Interagency Coordination Committees
ICD11	International Classification of Diseases 11th Revision
IDF	Immune Deficiency Foundation
IEC	Information Communication and Education
IGAs	Immunoglobulin A
IGRA	Interferon-Gamma Release Assays
IHRIS	Integrated Human Resources Information System
IMS	Incidental Medical Services
INH	Isoniazid
KEML	Kenya Essential Medicines List
KEMRI	Kenya Medical Research Institute
KEMSA	Kenya Medical Supplies Authority
KENPHIA	Kenya Population-Based HIV Impact Assessment
KHFA	Kenya Harmonized Health Facility Assessment
KHFA	Kenya Health Facility Assessment
KHIS	Kenya Health Information System
KHIS2	Health Information Software 2
KMHFL	Kenya Master Health Facility List
KNBS	Kenya National Bureau of Statistics
KNCV	*De Koninklijke Nederlandse Centrale Vereniging Tot Bestrijding Der Tuberculose* (The Royal Dutch Tuberculosis Association)
Ksh	Kenyan Shilling
LAMP	Loop-Mediated Isothermal Amplification
LCQI	Laboratory Continuous Quality Improvement Initiatives
LF-LAM	Lateral-Flow Lipoarabinomannan assay
LIMS	Laboratory Information Management System
MAF	Multisectoral Accountability Framework
MER	Monitoring, Evaluation and Research
MOH	Ministry of Health
MOU	Memorandum of Understanding
MTEF	Medium Term Expenditure Framework

mWRD	Molecular WHO-Recommended Rapid Diagnostics
NASCOP	National AIDS and STI Control Programme
NCD	Non-Communicable Diseases
NGO	Non-Governmental Organization
NHF	National Hospital Insurance Fund
NPHL	National Public Health Laboratories
NSP	National Strategic Plan
NTM	Nontuberculous Mycobacteria
NTRL	National TB Reference Laboratory
PCN	Primary Care Networks
PEP	Post Exposure Prophylaxis
PLHIV	People Living with HIV
PMDT	Programmatic Management of Drug-Resistant Tuberculosis
PPB	Pharmacy and Poisons Board
PPE	Personal Protective Equipment
PPM	Public Private Mix
PSM	Procurement and Supply Management
PT	Proficiency Testing
PVE	Preventing Violent Extremism
QA	Quality Assurance
QMS	Quality Management System
QoC	Quality of Care
QUAN	Quantitative TB Software
ReSoK	Respiratory Society of Kenya
RIF	Rifampicin
RMNCAH	Reproductive, Maternal, Newborn, Child, and Adolescent Health
RR	Rifampicin Resistant
SCTLC	Subcounty TB and Leprosy coordinator
SDG	Sustainable Development Goals
SDP	Service Delivery Point
SLA	Service Level Agreement
SLD	Second Line Drug
SOP	Standard Operating Procedure
TAT	Turn-Around Time
TB	Tuberculosis
T-BU	Digital Patient Centered Application for TB care in Kenya
TIBU	Digital Patient Centered information system for TB care in Kenya
TOR	Terms of Reference
TPT	Tuberculosis Preventive Therapy
TWG	Technical Working Group
UHC	Universal Health Coverage
UNICEF	United Nations International Children's Emergency Fund
USAID	United States Agency for International Development
VL	Viral Load
WHO	World Health Organization
WRD	WHO Recommended Diagnostics

Preface

The National Strategic Plan (NSP) for Tuberculosis, Leprosy, and Lung Diseases 2023/24 – 2027/28 envisions a Kenya free of TB and Leprosy, with a reduced burden of lung disease, achieved through people-centered and rights-based quality care and prevention services for all. This NSP is a comprehensive plan that reflects our collective commitment to prioritize public health, reduce the burden of Tuberculosis, Leprosy, and Lung Diseases, and improve the well-being of our citizens.

Tuberculosis remains one of the leading causes of death in Kenya, with impact at the household, community and societal levels that contribute to poor health, well-being and economic outcomes. The challenges posed at the individual and system levels by the COVID-19 pandemic have underscored the urgent need to strengthen our healthcare systems, ensure equitable access to quality care, and intensify efforts to combat infectious diseases.

The NSP is the result of tireless good will, inclusive discussion and engaged collaboration among key stakeholders, including the government, counties, health professionals, non-governmental organizations, civil society organizations (CSOs), donors, implementing partners, and TB-affected communities. It lays out a people-centered approach, rooted in evidence-based strategies and best practices, to address the systemic gaps along the patient pathway to quality care.

The NSP recognizes the deliberate progress made over time in reducing TB incidence, and emphasizes the critical need to find innovative strategies to mitigate the persistence of drug-resistant TB and to accelerate momentum towards the ambitious targets in the World Health Organization's End TB Strategy.

There are five key domains of our NSP: a core plan, supported by an operational plan, a framework for monitoring and evaluation, a strategy for technical assistance, and budget and resourcing plan. Wherever possible these domains are coordinated and integrated, to ensure a cost-effective, high-impact, efficient, and accountable approach to disease control.

We are committed universally to a multi-sectoral approach to TB control, recognizing that while disease management is the responsibility of the health sector, population health and well-being are the purview of everyone, to ensure a healthy and productive society. We will work at national level and within the context of the devolved delivery of

health services at county level, drawing in partners, champions and allies from the education, labor, and social services sectors, among others, to identify ways forward at community level to better understand the social determinants of health and strengthen our overall impact in response.

This strategic plan emphasizes the urgency of greater domestic investment in the management of TB, Leprosy and other Lung Diseases. The catastrophic costs of disease management borne by too many families and individuals are a blight on our national journey to inclusive and equitable prosperity. Access to quality care must be a fundamental right for all.

I call upon all stakeholders to join hands in a unified effort to achieve the ambitious targets in this plan. Together, we can create a healthier, more resilient Kenya, free from TB and Leprosy and a reduced burden of other Lung Diseases.

I extend my heartfelt gratitude to all those who have contributed to the development of this NSP under the stewardship of the National TB Program. Our collective determination and concerted action will achieve significant progress in reducing the impact of these diseases and safeguarding the well-being of our people.

Nakhumicha S. Wafula

Cabinet Secretary

Ministry of Health

Word from the Principal Secretary

Kenya has made considerable progress towards our goals to end TB, through control strategies such as the expansion of diagnostic services, adoption of TB prevention therapy and strengthened quality of care for TB services. This NSP provides a clear and thoughtful roadmap towards the greater and more sustained achievement of key strategic objectives and approaches to reach the 2030 deadline for the End TB Strategy's Milestones.

Detailed budget plans including identified funding gaps that could inhibit the achievement of our goals are included in the NSP, in order to demonstrate where the necessary financial and human resources must be integrated over the next five years. Funding gaps are substantive in a portfolio reliant primarily on public funds and development partners including the US government through USAID and the CDC, as well as financing from the Global Fund to Fight AIDS, TB and malaria, under grants allocated during the last cycle. Robust collaborative strategies with donors and implementing partners notwithstanding, we strive to continuously mobilize domestic resources to accelerate the TB response, and achieve elimination of TB and Leprosy by 2030.

Full implementation of the NSP will require sustained investments of Ksh 93 billion, through more domestic resource mobilization as well as explorations of more innovative partnerships with the private sector. Inclusion of TB services as part of the basic benefit package underpinning Kenya's strategy to achieve universal health coverage, linking eligible TB patients to existing social protection programs, conducting intense advocacy, adopting a multisectoral approach to TB control, and mobilizing donor funds are all part of a joint strategy to fund the end of TB in Kenya.

The Government remains fully committed to the complete implementation of the NSP for 2023/24 - 2027/28, alongside a community of diligent stakeholders united in their goals of achieving the NSP.

Mary Muthoni Muriuki, HSC

Principal Secretary
State Department for Public Health and Professional Standards,
Ministry of Health

Executive Summary

Background

Kenya initiated the development of its National Strategic Plan for Tuberculosis, Leprosy and Lung Health 2023-2028 amid a renewed push for accelerated momentum towards the achievement of the global goal of ending TB by 2030. The WHO End TB Strategy includes guidelines to develop TB strategic plans in countries that confronted stalls in their response as a function of the COVID-19 pandemic, and a realization of the importance of investment in stronger health systems.

Our emphasis is a patient-centered care model delivered through stronger community systems that commits to quality care.

Devolution of the delivery of health services as mandated by Kenya's 2010 constitution has produced, and continues to produce changes and new opportunities to reach the country's vast and diverse population with quality care. Moreover, Kenya's continued pursuit of universal health coverage provides a mandate for health as a human right, anchored in a strong, far-reaching primary health care system that relies on time tested best practice as well as innovations including digital health policy.

NSP development process

Under the stewardship of Kenya's National TB, Leprosy and Lung Disease Program, the development process for this NSP was wide, consultative and inclusive. Stakeholders engaged in this process included county governments, development partners, non-governmental organizations, civil society, faith-based organizations, communities affected by TB and Leprosy and patient representatives.

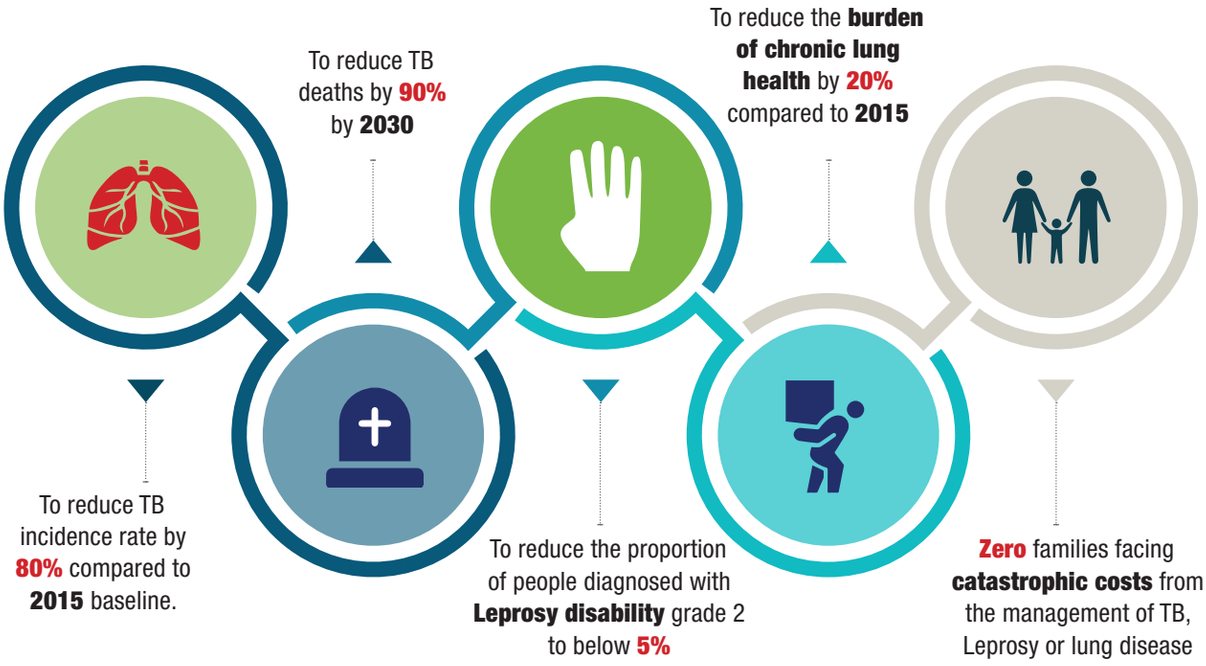
Its foundation was the 2019-2023 strategy, enhanced by timely and updated external epidemiological and comprehensive programmatic reviews led by WHO. Data synthesis workshops were conducted to identify where opportunities were missed, to inform the grafting of interventions and domains of action envisioned under the new strategy.

A situation analysis also informed the shaping of the NSP, incorporating socio-demographics, geography, a health system landscape, health financing and a deeper understanding of the epidemiology of TB and Leprosy in Kenya. Stakeholders were invited to validate, endorse and launch the plan, in consultation with external experts who provided guidance on prioritization of interventions to meet identified gaps. Intervention modeling was conducted in partnership with the National Program by Imperial College London to inform prioritization of high impact interventions.

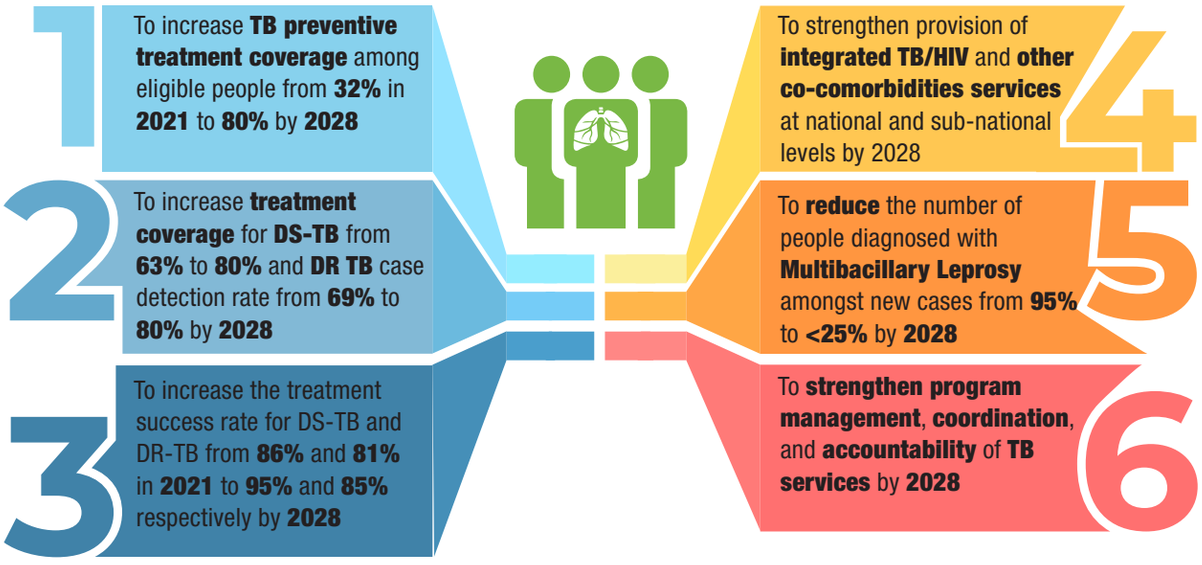
Goals and objectives

Our intention and overarching goal with this NSP is to move closer to the global target of eliminating TB by 2030, through a combination of quality prevention, diagnostic and treatment services for TB, Leprosy and lung diseases.

To achieve this goal, **five impact targets** have been identified:



Our six **strategic objectives** will help guide progress towards our goals:



Financial requirements and costing

The costing for this NSP was developed through a consultative approach using activity-based costing (ABC) methods. A total estimated funding envelope of Ksh 93 billion is required to fund the NSP, with details of intervention costs included in the plan annexes.

Implementation arrangements

A task force led by government alongside its key partners will oversee the implementation of this NSP. Included in the plan are risk mitigation measures to ensure we remain on track, and sustain impact over time at both the national policy level and in the county-level implementation of the highest impact, best practice interventions.

Contingency measures

Our implementation of the previous NSP was severely hindered by the onset of the COVID-19 pandemic and the resultant economic and health consequences for our country. To forestall against future interruptions, we incorporate some pandemic preparedness into this plan, to prevent any future disruption of service delivery that could compromise the life and livelihoods of patients managing their TB and Leprosy.

Dr Patrick Amoth, EBS

Ag. Director General
Ministry of Health

Acknowledgements

The development of this NSP drew participants from across sectors and domains of Kenyan life, ensuring a broad and nuanced collaboration that puts patients at the heart of a strategy for delivery of quality care. Without these valuable contributions and the full commitment of the technical committee, this plan would not be as robust, responsive or integrated as it is.

Our sincere gratitude begins with the immense technical participation of the National TB Program staff, under the thoughtful leadership of the Ministry of Health. Our appreciation extends to the Department of Planning for its stewardship of the writing of the plan.

Technical input was also received and appreciated from the following partners, Ministry of Health, the National Treasury, Ministry of Education, Ministry of Transport, Ministry of Interior and Coordination, County Governments including County Directors of Health, County/Sub County TB and Leprosy Coordinators, National Syndemic Disease Control Council (NDSCC), National Tuberculosis Reference Laboratory, AIDS Control Unit, National AIDS and STIs Control Programme (NASCOP), World Health Organization (WHO), USAID through Centre for Health Solutions (CHS) TB ARC II, HealthIT and Kenya Conference of Catholic Bishops (KCCB), Stop TB Partnership, the US Centers for Disease Control and Prevention (CDC), Global Fund, Kenya Coordination Mechanism, Global Fund, AMREF Health Africa in Kenya, Kenya Red Cross Society (KRCS), Clinton Health Access Initiative (CHAI), Kenya AIDS NGOs Consortium (KANCO), Respiratory Society of Kenya (ReSOK), Central Organization of Trade Unions/ Kenya Private Sector Alliance (COTU/ KEPSA), Kenya Legal and Ethical Issues Network (KELIN), Kenyatta University, and the TB community representatives.

We would like to express our sincere appreciation to the TB caucus members and the Kenya network of TB champions for their valuable support and contributions. Additionally, we acknowledge the consultants for their substantial technical assistance during the entire development process

Dr Immaculate Kathure

Ag. Head
National Tuberculosis Leprosy and Lung Disease Program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1 Introduction

10.6 M

Estimated number of persons that fell ill with TB in 2021, according to WHO. *Global Tuberculosis Report* (2022)

23%

Estimated global burden of TB in the African Region (AFRO) as classified in the WHO regional categorization.

Tuberculosis (TB) remains one of the top infectious killers in the world. In 2021, an estimated 10.6 million people (9.9–11 million) fell ill with TB. Twenty three percent of the global burden of TB was in the African Region (AFRO) as classified in the World Health Organization (WHO) regional categorization. However, according to the Global TB Report 2022, as few as 6.4 million TB patients were diagnosed and reported to the national programmes against estimated 10.6 million people who fell ill with TB in 2021. Additionally, 2021 saw the burden of drug-resistant TB increase by 3% from 2020, with 450,000 cases of multidrug- or rifampicin-resistant (MDR/RR)-TB reported. The success rate for people treated for TB in 2019 and 2020 was maintained at 86% globally, suggesting that the quality of care was maintained in the first year of the COVID-19 pandemic.

A high-level meeting on TB convened by the UN General Assembly in September 2018 was meant to kick start an accelerated global TB response, with heads of state and governments endorsing plans to successfully treat 40 million people living with TB by 2022, among them 3.5 million children, and 1.5 million people with drug-resistant TB. Another 30 million put on TB Preventive Treatment (TPT). Kenya's own 2019-2023 NSP was constructed to provide the best possible response to achieving its targets under the End TB Strategy led by WHO that emerged.

Kenya is one of the 30 high TB burden countries globally, with an estimated incidence of 133,000 cases in 2021 (2022 Global TB report). TB incidence has declined by 9% between 2015 and 2021. Progress is attributable to the wide implementation of demonstrated best practice, high impact interventions as part of a robust TB control strategy, including the use of GeneXpert technology for rapid TB diagnosis and the expansion of community-based TB care services. Furthermore, Kenya has achieved key successes in its efforts to exit from the list of DR-TB high burden countries. The success is attributed to improved access to drug susceptibility testing (DST) for TB patients, early detection and treatment of drug resistance TB. Other demonstrably effective strategies include; increasing the number of treatment sites, training of healthcare workers, improved community TB care and support, and improved adherence to treatment.

This NSP builds on this legacy of steady forward motion and increased success, looking to scale and expand the best practice interventions that have proven most effective and cost-effective in pursuit of the 2030 milestones of the End TB Strategy. The journey to move towards achieving the END TB targets to reduce TB incidence by 80%, TB deaths by 90%, and eliminate catastrophic costs for TB-affected households is continuing.

The NSP is an integrated, comprehensive and robust strategy that incorporates:

1. A Core Plan
2. An Operational Plan
3. A Monitoring and Evaluation (M&E) framework
4. A Technical Assistance (TA) Plan
5. Resource mobilization and costing estimates.

133,000

Estimated number of TB cases in Kenya (2021), according to WHO *Global Tuberculosis Report* (2022)

450,000

Estimated number of cases of **multidrug- or rifampicin-resistant (MDR/RR)-TB** reported in 2021, a 3% increase from 2020.

At the heart of the NSP are the patients, families and communities affected by TB, Leprosy and Lung diseases. The NSP is committed to patient-centered quality care, grounded in an evidence-based priority setting and planning approach that allocates resources to the identified and validated best practices along the patient pathway to quality care. The NSP is operationalised through a partnership framework aligned to each stakeholder's comparative advantage. The activities embodied under this NSP will address systemic and root causes of the gaps along the patient pathway, assigning the relevant roles and responsibilities in our multi-sectoral approach to the right players at national and county level and supplemented by collaboration with the private sector and civil society.

This NSP is Kenya's blueprint to eliminate TB and Leprosy, and reduce the burden of lung diseases. It articulates our goals and ambitions, with clear outcome and impact targets that align with international goals, and the full portfolio of funded activities needed to reach these goals. In acknowledgement of likely funding gaps, an evidence-based optimisation of resource allocation is presented alongside alternative impact targets given reduced funding scenarios, i.e., a) 2021 - 2022 funding levels from domestic and international sources; and b) 2021 - 2022 funding levels plus 25 percent. An upcoming supplement to the NSP will document the full operational plan behind this NSP and articulate the county- specific commitments that will contribute to the attainment of national goals.

1.1. Rationale for development of the Tuberculosis, Leprosy and Lung Disease NSP (2023/24-2027/28)

Kenya, despite the challenges brought by the COVID-19 pandemic, was able to make notable progress in achieving its 2019-2023 NSP, with positive developments including the introduction of new TB screening and diagnostic tools to help close the gap between estimates of likely TB infections and the number of people diagnosed and ultimately treated for the disease.

The findings from Patient Pathway Analysis and recommendations from GDF and GLC missions in 2017 helped to shape the interventions envisaged under the 2019-2023 NSP, and notable progress was recorded in the introduction of high-impact interventions including all-oral drug resistant (DR)-TB treatment regimen and a shorter drug-sensitive (DS)-TB and DR-TB, children friendly formulation, expansion of at-risk population eligible for TPT, and adoption of shorter TPT regimens. Digital innovations that were introduced included T-BU Lite, an Android-based app version of TIBU designed for use by frontline HCWs and community health workers, as a point of care platform.

The emergence of the COVID-19 pandemic disrupted not only TB services but the entire health system. Program implementation gaps identified during the Patient Pathway Analysis, GDF and GLC Technical Assistance Missions (2017) have been addressed during implementation of 2019-2023 NSP. Other implementation gaps identified during various reviews including the Independent End Term Program and epidemiological review conducted in 2022 have helped to inform and establish priorities within this NSP, as a demonstration of our continued commitment to evidence and analysis-informed planning. We remain in direct alignment with the Kenya health sector strategy, which itself recognizes TB as a major public health threat to human development in Kenya.

The NSP is based on the principles of the global End TB Strategy, which aims to reduce the global burden of TB by 2030, with targets of a 90% reduction in TB deaths, an 80% reduction in TB incidence by 2030, and zero catastrophic cost due to TB, compared to 2015 levels. Government stewardship and accountability are central to its achievement, with an emphasis on partnership and community led approaches to achieve and sustain progress towards disease eradication targets, supported by robust monitoring and evaluation. The NSP is grounded in Kenya's commitment to protect and promote human rights, ethics, and equity; and the adaptation of global guidance to national contexts for an integrated, patient-centered approach to TB care and prevention.

Best practices in targeted interventions are at the core of the NSP, in order to contribute to improved population health and well-being as envisioned under the Vision 2030 national strategy that seeks to transform Kenya into a newly industrializing, middle-income country providing a high quality of life to all its citizens by 2030 in a clean and secure environment.

1.2. Process of development of the Tuberculosis, Leprosy and Lung Health NSP (2023/24-2027/28)

Development of the National TB, Leprosy and Lung Disease Strategic Plan (NSP) 2023/24-2027/28 took over six months through a consultative process drawing in multiple stakeholders. A technical team at the National TB, Leprosy and Lung Disease Control Program oversaw the process, with assistance from WHO, USAID, CDC, the KNCV, FIND and other global and local multilateral stakeholders and implementing partners. Overall guidance was provided by the Ministry of Health.

The Division of National Tuberculosis, Leprosy and Lung Disease Program (DNTLD-P) followed the "People-Centered Planning Framework'' as outlined by the WHO (Figures 1.1, 1.2). The initiation of the NSP development process included a review of all available evidence mapped to the patient care continuum.

1.2.1. Roadmap for NSP development

More than 50 stakeholders joined 10 key activities as part of the NSP development process, with their outputs forming the backbone of the resulting strategy. These included:

i. **First stakeholders' forum:** Stakeholders explored a series of foundational documents including the current NSP, the end term review (ETR) report, the epidemiology review EPR report and more. County representatives also provided a snapshot of progress in their respective geographies, and guidance on NSP development was shared by the DNTLD-P.

ii. **Data synthesis workshop:** Local and global technical experts collaborated in a prioritization exercise derived from the collating and analysis of the current evidence base around TB and related determinants/risk factors.

iii. **Post data synthesis workshop**: A collaborative writing exercise that articulated areas of focus and prioritization for the NSP.

iv. **Second stakeholders' forum:** Provided an update and progress report on the activities since the first forum, with greater involvement of stakeholders from the county level in identifying how national priorities aligned with their own county-level commitments.

v. **First drafting/writing workshop:** A first draft of the NSP emerged that articulated a proposed vision, mission and strategic objectives for the NSP, building on the previous plans and refining which formulated interventions and activities with best practice to achieve impact and outcome targets.

vi. **Second drafting/writing workshop**: Draft strategic objectives, specific objectives, strategic interventions and thematic alignment were proposed, with attached costing assumptions.

vii. **Third drafting writing workshop**: The writing team finalized the costing of activities and developed a draft M&E framework.

viii. **County consultative forum and external peer review**: A first draft was shared, and feedback solicited. The template for county-level work planning was drafted.

ix. **Third Stakeholders' Forum:** A zero draft following external review was shared with stakeholders, for comprehensive feedback.

x. **Fourth Drafting Workshop:** A first draft derived from consolidated inputs was shared widely with relevant audiences, and for commitment from counties to initiate their own specific priorities to be included in their work planning.

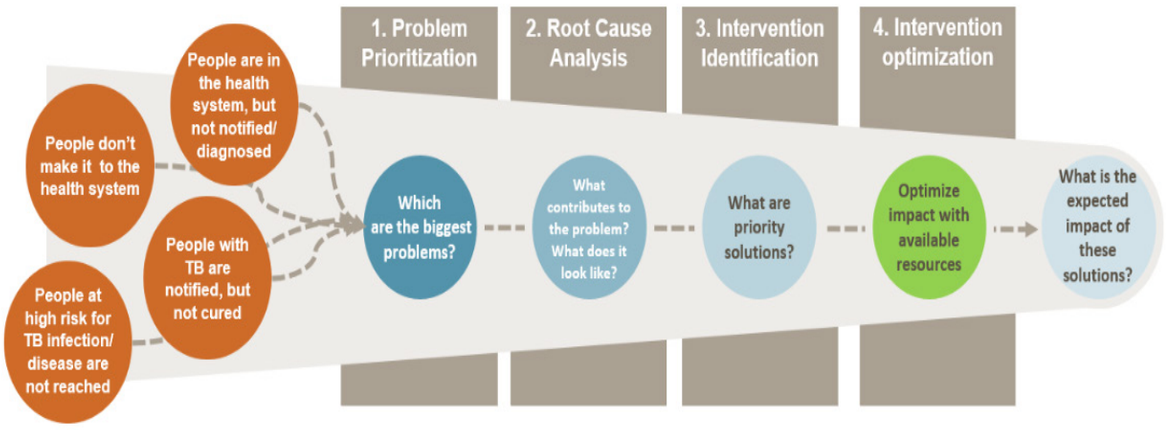

Figure 1.1: People-Centered Planning Framework

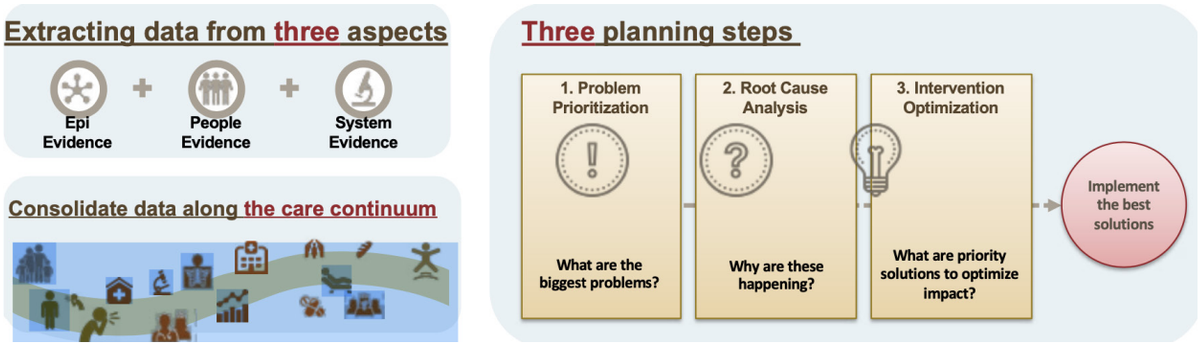

Figure 1.2: People-Centered Framework for Data Consolidation and Prioritized Planning

1.2.2. People-Centred Framework

The writing team first identified priorities based on data, tracked gaps in the evidence, and emerged with priorities that were consensus-based at the national level. The process was repeated with representatives from each of the 47 counties, and a triangulation exercise was conducted to ensure that both national and sub-national priorities are considered.

DR-TB is an example of slight divergence between national and county-level priority setting. For some counties, the risks and disease burdens are comparatively low, allowing them to de-emphasize this priority to reflect their local burden of disease. There is no possibility of the same at the national level, so it rightfully remains an impact objective for this NSP.

Meeting evidence gaps, equally, was identified as a priority for more effective intervention targeting going forward. Disaggregation of data to reflect pediatric needs was identified as a necessary exercise during this strategic period in order to ensure these needs are responded to with the best targeted interventions available.

Root cause analysis was conducted for each priority area, which identified and ranked socio-economic, health system, and clinical determinants that inhibit greater progress toward national targets. This was mind-opening for stakeholders, who were then able to look more deeply at the social determinants of health and the best interventions to interrupt the lifecycle of the TB epidemic beyond the health sector – entering into non-clinical realms such as nutritional support, education and poverty alleviation and social protection. Activities reflected in sections 3.1 and 3.2 of the NSP are derived from the exploration of this data.

Facilitated discussions about the feasibility, and known/potential impact of different interventions illustrated the value of a multi-sectoral, multi-stakeholder approach to strategy development, resulting in a series of activities that were then costed as presented in Table 6.1.

Mathematical modeling of impact was combined with cost models to consider the Incremental Cost-Effectiveness Ratios of interventions, which were then optimized to determine which package will achieve the highest impact on the epidemic overall and for selected special populations, within a resource-constrained budget.

The NTLD-P considered three resource scenarios: 2021-22 funding levels; a 25 % increase in funding, and an aspirational/fully financed budget. Each scenario presents which sets of interventions will be most effective and efficient for the response; this is presented in Part

Two. The budget with 2021-22 funding levels can be used for immediate action, while the other budget tiers can be used as the basis for future funding requests.

Stakeholders endorsed the NSP in August 2023, and it was subsequently approved by the Ministry of Health. County-specific work plans are under development, to align with jointly agreed sub-national targets.


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2

Summary of the Findings from the Situation Analysis

47.6 M

Estimated population of Kenya (KNBS-2019 Census Report).

48%

Estimated percentage of the total population under 18 years of age.

27%

Estimated percentage of Kenya's population lives in rapidly urbanizing areas.

2.1. The Country Context

2.1.1. Geography

Kenya covers roughly 582,646 km^2 in East Africa. It is bisected horizontally by the equator and vertically by longitude 38° E. The country is bordered to the north by South Sudan and Ethiopia, to the east by Somalia and the Indian Ocean, to the south by Tanzania, and to the west by Uganda. Kenya has since the promulgation of its 2010 Constitution operated a devolved system of governance through 47 county administrations.

2.1.2. Demographics and Socioeconomic

Kenya's population is outpacing global growth rates with a 2019 census reporting a total 47.6 million people, 50.5%[1] who are women and girls. Nearly half, or 48% of the total population, is under age 18, priming the country's economic growth and development to seize a demographic dividend if the appropriate investments are made in key systemic enablers such as education, health, employment and entrepreneurship. More than one in four, or 27%, of Kenya's population lives in rapidly urbanizing areas both attached to and beyond the main cities of Nairobi, Mombasa and Kisumu, contributing to an urbanization rate of 4.23%[2]. Gross national income per capita stood at USD$2,080[3] during the height of the economic stagnation precipitated by the COVID-19 pandemic. Kenya continues to fall short of the commitment made under the 2001 Abuja declaration to contribute 15% of GDP to health; expenditure was 4.59% in 2019, or roughly $83.41[4] per capita. World Bank estimates[5] suggest that out of pocket expenditure for individuals is comparable to that figure.

2.2. The National Health and Social Care System

2.2.1. Leadership and Governance

The Republic of Kenya is a direct and representative democracy with a national government led by a president. It has devolved governance and social service delivery to 47 counties, whose governments are autonomous and responsible for managing and funding the delivery of the entire gamut of health and pharmacy services from the lowest level dispensary to the county referral and specialty hospitals. TB management and care is offered alongside other

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1 Kenya National Bureau of Statistics (KNBS) Vol 3, 2019

2 World Bank, 2021

3 WHO, Global Health Expenditure database, 2019

4 *https://www.worldbank.org/en/topic/universalhealthcoverage*

5 *Republic of Kenya, Ministry of Health. 2022. National and County Health Budget Analysis, FY 2020/21. Nairobi: Republic of Kenya*

4.59%

Kenya expenditure on healthcare in 2019, falling short of the commitment made under the 2001 Abuja declaration to contribute 15% of GDP to health.

2.2 per 1,000 Population

The national health facility density for Kenya, according to Kenya Health Facility Assessment (KHFA) of 2018.

communicable disease services for HIV, malaria and others; Reproductive Maternal, Neonatal, Child and Adolescent Health (RMNCAH) services are at the foundation of the primary health care system.

The Kenya Health Sector Strategic Plan (July 2018 - June 2023) is the prevailing document that articulates medium-term priorities for achievement of health policy objectives, all of which seek to create and expand the sustainable delivery of universal health coverage. The HSSP articulates the national government mandate to lead and coordinate in the creation of an enabling policy environment with adequate resources to deliver the highest level of quality health care to the largest number of people.

Roles and responsibilities within the health sector are divided, with the national government coordinating and leading health sector working groups that formulate health policy; manage national referral facilities; conduct technical training and skill transfer for counties; and oversee consumer protection, including the development of norms, standards, and guidelines.

Counties are responsible for the supply of services and the commodities required to deliver those services, including pharmacy, ambulance, primary health, food safety, post-mortem care and the safe handling and disposal of medical waste. The Kenya Health Policy 2014-2030 provides the long-term policy directions for health in line with the Constitution and the Vision 2030.

2.2.2. Health service delivery

Kenya's health delivery system is a hierarchical structure grounded in community-based and community-led primary health care service delivery. Referral mechanisms link complex, urgent or emergent cases to higher levels in the six-tier structure:

Dispensaries, health centers and community health units are the first point of contact for care, health promotion, disease prevention, and essential treatment for common illnesses. Community health workers are crucial to the delivery of primary healthcare at this level, offering health education, conducting outreach programs, and facilitating community-based interventions. This community-level infrastructure serves as the foundation for accessible and preventive healthcare services, and are indispensable to a stronger healthcare system in Kenya.

The second level of the system is also mainly devoted to delivery of primary health services through clinics and dispensaries, while the third level is where a sub-county hospital is available, alongside nursing facilities that can offer a wider range of medical services, including specialized clinics and outpatient care. The fourth level comprises county referral hospitals that are regional centers for specialized medical care and are equipped with more advanced diagnostic and treatment facilities. National level referral hospitals in Nairobi, with Kenyatta National Hospital, and Mombasa, where the Moi Teaching and Referral Hospital is located, provide highly specialized services, including complex surgeries, advanced diagnostics, and research capabilities.

This tiered health infrastructure ensures accessibility and a continuum of care throughout the country. Findings from the Kenya Health Facility Assessment (KHFA) of 2018 indicate that the national health facility density was 2.2 per 10,000 population, and the country had achieved the WHO target of 2 per 10,000.

2.2.3 Health Workforce

Kenya had 222,870 registered health professionals (all cadres) in 2021. Registered nurses had the highest ratio of 155.9 per 100,000 population in 2021 while physiotherapists (degree) had the lowest ratio at 0.7 per 100,000 population. Kenya has 13,376 doctors with a ratio of 27.1 per 100,000 population. Kenya is below WHO-recommended minimum staffing levels of 356 nurses and 36 doctors per 100,000 population. Kenya's community-based health workers are called Community Health Promoters (CHPs). They serve in defined geographical locations called community health units. As at the end of 2019, Kenya had approximately 9100 community health units out of an expected 10,000. These community health units are supported by 3250 CHPs. Support for the CHPs is delivered through a network of government-employed Community Health Extension Workers (CHEWs) numbering approximately 1,569.

2.2.4. Health System Financing

The national treasury allocates and transmits funds for health directly to the national and county governments to develop their own health budgets. Overall, the Kenya health budget as a proportion of total government budget has increased steadily since fiscal year (FY) 2013/14 from 7.8% to 11.1 % in FY 2020/21[6] although it remains below the Abuja Declaration recommendation of 15%. Between 2018-2021, Kenya's public health budget increased by Ksh 40 billion, mainly driven by county contributions to their own budgets.

The Ministry of Health budget reached Ksh 114 billion in FY 2020/21, a jump over the

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[6] Republic of Kenya, Ministry of Health. 2022. National and County Health Budget Analysis, FY 2020/21. Nairobi: Republic of Kenya.

steady increase year on year likely due to additional costs borne for the response to the COVID-19 pandemic. The Ministry's budget constitutes 6.5% of the national government budget.

Key priorities for development partners under the MoH budget for FY 2020/21 are communicable disease (15%); UHC (43%) and COVID-19 response (18%). Government spending emphasized UHC (36%), capital investments in medical equipment (18%), and the Free Maternity Care Program (12%).

In FY 2020/21, county governments increased their allocations to health budgets to 29.2% (Ksh.135 billion), up from 27.8% (Ksh.127 billion) in the previous year. This allocation is still below the pre-devolution levels of 35% that the national government had allocated to counties for health services. Most of county budgets are devoted to meeting recurrent expenditures (81.5%) – above the recommended 70% threshold and primarily due to staff costs and personnel expenses. [5]

UHC coverage rose to 83% service access in 2022. This achievement masks the persistent challenges experienced with service quality, with only marginal gains recorded. Between 2017 and 2022, health insurance coverage increased from 17% to 26.5% as part of a push to reduce out of pocket expenditures for health. The National Hospital Insurance Fund (NHIF) has enrolled 23.4 million members with contributions reaching KSh 60.8 billion in 2020/21.

222,870
Registered health professionals (all cadres) in 2021.

13,376
Number of doctors in Kenya, with a ratio of **27.1** per **100,000** population.

2.2.5. Access to Essential Medicines

The Kenya Health Act 2017 established the Health Products and Technologies (HPT) regulatory body. Health products and technologies are procured in line with the Public Procurement and Disposal Act and Kenya Essential Medicines List (KEML) as well as agreed intergovernmental arrangements for medicine and medical products. Kenya Medical Supplies Authority (KEMSA) was capacitated to guarantee supply of essential medicines and other medical supplies and devices to all public health facilities. The Mission for Essential Drugs and Supplies (MEDs) complements KEMSA in supply of medical commodities to faith-based health facilities. Stock outs remain a challenge. Based on the KHFA 2018 the mean availability of essential medicines was 44% while that of diagnostic tests was 56% among the sampled health facilities assessed.

86,000
Number of community health volunteers in Kenya, serving approximately **6,000** community health units (as of 2019).

114 B
The Ministry of Health budget reached in **FY 2020/21**

2.2.6. Health Information Systems

The Health Information System policy envisions a robust HIS that aggregates and provides datasets for analysis that include population growth, birth, marriage, mortality and morbidity, disease outbreaks, social determinants of health (such as poverty, nutrition, environment, and oral health), access to and coverage of quality services, financing, human resources for health and other health issues. Kenya has established

a number of electronic national health information systems over the past decade including KHIS, KMHFL, EID/VL, TIBU, IHRIS, GBV/IMS, and commodities order management systems. The Ministry of Health is conducting facility digitization for all health facilities (Digital Health Platform) to knit together disparate data collection mechanisms into a unified data system for health under the direction of a national data center. Data collection will be done at all levels of the health system structure and leverage opportunities for integration with other existing platforms.

2.3. National Tuberculosis, Leprosy and Lung Disease Response and Control in Kenya

2.3.1. Coordination and Service Delivery for TB, Leprosy and Lung Disease Services

The DNTLD-P is domiciled in the Directorate of Preventive and Promotive Programs in the Ministry of Health. It is mandated to provide technical leadership and develop national policies and standards governing the response, and framing monitoring and evaluation as well as overall coordination of TB, Leprosy and lung disease interventions and activities. There are two levels of organizational and coordination structures: the national level, headed by the DNTLD-P Head, and the county level, led by county TB and Leprosy coordinators (CTLCs) in all 47 counties. Specialized technical oversight is provided for care and treatment, active case finding, laboratory services, TB/HIV, nutrition, infection prevention and control, public-private mix (PPM), advocacy communication and community system strengthening, (ACCE), childhood and adolescent TB, programmatic management of drug-resistant TB (PMDT), commodity supply chain management, aDSM & pharmacovigilance, monitoring and evaluation and research, social protection, policy and planning and finance.

The National TB Reference Laboratory (NTRL) is part of the national laboratory services and coordinates with the DNTLD-P to provide high level services nationwide, including culture and drug sensitivity testing (DST) and external quality assurance (EQA).

Sub-nationally, county and sub-county coordinators for TB and Leprosy (CTLCs and SCTLCs) oversee and coordinate their area's TB, Leprosy, and lung disease services. Technical and implementing partners, community-based organizations (CBOs), faith-based organizations (FBOs), civil society organizations (CSOs), and patient groups support TB activities at both the national and sub-national levels.

2.3.2. Epidemiology of Tuberculosis

According to the WHO global list for high TB burden countries and HIV associated TB and drug resistant TB (DRTB) 2021-2025 published in 2021, Kenya remains among the 30 high burden countries for TB and HIV associated TB: together contributing approximately 80% of the estimated global TB burden.

DR-TB remains a public health threat and thus a priority area of focus despite Kenya's removal from the list of highest burden countries for that illness.

2.3.2.1 TB Incidence and treatment coverage

TB incidence has risen and fallen over the last 20 years, with an observed increase to 243,000 from 144,000 from 2000 to 2006 and then a decline to 133,000 in 2021 as shown in Figure 2.1.[7]

The WHO Global TB Report (2021) recorded a key milestone for Kenya's fight against TB, becoming one of the high burden TB countries to achieve a 32% reduction in TB incidence compared to 2015, against a target of 20%. Further, the country also achieved a 44% reduction in the number of TB deaths compared to 2015, against a target of 35%[4].

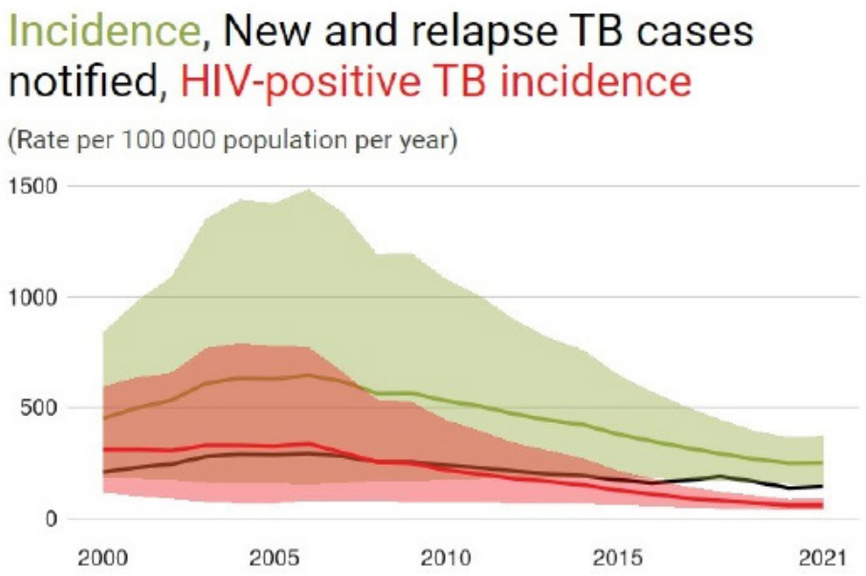

Figure 2.1: New and relapse TB cases notified, HIV-positive TB incidence between 2000 and 2021 (Rate per 100,000 population) Source: WHO Global report, 2022

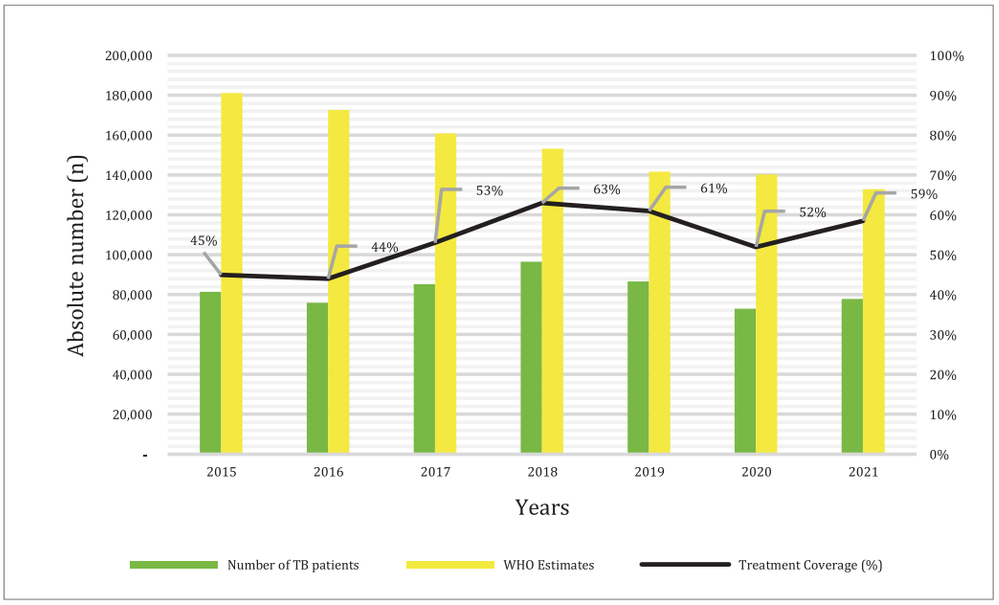

Figure 2.2: Treatment coverage 2015-2021

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[7] World Health Organization. Global tuberculosis report 2021: supplementary material. Published online 2022

Significant as these achievements are, there remains a significant gap in treatment coverage – nearly 50% of people with TB remained unreached in 2021. The treatment coverage gap is an estimate of the number of new and relapse cases detected and treated in a given year, divided by the estimated number of incident TB cases in the same year. As concerning as the figures of 50% are, it remains a downward trend from the peak of 63% in 2018, and as shown in Figure 2.2.

Similarly, TB notifications demonstrated a steady decline from 94,550 in 2018 to 77,854 in 2021 *(*Figure 2.3*)*. Figure 2.4 shows proportional change in notifications by year between 2015 and 2021. The increase in 2021 could reflect a recovery of TB services that were disrupted during the COVID-19 pandemic. The number of notified children with TB declined, from 10.1% in 2018 to 7.8% in 2021 as shown *in Figure 2.5.*

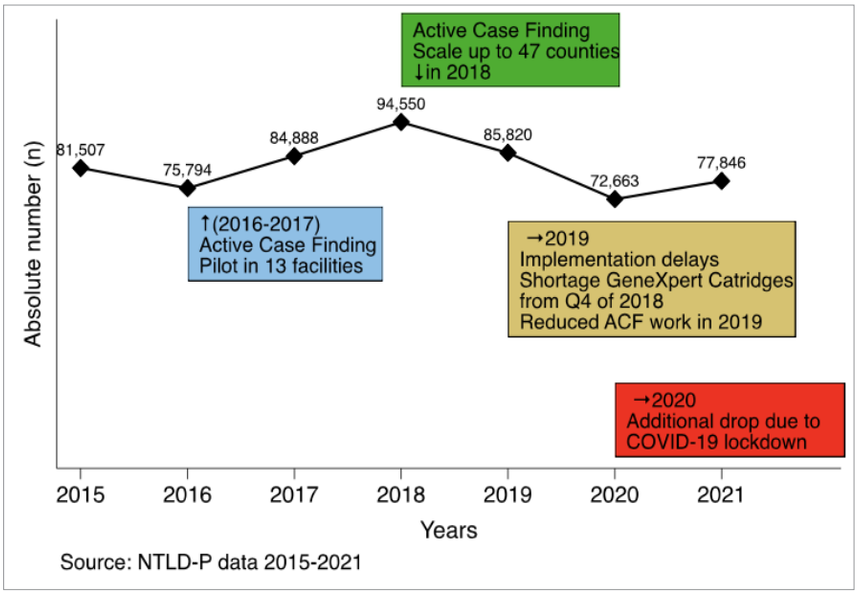

Figure 2.3: Case notification trend for TB between 2015 and 2021

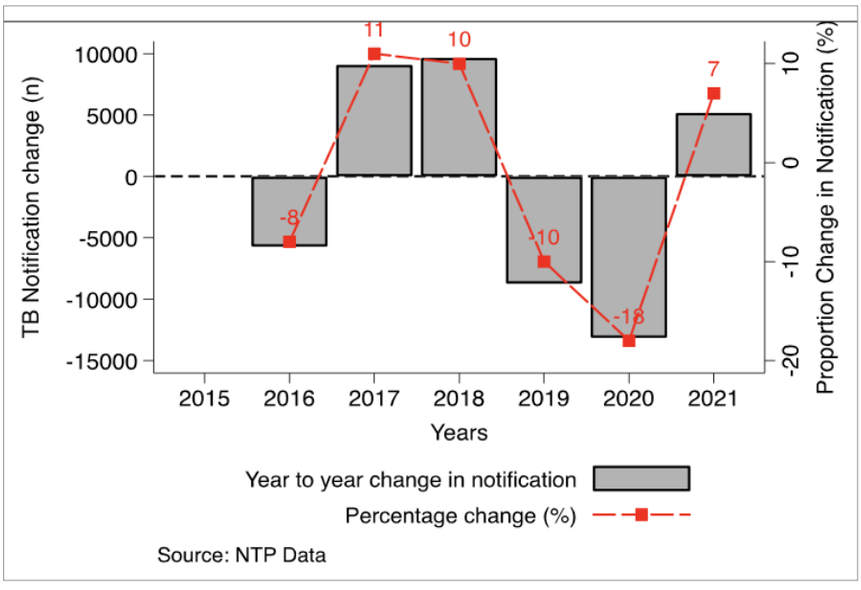

Figure 2.4: Percentage change in TB notification between 2015 and 2021

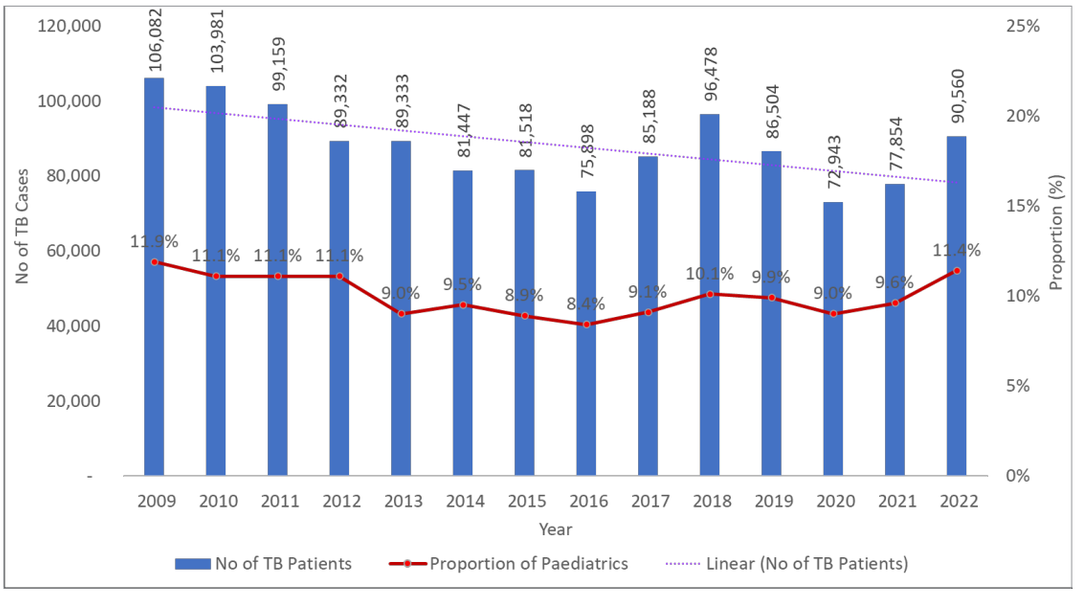

Figure 2.5: Trend of TB patients notified between 2009 and 2022

Source: Data from DNTLD-P, MoH

Drug resistant TB remains a significant challenge as demonstrated by the increase in the number of DR TB patients notified over the years as shown in Figure 2.6.

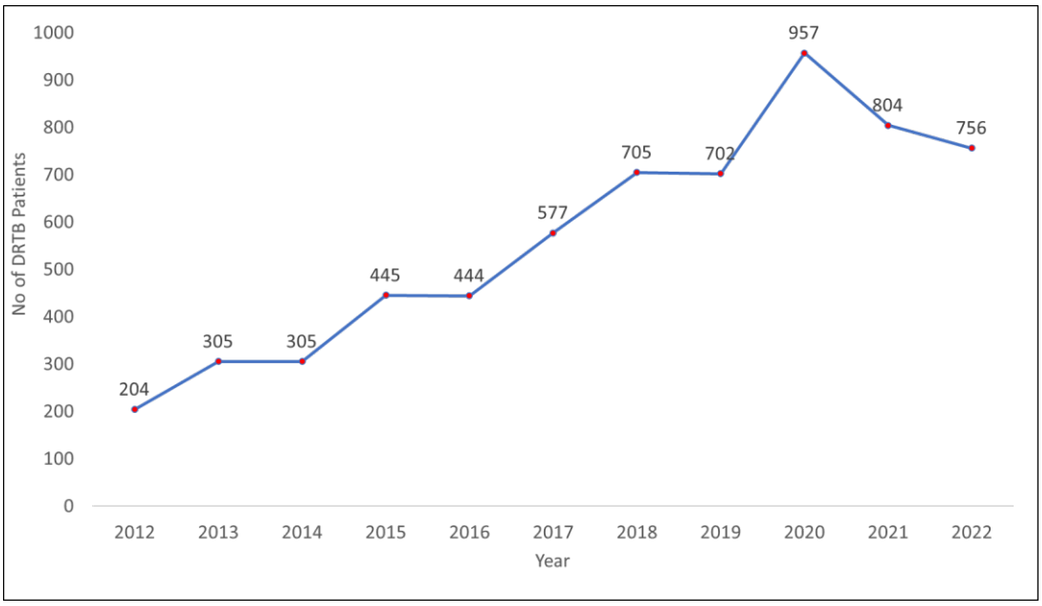

Figure 2.6: Trend of DR TB patients notified in Kenya between 2012 and 2022

Source: Data from DNTLD-P, MoH

In 2018, the first national TB patient cost survey estimated that up to 27% of households affected by TB incurred catastrophic costs, and when considering drug resistant TB, 86% of patients and their families incurred catastrophic costs while seeking TB care. Another finding of note was that 45% of people with drug-susceptible TB and 54% of people with drug-resistant TB diagnosed in 2020 were undernourished at the time of diagnosis.

2.3.2.2 Drivers of TB epidemic in Kenya

Poverty, undernutrition, HIV, alcohol use disorders, smoking and diabetes mellitus are the key drivers and social determinants of tuberculosis in Kenya, according to WHO Global Report 2021[7]. Kenya is listed among the top 30 high burden TB/HIV countries globally, with WHO estimating incidence of 35,000 people with TB and HIV co-morbidity and 12,000 people succumbing to the co-infection in 2020[10]. A Kenya population-based HIV impact assessment (KENPHIA) survey conducted in 2018, estimated the burden of HIV among adults in Kenya to be 4.9% and 0.7% among children, for an approximate number 1.3 million people living with HIV in Kenya. As adolescent girls and young women are the fastest growing group of new infections in Kenya, prevalence rates are demonstrably skewed at 6.6% for women and 3.1% for men. Kenya's progress towards the UNAIDS led 95-95-95 HIV targets as of 2021 are 79.4% of people living with HIV knowing their status; 95.7% of people who know their status initiated on life-saving HAART, and 88.4% of people on HIV treatment being virally suppressed.[8]

The Food and Agriculture Agency (FAO) estimates that 24.8% of Kenyans were undernourished in 2018, with the prevalence of those experiencing moderate or severe food insecurity estimated to be 68.5% in 2020. The prevalence of malnutrition in children, presenting as wasting and stunting, was estimated at 4.2% and 19.4% respectively in 2020.[9] Kenyans are heavy consumers of alcohol with 11% deemed heavy episodic alcohol consumers[10]; the same percentage of the population smokes tobacco[11].

The International Diabetes Federation projected a rapid increase in the number of people with DM from 190,000 in 2000, to 821,500 in 2021, and further to 1,965,000 in 2045. The current burden is estimated to be 460 diabetics per 10,000 population, with 4% of Kenyans between 20-79 diagnosed with DM. Diagnosis rates for DM are low; two-thirds of the estimated number of people to have the condition are unaware that they do, making them at higher risk for TB.[9]

Already considerable social determinants such as poverty, undernutrition, alcohol consumption and housing were exacerbated by the COVID-19 pandemic. In 2022, 17% of Kenya's population lived on less than USD$1.90 per day, placing more than 8.9 million Kenyans in extreme poverty, predominantly in rural areas although the rush to urbanization

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[7] World Health Organization. Global tuberculosis report 2021: supplementary material. Published online 2022.

[8] National AIDS and STI Control Programme (NASCOP). Preliminary KENPHIA 2018 report. Published online 2020

[9] UNICEF. The state of food security and nutrition in the world 2021. Published online 2021

[10] World Health Organization. WHO Global Report on Trends in Prevalence of Tobacco Smoking 2000- 2025. World Health Organization; 2018

[11] Sun H, Saeedi P, Karuranga S, et al. IDF Diabetes Atlas: Global, regional and country-level diabetes prevalence estimates for 2021 and projections for 2045. Diabetes Res Clin Pract. 2022; 183:109119

has also produced teeming informal settlements into which the urban advantage would seem to erode. Of the 8.9 million Kenyans in extreme poverty, 7.8 million are in rural areas: more than 6.5 times the numbers in urban areas.[12]

Food insecurity is also a challenge beyond the household level. Despite its agricultural potential, Kenya is not food self-sufficient and is, like most other African countries, suffering consequences related to the ongoing crisis in Ukraine. Since undernourishment is a risk factor for TB both in acquiring the disease and in its treatment's implications for livelihoods, food insecurity remains a major contributor to TB.

2.3.3. Epidemiology of Leprosy in Kenya

Kenya is in the post-elimination phase for Leprosy, having achieved the WHO elimination target of less than 1 case per 10,000 people in 1989. Worryingly, these targets seem at risk, with rising detection and reporting rates in recent years primarily from the five Leprosy-endemic counties in Kenya. Children account for 6.3% of the cases reported in 2020[13]. Endemic counties in Coast, Western and parts of Nyanza account for more than 60% of the total cases notified in the country, although sporadic cases have also been reported in non-endemic counties. Multibacillary Leprosy, the infectious and severe form of the disease, accounts for 90% of the cases reported in Kenya. In 2021, 14.2% of the 109 notified Leprosy patients had disability grade two, suggesting late diagnosis, which can increase risk of transmission and severity of disease. Out of the 161 cases reported in 2019, 83% were released from treatment, 6% were declared to be lost to follow-up, 2% died, 6% transferred out, and 2% were yet to complete treatment.

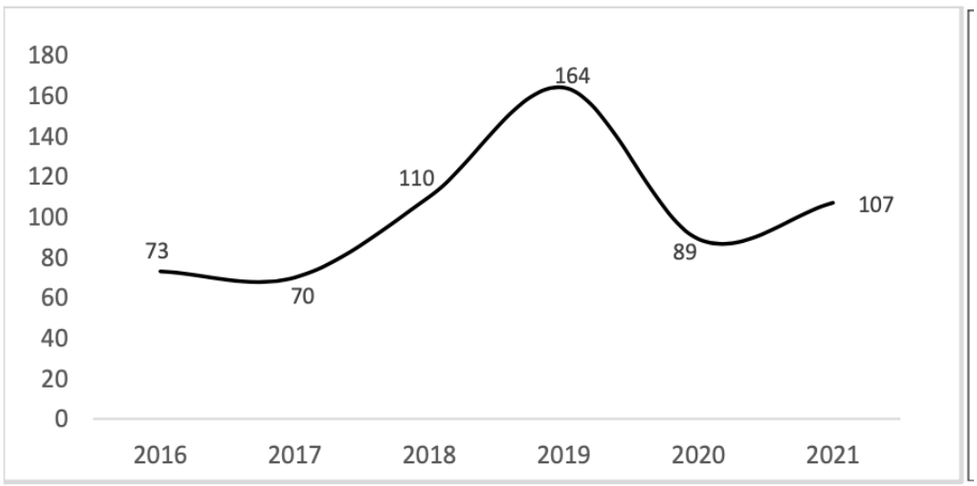

Figure 2.7: Trend of Leprosy cases notified in Kenya between 2016 and 2021

[12] Lars Kamer, Extreme poverty rate in Kenya 2016-2025, 2022

[13] World Health Organization's (WHO) Global Leprosy update, 2021

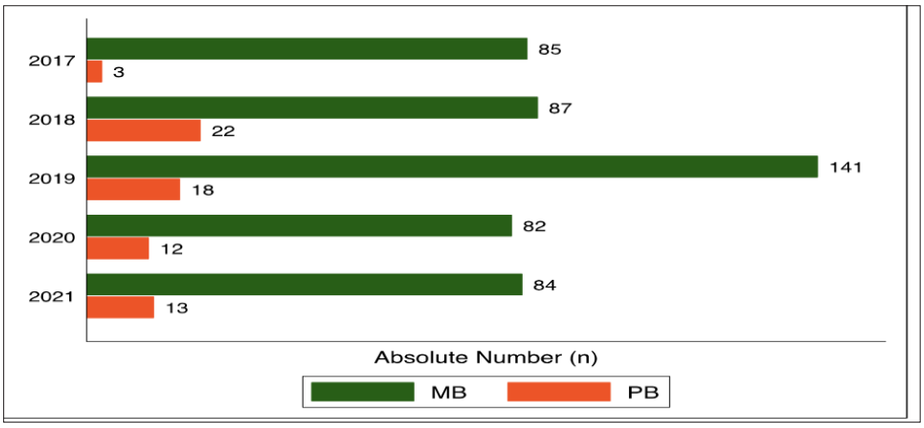

Figure 2. 8: Trends in the proportional of MB and PB Leprosy between 2017 and 2021

2.3.4 Epidemiology of Lung Health in Kenya

In Kenya, asthma, chronic obstructive pulmonary disease (COPD) and lung cancer are among lung health conditions of public health concern. Although there is limited data on the burden of lung health in Kenya in general, the country relies on global estimates as well as a limited body of local evidence. Reported prevalence of asthma ranged from 3% to 28.6%, with this variation reflecting the highest estimate found amongst the subset of patients with allergic conditions in clinical settings.[14]

Similarly, existing data found cancer to be the third leading cause of death after infectious and cardiovascular diseases. There were 42.116 estimated cases of cancer in Kenya in 2020, resulting in an estimated 27,092 deaths. Lung cancer is ranked 14th among the cancers with an incidence of 794 new cases, and 12th in mortality with 729 deaths, translating to a high fatality rate of 92%.[15]

2.4. Summary of the Review of Implementation of the Previous TB, Lung Health and Leprosy Strategic Plan

The previous NSP represented an evolution in the Government of Kenya (GOK)'s response to these diseases, becoming more patient-centered in its approach to planning and evidence-based prioritization of resource allocation to close the gaps along the patient pathway to quality of care. Activities included in the NSP addressed systemic and root causes of the gaps along the patient pathway, with complementary roles of county and national governments, departments across the MoH, partners, and other sectors. The NSP 2019-2023 presented the full aspiration of the country, including outcome and impact targets that aligned with international goals, and the full portfolio of activities needed to reach these goals.

An end of term review (ETR) of the NSP was conducted between 24 March and 08 April 2022, led by the WHO in conjunction with MOH- DNTLD-P, county governments and other key partners and stakeholders. The ETR was preceded by an epidemiological review, which

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[14] Nturibi E, Mecha J, Kamau E. Epidemiology and Risk Factors for Asthma in Kenya. J Kenya Assoc Physicians Sept. 2018;1(2)

[15] Sung H, Ferlay J, Siegel RL, et al. Global cancer statistics 2020: GLOBOCAN estimates of incidence and mortality worldwide for 36 cancers in 185 countries. CA Cancer J Clin. 2021;71(3):209-249

assessed the country's surveillance system against WHO standards and benchmarks for TB surveillance systems. It evaluated the extent to which the TB surveillance system in Kenya measures the TB disease burden and mortality and looked at trends to ascertain the TB epidemiological profile and best practice interventions to address TB disease. The country's surveillance system aligns with the recommended WHO case definitions and uses two electronic systems: TIBU (case-based) and Kenya Health Information System 2 (KHIS-2). Vital registration coverage for community and health facility mortality data was at 40%, with plans to adopt the ICD-11 (International Classification of Diseases, 11th Revision) that provides a standardized framework and classification system for recording and reporting causes of death. Kenya fully met six benchmarks, four were partially met and three were not met.

There has however been a progressive decline in TB incidence since 2006, when the highest rate was documented at 243,000 cases to 133,000 in 2021[16]. According to the WHO Global TB Report 2021, Kenya is among the seven high TB burden countries that reached the End TB Strategy milestone for 2020 with a 32% reduction in TB incidence compared to 2015, against a target of 20%. Kenya also achieved a 44% reduction in the number of TB deaths compared to 2015, against a target of 35% [17]

Kenya is no longer among the 30 high burden countries for DR-TB. Despite these significant achievements, the country's treatment coverage gap remains wide at nearly 50% of unreached people with the estimated TB treatment coverage declining from a peak of 63% in 2018 to 52% in 2020 according to the WHO Global Report 2021.

Only 51% of people estimated to have TB-HIV co-infection were notified in 2020, pointing to the need to improve case detection. Coverage of HIV testing for notified TB cases and initiation of antiretroviral therapy (ART) among HIV-positive TB patients was high, at 99% and 97%, respectively, in 2021. High death rates during TB treatment were reported among people living with HIV (PLWHIV), averaging 11% nationally, compared to 4% among people without HIV.

The review determined that frequent leadership changes and rapid staff turnover during the NSP period had a negative impact on the program's ability to steward activities, despite its good collaboration with implementing partners and key MoH departments. Opportunities have been missed for systematic engagement with departments including the National Public Health Laboratories (NPHL), which is home to the National TB Reference Laboratory (NTRL). To fully implement its multi-sectoral approach to TB prevention and control, the program must do more to cultivate relationships outside of the health sector, broadening the stakeholder pool to include actors leading socio-behavioral aspects of the TB response such as nutrition programs.

Private sector engagement and performance against NSP goals was disappointing despite considerable effort to implement the PPM Action Plan 2021-2023. Government funding for TB largely goes to procurement, with minimal allocation for other key programmatic activities. Lung health and Leprosy are particularly affected by the shortage of dedicated resources. There is a perception especially at the county level that the TB program is donor-funded and thus does not require county-level domestic financing. Although the TB program provides a special insurance cover for DR-TB patients, there is a need for stronger advocacy for the inclusion of TB, Leprosy, and lung disease in the UHC and the NHIF. There are also national social protection programs that offer safety nets for vulnerable populations, but there is a need to ensure explicit inclusion of eligible TB patients in these.

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[16] World Health Organization. Global tuberculosis report 2021: supplementary material. Published online 2022.

[17] Ibid WHO TB report

The NSP prioritized approaches to improve TB case finding through facility-based screening, strengthening the laboratory network, public-private collaboration and community-based interventions and outreach. At the time of the ETR, a total 236,329 TB notifications were reported against a target of 597,000 for the strategic plan period. Detection of TB in children under age 15 remains low with a treatment coverage gap of 45% in 2021. Children account for 9.6% of all DS-TB patients notified during the same period and 2-4% of DR-TB cases between 2019 and 2021. The country has two main public TB reference laboratories: NTRL in Nairobi, and KEMRI-Kisian in Western region, with additional regional first- and second-line probe assay (LPA) laboratories in Malindi, Kitale and Machakos.

The diagnostic network consists of 226 GeneXpert machines and 3,159 smear microscopy sites. There are 285 documented private laboratories in Kenya including 37 that have GeneXpert machines, five LPA and two culture and DST services. This network serves approximately 10,000 public and private health facilities. In addition, the country introduced 38 Truenat molecular assays, 2 interferon release gamma assays (IGRA) and urine lateral-flow lipoarabinomannan (LF-LAM).

The NSP ETR came at a time of prolonged disruption of testing services due to frequent, erratic supply of GeneXpert cartridges, which meant that microscopy was often substituted. While the correct high-risk groups were being prioritized for culture and DST, second-line DST coverage among RR/MDR TB patients was low, at 47%. The proportion of people tested for presumptive TB increased from 40% (2019) to 51% (2021) against a target of 80%; those with a GeneXpert test at diagnosis stood at 41% (2021) against a target of 90%. The treatment success rate for new and relapse patients for the 2020 cohort was 86.4% and 76% for people with RR/MDR TB for the 2018 cohort.

The review also noted the early adoption of WHO recommended treatment regimens for TB preventive therapy (TPT) with rifapentine-based regimens, including the expansion of eligible populations beyond under-five contacts and PLHIV. High coverage was noted among PLHIV in care in counties that were well-served with commodities and where staff received appropriate training and sensitization.

Moreover, oral longer-term treatment regimens and newer medicines were successfully introduced. However, the WHO-recommended shorter-all-oral regimens for MDR TB and a four-month regimen for drug susceptible strains remains unavailable. Child-friendly formulations for first- and second-line drugs were both available. Universal nutritional assessment among most TB patients was implemented, with high levels of malnutrition noted in both children and adults with TB and Leprosy. Widespread and long-standing stockouts of nutritional support and therapeutic feeds were reported. There were laudable efforts to integrate TB case finding, diagnosis, treatment, and prevention within prison services, but these had yet to be fully implemented as per the NSP.

Capacity strengthening and targeted interventions to improve the equity, human rights and gender dimensions of the TB response through media and educational campaigns are in place, and Kenya boasts an active national network of civil society including people affected by TB. However, there is a need to cost and fund community rights and gender activities at both national and county levels and include relevant indicators and targets in the M&E framework. The review noted significant efforts to strengthen the community system and community-led interventions towards TB response and control, which yielded a marginal increase in referrals from CHPs to facilities from 10% (2019) to 12% (2021). This minimal increase is possibly due to under-reporting, with limited documentation of community contributions as there was no data on the proportion of people with symptoms of TB from the community

that seek appropriate care from health facilities. Better coordination is needed for resourcing of community TB activities to ensure they are integrated within existing systems and other community health initiatives run by the MoH.

The DNTLD-P has a robust and real-time case-based TB surveillance system at national and sub-national levels that collates information from paper-based patient records and facility patient registers. A newer android-based mobile app called T-BU Lite is being rolled out as a point of care platform in 32 counties for use by frontline HCWs and community health workers. Scale to all counties is forecast during the NSP 2023-2028 period. The review also identified limited capacity among county level operatives in the use of data and evidence for quality decision-making, as envisioned under the NSP. More investment in capacity for analysis and use of operational research is required.

2.5. Programmatic Gap Analysis

The WHO people-centered framework was the basis for our comprehensive approach to identifying gaps in TB programming. An end term evaluation of previous strategic plans that were measured against current day activity reporting was the first in programmatic monitoring and evaluation activities, generating valuable insights into who is delivering what TB services to which populations with what impact. A data synthesis workshop was a multisectoral opportunity to review and synthesize available data, helping to identify where the gaps originated and what systemic and structural challenges were at their core. From the start, these consultations helped to identify then prioritize the most effective best practices, interventions and activities to meet the needs. The following summarizes the key gaps identified.

2.5.1. TB Preventive Therapy and Infection Prevention & Control

Kenya started TPT scaleup in 2016 and had committed to provide TPT to nearly 900,000 individuals by 2023, expanding the risk population eligible for TPT and using a shorter TPT regimen. The target population included PLHIV and children under age five. Most health facilities have an IPC focal person to steward the review and implementation of infection control measures.

Key gaps:

- Low coverage of TPT in 50% of the counties
- No national policy position on preventive therapy for DR-TB
- Lack of isolation wards to admit TB patients who need care in most counties
- Erratic supply of TPT commodities leading to prolonged disruption in TPT scale up and incomplete TPT completion
- Limited access to chest X-ray for screening and tests for TB infection
- Lack of systematic documentation and review of the ADRs linked to TPT
- TPT provision through private providers is limited.

2.5.2. TB Case Finding

The country has prioritized approaches to improve TB case finding through facility-based screening, strengthening the laboratory network, strengthening public-private collaboration and increasing the outreach through community-based interventions. In 2021, at least 48% of estimated new and relapse cases of DS-TB, and 31% of estimated DR-TB cases were missed.

Key gaps:

- Over 48% of incident TB cases in the community are missed
- Sub-optimal implementation of TB ACF in health facilities
- Sub-optimal quality of TB screening with multiple losses in the presumptive cascade
- Sub-optimal screening among high-risk groups of DR-TB
- Sub-optimal follow up of DS-TB and DR-TB contacts identified
- Sub-optimal data linkage between the laboratory LMIS and the TIBU system
- No data on surveillance in high-risk DR-TB groups
- Radiology services are largely available in only high-level facilities
- Inadequate targeted approaches for TB case finding among vulnerable groups
- Lack of information on size estimates of vulnerable groups and geo-spatial distribution of these groups, which makes it difficult to estimate coverage of screening interventions
- Sub-optimal coverage of TB diagnostics including WRDs
- Low coverage of private providers
- Inadequate awareness of TB symptoms and risk perception for TB in the community
- Only 43% of health facilities where people initially seek care are able to diagnose TB.

2.5.3. TB Care and Treatment

TB treatment success rate for new and relapse DS-TB cases stands at 86% while treatment success rate MDR/RR-TB was at 81% in 2022. The programme will sustain and improve on these success rates towards 95% and 85% targets for DS-TB and DR-TB respectively by supporting activities to encourage early detection and early treatment of all forms of TB.

Key gaps:

DS-TB

- Sub-optimal TSR for DS-TB of 86%
- Comorbidities not adequately management
- Unwillingness, lack of motivation, and hesitancy to provide TB services by the private sector
- Care is uniform rather than patient-centered or considerate of individual needs, for treatment protocols that could include personalized DOT or mental health counselling among other holistic approaches to care

- Low technical capacity in the holistic management of patients at lower facility levels, resulting in missed diagnoses due to the failure to recognize co-morbid conditions and factors predisposing to mortality
- Lack of structured system for referral or linkage of patients with other co-morbid conditions for evaluation and specialized care
- Passive implementation of multidisciplinary involvement in the management of TB patients
- Passive case finding approaches are leading to missed cases of TB and delayed diagnosis, with resultant negative impacts for treatment outcomes.

RR/DR-TB

- There is a notably longer than average turnaround time (TAT) of 3 weeks for LPA and up to 3 months for MGIT to get test results
- Long TAT between DR TB diagnosis and treatment initiation of between 2 to 4 weeks
- Second-line DST coverage among DR RR TB patients is very low
- The WHO-recommended shorter duration (9-12 months) all oral treatment for MDR TB has not yet been adapted for Kenya
- Inadequate documentation and reporting ADR in patients' file or TIBU
- Gaps in ECG and visual monitoring were observed with peripheral neuropathy assessed through symptomatic screening
- Inconsistent documentation of monthly follow-up cultures, LPA, and SL-DST in the registers/ patient logbook for DR-TB patients
- There was very little evidence of repeat testing for contacts of DR-TB patients at three months after baseline tests as recommended in national guidelines
- Baseline and follow up ECG testing for DR-TB patients is not routinely conducted in most facilities
- No child-friendly formulations for treatment of DR TB
- Suboptimal QA standards for SLDs.

2.5.4. TB/HIV

As at 2021, data indicated that Kenya has made gains in the TB/HIV response with targets almost attained across all areas, including for TB screening among people living with HIV.

Key gaps:

- Low sensitivity of symptom screening
- Sub-optimal TB screening at community level
- Limited access to CXR for screening
- High case fatality ratios in TB/HIV co-infected patients presented with advanced HIV disease

- Inconsistent supply of key commodities like HIV test kits, CRAG tests, viral load tests, CD4 tests, fluconazole, and nutrition supplements.

2.5.5. TB in children and adolescents

The program has prioritized childhood TB prevention, diagnosis, and treatment to accelerate achievement of the End TB goals. The DNTLD-P has started to leverage existing HIV adolescent programs to seize already existing opportunities to reach this vulnerable population.

Key gaps:

- Low index of suspicion of childhood and adolescent TB among health care workers
- Missing children with TB with a low contribution of children in TB notification: 9.6% for DS-TB in 2021 and 2-4% for DR TB between 2019-2021
- High level rates of malnutrition among children, coupled with erratic supply of nutrition commodities.

2.5.6. Laboratory Diagnostics services

The TB program has scaled up WRD TB diagnostics such as GeneXpert, TrueNat, Line Probe Assay (LPA) and TB LAMP. The program now can perform drug sensitivity tests (DST) for first- and second-line drugs. The technical working group oversees all QMS activities. The national laboratory system and network in Kenya include two government-owned culture laboratories (one research oriented), three regional decentralized 1st and 2nd DST LPA, 238 GeneXpert machines, 38 Truenat machines, 27 TB LAMP machines and 3,159 smear microscopy sites.

Key gaps:

- Commodity stock outs, human capacity challenges, sub-optimal technical support as well as biosafety/infrastructural concern at culture and LPA laboratory services both at the central and regional laboratories
- Sub-optimal engagement and coverage of private and research laboratories in diagnostic network activities
- Only 20 of the 47 counties have a functional sample referral system for TB
- Results and feedback for the EQA activities are not shared systematically with all laboratories assessed
- Current WRDs focus on Rif. DST therefore potential for missing initial INH resistant TB patients
- Sub optimal coverage for universal DST.

2.5.7. Procurement Supply Management and Pharmacovigilance

Seventy percent of the budget for procurement of first line TB medicines (FLDs) is covered by domestic resources. There is a functional commodities and pharmacovigilance management structure, with bi-annual forecasting and quantification to improve commodity security and reduced wastage.

Key gaps:

- Restructuring at KEMSA results in delays in procurement and supply chain due to delayed approvals along the approval chain
- Capacity gaps within the new national PSM team and other stakeholders on TB medicines quantification and early warning system (QuanTB)
- Gaps in forecasting and quantification has resulted in excess stocks for some medicines with the risk of potential expiries, and deficits for other medicines, resulting in increased risk of stockouts
- Inadequate funds to support activities to optimize TB supply chain systems i.e., supportive supervisions or mentoring, conducting supply chain audit, aiding stock movement, distribution/ redistribution, and disposal of expired medicines
- TB LMIS tools not linked to KEMSA Warehouse Management System
- Sub-optimal uptake of ancillary medicines at health facility level
- Sub optimal storage conditions at facility level i.e., no thermometers, no temperature charts, space constraint, ventilation issues
- Lack of SOPs, job aids for commodity management including dosing chart for patient pack constitution and TPT Daily Activity Register in some facilities
- Minimal reporting of ADR to the PPB as TIBU system is not linked to PPB electronic PV system, so adverse events reported in TIBU are not reflected in the country's data captured in the PPB reporting system.

2.5.8. Leprosy

Leprosy, one of the neglected tropical diseases, continues to afflict a small but severely impacted population making them even more vulnerable. The country has developed guidelines for management of Leprosy, based on a strategy of early diagnosis, treatment to prevent disability and preventive therapy using rifampicin. Leprosy control is jointly implemented with TB control by the DNTLD-P at national, county, and sub-county levels.

The vast majority of leprosy patients (95% in Kenya) suffer from multibacillary (MB) Leprosy (NTLDP, 2021). This advanced form of the disease means a localized infection, which spreads in communities as individuals remain undiagnosed and highly contagious for long periods. The country has developed guidelines to manage Leprosy, which includes early diagnosis, treatment, and management of Leprosy patients in the proper facilities at sub-county, county or national level.

Key gaps:

- The proportion of new Leprosy cases with grade 2 disability (G2D) is still high at 14%, indicating delayed detection of new cases
- The country continues to detect new cases among children signifying on-going community transmission
- High proportion of multibacillary Leprosy in endemic counties that has been consistently >95%
- Only 52% of Leprosy cases reported in 2019 were released from treatment, indicating low case-holding
- A high proportion (48%) of cases enrolled on treatment in 2019 had unfavourable treatment outcomes
- Inadequate strategies and structures to support early case finding
- No budget lines at county or national levels.

2.5.9. Lung health

DNTLD-P has a national focal person assigned for lung health and benefits from a strong partnership with the Respiratory Society of Kenya (ReSOK). The integrated guidelines on TB and lung health are closely aligned to the Global Initiative for Asthma (GINA) guidelines.

Key gaps:

- Lack of lung health training curriculum
- Suboptimal knowledge and skills for managing lung health conditions at all levels
- Lung health services are largely not linked to TB clinics
- There are no recording and reporting tools for lung health post TB, thus no data on the status of lung health in the country
- Medications and consumables for lung health are in short supply, especially in the public facilities, and some are not included in the essential drug list
- Poor mapping and linkages/collaboration.

2.5.10. Cross cutting issues

2.5.10.1. Governance, Program management and Accountability

The program enjoys high levels of political commitment and support. The DNTLD-P leadership is well structured, with clear delegation of authority, accountability, and responsibility. At county and sub-county levels, TB coordination is dual TB/HIV, Leprosy, and Lung health. Nationally, coordination is located within the Public Health and Research Directorate of the MoH.

Key gaps:

- Frequent leadership changes affecting the program during the strategic plan implementation period
- Rapid staff turnover resulting in inadequate program stewardship, delays/ stalling in activity implementation and loss of institutional capacity.
- Significant funding gap for implementing the NSP, with reliance on Global Fund and other donor support for staffing for some key program functions, including the laboratory network.
- Suboptimal coordination, collaboration, and joint planning with other relevant MoH programs
- Limited visibility of Leprosy and Lung health due to lack of funding and inadequate institutional capacity
- Inadequate stewardship and suboptimal coordination between the DNTLD-P and the Division of National Public Health
- Laboratories within MOH Department of Laboratory Services have no structured platform for ongoing engagement to optimize the functionality of the national TB diagnostic network

2.5.10.2. TB Financing and Resources

The DNTLD-P has built a robust collaboration with funding and implementing partners, resulting in the programme leveraging and optimizing the resources for TB programming. Together they call for better mobilization of domestic resources to fund the NSP and its role in accelerating the drive to eliminate TB and Leprosy by 2030.

Key gaps:

- The DNTLD-P has a significant funding gap and largely remains donor funded; public funds account for 38% of the current budget
- While a significant number of strategic plan interventions are implemented by FBOs and NGOs, there is insufficient capacity to use government funds to contract non-government TB implementers
- TB, Leprosy, and lung diseases are not included in the UHC benefit package, and there is no clear policy on how TB services should be purchased under national health insurance (e.g., capitation, fee-for-service, etc.) in order to maximize TB outcomes
- At around 20%, national insurance coverage is low, with low coverage (17%) of NHIF benefits.

2.5.10.3. Human Resource in TB, Leprosy and Lung Disease Services/Capacity Building

The DNTLD-P has a fully developed and coordinated structure with robust technical capacity to manage TB programming at all levels. In addition, a pool of community-based volunteers has been the backbone of community-based activities. The program has adopted virtual modes of delivering training and mentorship. Functions transferred to county governments include management of human resources.

Key gaps:

- Limited number of staff to provide TB services in most private facilities
- High staff turnover leading to skill loss in both public and private sector
- Low suspicion index and limited capacity to diagnose TB in both public and private sector
- Knowledge and skills of the TB program managers to manage the program at all levels.

2.5.10.4. Human Rights and Gender (HRG)5873258

DNTLD-P is committed to ensuring gender equity and a rights-based approach to its activities, as per MoH policy. While services are meant to be availed to the public free of charge from diagnosis to treatment of TB and Leprosy, there is limited capacity at both public and faith-based facilities to deliver the appropriate diagnosis, to say nothing of treatment going forward. Community engagement and participation are central to TB services delivery, built on the legacy of established partnerships between the National TB Program, National Human Rights and Gender Technical Working Group, Networks of TB-affected communities, and civil society.

Key gaps:

- There is no TB specific costed operational framework for gender-transformative and human rights activities
- Lack of county level strategic plans that address human rights and gender-transformative issues
- General lack of knowledge on HRG at all levels of implementation
- Minimal indicators, monitoring or remedies of and for TB stigma and discrimination
- Delays in accessing social protection packages (NHIF, monthly allowances) which is only available for DR TB clients excluding DSTB and Post TB clients
- TB services have not factored in People Living with Disability, especially those with hearing impairment
- Lack of a strategy to address post TB/lung complications
- Prison setups do not have isolation facilities or do not meet the minimum required standards as set out in the Isolation policy.
- Most counties do not have facilities to isolate patients who have TB and may need in-patient services.

2.5.10.5. Public-Private Mix

The country through the previous NSP was committed to increase participation of the private sector through strategic interventions that strengthen coordination and stewardship, scale up innovative PPM models of care and strengthen engagement that would have led to increased notification of TB and quality of care. The DNTLD-P has a well-established PPM unit at the central level that is led by a PPM coordinator and supported by a COE who oversees, coordinates, and provides guidance towards implementation of PPM activities in Kenya.

Key gaps:

- Suboptimal engagement of private providers across all PPM models
- PPM activities are majorly partner led and lack a formal mechanism for sustainability, coordination of PPM activities at the county level: no focal persons, no PPM TWG/ Committee, no MOUs between counties and private providers
- Inadequate number of staff to provide TB services in most private facilities, and high staff turnover leading to skill loss
- Low suspicion index and limited capacity to diagnose TB, as well as unwillingness, lack of motivation, and hesitancy to provide TB services
- Lack of diagnostic capacity in most private facilities evidenced by few GeneXpert machines despite the private facilities accounting for about 50% of all health facilities, stock out of GeneXpert Cartridges and user costs for GeneXpert, X-ray services and other tests in the private sector limit access
- Suboptimal recording and reporting and lack of TB screening module in some EMR
- Inadequate linkage of the private sector/facilities with community TB strategies and interventions

2.5.10.6. Multi-sectoral collaboration

The DNTLD-P functions through a robust TB TWG with active involvement of program staff led by the DNTLD-P manager, funding agencies, and implementing partners, civil society organizations and people affected by TB and HIV. This ensures there is adequate in-depth program review and creates a platform for sharing best practices.

Key gaps:

- Limited engagement of corporate or other workplaces that provide health services through wellness clinics
- The MAF guideline is new and there is need to budget for its implementation.

2.5.10.7. Advocacy, Communication and Community Engagement (ACCE)

The national TB program recognizes communities and CSOs as vital to the in-TB response in Kenya. A focal person at the DNTLD-P works with communities and civil society to develop and deliver advocacy and community-based activities. This includes the identification of potential political champions of more robust and responsive TB policy that includes consistent and sustained resources to fund the NSP. Targets are top leadership including the

executive, legislators and county-level leadership. Community system strengthening (CSS) is critical to sustaining community and civil society engagement in advocacy initiatives and community activities, limited not only to advocacy and campaign activities but also active case finding, contact tracing and treatment support. Meaningful and deliberate collaboration with community and civil society actors will contribute to national progress towards TB goals and targets.

Key gaps:

- Insufficient funds allocation for community TB and ACCE activities
- Unstructured coordination of community TB care
- Community engagement is heavily donor and partner driven, compromising sustainability

2.5.10.8. Monitoring, Evaluation and Learning

The DNTLD-P has a functioning M&E Technical Working Group, with a formal M&E plan tracking the achievement of key indicators as established by the NSP. *TIBU*, the DNTLD-P case-based surveillance system is available for use by CTLCs and SCTLCs, drawing from case information in paper-based patient records and *TB 4* registers at facilities during supervision visits. *T-bu Lite* is an android-based app version of TIBU designed for frontline HCW use as a point-of-care case capture platform. Used in 32 counties, there are plans to scale to all 47. *TIBU* is integrated with KHIS2, with quarterly data updates.

Key gaps:

- Limited capacity in analysis, use and communication at county, sub-county, and health facility level
- Unstructured TB target setting
- Outdated contextual estimates for TB, Leprosy, and lung diseases. Infrequent / inadequate implementation of impact surveys and assessments (e.g., Prevalence Survey 2016, DRS 2014, Inventory Study 2015, Catastrophic cost survey 2018)
- Low coverage of TB mortality audits and inconsistent reporting of TB mortality statistics.
- Low coverage of civil registration (40% of the health facilities) resulting in the underestimation of facility deaths.

3

Goals, Objectives, Strategic Interventions, and Major Action

3.1. Goal, Vision, Mission, and Priority Outcomes

GOAL

End TB and Leprosy by 2030.

VISION

A Kenya free of TB and Leprosy, and reduced burden of lung disease.

MISSION

To ensure provision of quality care and prevention services for TB, Leprosy, and lung diseases for all people in Kenya

IMPACT TARGETS (BY 2030)

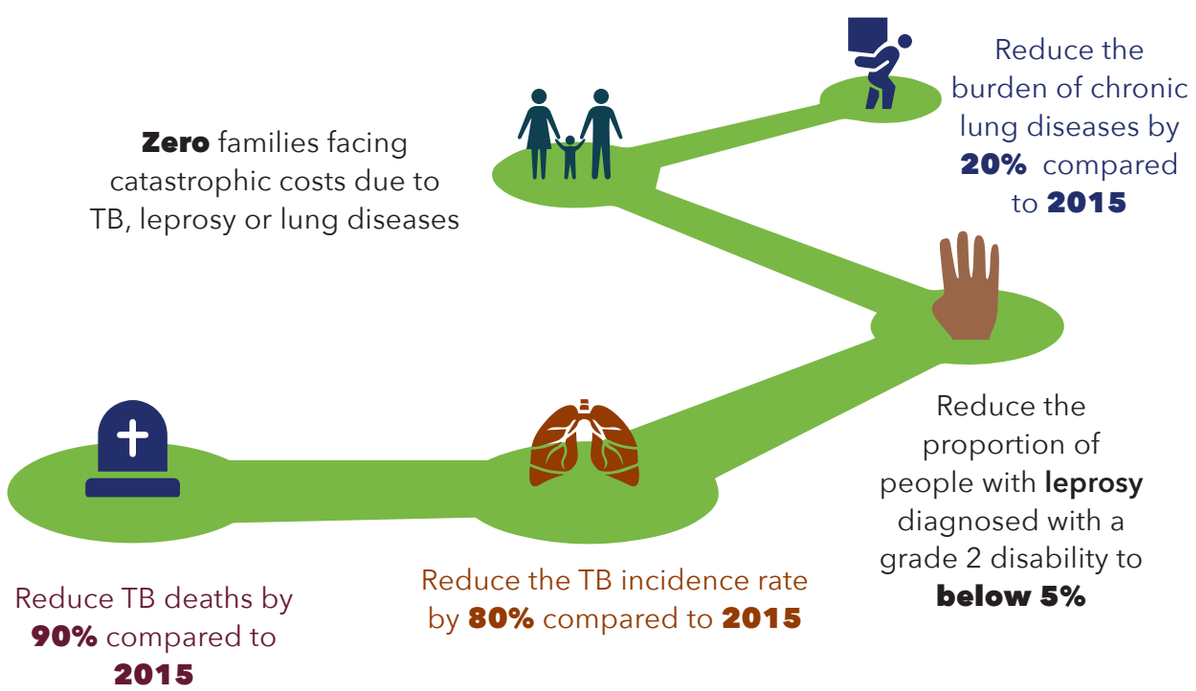
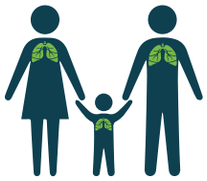


Figure 3.1: Impact Targets by 2030

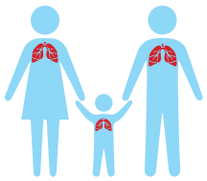
PRIORITY OUTCOME TARGETS (BY 2027/28)



At least
417,918
People with TB diagnosed and treated by **2028**

365,678
Adults with TB diagnosed and treated by **2028**

52,240
Children with TB diagnosed and treated by **2028**



4,391
People with DR-TB diagnosed and treated by **2028**

At least **681,081**
people at risk of TB provided with TB Preventive Therapy by **2028**

Chronic lung disease services offered at the lower-level health facilities by **2028**

1,420
People with Leprosy diagnosed and treated by **2028**

3.2. Guiding Principles

The guiding principles underpinning NSP implementation are:

1. Government leadership, stewardship, and accountability with monitoring and evaluation by all partners
2. Strong coalition with civil society organizations and communities so that they are engaged in the design, delivery, monitoring and evaluation of TB care and support services, human rights violations, and stigma
3. Working in partnership with other Ministries and state departments to address social determinants of health that may contribute to worsening the TB problem. Interior and National Administration, Public Service and Gender Affairs, Foreign and Diaspora Affairs, Trade Investment and Industry, Trade Investment and Industry, Education, Youth Affairs, Sports, and Arts, Mining, Labour ,among others
4. Align the strategy and targets with the National Health Strategic Plan, the Global End TB Strategy, and the United Nations Sustainable Development Goals: SDG3.3 End the epidemics of AIDS, tuberculosis, malaria and neglected tropical diseases and SDG3.8 Achieve universal health coverage, including financial risk protection, access to quality essential health-care services and access to safe, effective, quality, and affordable essential medicines and vaccines for all
5. Develop the strategy, interventions, activities and targets based on the results of the population-based TB prevalence survey. Use estimates from time modeling, findings from independent program review, Epi review, TB diagnostic network assessment and stakeholder consultations

6. Develop interventions and activities based on the principles of primary health care
7. Foster accountability to the government, funding partners, and the communities served
8. Address human rights and gender-related barriers to reach the country's goal of equitable, gender-transformative access to services especially among marginalized and vulnerable groups
9. Use Community Rights and Gender (CRG) assessment and TB stigma assessment results to establish baselines and evidence to support CRG interventions

3.3. Major Focus Areas

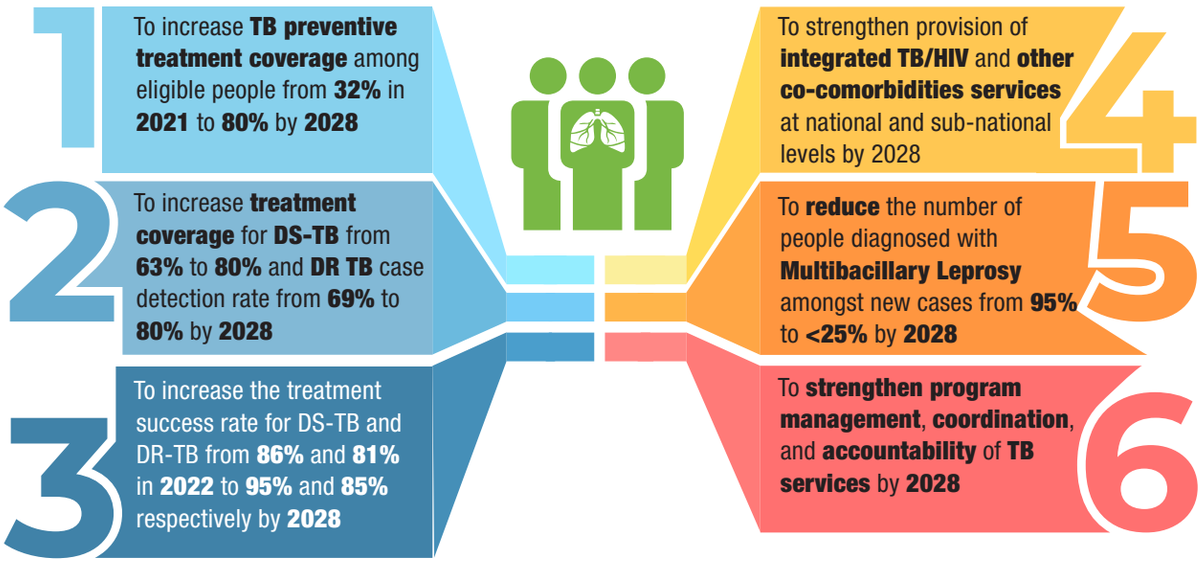
The National Strategic Plan for TB, Leprosy, and Lung Health (2023/24-2027/28) has identified six focus areas to address the TB epidemic in the country:

1. **Optimizing current patient-centric TB interventions:** This involves prioritizing patient-centric interventions including differentiated service delivery across the entire care cascade in line with the End TB Strategy, expanding treatment sites, optimizing current services through continuous quality improvement, and implementing point-of-care TB digital reporting and recording systems to allow tracking of uptake and impact of interventions enabling appropriate action when need be. Additionally, the NSP aims to optimize targeted preventive treatment and increase the use of mWRDs as the first test for TB.
2. **Adoption of new technology and innovations:** The NSP advocates for quick adoption of new technology, including vaccines, and screening tools such as portable/mobile digital X-ray with Computer Aided Detection software AI and TB antigen screening skin tests. The plan also calls for the use of molecular WRDs/NAAT and increasing the availability and accessibility of newer, shorter regimens for TB treatment among all patient groups including children and DR TB patients.
3. **Leveraging UHC and community systems:** The NSP emphasizes the need for integrating TB services into existing community health programs and structures, such as community health worker programs, advocating for the inclusion of TB prevention, screening, diagnosis, and treatment services in the Universal Health Coverage (UHC) benefit package, and embracing primary healthcare networks, to include collaboration with community leaders and organizations to raise awareness about TB and promote community participation in TB control efforts.
4. **Tailoring interventions to subnational epidemics:** The NSP seek to strengthen systems for pandemic preparedness and develop county-specific operational frameworks for TB control, with a focus on strengthening healthcare systems and improving access to TB services and conducting sub-national surveys to estimate the burden of TB and identifying areas with the highest incidence of TB for targeted interventions. The plan also leverages county infrastructure such as county hospitals and health centers to improve the availability and accessibility of TB services, and promotes knowledge management through research and innovation.

5. **Communities, human rights, and gender:** This area of the NSP focuses on empowering communities to participate in TB control efforts through community-led monitoring, advocacy, and research; addressing social determinants of TB, such as poverty, by implementing programs to improve living conditions and access to basic services in high-risk communities; and implementing gender-sensitive programming for TB, such as ensuring that women and men have access to gender-responsive TB services and are not stigmatized for seeking care.
6. **Multisectoral engagement for effective TB control:** The NSP advocates for collaboration with non-health sectors, such as education and housing, to address social determinants of TB and improve health outcomes for communities at risk; engagement with the private sector, UN agencies (e.g., WFP, UNHCR, ILO, IOM), civil society organizations, media, and community leaders for awareness and advocacy; and advocacy for increased funding for TB control from both domestic and international sources. In addition, engagement will also include strengthening collaboration with programs across the health sector (nutritional platforms, HIV, NCD, etc.).

3.4. Objectives, strategic interventions, major actions and expected outcomes

The NSP 2023/2024 - 2027/2028 emphasizes evidence-based ambitious targets. Each intervention conforms to a thematic area, configured as one of six strategic objectives:



SO1: To increase TB preventive treatment coverage among eligible people from 32% in 2021 to 80% by 2028

This NSP will work to scale TB prevention efforts and promote the use of shorter TPT regimens and screening of latent TB infection using both existing and new TB antigen-based skin tests. Promotion activities will be implemented as routine activities across the TB care cascade. The plan aims to provide TPT to all eligible PLHIV (adults and children) through strengthened collaboration at all levels with the National HIV Program and HIV services for integrated people-centered TB/HIV care, household contacts (all ages) of people with bacteriologically confirmed pulmonary TB and identified high risk groups. Supportive activities to improve access to screening and testing for TB infection and adherence to TPT will include TPT demand creation activities including community engagement, convening of psychosocial support groups to support TPT uptake, provision of digital adherence technologies for clients initiated on TPT, integration of TPT into HIV-differentiated service delivery (DSD) models (e.g., multi month dispensing of ARVs) and strengthened recording and reporting for management of TB infection, starting from contact identification, screening, initiation and completion of TPT. The NSP plans to ensure provision of all TPT commodities to avoid stock outs that may affect the implementation of proposed activities.

The NSP emphasizes the need for infection control measures in health care settings to prevent the spread of TB. These measures include ensuring proper ventilation, the use of personal protective equipment by health care workers, and promoting TB infection control measures in congregate settings, such as prisons and schools, where the risk of TB transmission is high. TPT will as far as possible be provided to those eligible.

Greater detail is articulated below.

Specific Objectives	Expected Outcomes	Strategic Interventions	Major Actions
1.1. To increase uptake of TPT for eligible HIV negative population and people at risk of TB disease from 14% in 2022 to 85% in 2028.	i. Increased number of people in contact with TB patients put on TB preventive therapy increased from 19,681 in 2022 to 152,559 by 2028 ii. Increased proportion of contacts aged <5 years put on TPT from 45% - 70%	1.1.1. Improve uptake of TPT for eligible HIV negative population and people at risk of TB disease.	1.1.1.1. Increase provision of TPT to eligible HIV negative individuals and those at risk of TB disease (Including contacts of DRTB patients) 1.1.1.2. Increase demand for TPT through inclusive engagements including the community 1.1.1.3. Improve access to latent TB testing 1.1.1.4. Improve commodity security for TPT among the eligible HIV negative population and those at risk of TB disease 1.1.1.5. Strengthen monitoring of TPT cascade in the expanded TPT eligible population. 1.1.1.6 Introduce community-led monitoring to identify those eligible for TPT and ensure access for eligible groups
1.2. To increase coverage of TPT among PLHIV from 50% in 2022 to 95% in 2028.		1.2.1. Reduce the burden of TB in PLHIV.	1.2.1.1. Support early TB case detection (use of digital CXR for screening and mWRD testing), treatment, and prevention of TB in PLHIV 1.2.1.2. Ensure 100% initiation of TPT for all the eligible PLHIV 1.2.1.3. Increase TPT completion rates among PLHIVs 1.2.1.4. Engage communities in raising awareness about TB among PLHIV, the TB HIV care package and the rights of people with TB and HIV 1.2.1.5. (4.9.4). Engage HIV CSOs to develop TPT messages
1.3. Enhance implementation of TB infection control measures at various levels of the health care system		1.3.1. Enhance implementation of TB infection control measures at various levels of the healthcare system	1.3.1.1. Improve health care workers' knowledge and practices in IPC 1.3.1.2. Enhance facility-level infection control by improved administrative and environmental interventions and ensure availability and rational use of PPE. 1.3.1.3. Support institutionalization of TB infection control through strengthening the functionality of the TB infection control committee 1.3.1.4. Ensuring availability of additional TB isolation facilities 1.3.1.5. (4.10.5) Strengthen monitoring of TB infection control indicators at various levels.

SO2: To increase DS-TB treatment coverage from 63% to 80% and DR TB case detection rate from 52% to 80% by 2028

Key objectives will include increasing case detection for DS-TB and DR-TB, increasing the proportion of childhood TB among notified TB cases, scaling access to quality TB diagnostic services, ensuring uninterrupted supply of TB and Leprosy commodities, improving access to chronic lung disease services for TB patients, strengthening the capacity of NTP and its stakeholders to integrate a human rights-based approach to TB, Leprosy, and lung diseases services, and increasing political, public engagement and raise awareness that will contribute to TB prevention and control.

Key interventions to achieve these objectives include expanding case finding to all clinical settings to improve case detection, strengthening TB services for high-risk groups, institutionalizing contact management for all bacteriologically confirmed TB patients and children with TB, and involving care providers operating outside the NTLD-P network in TB case detection and management.

The DNTLD-P will scale up and strengthen cross-border and migrant TB initiatives, improve active contact tracing in households of DR-TB patients, strengthen advocacy on TB to eradicate stigma and myths, scale clinical capacity to detect DR-TB, expand coverage for TB diagnostic services, strengthen and expand the sample referral network in the country, and establish a National Committee of Experts (CoE) to support the TB diagnostic network.

The DNTLD-P will also strengthen forecasting and quantification, strengthen pharmacovigilance systems, operationalize the lung unit within NTLD-P, strengthen leadership, governance, and coordination to improve human rights conditions for TB patients, and promote monitoring, accountability, and responsiveness for enhanced TB human rights protection, and community systems strengthening.

Greater detail is articulated below.

Specific Objectives	Expected Strategic Outcomes	Strategic Interventions	Major Actions
2.1. To increase DS-TB case detection from 63% in 2022 to 80% by 2028	i. Increased number of TB treatment sites from 4500 to 6500 ii. Increased contribution of the private sector to TB patient notification from 19% to 25% by 2028 iii. Increased community contribution in TB case Notification from the current < 12% in 2022 to 30 % by 2028 iv. TB contact tracing coverage increased from 16% in 2021 to 85% by 2028. v. Increased proportion of TB patients notified through contact tracing from 2% in 2022 to 10% by 2028.	2.1.1. Improve case detection by expanding case finding to all clinical settings	2.1.1.1. Review and disseminate Policy guidelines, SOPs, Job aids, tools 2.1.1.2. Build capacity and improve skills for TB screening and diagnosis among health workers 2.1.1.3. Implement and scale up active case finding in all service delivery points including activation of sites to perform Program Quality and Efficiency (PQE) ACF approaches. 2.1.1.4. Conduct bi-directional screening for TB and other co-morbidities (intervention 4.3.5) 2.1.1.5. Ensure all diagnosed TB patients are put on treatment, notified, and reported 2.1.1.6. Ensure all health facilities record and report ACF cascade data
		2.1.2. Strengthen TB services for high-risk groups	2.1.2.1. Differentiated awareness creation targeting high risk groups 2.1.2.2. TB prevention among high-risk groups 2.1.2.3. Differentiated screening and testing approaches targeting high risk groups in the community. Adopt the usage of non-sputum samples for testing TB in the community (swab testing, urine) using mWRDs 2.1.2.4. Improve active case finding and TB services among high-risk groups in clinical settings. 2.1.2.5. Differentiated care provision among high-risk groups 2.1.2.6. Conduct contact investigation and management to all contacts of TB patients from high-risk groups, including social contacts 2.1.2.7. Follow up and management of post-TB complication (3.1.4.7)

Specific Objectives	Expected Strategic Outcomes	Strategic Interventions	Major Actions
		2.1.3. Institutionalize contact management for all bacteriologically confirmed TB patients and children with TB	2.1.3.1. Review and disseminate Policy guidelines, SOPs, Job aids, tools on contact management 2.1.3.2. Engage senior management at Ministry of Health on contact management so that they advocate for it and facilitate its implementation 2.1.3.3. Facilitate contacts of bacteriologically confirmed TB patients to visit health facilities for further management 2.1.3.4. Facilitate community-based contact management
		2.1.4. Involve all care providers (All PPM models) operating outside the NTLD-P network in TB case detection and management	2.1.4.1. Strengthen coordination of PPM at national and County level including PPM working groups for PPM oversight. 2.1.4.2. Scale-up the number and diversity (All PPM Models - Private sector, Workplace, Diagnostic, ISP and Chemist/Pharmacy) offering TB screening services, referral, diagnosis and treatment 2.1.4.3. Optimize provision of TB services in the already engaged private facilities by supporting the providers and demand creation 2.1.4.4. Strengthen referral and linkage systems for patients and samples between public and private. 2.1.4.5. Strengthen Monitoring and Evaluation systems to generate evidence of PPM-TB performance. 2.1.4.6. Incentivization of the Private Providers to offer TB services
		2.1.5. Engage other government ministries and departments in TB prevention, care, and support.	2.1.5.1. Implement the Legal framework for engagement of MOH and other departments and ministries to strengthen TB multisectoral TB services. 2.1.5.2. Implement work wellness policy that includes TB and addresses stigma

Specific Objectives	Expected Strategic Outcomes	Strategic Interventions	Major Actions
		2.1.6. Scale up and strengthen cross border and migrant (mobile populations, refugees, IDPs) TB initiatives (CBMI).	2.1.6.1. Design and implementation of policy, guidelines on migrant health and TB 2.1.6.2. Development of cross-border mechanisms (both national borders and county borders) 2.1.6.3. Strengthening partnership between border counties and health facilities within the country 2.1.6.4. Strengthening partnership between border counties and health facilities with neighboring countries
2.2. To increase DR-TB case detection from 52% in 2022 to 80% by 2028	i. Increased proportion of DR TB patients with fluoroquinolone DST (second line DST) from 21% to 100% by 2028. ii. Increase proportion of DR-TB patients who are failing treatment tested by Whole Gene Sequencing from 0% to 50% by 2028. iii. DR-TB patients whose contacts are screened for active TB increased from 0% to 100% by 2028.	2.2.1. Scale up clinical capacity to detect DR-TB.	2.2.1.1. Review and update PMDT guidelines 2.2.1.2. Capacity building of health care workers on the diagnosis and management of DR TB 2.2.1.3. Prioritize DR TB surveillance among all high-risk DR TB groups beyond previously treated patients 2.2.1.4. Increase laboratory diagnostic capacity 2.2.1.5. Increase the detection of Paediatric DR TB 2.2.1.6. Mentorship and support supervision of HCWs managing DR TB patients
		2.2.2. Improve active contact tracing in households of DR-TB patients (Contact management)	2.2.2.1 Strengthen baseline screening and follow up of DR-TB contacts 2.2.2.2 Institutionalize the use of CXR for screening among DR-TB contacts
		2.2.3. Strengthen advocacy on TB to eradicate stigma and myths	2.2.3.1. Create awareness about availability of screening services among the high-risk population and the community 2.2.3.2. Conduct advocacy: Involve churches, opinion leaders, community meetings, telecom companies (doing things differently). 2.2.3.3. Development of patient and community level literacy packages.

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		2.2.4. Placement of DR-TB surveillance platforms at primary level facilities	2.2.4.1. Universal access to DST services for all both referral services and where applicable on-site testing 2.2.4.2. Adoption of mWRDs 2.2.4.3. Review placement of TB diagnostic equipment (currently placement is based on utilization and high-volume facilities) 2.2.4.4. Scale up and strengthen integrated sample networking / referral system. 2.2.4.5. Screening of DR-TB among high-risk population 2.2.4.6. Operationalize ongoing DR TB sentinel surveillance
2.3. To increase proportion of childhood TB among the notified TB cases from 11.4% in 2021 to 15% by 2028	i. Increased proportion of childhood TB (<15years) out of the total notifications from 11.4% in 2022 to 15% by 2028. ii. Increased Treatment Success Rate of notified Childhood TB patients from 90% in 2021 to >95% by 2028.	2.3.1. Improve TB case detection among children and adolescents by increasing the proportion of children with TB who are detected to 70%	2.3.1.1. Roll out simplified diagnostic algorithms (PTB and EPTB) adopted from the WHO operational handbook for management of tuberculosis in children and adolescents 2022 to enhance health care workers capacity to make early diagnosis of TB in children. 2.3.1.2. Build capacity of health care workers on the new simplified diagnostic algorithms through TOT trainings and sensitizations 2.3.1.3. Evaluate the impact of the use of the new simplified diagnostic algorithms in 2025 and revise as necessary
		2.3.2. Improve access to diagnostic tools for children, and scale up noninvasive specimen collection methods for children	2.3.2.1. Advocate for access to CXR and free CXR for all children <15 years for diagnosis, and for all child TB contacts 2.3.2.2. Finalize the stool policy and TB LAM policy guidelines 2.3.2.3. Roll out and mentor on the use of stool samples for Xpert ultra testing for children 5 years and below- 2.3.2.4. Mentor on use of mWRDs (Xpert or TrueNat or other newer mWRDs) as the first test for samples collected from children

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		2.3.3. Build capacity of healthcare workers including pediatricians and CHW to diagnose and manage childhood tuberculosis	2.3.3.1. Develop and disseminate a childhood TB handbook (DS and DR TB) 2.3.3.2. Update the childhood TB modules on the e-learning platform (Virtual academy), use of ECHO and other emerging online learning platforms for capacity building 2.3.3.3. Comprehensive training of health care workers on childhood and adolescent TB (Prevention, diagnosis, treatment, contact management and TPT) 2.3.3.4. Conduct skills building workshops for healthcare workers for childhood TB diagnosis at level 3,4 and 5 health facilities
		2.3.4. Involvement of county pediatricians and Kenya Pediatric association to drive childhood TB program, and support capacity building to boost confidence of HCWs, including peer to peer mentorship	2.3.4.1. Engage Kenya Pediatric association to conduct webinars for their members on TB 2.3.4.2. Organize TB symposiums during the annual Kenya Pediatric Association conferences to continuously engage pediatricians on matters childhood and adolescent TB 2.3.4.3. Regionalized training and sensitization for county pediatricians and RCO pediatric officers 2.3.4.4. Facilitate County pediatricians to offer support to high volume hospitals and health centers to review children and offer mentorship. This will include establishment of a platform for remote mentorship 2.3.4.5. Engage and facilitate pediatricians to join the national team during technical assistance missions and supportive supervision to counties biannually

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2.4. Scale up access to quality TB diagnostic services, including the adoption of new technologies by 2028.	i. Increased proportion of sub-county Hospitals with mWRDs from 66% to 100% by 2028 ii. Increased number of sites providing the Molecular 1st and 2nd line DST from 5 (10%) sites to the 47 County Referral hospitals by 2028 iii. Increased proportion of counties with a sample referral network from 32% in 2022 to 100% in 2028 iv. Scaled-up community outreach activities incorporating digital CXR with CAD in all counties from 15% in 2022 to 60% in 2028 v. Specific skin tests as an alternative for TB infection testing introduced within communities by 2025.	2.4.1. Expand coverage for TB diagnostic services	2.4.1.1. Redesign and strengthen strategy for equitable distribution of equipment for diagnostics 2.4.1.2. Develop Laboratory Quality system in line with National standards and quality 2.4.1.3. Multiplex 2.4.1.4. Procure and increase the number of mWRDs including the 10 color Xpert machines to be placed in the lower facilities to expand molecular TB testing (1st and 2nd line DST) 2.4.1.5. Expand testing for TB among high-risk populations using non-sputum samples 2.4.1.6. Assess nationwide current diagnostic status 2.4.1.7. Strengthen and expand the integrated sample referral network in the country, including development of TB diagnostic network TORs for each level from national to community level. NTRL will be actively involved in the planning of the network activities
		2.4.2. Strengthen culture and drug susceptibility testing for both phenotypic and genotypic molecular, (For First line, second line and potential XDR diagnosis).	2.4.2.1. Increase access to Culture, 1st and 2nd line DST for all previously treated including relapses and for RR patients 2.4.2.2. Scale up the use of low and moderate complexity WRDs for diagnosis and detection of resistance to RIF, INH and FQ 2.4.2.3. Enhance timely provision of all culture and DST supplies, commodities 2.4.2.4. Support remote logging in the facilities with TB diagnostic capacity of either Culture or molecular testing across the country 2.4.2.5. Improve surveillance and diagnostic capacity for drug resistance by establishing the country's capacity to carry out on whole genome sequencing for M. tuberculosis complex and requisite technical capacity 2.4.2.6. BSL III Quarterly service and Annual certification of the cooling system and the HVAC

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		2.4.3. Strengthen the quality of Laboratory services	2.4.3.1 Maintain the existing quality standards at the National level 2.4.3.2 Implementation of National quality management framework for TB laboratories 2.4.3.3 Increase the PT coverage in mWRDs facilities 2.4.3.4 Increase implementation of Laboratory continuous quality improvement initiatives (LCQI) among mWRDs facilities 2.4.3.5 Capacity building Laboratory staff with technical skills and adequate knowledge. 2.4.3.6 National Laboratory review meetings
		2.4.4. Enhance management of laboratory supplies and equipment	2.4.4.1 Sustain and procure appropriate SLA for TB diagnostic equipment 2.4.4.2 Ensure adequate equipment functionality 2.4.4.3 Strengthen laboratory logistics and supply management. 2.4.4.4 Capacity build health care workers on forecasting and quantification
		2.4.5. Strengthen biosafety and infection Prevention in TB laboratories	2.4.5.1. Provide PPEs at the laboratory i.e., for National level support for reference laboratories, as counties get support from their respective local government. 2.4.5.2. Support proper waste segregation and incineration in all sites through assessment, training and provision of equipment
		2.4.6. Improve Human Resource capacity for Laboratory	2.4.6.1. Secure domestic funding to support recruitment of staff at TB laboratories, thus Increasing staffing at all health facility level laboratories 2.4.6.2. Build the capacity of laboratory staff in TB testing (Refresher training on existing tests and training on new TB diagnostic technologies)

Specific Objectives	Expected Strategic Outcomes	Strategic Interventions	Major Actions
		2.4.7. Integrate laboratory and patient management systems to improve testing and timely results for TB investigations and treatment outcomes	2.4.7.1. Strengthen linkage to care for people diagnosed with TB using mHealth technologies e.g. Use of LIMs at facilities. 2.4.7.2. Timely monitoring of treatment response at defined time points for DS-TB and DR-TB. (Availability of microscopy and culture) 2.4.7.3. Adopt use of next generation sequencing for all TB bacteriologically confirmed patients
		2.4.8. Establish a National Committee of Experts (CoE) to support the TB diagnostic network	2.4.8.1. Restructure the laboratory network to a patient-centered, coordinated diagnostic network with participation and representation from networks of people affected by TB 2.4.8.2. Build capacity and mechanisms for responsive technical assistance.
2.5. To ensure uninterrupted supply of TB and Leprosy commodities by 2028	i. 0 % Stock-outs in the National central warehouse and Country stores throughout the strategic plan period. ii. 0% expiries in the national central warehouse and Country stores throughout the strategic plan period. iii. 100% program commodities within the permissible national and county strategic levels of Min & Max. iv. 100% updated list of health products based on programmatic demands throughout the strategic plan period	2.5.1. Strengthen forecasting and quantification	2.5.1.1. Maintain commodities within min-max in the central warehouse and in the facilities in the TB control zones 2.5.1.2. Use real-time commodities consumption data to inform real-time supply chain needs of patients as well as conduct drug utilization reviews 2.5.1.3. Develop F & Q tool for Lab and Nutritional Commodities. 2.5.1.4. Train pharmacists on commodity management best practices. 2.5.1.5. Train pharmacists in the county and sub-county facilities on the use of DADR and FCDRR. 2.5.1.6. Train pharmacists on the rational use of the patient pack in the TB control zones. 2.5.1.7. Leverage existing systems and integration opportunities, including pharmacy modules with Electronic Dispensing tools.

Specific Objectives	Expected Strategic Outcomes	Strategic Interventions	Major Actions
	v. 100% reporting rate of ADRs and improved surveillance by 2028 vi. Increase in ADRs reporting to PPB and TIBU platform to an extent of 100% of the occurring events by 2028		
		2.5.2 Strengthen Pharmacovigilance systems in the program	2.5.2.1 Enhance reporting of ADRs and poor quality of drugs to PPB and TIBU 2.5.2.2 Expedite linkages of PPB system PVErs to DNTLDP system - TIBU for interoperability and visibility 2.5.2.3 Finalize the strategic operation plan of the aDSM system in the program 2.5.2.4 Establish National Rational Antibiotics stewardship and ethics review subcommittee. 2.5.2.5 Train rational TB drugs and Nutritional commodities use in the sub-counties through the sub counties' antibiotic stewardship committees 2.5.2.6 Establish infrastructure and technologies for ADSM at national and TB care and treatment centers of excellence. 2.5.2.7 Reduce medicines-induced morbidity and mortality and improve the rational use of medicines 2.5.2.8 Routine monitoring and evaluation of aDSM 2.5.2.9 Sett up ethics review on antibiotics stewardship for the program 2.5.2.10 Train sub- county committees on antibiotics stewardship and rational use of TB meds. 2.5.2.11 Initiate pharmacovigilance reporting in private pharmacies to a national target of 100% PV reporting and referral to the mainstream public health care system.

Specific Objectives	Expected Strategic Outcomes	Strategic Interventions	Major Actions
		2.5.3 Strengthen good distribution & order management practice	2.5.3.1 Initiate and advise on management actions as matters to stabilizing the commodities security and safety in the program. 2.5.3.2 Improve and adhere to supply chain data, product, and technologies according to required quality and standards. 2.5.3.3 Generate routine policy advisory to the Ministry in respect to program supply chain system strengthening for our commodities. 2.5.3.4 Train county commodities security committees.
		2.5.4 Strengthen good distribution & order management practice	2.5.4.1 Monitor and document good distribution practices on a quarterly basis for dissemination and adoption in other counties. 2.5.4.2 Maintain high data quality standards for the resupply orders. 2.5.4.3 Increase timelines of the resupply orders to patient needs. (adapting to patient needs to support treatment adherence) 2.5.4.4 Reduce order turnaround time for both monthly supply cycle and emergency supply cycles. 2.5.1.5 Rationalize the supply of TB medicines and reduce stockouts and expiries 2.5.1.6 Maintain 100% order fill rate for TB commodities.

Specific Objectives	Expected Strategic Outcomes	Strategic Interventions	Major Actions
2.6 Improve access to chronic lung disease services for TB patients	i. Established fully funded, operational lung health unit within the NTLD program by 2028 ii. Chronic lung disease services offered at the lower-level health facilities by 2028 iii. Increase in the number of lung health conditions identified and diagnosed in the health facilities by 2028 iv. Routine surveillance system for Chronic lung disease in place by 2028 v. Availability of data on chronic lung disease including post TB lung disease at National and county level by 2028	2.6.1 Operationalize Lung Health unit within NTLD-P	2.6.1.1 Set up a unit within the NTLD program consisting of a unit head and other technical officers (lung health) 2.6.1.2 Roll out coordination structures to the sub county level 2.6.1.3 Strengthen coordinating mechanisms for lung health by revamping the national and county technical working groups (TWGs) and ensure regular quarterly meetings. 2.6.1.4 Mobilize resources to support lung health interventions, and support advocacy for inclusion of lung health in the National and County strategies and budgets 2.6.1.5 Support effort towards Partner mapping and resource mobilization for lung health, from organizations and institutions with common interests for leveraging 2.6.1.6 Lobby for NHIF to include a package for diagnosis and management of chronic lung disease patients with TB 2.6.1.7 Develop a policy and review the guidelines to make a popular version on chronic lung diseases
		2.6.2 Identify people with presumptive chronic lung diseases and diagnosis for chronic lung disease	2.6.2.1 Provide Chronic Lung Disease services at Level 3 Health Facilities and above 2.6.2.2 Improve the capacity of Level 3 HFs and above to provide Chronic Lung Disease services 2.6.2.3 Improve Lung disease diagnostic capacity for chronic lung diseases 2.6.2.4 Develop lung health scale up and decentralization plans to the peripheral level 2.6.2.5 Quality management for chronic lung disease

Specific Objectives	Expected Strategic Outcomes	Strategic Interventions	Major Actions
		2.6.3 Establish the burden of chronic lung disease including post TB lung diseases, COPD, asthma, post TB lung disease	2.6.3.1 Conduct baseline survey to establish burden of chronic lung diseases in Kenya 2.6.3.2 Consolidate research findings on burden of chronic lung and post TB lung disease in Kenya during the TWG/research fora 2.6.3.3 Incorporate chronic lung disease data into TIBU and KHIS and other surveillance systems of the ministry of health 2.6.3.4 Develop and print recording and reporting tools and integrated reporting system 2.6.3.5 Define monitoring and evaluation plans for lung health through establishment of reporting systems for chronic lung diseases including post TB lung diseases.
		2.6.4 Create awareness on chronic lung diseases at different layers of the community	2.6.4.1 Develop IEC materials on chronic lung diseases- posters, pamphlets, 2.6.4.2 Engage policymakers 2.6.4.3 Conduct mass media campaigns 2.6.4.4 Referral linkage between community and health facilities. 2.6.4.5 Identify and strengthen lung health champions 2.6.4.6 Integrate lung health in all advocacy platforms including the ACCE and among the TB champions Terms of Reference
2.7 Strengthen the capacity of NTP and its stakeholders to integrate a human rights-based approach to TB, Leprosy, and lung diseases services by 2028	i. Increased awareness of TB related human rights at National and sub-national level by 2028 ii. Reduced TB and Leprosy related stigma and discrimination by 2028	2.7.1 Strengthen leadership, governance, and coordination towards TB human rights	2.7.1.1 Conduct a national mapping of stakeholders addressing the needs of key and vulnerable groups for engagement and strengthened multi-sectoral action. 2.7.1.2 Coordinated approach to leadership and management of TB human rights

Specific Objectives	Expected Strategic Outcomes	Strategic Interventions	Major Actions
	iii. Availability of National costed operational plan and M&E framework for HRG related activities by 2028		
		2.7.2 Vulnerable populations and implementation of HRG and barrier reduction interventions	2.7.2.1 Identify key and vulnerable populations for TB at county level. 2.7.2.2 Devise and implement innovative strategies targeting men: Implement TB interventions and activities targeting men who are at a higher risk for TB especially at their workplaces: Increase men involvement in TB care, services and behavior change communication approaches 2.7.2.3 Address socio-cultural barriers impeding men from accessing health care 2.7.2.4 Address socio-cultural barriers impeding women and children from accessing health care 2.7.2.5 Create awareness on TB HRG and reduce HRG related barriers including stigma 2.7.2.6 Adapt global HRG policies and domesticate them
		2.7.3 Ensure that the Legal environment promotes appropriate laws, policies, and practices in implementation of TB interventions	2.7.3.1 Promote legal literacy/know your rights in relation to TB, Leprosy, and lung health. 2.7.3.2 Implement supportive laws, policies and practices
		2.7.4 Promote monitoring, accountability, and responsiveness for enhanced TB human rights protection	2.7.4.1 Launch coordinated mechanism to monitor and reform policies, regulations and laws that impede TB services including GBV 2.7.4.2 Activate community-led monitoring of human rights sensitive TB response and ensure feedback to inform policy

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2.8 To increase political, public engagement and raise awareness that will contribute towards the TB, Leprosy and Lung Disease prevention and control targets of 2028	i. Increased community contribution in TB case Notification from 11 % in 2022 to 30 % by 2028 ii. Increased proportion of policies that are responsive to the needs of communities, policy makers, stakeholders, and the end users iii. Increased Awareness on TB, Leprosy and Lung Disease iv. Increased political and public engagement, and policies addressing emerging TB, Leprosy and Lung disease issues	2.8.1 Community Systems Strengthening	2.8.1.1 Stronger capacity and greater leadership among community actors (CHA, CHV, TB Champions, CSOs) 2.8.1.2 Strengthen community engagement 2.8.1.3 Strengthen community-led monitoring 2.8.1.4 Improve coordination for community stewardship 2.8.1.5 Develop approach for community data integration 2.8.1.6 Monitoring and Evaluation of community engagement 2.8.1.7 Community TB Prevention and care 2.8.1.8 Strengthen community actors in Demand creation
		2.8.2 Targeted Communication on TB, Leprosy and Lung disease	2.8.2.1 Develop TB, Leprosy and Lung Disease BCC implementation toolkit 2.8.2.2 Conduct creative/innovative outreaches 2.8.2.3 Publish targeted IEC / BCC Materials 2.8.2.4 Develop and execute social media campaigns 2.8.2.5 Conduct school health outreaches 2.8.2.6 Promote and offer End TB Dance Challenge 2.8.2.7 Engage TB affected communities 2.8.2.8 Engage opinion leaders from diverse sectors in enhanced TB awareness and demand creation 2.8.2.9 Run mass media campaigns 2.8.2.10 Run out of home TB, Leprosy and Lung Disease campaigns 2.8.2.11 Document best practices and lessons learned for scale up and adoption by other stakeholders. 2.8.2.12 Document and share human interest stories 2.8.2.13 Integrate TB awareness and demand creation activities into other health promotion activities

Specific Objectives	Expected Strategic Outcomes	Strategic Interventions	Major Actions
			2.8.2.14 Influence social norms (Stigma reduction and positive attitudes and perceptions) 2.8.2.15 Leverage brand positioning for social and political impact 2.8.2.16 Engage religious institutions, religious leaders, and platforms 2.8.2.17 Conduct regular message effectiveness assessments and evaluations, and knowledge, attitude, and perception surveys 2.8.2.18 Develop advocacy communication and social mobilization strategy for policy change
		2.8.3 Advocacy for TB, Leprosy and Lung Disease at all levels	2.8.3.1 Collaborate with government officials, parliamentarians, and local community leaders to organize awareness campaigns about TB, leprosy, and lung health. 2.8.3.2 Lobby for the allocation of sufficient funds and resources in the national and county budgets and engage with political leaders to advocate for policies that support early diagnosis, treatment, and prevention 2.8.3.3 Organize workshops and training sessions at the grassroots level to empower community health workers, local leaders, and volunteers with knowledge about TB, leprosy, and lung health 2.8.3.4 Support communities to develop and implement their own initiatives to raise awareness and address TB, leprosy, and lung health issues. 2.8.3.5 Launch campaigns that aim to reduce the stigma 2.8.3.6 Develop educational materials and workshops that focus on healthy behaviors, hygiene practices, and preventive measures to reduce the risk of the diseases 2.8.3.7 Collaborate with health institutions and organizations to gather accurate data on community led activities 2.8.3.8 Regularly assess the effectiveness of advocacy activities and community initiatives.

SO3: To increase the treatment success rate for DS-TB and DR-TB from 86% and 81% in 2022 to 95% and 85% respectively by 2028

Increased treatment success rates for DS-TB and DR-TB are critical to the global goal of ending the TB epidemic by 2030. To increase the treatment success rate for DS-TB cases, the DNTLD-P will implement activities to reduce rates of loss to follow-up and unevaluated outcomes, reducing mortality, promoting nutritional care and support for TB patients, ensuring appropriate TB treatment for all detected patients, strengthening linkage to post-TB and lung health care, and improving treatment outcomes for childhood and adolescent TB cases.

To increase the treatment success rate for DR-TB cases, the DNTLD-P will implement activities geared to expanding and strengthening the capacity for DR-TB treatment, improving the social welfare of MDR/RR-TB patients, reducing loss to follow-up and unevaluated outcomes, strengthening patient-centered care, and optimizing the quality of care, and enhancing the management of contacts of DR-TB patients.

Greater detail is articulated below.

Specific Objectives	Expected Strategic Outcomes	Strategic Interventions	Major Actions
3.1. To increase treatment success rate for DS-TB from 86% in 2021 to at least 95% by 2028	i. Proportion of TB patients diagnosed and not started on treatment (initial loss to follow up) reduced from 21% to <5% by 2028 ii. Mortality among TB patients reduced from 6% in 2021 to <3% by 2028 iii. Increased TSR of notified TB patients from 86% in 2022 to >95% by 2028.	3.1.1. Reduce loss to follow up and unevaluated outcomes	3.1.1.1. Improve follow up through management of the appointment system using digital tools. 3.1.1.2. Accelerate the scale up of Electronic Health Management system 3.1.1.3. Improve adherence counselling and peer led support 3.1.1.4. Improve access to services through TB mobile services and opening of new treatment facilities, and rolling out DSD 3.1.1.5. Improve cross-border collaboration 3.1.1.6. Enhance treatment supporters and community management of patients 3.1.1.7. Enhance family treatment supporters. 3.1.1.8. Raise awareness about the rights of people affected by TB. 3.1.1.9. Introduce community-led monitoring to identify barriers to access and reduce loss to follow up
		3.1.2. Reduce mortality	3.1.2.1. Enhance multidisciplinary approach in the management of DS-TB Patient 3.1.2.2. Improve evidence-based intervention (through mortality reviews)
		3.1.3. Promote nutritional care and support for TB patients	3.1.3.1. Ensure all TB patients receive nutritional assessment and counselling and receive nutritional support as appropriate. 3.1.3.2. Link TB Patients to social & Economic Support services in the Community 3.1.3.3. Enhance gender equality and social inclusion (GESI) in all nutritioninterventions for TB patients 3.1.3.4. Enhance nutrition monitoring and evaluation for TB

Specific Objectives	Expected Strategic Outcomes	Strategic Interventions	Major Actions
		3.1.4. Ensure appropriate TB treatment for all detected patients	3.1.4.1. Sustain provision of adult and child-friendly quality-assured formulations for all TB patients 3.1.4.2. Strengthen active TB drug safety monitoring and management (aDSM) 3.1.4.3. Introduce new therapies 3.1.4.4. Implement eLMIS for TB drugs 3.1.4.5. Improve DS-TB training for health care providers (Capacity strengthening of HCW) 3.1.4.6. Strengthen diagnosis, and management of NTMs (Treatment protocols and Job aids 3.1.4.7. Develop Post TB care, rehabilitation, and palliation package 3.1.4.8. Ensure uninterrupted supply for TB medicines 3.1.4.9. Raise awareness about the rights of people affected by TB (Awareness creation for patients) 3.1.4.10. Introduce community-led monitoring to identify and overcome barriers to TB care services, e.g., drug stock outs 3.1.4.11. Conduct community awareness and advocacy to ensure access to the latest tools and technologies for quality TB care services for all. 3.1.4.12. Adoption of innovations to enhance treatment adherence (DAT)
		3.1.5. To strengthen linkage to post TB and lung health care	3.1.5.1. Include lung health in the National and County strategies and budgets 3.1.5.2. Training curriculum for lung diseases including post TB lung diseases developed and in use 3.1.5.3. SCTLCs provide supportive supervision and mentorship on diagnosis and management of lung health conditions 3.1.5.4. Availability of essential commodities based on WHO's Package of Essential Non-communicable (PEN) disease interventions for provision of lung health services at the primary care level 3.1.5.5. Monitoring and evaluation mechanisms for tracking the coverage of lung health services, post TB lung inclusive in place 3.1.5.6. Scale up and decentralisation plan of chronic lung disease plan at NTLD-P and counties

Specific Objectives	Expected Strategic Outcomes	Strategic Interventions	Major Actions
		3.1.6. Improve treatment success rate for children and adolescents to 95%	3.1.6.1. Adopt the use of shorter term and child friendly formulations for both DS and DR TB 3.1.6.2. Conduct facility level workshops, sensitization, CMEs, on job mentorship for weight-based dosing for children, clinical and ADR monitoring, use of 4-month shorter regimen 3.1.6.3. Support adolescent friendly services
		3.1.7. Increase awareness of/ demand for child and adolescent TB services	3.1.7.1. Develop community and patient information materials on childhood TB (prevention, diagnosis and treatment including TPT) 3.1.7.2. Train CHWs on contact screening and management 3.1.7.3. Integrate TB services to all other childhood and adolescent health services in the facilities and communities
3.2. To increase treatment success rate of DR-TB patients from 81% in 2020 to 85% in 2028	i. Sustain MDR- TB linkage to treatment at 100% by 2028. ii. Increased treatment success rate for DR-TB from 81% in 2020 to >85% by 2028. iii. 100% of all TB patients receive nutritional assessment at baseline and monthly by 2028 iv. 50% of all moderately and severely malnourished TB patients access nutritional supplements/ therapeutic feed by 2028	3.2.1. Expand and strengthen capacity for treatment of DR-TB	3.2.1.1. Enhance multidisciplinary approach in the management of DR-TB Patient, including community-based support and stigma reduction. 3.2.1.2. Enhance decentralisation of DR-TB management 3.2.1.3. Strengthen active TB drug safety monitoring and management (aDSM) 3.2.1.4. Introduce new treatment regimen that may be approved by WHO in the course implementing this NSP 3.2.1.5. Introduce electronic patient recording and monitoring systems. 3.2.1.6. Conduct community awareness and advocacy for new treatment regimens of DR TB.

Specific Objectives	Expected Strategic Outcomes	Strategic Interventions	Major Actions
	v. Increased proportion of DR-TB patients receiving nutritional support from 33% in 2022 to 75% by 2028.	3.2.2. Improve the social welfare of MDR/RR-TB patients	3.2.2.1. Provide social protection support to MDR/RR TB patients 3.2.2.2. Provide nutritional care and support 3.2.2.3. Introduce community-led monitoring to identify and overcome barriers to nutritional and other social welfare support services for people with MDR/RR-TB.
		3.2.3. Reduce loss to follow up and unevaluated outcomes	3.2.3.1. Strengthen patient monitoring and follow up through management of appointment system (data management e.g., electronic platforms) 3.2.3.2. Improve access to services through TB mobile services and opening of new treatment facilities 3.2.3.3. Sustain community treatment supporters for MDR/RR-TB patients. 3.2.3.4. Engage the community to raise awareness about the rights of people affected by TB. 3.2.3.5. Introduce community-led monitoring to identify barriers to access and reduce loss to follow up
		3.2.4. Strengthen Patient centered care/ Optimization of quality of care	3.2.4.1. Strengthen QoC and management of ADRS/ADEs and comorbidities by clinical review teams at all levels. Higher level clinicians should be involved in the management of DR TB patients 3.2.4.2. Strengthen DR-TB care through strengthening CoEs, clinical review teams. Innovate new ways to monitor the activities of clinical review teams at all levels 3.2.4.3. Increase capacity of health care providers and community providers in patient centered care, including gender sensitive care and medical ethics. 3.2.4.4. Increase access to clinical monitoring services e.g. laboratory monitoring of treatment progress 3.2.4.5. Build capacity of HCW, including CHWs in management of DR-TB patients 3.2.4.6. Assess mental health status and provide psychological counselling 3.2.4.7. Develop Post TB care, rehabilitation, and palliation package in collaboration with affected TB communities.

Specific Objectives	Expected Strategic Outcomes	Strategic Interventions	Major Actions
			3.2.4.8. Improve recording of patient clinical data (paper based and electronic based). 3.2.4.9. Engage the community to raise awareness about the rights of people affected by TB. 3.2.4.10. Introduce community-led monitoring to identify barriers and challenges and to ensure the availability, accessibility, acceptability of quality TB care and support services that are free of stigma and human rights violations for all. 3.2.4.11. Identify and make programmatic and service improvements to optimize the quality of care, based on the CLM data.
		3.2.5. Enhance management of contacts of DR-TB patients.	3.2.5.1. Conduct contact investigation to detect those infected and those at risk, also leveraging a community-based system

SO4: To strengthen provision of integrated TB/HIV and other co-morbidity services at national and sub-national levels by 2028

This NSP will provide 100% HIV counselling and testing for all people with TB and offer high-quality, patient-centered HIV care for HIV co-infected TB patients. Systematic screening for TB among PLHIV will be optimized by empowering HCWs on quality TB symptom screening, use of digital CXR with CAD as a screening tool and the use of mWRD tests for TB diagnosis. Use of LF-LAM test in PLHIV who are critically ill will be scaled to support the detection of TB. The plan will emphasize quality improvement approaches to strengthen TB screening and diagnosis among PLHIV. The NSP will focus on strengthening diagnostic and care approaches for NCD patients (diabetes, mental health, and lung cancer) presumed to have TB and similarly for TB patients with NCDs. This plan will provide bidirectional screening and diagnosis of TB and COVID-19. Contact management of either of diseases will be offered.

Greater detail is articulated below.

Specific Objectives	Expected Strategic Outcomes	Strategic Interventions	Major Actions
4.1 Improve TB and HIV program coordination		4.1.1 Strengthen program coordination – between the TB and HIV programs	1.1.1.1 Carry out joint supervision, program coordination, monitoring, mentoring and quality assurance
4.2 Increased proportion of TB patients who know their HIV status	i. Increased proportion of TB patients who have documented HIV status from 95% in 2022 to 100% by 2028	4.2.1 Strengthen integration of TB and HIV services	1.1.1.1 Strengthen HIV testing in TB service delivery points 1.1.1.2 Supply HIV test kits for TB patients with unknown HIV status
4.3 Improve treatment success rate for the TB/HIV co-infected patients.	i. Increased treatment success rate for the TB/HIV co-infected from 79% in 2021 to >90% in 2028	4.3.1 Improve the Quality of TB Screening among PLHIV	1.1.1.1 Capacity strengthening of HCWs (improve quality in administration of the screening questions by health workers) 1.1.1.2 Development of health worker job aids to support quality TB screening and diagnosis 1.1.1.3 Improved quality of TB symptom screening among PLHIV through capacity building and or mentorship activities 1.1.1.4 Quality improvement approaches used to strengthen TB screening and diagnosis among PLHIV 1.1.1.5 Additional or innovative TB screening tools such as the use of digital chest X Ray used 1.1.1.6 Improved use of mWRDs for testing respiratory and non-respiratory specimens for enhancing TB diagnosis among PLHIV 1.1.1.7 Additional diagnostic tools like LF LAM for PLHIV employed

Specific Objectives	Expected Strategic Outcomes	Strategic Interventions	Major Actions
4.4 Decreased TB/HIV case fatality among PLHIV	i. Decreased TB/HIV case fatality among PLHIV from 11% in 2021 to < 5% by 2028 ii. Improved quality of care for patients co affected by TB and NCDs	4.4.1 Strengthen patient adherence to both TB and HIV Medication	4.4.1.1 Enhanced integration and linkages of TB/HIV to minimize lost opportunities in screening and testing for TB 4.4.1.2 Early ART (within 2 weeks) initiated 4.4.1.3 Stronger follow-up mechanism of treatment interrupters at the community level through the use of CHPs 4.4.1.4 Updated and integrated TB and HIV recording and reporting tools available to capture data on TB detection from screening to treatment initiation at all SDPs providing HIV care and treatment
		4.4.2 Improve coordination of TB and key NCDs at national and sub-national levels	4.4.2.1 Set up regular representative coordination bodies and forums for TB and key NCDs (diabetes, mental health, and lung cancer) at national and subnational levels 4.4.2.2 Define their TORs and Operationalize their functions at national and subnational levels
		4.4.3. Increase the proportion of patients with key NCDs being screened for active TB disease	4.4.3.1. Train health workers working in NCD SDPs on quality screening approaches for TB 4.4.3.2. Strengthen diagnostic and care approaches for NCD patients presumed to have TB 4.4.3.3. Standardize the recording, reporting, monitoring and evaluation of TB care and control among patients with key NCDs
		4.4.4. Increase the proportion of patients with TB being screened for key NCDs	4.4.4.1. Train health workers working in TB settings on quality screening and testing approaches for key NCDs (including diabetes, mental health, and lung cancer) 4.4.4.2. Strengthen diagnosis and care approaches for TB patients with NCDs

Specific Objectives	Expected Strategic Outcomes	Strategic Interventions	Major Actions
			4.4.4.3. Standardize recording, reporting, monitoring and evaluation of NCD care among TB patients
		4.4.5. Provide bidirectional screening and diagnosis of TB and COVID-19	4.4.5.1. Screen and test patient with COVID-19 for TB and patient with TB for COVID-19. 4.4.5.2. Review COVID-19/TB guidelines 4.4.5.3. Contact management for either TB or COVID-19 cases as well engage the community to enhance contact tracking and tracing. 4.4.5.4. Link patients with positive results for either condition to care and treatment. Adopt test and treat

SO5: To reduce the number of people diagnosed with Multibacillary Leprosy amongst new cases from 95% to <25% by 2028

The DNTLD-P plans to increase Leprosy treatment coverage to 90% in 2028 by strengthening coordination and implementation of Leprosy interventions, carrying out case-based surveillance and active case-finding, reducing stigma and discrimination against people living with Leprosy, and enhancing community awareness and sensitization. The DNTLD-P will increase the Leprosy treatment success rate to 100% by 2028 by successfully treating Leprosy cases, managing complications, and minimizing disability, preventing disability among Leprosy patients, and improving the lives of Leprosy communities. DNTLD-P will increase uptake of post-exposure prophylaxis (PEP) to 90% in 2028 by prioritizing PEP in Leprosy-endemic districts, strengthening routine contact tracing and monitoring of PEP completion, improving awareness and knowledge about PEP among health workers and communities, and ensuring the timely availability of PEP medication and other supplies in health facilities.

Greater detail is articulated below.

Specific Objectives	Expected Strategic Outcomes	Strategic Interventions	Major Actions
5.1 To reduce the number of people diagnosed with Multibacillary Leprosy amongst new cases from 90% to <25% by 2028.	i. Increased proportion of index Leprosy cases whose contacts were traced from 0% in 2022 to 80% by 2028 ii. Reduced Proportion of new cases with grade-2 disability (G2D) from 19% in 2022 to < 10% by 2028 iii. Reduced proportion of newly diagnosed children with Leprosy from 3% in 2022 to < 1% by 2028	5.1.1 Strengthen coordination and implementation of Leprosy interventions at all levels to achieve progress towards zero Leprosy	5.1.1.1 Establish national partnerships for zero Leprosy, incorporating government, development Partners and persons affected by Leprosy.
			5.1.1.2 Allocate share of Leprosy budget financed by domestic sources and resources mobilization from development partners
			5.1.1.3 Collaborate across borders to ensure continuity of care and the interruption of transmission
			5.1.1.4 Continuous advocacy and communication within and across ministries on Leprosy
			5.1.1.5 Develop and monitor Leprosy implementation plans at all levels
			5.1.1.7. Mobilize resource for Leprosy activities
		5.1.2. Carry out case-based surveillance and active case - finding of Leprosy at health facility and community level.	5.1.2.1. Map hot spot areas in Leprosy endemic counties
			5.1.2.2. Conduct contact tracing of all index cases with MB Leprosy, in all counties.
			5.1.2.3. Build capacity of HCWs and CHWs to diagnose Leprosy cases early and manage accordingly/ recording/reporting/ surveillance
			5.1.2.4. Update and improve effective surveillance system for Leprosy
			5.1.2.5. Increase provision of single dose rifampicin from the current 0% to over 80% by 2026
			5.1.2.6. Organize active case finding campaigns in areas reporting high cases i.e., where such campaigns are more likely to be cost effective in terms of higher chances of finding cases

Specific Objectives	Expected Strategic Outcomes	Strategic Interventions	Major Actions
		5.1.3. Reduce stigma and discrimination against people living with Leprosy	5.1.3.1. Include persons with Leprosy as a population among people living with disability
		5.1.4. To enhance awareness and sensitization at community level on Leprosy	5.1.4.1. Develop and disseminate IEC materials 5.1.4.2. Include shows and talks on TV/ Radio and Leprosy articles on print media Identify and strengthen Leprosy survivors/ champions for advocacy
5.2. To increase proportion of patients who are Released from Treatment (RFT) from 75% in 2020 to 90% by 2028	i. Increased proportion of all forms of Leprosy patients who successfully complete treatment from 75% in 2020 to over 90% by 2028 ii. Percentage of persons affected by Leprosy accessing self- care support to be at 50% by 2028	5.2.1. To successfully treat Leprosy cases and manage the complications and minimize the upgrade in disability	5.2.1.1. Early case detection, accurate diagnosis, and prompt treatment. Ensure procurement of adequate Leprosy medicines and commodities.
			5.2.1.2. Access to comprehensive rehabilitative services
			5.2.1.3. Diagnosis and management of Leprosy reactions, neuritis, and disabilities
			5.2.1.4. Mental well-being through psychological care and therapeutic counselling.
		5.2.2. To prevent development of disability among Leprosy patients	5.2.2.1. Conduct elimination campaigns in the Leprosy endemic counties
			5.2.2.2. Addressing disability grade 2 including self-care interventions.
			5.2.2.3. Monitoring, support, and training in self-care for persons with Leprosy
		5.2.3. To improve the lives of Leprosy communities	5.2.3.1. Formation of organizations and networks of persons affected by Leprosy
			5.2.3.2. Access to social support and rehabilitation
			5.2.3.3 Identify former Leprosy patients and integrate them with new or existing Leprosy cooperatives

Specific Objectives	Expected Strategic Outcomes	Strategic Interventions	Major Actions
			5.2.3.4. Start Income Generation Activities (IGAs) to remove dependence syndrome.
5.3. Increase uptake of PEP from 0% in 2022 to 50% in 2028	i. Proportion of contacts of Leprosy patients given single dose Rifampicin preventive therapy increased from 0% in 2022 to 50% by 2028.	5.3.1. To prioritize PEP in the endemic districts	5.3.1.1. Conduct active case finding
			5.3.1.2. Conduct targeted campaigns
			5.3.1.3. Conduct household contact investigation
			5.3.1.4. Scale-up PEP

SO6: To strengthen program management, coordination, and accountability of TB services by 2028

We will strengthen and encourage committed leadership at all levels to promote effective program stewardship, reduce delays and disruptions in the execution of activities, and increase institutional capacity of the program. Coordinated platforms will be used to strengthen linkages in planning, programming, and advocacy. HRH skills will be oriented towards sustained and efficient service delivery, for optimal distribution of HRH and uninterrupted service delivery. The NSP will be implemented within existing frameworks (health and non-health), as part of a more effective implementation of the Multi-Sectoral Accountability Framework (MAF). Improved domestic resource mobilization will be coordinated at all levels, as part of more optimal utilization of limited resources. The NTP program will leverage existing social protection programs.

The monitoring and evaluation plan will strengthen the quality of recording and reporting of TB data including the scale of TIBU for community health services and community-led monitoring. We will strengthen data analysis and optimize the utilization of TB, Leprosy, and lung disease data for decision-making at all levels of TB service. The NSP has planned for operational research studies, population-based and facility-based TB surveys and program/ epidemiological reviews to generate evidence to inform approaches, to inform on morbidity and to monitor interventions.

Greater detail is articulated below.

Specific Objectives	Expected Outcomes	Strategic Interventions	Major Actions
6.1. Strengthen program management, coordination, and accountability of TB services		6.1.1. Institutionalize dedicated leadership at the National, County & Sub County (Sub National) levels for the successful implementation of all TB, Leprosy and Lung Disease objectives	6.1.1.1. Establish a deputy head of program office to ensure continuity of leadership and ensure handover processes are clear
			6.1.1.2. Develop a clear transition plan/mechanism for NTP leadership at National and county levels be put in place including orientation for new office holders
			6.1.1.3. Develop a standardized induction package in collaboration with the county health management team for CTLCs/SCTLCs
		6.1.2. Strengthen linkages in planning, programming, and advocacy	6.1.2.1. Align the county leadership on TB, Leprosy, and Lung Health issues
			6.1.2.2. Prepare a calendar of events for national briefs for TB planning and programming (e.g., prior to development of CIDPS, AWPs
			6.1.2.3. Build advocacy resource pool on advocacy issues (mapping of stakeholders who are strong on advocacy)
6.2. To strengthen human resource capacity for TB services		6.2.1. To ensure availability and optimal distribution of human resources at NTP/ NTRL and counties who are government supported	6.2.1. 1. Optimally distributed HRH for sustained TB programming
			6.2.1. 2. Seamless transition to ensure uninterrupted service delivery
			6.2.1. 3. Adequately skilled HR for TB programming and service delivery

Specific Objectives	Expected Outcomes	Strategic Interventions	Major Actions
6.3. Strengthen monitoring, evaluation, research, surveillance, and learning of TB and Leprosy services by 2028		6.3.1. Strengthen monitoring, evaluation, and learning of TB and Leprosy services	See MER summary document
6.4. Increase proportion of annual TB budget contributed by Government from 22% to 25% by 2028.		6.4.1 Ensure the profile of TB, Leprosy and Lung Disease is elevated and prioritized among decision makers and among all stakeholders	6.4.1.1 Integrate TB NSP in the implementation of other existing frameworks (health and non-health)
			6.4.1.2 Advocate for goodwill and support for TB priorities among high level stakeholders (e.g., parliamentary Health committees, COGs, professional associations).
			6.4.1.3 Ensure effective implementation of the Multi-Sectoral Accountability Framework to end TB (MAF-TB)
		6.4.2. Ensure optimal and sustainable financing for TB, Leprosy and Lung Disease that is efficiently utilized	6.4.2.1 Leverage existing policy platforms (PPM, KHSSP, Community health strategy, PCN) within government and outside government for TB prioritization.
			6.4.2.2 High level advocacy for increased funding for TB, Leprosy, and lung diseases at National and County level
			6.4.2.3 Explore and mobilize social enterprise and Contracting opportunities at national and county levels e.g., Workplace Policy integration, Tax relief/tax re-investing for TB response, sustainable transitioning and scaling up from heavily donor funded activities, taking advantage of the comparative advantage of NGOs, community, and private sector to provide certain services more efficiently and effectively
			6.4.2.4 Build the capacity of the County Health leadership and CLTCs to be able to advocate better for TB funding and prioritization at county level e.g., Medium Term Expenditure Framework (MTEF)
			6.4.2.5 Advocate for TB, Leprosy, and lung disease services inclusion in the in social protection mechanisms/services

4

M&E Component of the NSP

4.1. Continuous M&E

4.1.1. M&E Framework

The M&E framework aligns and complements the existing national TB program framework, identifying relevant indicators and corresponding targets for use in measuring progress and performance.

The guiding M&E framework is as illustrated below:

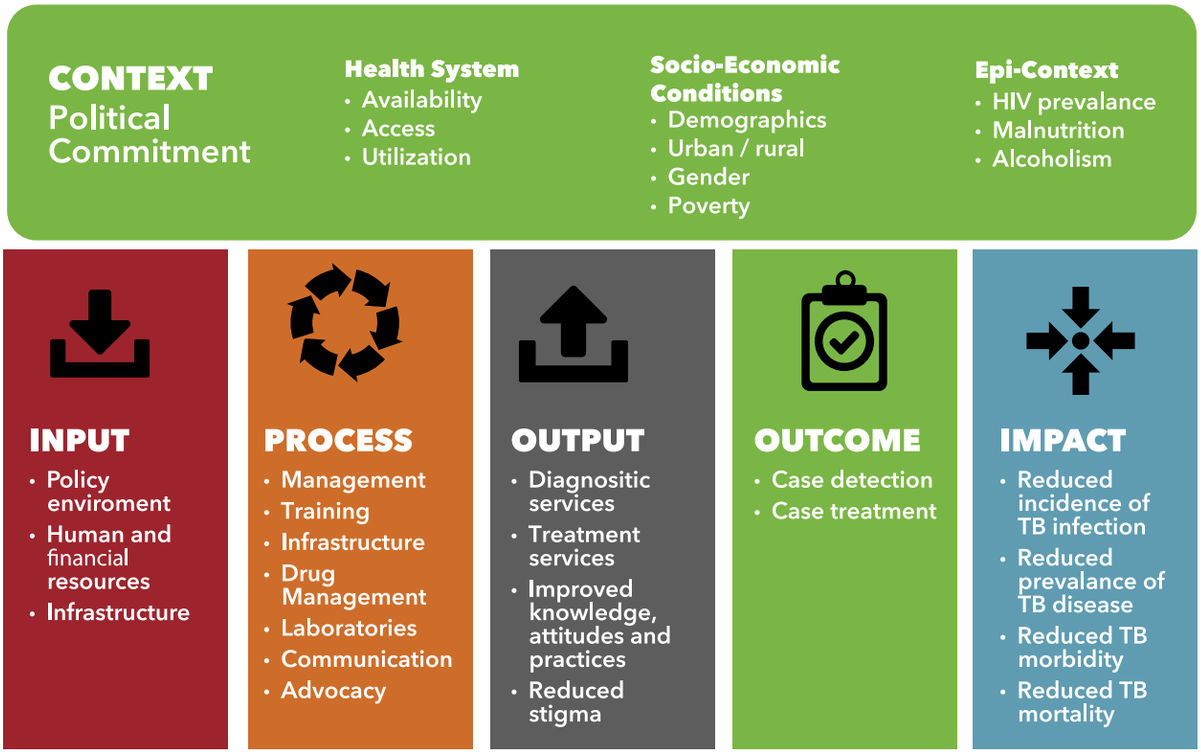

Figure 4.1: WHO M&E Framework for National TB Control Program

4.1.2. M&E coordination mechanisms

The DNTLD-P has a well-established M&E and Research section under the coordination of a technical lead appointed by and reporting to the head of the program. M&E functions are coordinated across the MoH, along the following lines:

i. Coordination of M&E activities to provide performance measurement for TB control interventions and activities

ii. Capacity strengthening of TB service providers on recording, reporting, data management, analysis and dissemination of TB outputs, outcomes, and outcomes

iii. Development and dissemination of M&E policies, guidelines, and tools

iv. Coordination of M&E stakeholders

v. Development and roll out of integrated data systems 5.1.3. M&E Partnerships.

The M&E Committee of Experts (COE) is composed of various stakeholders drawn from the Ministry of health, DNTLTD-P, HIV program, development partners, civil society and communities affected by TB. The COE is a governance body that feeds into the health sector working group (HSWG) chaired by the director general of health (DG) or representative delegated by the DG. The committee conducts quarterly review meetings, to do the following:

- Review proposed M&E and research policies, guidelines, and quality standards.
- Identify research priorities in TB and lung disease control.
- Coordinate and guide M&E and program evaluations.
- Facilitate and support dissemination of M&E and research products.
- Resource mobilization for effective monitoring and evaluation
- Provide a platform for information and knowledge sharing.

4.2. M&E Capacity

4.2.1. Surveillance system

The TB program conducted an in-depth Epidemiologic Review including assessment of the surveillance system using WHO checklist (TB EPI report 2021). When assessed against the WHO benchmarks and standards, the system was noted to be fairly robust with results indicating that six standards were met (B1.1, B1.2, B1.3, B1.4, B1.6 and B2.2), four were partially met (B1.5, B1.7, B1.8 and B2.3) and three were not met (B1.9, B1.10 and B2.1).

In comparison to the 2017 assessment, three benchmarks are upgraded to be met (B1.3, B1.4 and B2.3). Whereas two (B1.8 and B2.1) have been downgraded – one from met to partially met.

The report further noted that areas that required strengthening include:

- Cleaning data in both TIBU (de-duplication) and KHIS 2 to ensure internal consistency
- Strengthen TIBU and KHIS 2 inter-operability
- Incorporate WHO dashboards into KHIS 2 and strengthen in-country capacity
- Link modules within TIBU with a unique ID to improve accuracy.

The TB program has incorporated recommendations from the Epi review into the interventions proposed in this NSP.

4.2.2. Human resources

The NTP currently has a fully-fledged, 11-member M&E unit, primarily supported by development partner.

The expanding mandate of the program compounded by high staff turnover primarily through transfers has resulted in gaps in skills and number of staff not only in the M&E unit but within the broader NTLD-Program.

There is a need to undertake a detailed human resource capacity assessment to ascertain the gap in human resources as well as align the same to the expanded mandate and scope of the program.

Based on the existing workload, the M&E unit requires additional information technology experts to support the use of electronic recording and reporting systems as well as adaptation of new technologies rolled out by the ministry. Further, the program requires two statisticians, two epidemiologists, and two M&E and finance experts to complement and support the financial and monitoring of the expanded mandate of the NTLD-Program.

4.3. Routine Data

4.3.1. Data Collection

The DNTLD-P collects routine data (output indicators) used to measure programmatic and impact/outcome indicators. Routine data collection is undertaken at various service delivery points including public health facilities, private health facilities and in communities, either using paper-based or electronic data capture systems.

Data elements collected as part of routine reporting include:

- Demographic data – patient particulars (name, age, sex, height, weight etc.)
- Clinical data –TB screening data, investigation, and treatment
- Contact management, referrals, and linkage
- Commodity data.

Facility TB, Leprosy and lung disease data is recorded with MoH tools, attached in annex. Data is entered daily at service delivery level.

The program revises recording and reporting periodically (every two years) to capture new data elements and ensure that reporting, including indicator definitions, aligns with WHO guidance and recommendations.

The surveillance system for reporting routine TB data in Kenya is TIBU: a case-based surveillance system. It is a web-based android application available on handheld devices (tablets, laptops, and mobile phones) and uses sub-county TB level as its primary data entry point. The SCTLCs are responsible for entering various data sets, including the DS-TB, DR-TB, TPT, Leprosy, GeneXpert, TrueNat, and X-ray CAD registers, which are all case based. In addition, they also enter Aggregate ACF and Asthma Reports, Facility-based Supervision Data, and Commodity Reports.

The SCTLCs visit most TB treatment sites at least once a month, with higher workload facilities visited more frequently. Diagnostic datasets such as Gene Xpert, TrueNat, and CAD X-ray are collected automatically from the machines through an API into the TIBU system. Lab staff enter diagnostic request form data, and results are automatically integrated into the request data through an API.

The system has automated reports that collect data from both the case-based and aggregate reports submitted by sub-county coordinators. These reports provide data breakdowns by region, county, sub county, facility, quarter, year, and month, following WHO case definitions and reporting framework.

To strengthen facility-level reporting, the program has launched an electronic data capture tool (t-bu lite) integrated with TIBU. The android-based app delegates data entry tasks to facility-level staff and allows the SCTLCs to validate the data entered for quality checks

before it is incorporated into the case finding and cohort reports. T-bu lite captures data on TB screening, DS-TB, DR-TB, contact management, Digital Adherence Technology (DAT), and capacity strengthening.

4.3.1.1. TB data flow in Kenya

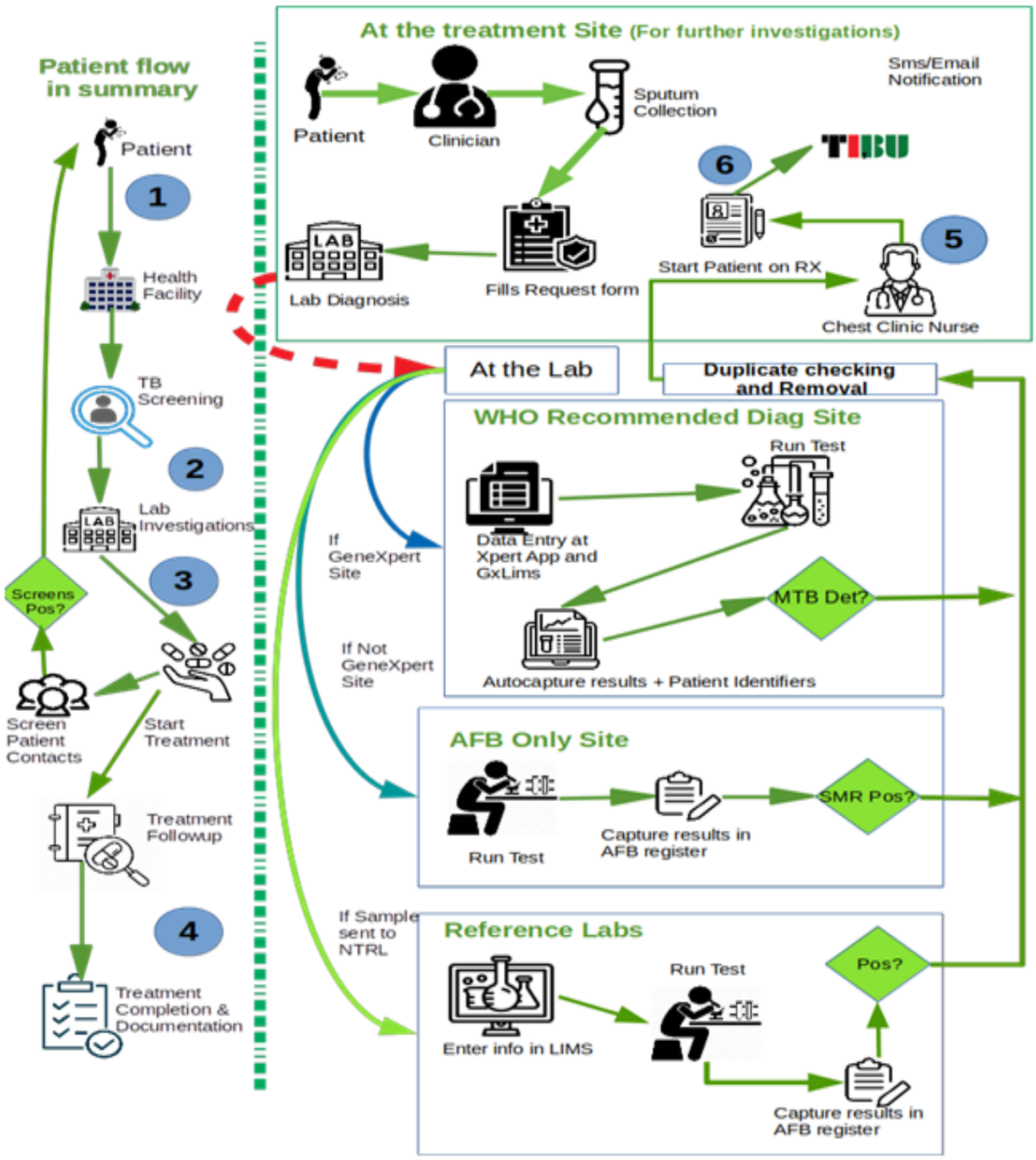

Figure 4.2: The TB Surveillance Summary of Data Flow

4.3.2. Data Storage

The program stores all data, including both case-based and aggregate data, in cloud servers. To ensure data safety, all datasets are backed up weekly onto mirror servers at program offices. Additionally, program devices at the sub-county level, such as computer tablets, laptops and desktops, store both live datasets and backups. These backups are also periodically synced to cloud servers for performance monitoring.

4.3.3. Data Processing

Program data is processed at sub-national and national levels. Sub-nationally, counties perform quarterly data cleaning and review, through multi-stakeholder forums that include members of the health management team, such as pharmacists, laboratory personnel, public health officials and representatives from the private sector. Any data errors are identified and corrected including within the TIBU platform. At the national level, the program conducts quarterly data reviews with the participation of sub-national teams to ensure all gaps or issues that arise are addressed appropriately during the joint review.

4.3.4. Data Analysis

TIBU provides real-time monitoring and analysis of data for patient management and decision making. It allows for easy integration of data from various sources to a range of powerful analytical tools to enable the program to make data-driven decisions. Using Stata, Power BI, and R, the program performs a range of descriptive analyses on its data to gain insights into key trends, patterns, and epidemiological relationships.

The TB program has also developed various modules within TIBU such as Patient Management System, LIMS, Cash, Meds and T-bu lite that are equipped with automated data analysis functions allowing for real-time data analysis that facilitates timely decision making. Their user-friendly interfaces and intuitive design enable users to navigate platforms easily without specialized technical expertise.

4.3.5. Archiving and Confidentiality

Health facilities are expected to take precautions against fire, other accidents and criminal acts that may affect stored data. For computer-based records, responsible ICT officers in conjunction with the facility in-charge(s) should ensure proper archiving and controlled accessibility of the data. Appropriate security against unauthorized access and modification should be instituted in line with the Data Protection Act 2017.

4.4. Data Quality Assurance

Data quality assurance refers to the various tools, processes and procedures used to identify and correct any errors, anomalies and other inconsistencies, allowing accurate and reliable reporting that informs decision-making.

Data quality assurance serves to not only verify the quality of data reported for key program indicators but also verify the ability of the respective data management systems to collect, manage and report quality data. Data quality assurance procedures allow for implementation

of corrective measures to strengthen data management systems, including capacities of health care workers, with an aim of progressively improving data quality.

4.4.1. Standardized development and utilization of tools, guidelines, and checklists

The national program is responsible for developing and distributing data collection and reporting tools and the respective guidelines, used at service delivery points including the community. Tools and guidelines are developed and revised through a participatory approach involving various stakeholders. The number and design of cards, forms and registers is carefully managed and kept as simple as possible to minimize risk of data collection and reporting errors while ensuring the data facilitates good patient care and program monitoring.

Quality of data within the various tools is the primary responsibility of all healthcare workers involved in management of TB, Leprosy, and lung disease. The facility in charge works together with the SCTLC to ensure data within the various tools meets the required quality standards.

Data collection and reporting tools are reviewed every two years to capture new data elements and ensure that the reporting aligns with WHO recommendations.

4.4.2. In-built data quality assurance procedures in TIBU

The program surveillance system TIBU and its constituent systems namely TIBU LIMs, TB meds (also known as TB allocation), NTRL LIMs each have data entry processes and inbuilt system validations. The system validation areas include checks for data completeness, duplicate entries, availability of essential TB laboratory commodities, missing records/values, inconsistent values, inaccurate values and invalid or unclear values. Once such issues are identified, they may be resolved through communication with the SCTLCs responsible to verify information with the respective facilities and updating of the system with the missing data, valid entries and ensure consistency of information from the source documents.

In order to guarantee data security, TIBU and TIBU LIMS have automated options for data archiving. The data archive keeps old (legacy) data in the servers and does not avail it to user devices for any updates. To guarantee data integrity, old data is available for download and analysis but cannot be updated through the system. Currently, data is only archived after a cohort report is finalized and completed (1 year for DSTB data and 2 years for DRTB data).

4.4.3. Data Quality Assessments

Data quality assessments are periodic checks conducted to verify consistency, accuracy, completeness, integrity, validity, and timeliness of reported program data using an agreed set of tools and procedures. Assessments are typically conducted using standardized checklists mostly adapted from WHO standardized tools and include a minimum set of key performance indicators plus overall system assessment.

The DNTLD-P undertakes data quality assessments including:

i. Routine data quality assessment (RDQA) – an annual self-assessment by the program targeting selected Counties and using the adapted checklist.

ii. Data Quality Assessment/ On-site Data Verification (DQA/ OSDV) – done externally by development partners primarily at the national level targeting randomly selected but representative health facilities.

iii. DQA at county level have yet to begin, despite the existence of a data quality improvement plan. Support support supervision activities conducted by the CTLCs may include a standard checklist that incorporates data assurance indicators.

4.4.4. Supportive supervision

Well-structured supportive supervision seeks to improve work performance through review of data and service quality to identify gaps and provide tailor-made recommendations to remedy an identified gap. It allows for identification of best practices as well as any gaps in capacity that may require further training and or capacity building.

Supportive supervision is conducted by national as well as sub-national teams across all levels of service delivery.

National Level:

The National TB program provides supportive supervision at national level in collaboration with development and implementing partners and targets the CTLC and facility staff. It is aimed at improving data and service quality as well as tracking performance with a focus on implementation of policies and guidelines to support TB, Leprosy and Lung health activities.

Support supervision team should comprise TB stakeholders at the county level including but not limited to C/SCTLCs, CHMT, C/SCP, CMLCs and TB implementing partners. It is recommended that each treatment sites be visited quarterly with a minimum of three clinics visited during each supervisory visit.

County and Sub-County Level:

The CTLC shall work directly with the SCTLC and HCWs at facility level to ensure service and data quality are maintained during routine patient management. The STLCs shall in turn provide supportive supervision to HCWs in the health facilities including treatment sites.

4.4.5. Performance Review Meetings

Regular performance review meetings at national and county level are undertaken to ensure the program is on course to meet its objectives. Review meetings are data driven and data quality assurance procedures including verification and validation of data is undertaken during said review meetings. Review meetings are undertaken quarterly to identify where further support is needed either through training or supportive supervision and mentorship.

4.5. Program Review, Evaluation, and Surveys

4.5.1. Program reviews and evaluations

The NTP regularly undertakes standard program reviews in line with global best practices. This includes internal program reviews, mid-term, and end term review of the NSP as well as epidemiologic review. The reviews are typically led by the NTP but where necessary, involve external stakeholders to validate the exercise and ensure alignment with global best practice.

Under this NSP, the program shall undertake the following programmatic reviews:

4.5.1.1. Internal Program Reviews

These shall be undertaken on a quarterly basis at national and county levels. Program performance shall be reviewed against set objectives and inform adjustments where necessary. Internal reviews also offer platforms to review data quality.

4.5.1.2. Mid-term review

This will be undertaken at the mid-point of the NSP (2025/26) in line with global best practice.

4.5.1.3. End Term review

Will be undertaken on the last year of the NSP (2027/8) and shall inform the subsequent strategic planning process.

4.5.1.4. Epidemiological Review

Shall be conducted using WHO standards and benchmark criteria in line with global best practice. The proposed year is 2024/25.

4.5.2. Surveys and surveillance

In the current NSP, the DNTLD-P has had challenges in undertaking many of the proposed surveys in part due to resource constraints but also due to the COVID-19 pandemic that limited travel and field work.

The following surveys are proposed under this NSP:

i. TB prevalence survey – The last TB prevalence survey was undertaken in 2016 and the program proposes to undertake a follow-on survey in 2026/7 to provide an update on TB burden as well as measure progress toward achieving the 2030 SDG and 2035 End TB goals.

ii. Inventory Study – The last inventory study was conducted in 2015 and highlighted significant gaps in data quality that the program has been addressing. The program proposes to undertake a follow-on inventory study in 2025.

iii. Drug Resistance Survey – The last DRS was conducted in 2015 and informed the interventions put in place to address DR TB. The program is currently in the process of planning for a follow-on DRS that will be undertaken in 2023/24.

iv. Catastrophic costs survey – The last catastrophic costs survey was undertaken in 2018 and the program proposes to undertake the follow-on survey in 2023/24

v. TB Stigma Index – The program is currently (2023) planning to undertake a baseline TB stigma index that shall inform targets for the intervention with a follow-on survey planned for 2026/7.

vi. Patient pathway analysis – The last PPA was undertaken in 2017 and the program proposes to undertake a follow-on analysis in 2024

vii. Service quality assessments at subnational levels

viii. Prospective follow-up of contacts survey

4.5.3. Research and special studies

Research at local and national level will be conducted periodically to answer questions which cannot be clarified through routine surveillance systems.

The TB program has struggled to undertake proposed research and or special studies, due in part to gaps in stakeholder coordination that were compounded by limited funding and the COVID-19 pandemic that led to restrictions in field-based activities.

Just three of 19 planned studies are being conducted now, from the previous strategic period.

To strengthen the research agenda at the NTP, the program proposes to adapt the End TB strategic guidance on strengthening research and innovation. The TB program shall undertake the following activities:

1. Strengthen coordination through establishment of a national TB research network (reconstitute the national TB, Leprosy, and lung diseases research advisory committee) that shall include stakeholders from the TB program, broader MoH and other relevant ministries, academia, civil society organizations, private sector, and any other relevant stakeholders.
2. Through the TB research network, undertake a situational assessment of the TB research environment/context and develop a TB research plan through a multi-stakeholder process
3. Ensure that national TB research priorities have been developed through a multi-stakeholder process and are widely disseminated
4. Propose/develop a national mechanism for funding TB research and advocate for public support and funding for TB research.
5. Develop and share a national plan for health research capacity building – including mechanisms for national funding of health research training and infrastructure support
6. Establish milestones and indicators for on-going monitoring and evaluation of the TB research agenda
7. Concurrent to this process, the M&E unit will coordinate the execution of on-going studies as well as support transition of the same to the research network.
8. The end term review as well as various stakeholders within the TB program have developed a list of research priorities that is annexed in this NSP, and this shall be reviewed and finalized by the research network once operational.

4.6. Information Products, Dissemination and Use

The National TB Program will disseminate its M&E information through a number of internal and external channels, to include:

Programmatic reports: The program produces quarterly print and electronic bulletins and annual reports containing updates and performance monitoring on TB control activities.

Guidelines and policy documents: These are produced and reviewed regularly to ensure that stakeholders receive relevant information and recommendations that emerge from consultations in order to provide decision-makers, service providers and other stakeholders with timely updates on technical direction the program is taking to help ensure that patients receive the best possible care, and that TB prevention and control efforts are evidence-informed and effective.

Patient education materials: Information about TB for patients and their families is vital to help them understand how to manage TB symptoms and access the most effective treatment, while also helping to reduce the stigma associated with TB.

Dissemination: Channels to disseminate TB information include print and digital media, conferences and workshops, TB data dashboards, and social media campaigns.

TB information dissemination strategy: The TB program has prioritized the design, development and validation of an information sharing strategy to assess the extent to which stakeholders are targeted, reached and accommodated with the information they require to make the right decisions about how to engage with TB management.

Programmatic Reports

Social media campaign

4.7. Logical Framework: NSP (2023/24-2027/28)

VISION: A Kenya free of TB, Leprosy and reduced burden of lung disease

GOAL: End TB and by 2030

STRATEGIC OBJECTIVES AND OUTCOME TARGETS

Strategic Objective 1
To increase TB preventive treatment coverage among eligible people from 32% in 2021 to 80% by 2028

SO1.1 To increase number of eligible people (listed contacts) in contact with TB patients who begin TPT from 14% to 85%

SO1.2 To increase Proportion of eligible < 5 years children contacts of TB patients put on TB preventive therapy from 45% to 70%

SO1.3 To increase coverage of TB Preventive Therapy among eligible PLHIV from 50% to 95%

Strategic Objective 2
To increase treatment coverage for DS-TB 63% to 80% and DR TB case detection rate from 69% to 80% by **2028**

S0 2.1 To increase TB treatment coverage from 63% to 80%

SO2.2 To increase the contribution of the private sector to TB case notification from 18% to 25%

SO2.3 To increase the contribution of the community case finding to TB case notification from 11% to 30%

SO2.4 To increase DR-TB case detection rate from 69% to 80%

SO2.5 To increase proportion of paediatric TB cases among all TB cases notified from 11.4% to 12.5%

SO2.6 To increase the proportion of TB patients diagnosed using WHO recommended rapid tests (mWRD) from 42% to 90%

SO2.7 To increase Proportion of notified TB cases with DST for rifampicin from 57% to 95%

SO2.8 To increase the Proportion of RR TB patients with DST for fluoroquinolone and other second line drugs DST from 8% to 90%

Strategic Objective 3
To increase the treatment success rate for DS-TB and DR-TB from 86% and 81% in 2022 to 95% and 85% respectively by 2028

SO3.1 To increase the TSR of notified DS-TB patients from 86% to 95%

SO3.2 To increase the treatment success rate for Drug resistant TB from 81% to 85%

SO3.3 To increase proportion of TB patients with malnutrition who receive therapeutic food from 25% to 50%

Strategic Objective 4
To strengthen provision of integrated TB/HIV and other co-comorbidities services at national and sub-national levels by 2028

SO4.1 To increase proportion of TB patients tested for HIV from 95% to 100%

SO4.2 To increase proportion of HIV positive TB patients on ART from 97% to 100%

SO4.3 To increase number of TB patients followed up post treatment from 0% to 40%

SO4.4 To reduce percentage of people diagnosed with who experience self-stigma that inhibited them from seeking and accessing TB services by 50%

Strategic Objective 5
To reduce the number of people diagnosed with Multibacillary amongst new cases from 95% to <25% by 2028.

SO 5.1 To reduce proportion of newly notified patients with disability grade 2 from 19% to 10%

SO5.2 To reduce proportion of children below 15 years diagnosed with from 3% to <1%

SO5.3 To increase proportion of patients who are Released from Treatment (RFT) from 75% to 90%

SO5.4 To increase proportion of index cases whose contacts were traced from 0% in 2021 to 80% by 2028

Strategic Objective 6
To strengthen programme management, coordination, and accountability of TB services by 2028.

SO6.1 Improve data quality

SO6.2 Improve domestic funding for TB

SO6.3 Improve multi-sectoral coordination of TB

4.8. Monitoring and Evaluation Matrix

Table 4.1: Monitoring and Evaluation Matrix

Result	Indicator	Data sources	Periodicity	Baseline data 2022	2023	2024	2025	2026	2027	2028
Reduce TB incidence by 80% by 2030	TB incidence rate (per 100,000)	Global TB Report (WHO)	Annually	287	281	264	247	230	213	196
Reduce TB mortality by 90% by 2030	TB mortality rate (per 100,000)	Global TB report (WHO)	Annually	35	32	28	26	23	21	19
Have zero TB affected households facing catastrophic costs due to TB	Number of TB patients and their households that experienced catastrophic costs due to TB, out of all TB patients (%)	Catastrophic cost survey	Three yearly	43%		TBD				
	TB Case Notification rate	TIBU	Annually	179	194	190	185	179	168	156
Strategic Objective 1: To increase TB preventive treatment coverage among eligible people from 14% in 2022 to 85% by 2028										
SO1.1: To increase proportion (number) of eligible people in contact with TB patients who begin TPT from 14% to 85%	Number of people in contact with TB patients (bacteriologically confirmed) who began preventive therapy	TIBU	Quarterly	19,681	65,504	84,638	105,829	127,396	145,155	152,559

Result	Indicator	Data sources	Periodicity	Baseline data 2022	2023	2024	2025	2026	2027	2028
SO1.2: To increase proportion of eligible children under age 5 with contact with TB patients put on TB preventive therapy from 45% to 70%	Proportion of eligible children under age 5 who are contacts of people with TB, who are put on TB preventive treatment	TIBU	Quarterly	45%	50%	55%	60%	65%	68%	70%
SO1.3: To increase coverage of TB preventive therapy among eligible PLHIV from 50% to 95%	Proportion of eligible PLHIV given TB preventive therapy	HMIS	Quarterly	50%	60%	70%	90%	95%	95%	95%
Strategic Objective 2: To increase treatment coverage for DS-TB and DR-TB from 63% and 69% in 2022 to 80% and 80% respectively by 2028										
S0 2.1: To increase TB treatment coverage from 63% to 80%	TB treatment coverage: percentage of new and relapse cases that were notified and treated among the estimated number of incident TB cases in the same year (all forms of TB - bacteriologically confirmed plus clinically diagnosed)	TIBU	Annually	63%	69%	72%	75%	78%	79%	80%
	Number of notified cases of all forms (new and relapse) of TB (i.e. bacteriologically confirmed + clinically diagnosed)	TIBU	Quarterly	90,841	99,975	99,780	98,855	97,219	92,585	87,659

Result	Indicator	Data sources	Periodicity	Baseline data 2022	2023	2024	2025	2026	2027	2028
SO2.2: To increase the contribution of the private sector to TB case notification from 18% to 25%	Proportion (number) of notified TB cases (all forms) contributed by non-national TB program providers – private/non-governmental facilities	TIBU	Quarterly	18%	19%	20%	21%	22%	23%	25%
	Proportion of private facilities providing TB treatment services	TIBU	Quarterly	25%	26%	27%	28%	29%	29%	30%
SO2.3: To increase the contribution of the community case finding to TB case notification from 11% to 30%	Proportion (number) of notified TB cases (all forms) contributed by non-national TB program providers – community referrals	TIBU	Quarterly	11%	14%	17%	21%	24%	27%	30%
SO2.4 To increase DR TB case notifications.	Number of TB cases with Rifampicin-resistant (RR-TB) and/or MDR-TB notified	TIBU	Quarterly	724	1,085	1,085	1,076	1,059	1,022	980
SO2.5: To increase the proportion of pediatric TB cases among all TB cases notified from 11.4% to 15%	Number of notified TB cases new and relapse aged <15 years	TIBU	Quarterly	10,324	12,497	12,472	12,851	13,125	12,962	13,145
	Proportion of notified childhood TB patients with a CXR at diagnosis	TIBU	Quarterly	75%	78%	80%	82%	90%	95	100%

Result	Indicator	Data sources	Periodicity	Baseline data 2022	2023	2024	2025	2026	2027	2028
SO2.6: To increase the proportion of notified new and relapse TB patients diagnosed using WHO recommended rapid tests (mWRD) from 42% to 90%	Percentage of new and relapse TB patients tested using WHO recommended rapid tests at the time of diagnosis	TIBU	Quarterly	42%	45%	50%	60%	70%	80%	90%
SO2.7: To increase the proportion of notified TB cases with DST for rifampicin from 57% to 95%	Proportion of notified, bacteriologically confirmed TB cases with DST for rifampicin (1st line DST)	TIBU	Quarterly	57%	65%	70%	75%	80%	85%	95%
SO2.8: To increase the proportion of RR/MDR TB patients with fluoroquinolone DST (second line DST) from 8% to 90%	Percentage of notified rifampicin-resistant TB cases with DST results for Fluoroquinolones and 2nd line molecules (2nd Line DST)	TIBU	Quarterly	8%	15%	30%	45%	60%	75%	90%
SO2.9: To increase the proportion of new and relapse TB cases with bacteriologic confirmation from 53% to 70%	Proportion of notified new and relapse TB cases with bacteriological confirmation	TIBU	Quarterly	53%	56	58	61%	64%	67%	70%

Result	Indicator	Data sources	Periodicity	Baseline data 2022	2023	2024	2025	2026	2027	2028
SO2.9: To improve quality of laboratory services	Proportion of laboratories participating in EQA for microscopy	TIBU	Annually	80%	85%	90%	95%	100%	100%	100%
	Proportion of laboratories participating in EQA for DST among all laboratories conducting DST	TIBU	Annually	87%	90%	95%	100%	100%	100%	100%
	Percentage of laboratories showing adequate performance in external quality assurance for smear microscopy among all laboratories that undertake smear microscopy during the reporting period	TIBU	Annually	80%	85%	90%	95%	100%	100%	100%
	Percentage of DST laboratories showing adequate performance on External Quality Assurance	TIBU	Annually	80%	85%	90%	95%	100%	100%	100%
	Gene Xpert (mWRD) utilization rates	TIBU		25%	27.50%	30%	35%	40%	45%	50%

Result	Indicator	Data sources	Periodicity	Baseline data 2022	2023	2024	2025	2026	2027	2028
Strategic Objective 3: To increase the treatment success rate for DS-TB and DR-TB from 86% and 81% in 2021 to 95% and 85% respectively by 2028										
SO3.1: To increase the TSR of notified TB patients from 86% to 95%	Treatment success rate of all forms of TB with bacteriological confirmation plus clinically diagnosed, new and relapse cases	TIBU	Quarterly	86%	87%	88%	90%	92%	94%	95%
SO3.2: To increase the treatment success rate for drug resistant TB from 81% to 85%	Treatment success rate of RR TB and/or MDR-TB: percentage of cases with RR and/or MDR-TB successfully treated	TIBU	Quarterly	81%	81.5%	82%	82.5%	83%	84%	85%
	Number of health facilities offering TB treatment services (treatment site)	TIBU	Quarterly	4,500	4,900	5,300	5,700	6,000	6,300	6,500
	Proportion of TB cases evaluated for Nutritional support	TIBU	Annual	98%	99%	100%	100%	100%	100%	100%
SO3.3: To increase proportion of TB patients with malnutrition who receive therapeutic feeding from 25% to 50%	Proportion of TB patients with malnutrition (SAM and MAM) who received therapeutic feeding	TIBU	Annual	25%	27.5%	30%	35%	40%	45%	50%
	Proportion of health facilities reporting TB cases	TIBU	Quarterly	28%	33%	38%	43%	48%	50%	52%
	Proportion of TB deaths audited	TIBU	Annual	0%	25%	50%	75%	100%	100%	100%

Result	Indicator	Data sources	Periodicity	Baseline data 2022	2023	2024	2025	2026	2027	2028
Strategic objective 4: To strengthen provision of integrated TB/HIV and other co-morbidity services at national and sub-national levels by 2028										
SO4.1: To increase proportion of TB patients tested for HIV from 95% to 100%	Percentage of registered new and relapse TB patients with documented HIV status	TIBU	Quarterly	95%	96%	97%	98%	99%	100%	100%
SO4.2: To increase proportion of HIV positive TB patients on ART from 97% to 100%	Percentage of HIV-positive new and relapse TB patients on ART during TB treatment	TIBU	Quarterly	97%	97.5%	98%	98.5%	99%	99.5%	100%
SO4.3: To increase number of TB patients followed up post treatment to 40%	Proportion of DS TB patients screened for post TB lung diseases	TIBU		TBD		5%	15%	25%	35%	40%
	Proportion of DR TB patients screened for post TB lung diseases	TIBU		TBD	TBD	5%	15%	25%	35%	40%
SO4.4: To reduce percentage of people diagnosed with TB who experience self stigma that inhibited them from seeking and accessing TB services by 50%	Percentage of people diagnosed with TB who experienced self-stigma that inhibited them from seeking and accessing TB services	Stigma index survey	Three yearly	TBD				TBD		
	Percentage of people diagnosed with TB who report stigma in health care settings that inhibited them from seeking and accessing TB services	Stigma index survey	Three yearly	TBD				TBD		

Result	Indicator	Data sources	Periodicity	Baseline data 2022	2023	2024	2025	2026	2027	2028
	Percentage of people diagnosed with TB who report stigma in community settings that inhibited them from seeking and accessing TB services	Stigma index survey	Three yearly	TBD				TBD		
Strategic objective 5: To reduce the number of people diagnosed with Multibacillary Leprosy amongst new cases from 95% to <25% by 2028.										
SO5.1: To reduce proportion of newly notified Leprosy patients with disability grade 2 from 19% to 10%	Proportion of newly notified Leprosy patients with disability grade 2	TIBU	Quarterly	19%	18%	17%	15%	13%	11%	10%
SO5.2: To reduce proportion of children under age 15 diagnosed with Leprosy from 3% to <1%	Proportion of children under age 15 diagnosed with Leprosy	TIBU	Quarterly	3%	3%	2%	2%	1%	1%	<1%
SO5.3: To increase proportion of patients Released from Treatment (RFT) from 75% to 90%	Proportion of patients Released from Treatment (RFT)	TIBU	Quarterly	75%	80%	82%	84%	86%	88%	90%
SO5.4: To increase proportion of index Leprosy cases whose contacts were traced from 0% in 2021 to 80% by 2028	Proportion of index Leprosy cases whose contacts were traced	TIBU	Quarterly	0%	10%	20%	40%	50%	60%	80%

Result	Indicator	Data sources	Periodicity	Baseline data 2022	2023	2024	2025	2026	2027	2028
Strategic objective 6: To strengthen program management, coordination, and accountability of TB services by 2028.										
SO6.1: Improve data quality	Number of joint data review meetings conducted			1	1	1	1	1	1	1
	Proportion of data concordance between facility register and TIBU (%)			95%	≥95%	≥96%	≥97%	≥98%	≥99%	100%
SO6.2: Improve domestic funding for TB	Number of counties that have allocated funds for TB activities in their AWPs			-	11	23	35	47	47	47
	Proportion of annual TB budget contributed by government (%)			22%	22.5%	23%	23.5%	24%	24.5%	25%
	Proportion of annual budget defined in TB NSP that is funded (%)			51%	52.5%	54%	55.5%	57%	58.5%	60%
	Proportion of counties that access allocated funds in AWP			TBD						100%
SO6.3 To ensure uninterrupted supply of TB and Leprosy commodities by 2028	Percentage of reporting units reporting no stock-outs of anti-TB drugs on the last day of the quarter		Quarterly	75%	80%	85%	90%	95%	100%	100%

Result	Indicator	Data sources	Periodicity	Baseline data 2022	2023	2024	2025	2026	2027	2028
	Percentage of reporting units reporting no expiries of anti-TB drugs on the last day of the quarter		Quarterly	60%	70%	80%	90%	95%	100%	100%
SO6.4: Strengthen active drug safety monitoring and management (aDSM)	Proportion of adverse events reported to PPB		Annual	<5%	10%	30%	50%	70%	90%	100%
SO6.5: Improve multi-sectoral coordination of TB	Proportion of engaged sectors reporting on MAF indicators			0%	10%	30%	50%	70%	90%	100%

5

Financing Requirements

KES 93,204 M

Investment for TB required by TB programme of the Ministry of Health in Kenya, and other key stakeholders over the 5-year plan period.

KES 21,541 M

Of the total resources required for the period of the strategic plan in 2025, accounting for the highest resource needed over the 5-year plan period.

5.1. Budgeting for Impact: Estimates and Justification

5.1.1. Introduction

The costing of the NSP is a nationally-owned process, involving partners and stakeholders both in and out of government committed to achieving Kenya's goals for eradication of TB, Leprosy, and lung diseases.

This section presents the annual resources required to implement the plan, to underwrite the strategic intervention and initiatives identified by the National TB, Leprosy, and Lung Disease Program in the MoH and across partners and stakeholders. This cost information is vital to efforts to budget, identify resourcing opportunities and leverage cost-effectiveness and cost saving mechanisms that could integrate TB programming and activities into other health system initiatives.

The ultimate goal of a costing exercise is to support the articulation of the true resource needs to fulfill strategic priorities and initiatives identified in the plan to meet specific targets. Resource requirements are described in this section in detail, and compared with available resources as provided in previous budget cycles. Understanding the extent of the financing gap will help stakeholders in their efforts to design realistic and prioritized annual health budgets to underpin operational plans as well as to provide an important policy advocacy tool for implementers, duty bearers, and funders to demonstrate the need for greater and more sustained resource mobilization and allocation for TB program delivery.

5.2. Costing Methodology

Costing helps to determine the monetary value of inputs required to generate a particular output, both in terms of the operational (recurrent) and the capital costs. Consultations to develop a costing plan for this NSP employed the Activity Based Costing approach (ABC): a method whereby costs allocated to products and services are intervention-based and assessed based on the final price tag to achieve each goal or result.

ABC is a planning and control tool in which activity costs are connected to the products and services that support the greatest efficacy of activity performance. These costs can include everything from the labor required to perform the activity to the materials used for the activity itself, down to the printing costs for materials disseminated during activities or the rental of a space to host an outreach activity. Each input is measured for quantity and frequency.

Total input cost is equal to the sum of unit costs, quantity and frequency. Unit cost refers to the value of resources to provide a service to one unit/person (client or a patient). ABC ensures that each of the inputs required to provide a complete service to one person is clearly defined. The cost price of a unit of input is also required to calculate the unit cost. The ABC costing method was used to estimate the resources required for the strategic objectives,

interventions, and activities within the national strategic plan. The scope for these strategic interventions and activities costed in the ABC is for the TB programme.

5.3. Total Resource Requirements (2023/24 - 2027/28)

The cost estimates show that DNTLD-P, and other key stakeholders require an investment of KSH 93,204 million for TB over the 5-year plan period. Variation in the financial need across years is marginal, with the year 2025 accounting for the highest resource needed at KSh 21,541 million (23.11%) of the total resources required for the period of the strategic plan (Figure 5.1).

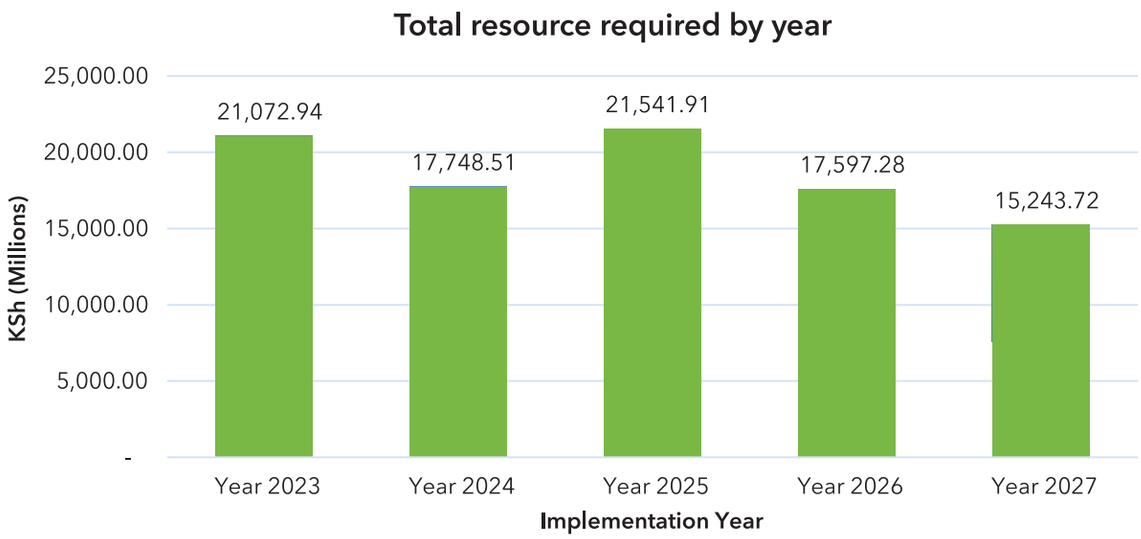

Figure 5.1: Total estimated costs for the TB National Strategic Plan 2023 - 2027

Table 5.1 shows the total resource requirements by strategic objective for the five-year strategic plan period.

Table 5.1: Resource requirements by strategic pillar (KSH million)

Strategic Objective	Year 2023/24	Year 2024/25	Year 2025/26	Year 2026/27	Year 2027/28	Total
Strategic Objective 1	823.32	1,324.98	1,283.73	1,344.47	1,443.95	6,220.45
Strategic Objective 2	9,580.02	9,492.01	9,878.93	9,096.04	7,684.23	45,731.24
Strategic Objective 3	9,310.90	4,926.51	8,952.50	4,409.75	4,743.50	32,343.16
Strategic Objective 4	259.22	271.53	197.12	205.33	254.97	1,188.17
Strategic Objective 5	203.12	318.68	207.49	299.75	239.84	1,268.89
Strategic Objective 6	896.37	1,414.81	1,022.14	2,241.93	877.22	6,452.46
Total	21,072.94	17,748.51	21,541.91	17,597.28	15,243.72	93,204.37

Figure 5.2 shows the proportion of resource needs for each strategic objective.

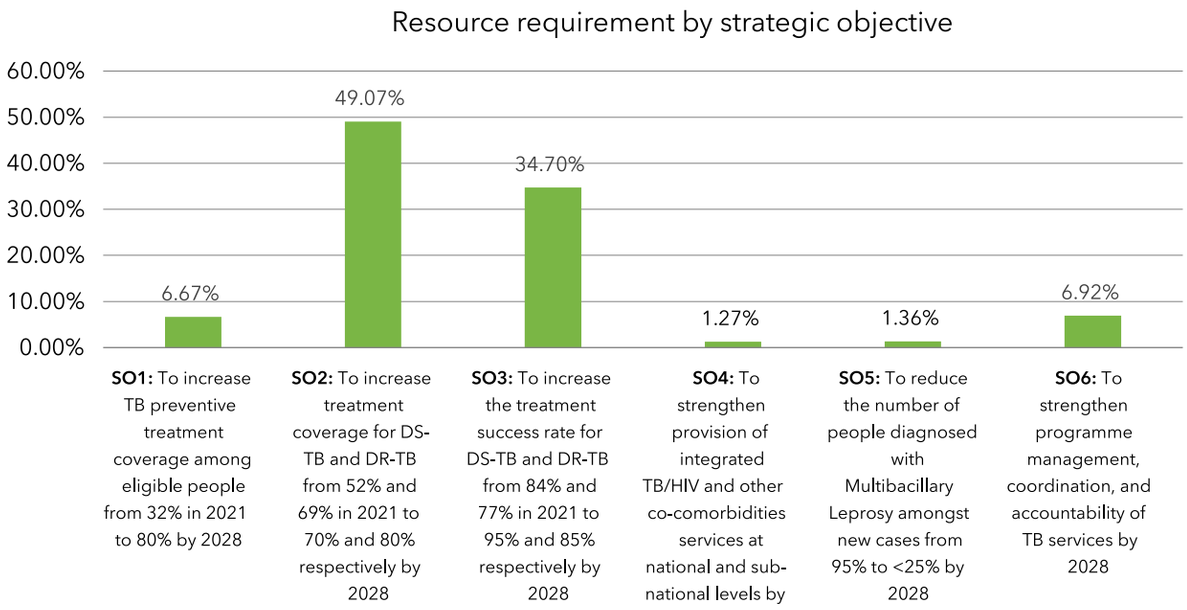

Figure 5.2: Proportion of resources required by strategic objective

6

Modeling for Kenya Tuberculosis NSP: Scope and Aims

6.1. Introduction

A deterministic, compartmental model was developed, to capture the epidemiology of TB in Kenya, and the effects of different interventions in the NSP. The model captures the natural history and transmission dynamics of TB, as well as key factors in Kenya such as the driving role of HIV, and the role of the private healthcare sector in managing TB. The model was calibrated to capture WHO estimates for the burden of TB in Kenya, as well as for the effects of disruptions during the COVID-19 pandemic. Further details on the model are provided in the technical summary (Section 6.2 below)

While the NSP involves a range of different activities, their effects on the TB epidemic depend on how they can improve key indicators such as case-finding, preventive treatment coverage, and treatment success. Accordingly, to project the epidemiological impact of the NSP, the model was applied to estimates from the NSP, for the following outputs: the annual number of TB cases that will be notified by the private sector, as well as from the community; the coverage of TPT amongst close contacts and people living with HIV; and first-line treatment success. Table 6.1 below shows the scenarios for these intervention outputs, that were used as inputs for the modelling (see table 6.4. in the technical summary for the full annual timeseries that was used).

Figure 6.1 shows the resulting projections, in terms of incidence and mortality in Kenya between 2022 and 2030. Overall, a combination of all these measures would reduce incidence to 105 per 100,000 (95% uncertainty intervals (UI) 95 - 127), and mortality to 9.9 per 100,000 (95% UI 6.3 – 14), by 2030. Amongst all outputs shown, those having the largest impact are case-finding from the community, and preventive therapy amongst contacts. Table 6.2 shows the possible implications of varying levels of coverage in both of these interventions. For example, a doubling of effort in *both* case-finding and TPT in contacts would reduce incidence and mortality in 2030 to 83 per 100,000 (95% UI 74 – 100) and 5.4 per 100,000 (95% UI 3.2 – 7.4), respectively.

Although interventions such as public-private mix (PPM) appear to make only modest contributions to incidence and mortality reductions, it should be noted that these interventions will still have a critical role to play. PPM will play an important foundational role for other interventions, for example with increased notifications also increasing the number of close contacts of TB patients who are eligible to receive preventive therapy. Therefore, the value of interventions goes well beyond the epidemiological impact shown here.

Overall, these results highlight the importance of combined measures to address TB at every stage of its natural history. Doing so can achieve substantial reductions in TB incidence and mortality in the coming years.

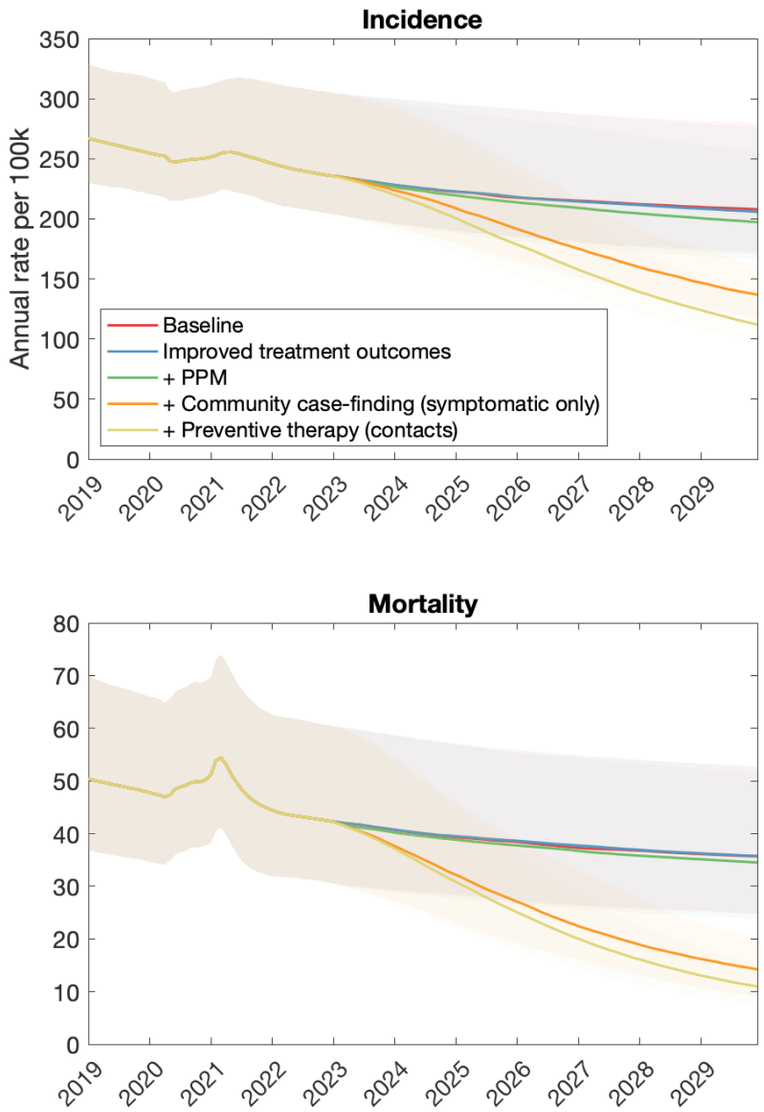

Figure 6.1. Model projections for the effect of interventions in Kenya's TB National

Strategic Plan. Shown are interventions in successive combination, so that (for example) the bottom curve in both panels represents all interventions acting together. Solid lines show central estimates, while shaded areas show 95% uncertainty intervals.

Table 6.1. List of NSP interventions captured in mathematical modelling

Intervention	Relevant activities in the NSP	Baseline level as of 2022	Level by 2028*
Annual case-finding through private sector engagement	1. Strengthen coordination of PPM at national level including the PPM sub-working group for PPM oversight 2. Scale up the number and diversity of private providers contributing to referral of presumptive TB cases including diagnostic and treatment support to contribute to national goals for TB case detection and treatment success	16351	21915

Intervention	Relevant activities in the NSP	Baseline level as of 2022	Level by 2028*
	3. Strengthen referral and linkage systems for TB patients diagnosed between public and private facilities 4. Improve M&E to generate evidence of PPMTB performance.		
Annual case-finding from the community	1. Capacity strengthening 2. Community-led monitoring 3. Community stewardship (Coordination) 4. Community data integration 5. M&E of community engagement 6. Demand creation	4542	26298
TPT coverage amongst close contacts	1. Increase provision of TPT to eligible HIV negative individuals and those at risk of TB 2. Increase community-level demand for TPT 3. Improve access to latent TB testing 4. Improve commodity security for TPT among eligible HIV negative population and those at risk of TB 5. Strengthen monitoring of TPT cascade in the expanded TPT eligible population 6. Introduce community-led monitoring to identify those eligible for TPT and monitor and ensure access 7. Engage communities in raising awareness about TPT, TPT eligibility and the rights of people affected by TB	19681	66270
Treatment success rates	1. Reduce loss to follow-up and un-evaluated outcomes 2. Reduce mortality 3. Promote nutrition support 4. Ensure appropriate TB treatment for all detected patients 5. Strengthen linkage to post TB and lung health care	86%	95%

*Footnotes: **

For the full annual timeseries of indicator values from 2022 to 2028, see Table 6.4. in the technical appendix.

Table 6.2. Effects of varying assumptions for the coverage of community case-finding, and TPT amongst contacts

Incidence in 2030 Half NSP coverage		**TPT amongst contacts**		
		NSP coverage	**Twice NSP coverage**	
Case-finding from community	Half NSP coverage	126.51 (114.50 - 159.09)	120.50 (109.44 - 151.25)	108.53 (99.27 - 136.33)
	NSP coverage	109.37 (99.46 - 132.61)	104.61 (95.36 - 126.84)	95.44 (86.69 - 115.75)
	Twice NSP coverage	92.94 (83.23 - 112.95)	89.44 (79.94 - 108.57)	82.72 (73.55 - 100.07)

The table concentrates on these two interventions as they show the largest reductions in incidence and mortality in Figure 6.1. Shown are reductions in incidence and mortality when adopting half and twice the intervention coverage projected in the NSP. Central estimates, depicted in Figure 6.1, are shown in bold.

Table 6.3. Mortality by 2030 with TPT amongst contacts.

Mortality in 2030		**TPT amongst contacts**		
Half NSP coverage		**NSP coverage**	**Twice NSP coverage**	
Case-finding from community	Half NSP coverage	15.19 (10.53 - 21.26)	14.54 (10.15 - 20.38)	13.28 (9.41 - 18.69)
	NSP coverage	10.34 (6.49 - 14.06)	9.93 (6.26 - 13.51)	9.16 (5.80 - 12.45)
	Twice NSP coverage	6.04 (3.54 - 8.26)	5.83 (3.43 - 7.97)	5.44 (3.20 - 7.42)

6.2. Technical summary

6.2.1. Model overview

The model is a deterministic, compartmental framework, illustrated schematically in Figure S1. Transitions between all model compartments are captured by a series of ordinary differential equations. For simplicity, the model does not incorporate different age groups, nor does it distinguish different forms of TB such as pulmonary vs extrapulmonary TB. It addresses the TB epidemic only at the national level. To capture the role of HIV coinfection, the model distinguishes four different types of HIV status: those without HIV; those with untreated HIV; those on ART alone; and those on ART and TPT. The dynamics of HIV are drawn from estimates using the Thembisa model, which is employed for global burden estimates of HIV. The effect of HIV on TB is captured through an increased rate of progression from latent to active TB amongst those with untreated HIV, compared to those without HIV: to model the impact of ART, this rate is assumed to be 60% lower than that for untreated TB, in agreement with the effectiveness of ART.

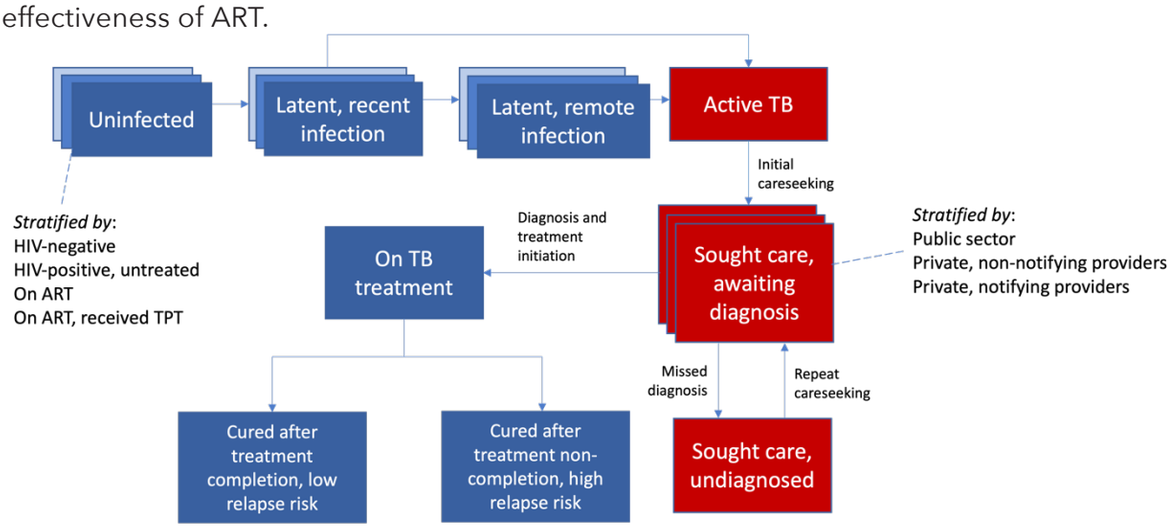

Figure 6.2. Schematic illustration of the model structure

Each box shows a different compartment in the model, with flows between compartments represented by a series of mathematical equations. Boxes in red are infectious compartments, that all contribute towards the rate at which uninfected people acquire infection (i.e. the first transition at upper left of the figure). 'Layers' shown as light-blue shaded boxes correspond to different types of HIV status, as listed in the annotation. Likewise, 'layers' to the status "Sought care, awaiting diagnosis" correspond to different types of healthcare providers, listed in the annotation. Transitions included in the model, but not shown here for simplicity, include: TB mortality; endogenous relapse and exogenous reinfection; spontaneous cure; and subclinical TB.

6.2.2. Model calibration

The model was calibrated in two stages: first, to match pre-COVID-19 estimates for TB burden in Kenya, and second, to capture the effects of COVID-related disruptions from 2020 onwards.

In the first step, model parameters were calibrated to match WHO estimates in 2019 for: incidence; mortality; the proportion of incident TB that was HIV-coinfected; the proportion of TB deaths that were HIV+ve; and notifications, including the proportion that came from the private sector. Uncertainty was also incorporated in model parameters such as the standard of TB care in the private sector. Calibration was performed using Bayesian Markov Chain Monte Carlo, which allows uncertainty to be propagated from model inputs to model projections in a systematic way.

In the second step, the effects of COVID disruptions were captured using the same approach as currently used by WHO for TB burden estimation: the rate-of-presentation-to-care was adjusted on a monthly basis, so that the monthly number of patients initiating treatment in the public sector was the same as the monthly data reported to WHO. In order to capture any transmission-reducing effects during lockdowns, it was assumed that TB transmission reduced by 50% during such periods, with wide uncertainty intervals of 25 - 75%.

6.2.3. Modelling interventions

As described in the main text, the model did not concentrate on individual activities in the NSP, but rather on their outputs under the categories shown in Table 6.1. The assumed effects of each intervention were modelled as follows:

- **Treatment success:** At baseline, there was 86% treatment success for first-line treatment in the public sector. It was assumed that improving treatment success would be achieved by reducing loss-to-follow-up (LTFU) during treatment (for example, as opposed to reducing mortality while on treatment). In the model, it is assumed that patients experiencing LTFU are temporarily cured, but experience higher rates of post-treatment relapse than patients completing treatment: thus, the impact of improving treatment completion is to reduce relapse rates.

- **Public-private mix (PPM):** Model estimates suggest that at baseline, 35% (95% uncertainty intervals 21 – 64%) of patient-provider interactions in the private sector were with notifying private providers. The intervention is modelled as an increase in this proportion, so that the number of TB patients notified by the private sector

increases annually by the amount shown in Table 6.4. It is assumed that non-notifying private healthcare providers have poorer diagnostic and treatment outcomes than the public sector. Further, it is assumed that PPM - in addition to encouraging notifications from private providers - would bring diagnosis and treatment outcomes to the same levels as in the public sector, thus reducing both diagnostic delays and post-treatment relapse amongst patients managed by the private sector. Both of these factors drive the epidemiological impact of this intervention.

- **Community case-finding:** The model incorporates symptomatic individuals whose TB remains undiagnosed, whether because they have not sought care, or (amongst those who have presented for care) because they are undergoing a diagnostic delay. Case-finding in the community benefits such individuals: this intervention is modelled by increasing the rate at which undiagnosed TB is linked directly to treatment, in such a way as to match the annual targets for case-finding shown in Table 6.1.

- **TPT in contacts:** Although compartmental models do not lend themselves to modelling contact structure, the model implemented a method previously developed for countries in South East Asia[18]. Consistent with the 3HP regimen, it was assumed that preventive therapy has 60% effectiveness in reducing TB incidence amongst individuals with latent TB.

- **TPT in PLHIV:** As shown in Figure 6.1 in the main text, the model keeps track of individuals on ART who also receive TPT. The increase of TPT coverage amongst those on ART was modelled simply as an increase in the proportion of patients receiving TPT, to match NSP projections. As for TPT in close contacts, we assumed 60% efficacy in reducing incidence amongst those with latent TB.

6.2.4. Additional scenarios

Two additional scenarios were also modelled, in order to further explore the model projections. First, the two interventions associated with the greatest reductions in incidence and mortality (case-finding from the community and TPT amongst contacts) were modelled at half and twice their respective coverage in the NSP, to show how the overall impact of the combined interventions would depend on these scenarios. Results from this scenario are shown in Table 6.2.

Second, a second period of disruption was modelled, to assess the implications of a future emergency similar to COVID-19. For this scenario, the same disruptions in effect during 2020 were modelled as occurring again, during 2025. The resulting projections are shown in Figure 6.3, below. As illustrated by the figure, the disruptions cause temporary, substantial increases in incidence and mortality, but the long-term projections for 2030 remain similar to those shown in Figure 6.1. The reason is that any long-term effects of disruptions are driven by an increase in undetected TB: the enhanced case-finding efforts planned in the NSP, if continued immediately after the periods of disruption, will play a critical role in minimising such an increase, thus mitigating the long-term effects of disruption.

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[18] *https://bmcmedicine.biomedcentral.com/articles/10.1186/s12916-020-01651-5*

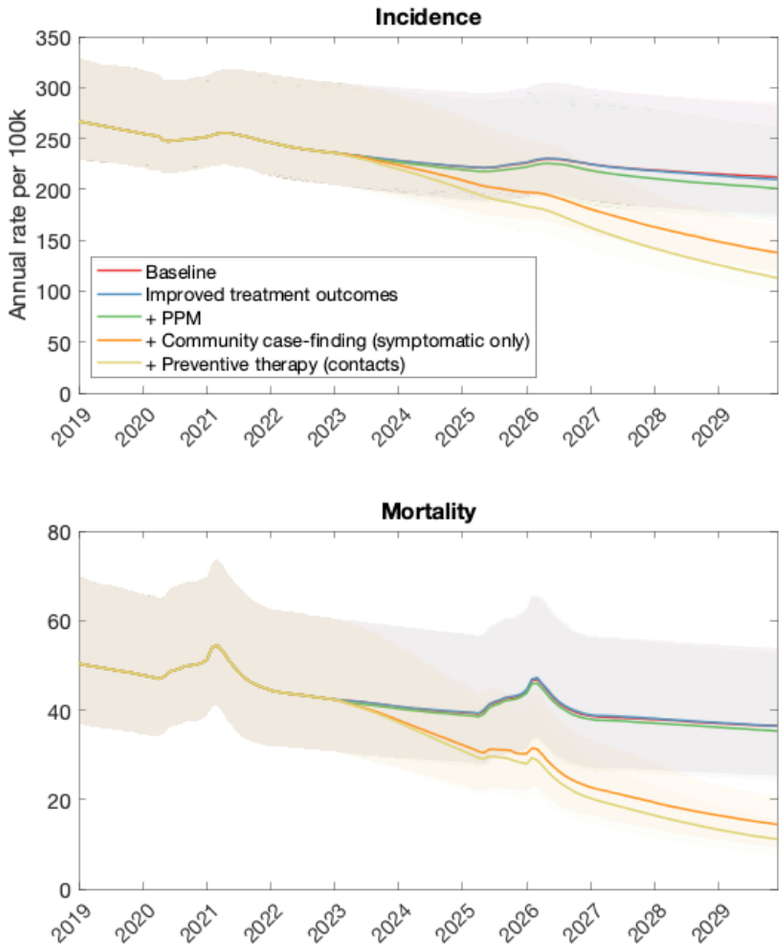

Figure 6.3. Results of a second period of COVID-like disruption

Shown is a scenario where COVID-related disruptions occur again in 2025, for example as a result of a new pandemic virus emerging in that year. As described in the text, despite transient increases in incidence and mortality, both measures of TB burden ultimately reach similar levels in 2030 as in Figure 6.1.

Table 6.4. Full annual timeseries of intervention outputs from 2022 to 2028

Intervention	2022	2023	2024	2025	2026	2027	2028
Annual Case Notifications (Total)	90,841	99,975	99,780	98,855	97,219	92,585	87,659
Annual case-finding through private sector engagement	16,351	18,995	19,956	20,760	21,388	21,295	21,915
Annual case-finding from the community	4,542	7,498	9,978	14,828	19,444	23,146	26,298
TPT coverage amongst close contacts	19,681	59,970	62,969	65,472	67,425	67,103	66,270
Treatment success rates	86%	87%	88%	89%	91%	93%	95%

7.1. Taskforce for NSP (2023/24-2027/28)

The taskforce for implementation of the NSP will steward the realization of Kenya's vision of

7

Implementation Arrangements

being TB and Leprosy free by 2030, with a reduced burden of lung disease. Joining the task force are representatives of critical agencies and entities working to eradicate TB through the provision of quality care and prevention services for all people in Kenya.

The NSP guiding the work of the task force incorporates strategies to increase awareness, strengthen surveillance systems, improve diagnosis, treatment, and care, and enhance research and development in the area of lung health. The task force will oversee the implementation of these strategies, working closely with government agencies, civil society organizations, health workers, and other key players in the health sector.

A key responsibility is to ensure that adequate resources are allocated to implement the NSP, and as such the task force will work with government agencies to secure funding and mobilize additional resources. The task force will also monitor and evaluate implementation progress, with timely updates.

The task force will work closely with frontline health service delivery entities to ensure that the activities in the NSP are implemented in a way that meets the needs identified in communities.

7.2. Sub-national implementation

Stakeholders engaged in the development of the NSP looked not only at the national level policy architecture governing the Kenyan TB response but also at the counties individually, to identify the contextual variations in priorities and interventions that would shape the county-level work planning that follows the NSP's inauguration. Each of Kenya's 47 counties will develop County Strategic Operational Frameworks for TB, Leprosy and Lung Disease alongside this NSP, anchored in their County Integrated Development Plans (CIDPs).

This will align with health objectives such as:

- Reducing the burden of communicable diseases including TB, HIV, Malaria, Leprosy and any other as prioritized by the county
- Upgrading health facilities through improvement of infrastructure and provision of modern equipment and adopting digitization of processes for efficiency.
- Strengthening health promotion interventions to increase awareness on communicable and non-communicable diseases and promote healthy behaviors, including lead-up to important global visibility events for health promotion
- Strengthening collaboration, engagement, and support of the private and other sectors in the delivery of health services for communicable and non-communicable diseases
- Promotion of a people-centered approach to health and health interventions across the continuum of care.
- Advocacy and promotion of a multi-sectoral, politically responsive approach to realizing health goals as a response to the social and structural determinants of health
- Improve domestic resource mobilization, including the consideration of possible earmarking and ring-fencing of funds for communicable and non-communicable diseases within program-based budgets.

Counties will develop and adopt operational work plans with clear roles and responsibilities to hasten and complete the adoption of the NSP in counties.

These are articulated in Table 8.1 below.

Table 7. 1: Priorities and strategies for county adaptation of the NSP

Priorities	Strategies
1. Leadership and Governance	
Promote committed leadership at county and sub-county levels to ensure the achievement of all TB, Leprosy, and lung disease objectives	Strengthen linkages at all levels for planning, programming, and advocacy
	Effective implementation of the Multi-Sectoral Accountability Framework (MAF)
2. Infrastructure	
Improve infrastructure to ensure infection prevention and control measures along the health service delivery points along the cascade of care.	Renovate existing structure to improve on IPC or build new structures to expand access to quality health services including isolation facilities, TB clinics, HIV clinics, laboratory
Expand access to TB diagnostic services	
Ensure availability of isolation unit for infectious diseases	
3. Service Delivery	
Ensure accessible and quality TB services at all levels of care by increasing proportion of facilities offering TB care and treatment	Implement and scale up active case finding in all service delivery points
	Build capacity and improve skills for TB screening and diagnosis among health workers
	Differentiated care approaches
	Increased number of diagnostic sites and increase coverage of sample referral mechanisms.
	Improved engagement of the private sector
4. Health care financing	
Increase annual allocation to communicable and non-communicable diseases in the county budget.	Generate evidence to be used as advocacy materials for increased funding in the county budget.
Ensure 100% spending of annually allocated funds for communicable and non-communicable diseases in the county budget	Conduct and avail quarterly public expenditure review reports of the annual county health budget
4. Human resources for health	
Ensure availability of qualified personnel at all TB treatment sites.	Optimal distribution of HRH

Priorities	Strategies
5. Medical products and technologies	
Reduce stockouts of key TB prevention and treatment commodities	Procure TB health products and technologies
Leverage innovative technologies in diagnosis of TB	Adopt innovative technologies e.g., Portable Chest X-Ray machines for diagnosis of TB
6. Health information	
Digitize processes at service delivery points	Adopt the use of facility wide EMRs at the health facilities to eliminate paper-based processes.
Enhance data use for decision making	Capacity strengthen healthcare workers to use existing health data for decision making.

7.3. Risk Management

Risk is the extent to which uncertainty could compromise achievement of the NSP for NTLD-P. The risk management strategy accompanying the NSP will provide reasonable, but not absolute, assurance that significant risks are identified and monitored, opportunities are maximized, and objectives are achieved.

Objectives of the Risk Management Policy and Process:

1. To establish a risk management policy and process that aligns with the goals and objectives of Kenya's NSP for NTLD-P
2. To identify and assess risks that may affect the achievement of the NSP's objectives, including risks related to financial, operational, reputational, and compliance issues
3. To prioritize risks based on their potential impact and likelihood of occurrence, and develop appropriate strategies to mitigate their impact
4. To monitor and review risks on an ongoing basis, and update risk management strategies as necessary to ensure continued effectiveness
5. To ensure that risk management is integrated into all aspects of the NSP's implementation, including planning, budgeting, monitoring, and reporting

Risk Management Process:

1. **Risk Identification:** The first step in the risk management process is to work with stakeholders to identify and assess risks that may affect the achievement of the NSP's objectives.

2. **Risk Assessment:** Identified risks will be assessed based on their potential impact and likelihood of occurrence, and prioritized
3. **Risk Mitigation:** Risk mitigation strategies will be developed based on the prioritization of risks. These strategies may include risk avoidance, risk reduction, risk transfer, or risk acceptance
4. **Risk Monitoring and Review:** Risk management strategies will be routinely monitored and reviewed for effectiveness, and updated as necessary to reflect changes in risk profiles or to improve the effectiveness of risk mitigation strategies

An addendum to the NSP will incorporate already existing strategies developed by NTLD-P to mitigate risk, aligned with the NSP's objectives and integrated into its implementation.

8

Contingency Measures

Kenya's significant strides in its eradication efforts for TB and Leprosy stalled during the COVID-19 pandemic, threatening to reverse some of the important progress made over time. To guard against future interruptions in service delivery, a structural and system-wide contingency plan is vital, incorporating pre-planned and well-coordinated response mechanisms.

Contingency plans accompanying this NSP seek to:

1. Ensure the continuity of essential health services during times of disruption, such as pandemics, wars, and industrial action
2. Minimize the negative impact of such disruptions on TB, Leprosy, and Lung Health delivery and patient outcomes
3. Protect progress towards achieving the targets for TB and Leprosy control and elimination and Lung Health targets
4. Strengthen the health system's resilience to cope with future disruptive events

Key Strategies

1. **Risk Assessment and Scenario Planning**: The DNTLD-P will conduct a comprehensive risk assessment and scenario planning exercise to identify potential risks and disruptions and develop mitigation strategies, including the development of a contingency plan that outlines roles, responsibilities, and strategies for the continuity of essential health services
2. **Alternative Service Delivery Models:** The DNTLD-P will identify and implement alternative service delivery models that enable the seamless provision of services along the cascade of care. These service delivery models will adopt innovative approaches such as telemedicine, community-based models, and home-based care
3. **Strengthening Community-Based Services**: The DNTLD-P will strengthen community-based services such as community health workers and community support groups to ensure continuity of care and support for TB, Leprosy, and Lung Health patients
4. **Prioritizing and Protecting TB, Leprosy, and Lung Health Services**: The DNTLD-P will allocate resources to prioritize and protect essential health services during disruptions. Resource allocation will ensure uninterrupted access to TB services and medications, and aim to protect health workers and TB-affected persons from exposure and effects of disruptive health service delivery events like COVID-19. It will also include an approach to securing stable funding and supplies to sustain TB, Leprosy, and Lung Health services during health service delivery disruptions.
5. **Capacity Strengthening**: The DNTLD-P will coordinate the capacity strengthening of all stakeholders, including county health departments and community health volunteers, to ensure full understanding of their specific roles and responsibilities in ensuring the continuity of essential health services. Such training could incorporate new SOP for continued service delivery

ANNEX 1

Summary by Themes

Summary by Teams	Sum of Total Cost 2023	Sum of Total Cost 2024	Sum of Total Cost 2025	Sum of Total Cost 2026	Sum of Total Cost 2027	Sum of Total	Proportion
ACCE	7,592,485,000	3,407,677,000	7,623,676,200	3,343,997,500	3,353,114,500	25,320,950,200	27%
Childhood TB	296,564,300	145,687,988	150,250,692	155,312,356	148,698,967	896,514,303	1%
Chronic Lung Health	1,723,693,900	1,691,332,652	1,867,023,015	1,584,032,405	680,523,350	7,546,605,322	8%
Cross-Cutting	13,695,000	166,825,930	149,656,996	106,018,866	14,997,983	451,194,775	0%
Diagnostics	2,188,824,068	2,431,041,207	2,945,070,712	2,609,691,851	2,653,183,140	12,827,810,978	14%
Leprosy	203,116,677	318,682,379	207,493,920	299,748,472	239,843,615	1,268,885,063	1%
MER	878,683,245	1,242,782,394	868,308,826	2,131,642,438	857,854,786	5,979,271,690	6%
PPM HRG	620,771,500	972,992,486	1,062,719,013	991,446,559	981,505,949	4,629,435,507	5%
PSM	1,855,343,934	1,726,409,139	1,680,368,522	1,450,721,389	1,333,622,897	8,046,465,881	9%
TB Care and Treatment	4,617,229,821	4,048,575,649	3,506,495,219	3,374,859,033	3,281,454,034	18,828,613,756	20%
TB- HIV	1,082,537,600	1,596,508,122	1,480,848,477	1,549,805,242	1,698,919,256	7,408,618,697	8%
Grand Total	**21,072,945,046**	**17,748,514,946**	**21,541,911,593**	**17,597,276,112**	**15,243,718,475**	**93,204,366,172**	**100%**

Summary by Strategic Objective

Summary by Strategic Objective	Sum of Total Cost 2023	Sum of Total Cost 2024	Sum of Total Cost 2025	Sum of Total Cost 2026	Sum of Total Cost 2027	Sum of Total	Proportion
SO1: To increase TB preventive treatment coverage among eligible people from 32% in 2021 to 80% by 2028	823,318,600.00	1,324,978,347.00	1,283,728,460.70	1,344,472,887.01	1,443,949,162.91	6,220,447,457.61	6.67%
SO2: To increase treatment coverage for DS-TB and DR-TB from 52% and 69% in 2021 to 70% and 80% respectively by 2028	9,580,022,236.12	9,492,008,305.82	9,878,932,198.95	9,096,040,698.69	7,684,234,525.52	45,731,237,965.10	49.07%
SO3: To increase the treatment success rate for DS-TB and DR-TB from 84% and 77% in 2021 to 95% and 85% respectively by 2028	9,310,902,287.23	4,926,510,974.94	8,952,497,616.78	4,409,750,845.05	4,743,500,561.51	32,343,162,285.51	34.70%
SO4: To strengthen provision of integrated TB/HIV and other co-comorbidities services at national and sub-national levels by 2028	259,219,000.00	271,529,775.00	197,120,016.32	205,332,355.44	254,970,092.70	1,188,171,239.46	1.27%
SO5: To reduce the number of people diagnosed with Multibacillary Leprosy amongst new cases from 95% to <25% by 2028	203,116,677.20	318,682,379.18	207,493,920.48	299,748,471.57	239,843,615.03	1,268,885,063.46	1.36%
SO6: To strengthen programme management, coordination, and accountability of TB services by 2028	896,365,245.35	1,414,805,163.75	1,022,139,380.02	2,241,930,853.92	877,220,517.67	6,452,461,160.71	6.92%
Grand Total	**21,072,944,045.91**	**17,748,514,945.68**	**21,541,911,593.26**	**17,597,276,111.66**	**15,243,718,475.34**	**93,204,365,171.85**	**100.00%**

Summary by Major Action

Summary by Major Action	Sum of Total Cost 2023	Sum of Total Cost 2024	Sum of Total Cost 2025	Sum of Total Cost 2026	Sum of Total Cost 2027	Sum of Total
SO1: To increase TB preventive treatment coverage among eligible people from 32% in 2021 to 80% by 2028						
1.1. Improve uptake of TPT for eligible HIV-negative population and people at risk of TB disease.						
1.1.1. Increase provision of TPT to eligible HIV-negative individuals and those at risk of TB disease (including contacts of DRTB)	377,160,000	419,464,782	364,192,092	403,787,182	417,141,945	1,981,746,001
1.1.2. Increase demand for TPT through inclusive engagements including with the community	226,000,000	269,462,292	320,237,874	327,603,345	354,199,482	1,497,502,993
1.1.3. Improve access to latent TB testing	25,000,000	357,389,142	356,060,562	364,249,955	382,620,518	1,485,320,176
1.1.4. Improve commodity security for TPT among the eligible HIV-negative population and those at risk of TB disease	350,000	19,254,395	366,285	374,710	20,613,739	40,959,128
1.1.5. Strengthen monitoring of TPT cascade in the expanded TPT-eligible population	95,834,600	136,160,789	139,292,487	142,496,214	137,425,399	651,209,488
1.1.6. Introduce community-led monitoring to identify those eligible for TPT and ensure access for eligible groups	91,100,000	93,195,300	95,338,792	97,531,584	99,774,811	476,940,487
1.2. Reduce the burden of TB in PLHIV.						
1.2.1. Ensure 100% initiation of TPT for all the eligible PLHIV	7,634,000	7,809,582	7,989,202	8,172,954	8,360,932	39,966,670
1.2.2. Support PLHIV on TPT to complete treatment	240,000	245,520	251,167	256,944	262,854	1,256,484
1.2.3. Engage communities in raising awareness of TPT.	-	4,452,096	-	-	4,766,410	9,218,506
1.2.4. Engage HIV CSOs to develop TPT messages	-	17,544,450	-	-	18,783,074	36,327,524
1.3. Enhance implementation of TB infection control measures at various levels of the health care system.						
1.3.1. Improve healthcare workers' knowledge and practices in IPC	-	-	-	-	-	-
1.3.2. Enhance facility-level infection control by improved administrative and environmental interventions and ensure availability and rational use of PPE.	-	-	-	-	-	-

1.3.3. Support institutionalization of TB infection control through strengthening the functionality of the TB infection control committees	-	-	-	-	-	-
1.3.4. Ensuring availability of TB isolation facilities	-	-	-	-	-	-
1.3.5. Strengthen monitoring of TB infection control indicators at various levels.	-	-	-	-	-	-
SO2: To increase treatment coverage for DS-TB and DR-TB from 52% and 69% in 2021 to 70% and 80% respectively by 2028						
2.1. Improve case detection by expanding case finding to all clinical settings	1,725,807,184	1,005,169,332	1,012,333,055	967,230,266	738,792,953	5,449,332,790
2.2. Institutionalize contact management for all bacteriologically confirmed TB patients and children with TB						
2.2.1. Review and disseminate Policy guidelines, SOPs, Job aids, tools on contact management	-	175,813,598	-	183,994,029	-	359,807,628
2.2.2. Engage senior management at Ministry of Health on contact management	-	2,266,968	-	2,372,448	-	4,639,416
2.2.3. Facilitate contacts of bacteriologically confirmed TB patients to visit health facilities for further management	60,000,000	61,380,000	62,791,740	64,235,950	65,713,377	314,121,067
2.2.4. Facilitate community-based contact tracing	160,878,250	164,578,450	168,363,754	172,236,120	153,812,152	819,868,727
2.3. Involve all care providers (All PPM models) operating outside the NTLD-P network in TB case detection and management.						
2.3.1. Strengthen coordination of PPM at national and County level including PPM working groups for PPM oversight.	53,390,500	41,784,947	27,310,744	43,729,158	28,581,486	194,796,834
2.3.2. Scale-up the number and diversity (All PPM Models - Private sector, Workplace, Diagnostic, ISP and Chemist/ Pharmacy) offering TB screening services, referral, diagnosis and treatment	78,188,000	66,800,366	68,336,774	69,908,520	71,516,416	354,750,075
2.3.3. Optimize provision of TB services in the already engaged private facilities by supporting the providers and demand creation	119,119,500	117,139,127	132,704,587	120,837,993	123,617,267	613,418,472
2.3.4. Strengthen referral and linkage systems for patients and samples between public and private.	37,050,000	37,902,150	38,773,899	39,665,699	40,578,010	193,969,759

2.3.5. Strengthen Monitoring and Evaluation systems to generate evidence of PPM-TB performance.	68,457,500	62,951,635	63,556,229	57,791,478	66,513,437	319,270,280
2.3.6. Incentivization of the Private Providers to offer TB services	-	255,750,000	261,632,250	267,649,792	273,805,737	1,058,837,779
2.4. Multi-sectoral engagements with other government ministries and departments in TB prevention, care, and support.						
2.4.1. Review and revise the Legal framework for engagement of MOH and other departments and ministries to strengthen TB multisectoral TB services.	-	5,550,798	-	-	5,942,680	11,493,478
2.5. Scale up clinical capacity to detect DR-TB.						
2.5.1. Review and update PMDT guidelines	-	30,220,955	-	31,627,105	-	61,848,060
2.5.2. Capacity building of healthcare workers on the diagnosis and management of DR TB	59,921,500	53,918,750	62,709,587	56,427,535	65,189,313	298,166,685
2.5.3. Prioritize DR TB surveillance among all high-risk DR TB groups beyond previously treated patients	-	-	-	-	-	-
2.5.4. Increase laboratory diagnostic capacity	5,704,000	5,835,192	5,969,401	6,106,698	6,247,152	29,862,443
2.5.5. Increase the detection of paediatric DR TB	177,143,000	183,993,200	185,385,287	192,554,219	194,011,079	933,086,784
2.5.6. Mentorship and support supervision of HCWs managing DR TB patients	79,360,800	81,186,098	83,053,379	84,963,606	86,917,769	415,481,653
2.6. Scale up and strengthen cross-border and migrant (mobile populations, refugees, IDPs, pastoralists) TB initiatives (CBMI)						
2.6.1. Design and implementation of policy, guidelines on migrant health and TB	-	18,408,374	-	-	-	18,408,374
2.6.2. Design and implementation of policy, guidelines on migrant health and TB	-	3,330,888	-	-	-	3,330,888
2.6.3. Development of cross-border mechanisms (both national borders and county borders)	3,256,000	71,130,213	1,962,242	2,007,373	2,053,543	80,409,371
2.6.4. Capacity building on TB and migrant health targeting cross-border facilities	37,095,600	37,948,799	38,821,621	39,714,518	40,627,952	194,208,491
2.7. Improve active contact tracing in households of DR TB patients (Contact management)						

2.7.1. Strengthen baseline screening and follow up of DR TB contacts	68,574,500	73,584,902	71,765,203	77,008,733	75,104,366	366,037,704
2.7.2. Institutionalise the use of CXR for screening among DR TB contacts	9,890,000	-	-	-	10,831,755	20,721,755
2.8. Strengthen culture and drug susceptibility testing for both phentoypic and genotypic molecular, (For first line, second line and potential XDR diagnosis).						
2.8.1. Increase access to Culture, 1st and 2nd line DST for all previously treated including relapses and for RR patients	6,274,000	6,418,302	6,565,923	6,716,939	6,871,429	32,846,593
2.8.2. Scale up the use of low and moderate complexity mWRDs for diagnosis and detection of resistance to RIF, INH and FQ	25,816,700	32,560,453	27,017,925	27,639,338	28,275,042	141,309,458
2.8.3. To decentralize phenotypic culture services to Malindi, Kitale and Machakos in order of priority, equity and coverage of the country's network.	-	-	1,053,436	-	-	1,053,436
2.8.4. TB related sentinel surveillance activities	17,712,200	17,488,594	13,303,686	13,609,671	18,723,274	80,837,425
2.8.5. To increase laboratories with capacity for both Phenotypic and Genotypic Culture and DST by targeting laboratories with infrastructure	-	49,104,000	-	-	-	49,104,000
2.8.6. Enhance timely provision of all culture and DST supplies, commodities	16,810,900	16,264,472	11,018,276	20,866,406	11,530,945	76,491,000
2.8.7. To improve surveillance and diagnostic capacity for drug resistance by establishing the country's capacity to carry out on whole genome sequencing for M.tuberculosis complex and requisite technical capacity	34,785,740	43,428,130	32,861,052	34,360,923	34,390,044	179,825,890
2.8.8. BSL III Quarterly service and Annual certification of the cooling system and the HVAC	7,000,000	7,161,000	7,325,703	7,494,194	7,666,561	36,647,458
2.9. Strengthen the Quality of Laboratory services						
2.9.1. Maintain the existing quality standards at the National level	6,588,250	1,549,078	1,584,707	7,053,375	1,658,441	18,433,851
2.9.2. Implementation of National quality management framework for TB laboratories	986,600	8,325,788	990,644	1,013,429	1,036,738	12,353,199
2.9.3. Increase the Proficiency testing (PT) coverage in mWRDs facilities	19,134,000	19,574,082	20,024,286	20,484,844	20,955,996	100,173,208

2.9.4. Increase implementation of Laboratory continuous quality improvement initiatives (LCQI) among mWRDs facilities	101,423,500	75,981,791	98,515,531	82,626,167	103,099,360	461,646,348
2.9.5. Capacity building laboratory staff with technical skills and adequate knowledge	13,999,200	14,321,182	18,058,067	14,987,532	18,898,291	80,264,272
2.9.6. National Laboratory review meetings	26,253,000	26,856,819	27,474,526	28,106,440	28,752,888	137,443,673
2.10. Enhance management of laboratory supplies and equipment						
2.10.1. Sustain and procure appropriate SLA for TB diagnostic equipment	-	-	-	-	-	-
2.10.2. Ensure adequate equipment functionality	67,874,066	60,676,344	54,400,842	51,508,843	69,198,556	303,658,650
2.10.3. Strengthen laboratory logistics and supply management.	300,701,094	307,617,219	314,692,415	321,930,341	329,334,739	1,574,275,808
2.10.4. TB Mobile Labs- Cross boarder services	3,000,000	3,069,000	3,139,587	3,211,798	3,285,669	15,706,053
2.11. Expand coverage for TB diagnostic services						
2.11.1. Assessment of the country's current diagnostic status	13,127,000	3,330,888	-	16,573,946	-	33,031,834
2.11.2. Redesigning and strengthening the strategy for equitable distribution of equipment for diagnostics	-	10,148,672	-	-	-	10,148,672
2.11.3. Developing laboratory quality system in line with National standards and quality	-	4,440,843	31,563,943	-	-	36,004,786
2.11.4. Multiplexing	-	14,814,063	-	8,133,342	-	22,947,405
2.11.5. Procure and increase the number of mWRDs including the 10 color Xpert machines to be placed in the lower facilities to expand molecular TB testing (1st and 2nd line DST)	1,229,358,320	1,345,916,415	1,863,176,519	1,611,089,786	1,648,144,851	7,697,685,892
2.11.6. Strengthen and expand the sample referral network in the country	43,200,000	67,658,663	150,441,160	63,207,104	47,313,631	371,820,558
2.11.7. Expand testing for TB among high-risk populations using non-sputum samples	168,905,280	210,011,343	176,764,274	180,829,852	184,988,939	921,499,687
2.12. Capacity building laboratory staff with technical skills and adequate knowledge						

2.12.1. The national and county governments to secure domestic funding to support recruitment of staff at TB laboratories, thus Increasing staffing at all health facility level laboratories	10,131,800	10,364,831	10,603,223	10,847,097	11,096,580	53,043,530
2.12.2. Build the capacity of laboratory staff in TB testing. Refresher training on existing tests and training on new TB diagnostic technologies	4,011,400	5,242,773	4,198,046	5,486,714	4,393,377	23,332,310
2.13. Integrate laboratory management system and patient management systems to improve testing and resulting of TB investigations and treatment outcomes						
2.13.1. Strengthen the disease specific system needs linkage to the over arching to the PMS.	4,596,000	4,701,708	4,809,847	4,920,474	5,033,645	24,061,674
2.13.2. Timely monitoring of treatment response at defined time points for DS-TB and DR-TB. (Availability of microscopy and culture)	7,514,000	7,686,822	7,863,619	8,044,482	8,229,505	39,338,428
2.13.3. Adopt use of next generation sequencing for all TB bacteriologically confirmed patients	4,193,000	4,289,439	4,388,096	4,489,022	4,592,270	21,951,827
2.14. Establish a National Committee of Experts (CoE) to support the TB diagnostic network						
2.14.1. Restructure the laboratory network to a patient-centered, coordinated diagnostic network with participation and representation from networks of people affected by TB	30,000	30,690	31,396	32,118	32,857	157,061
2.14.2. Build capacity and mechanisms for responsive technical assistance.	16,601,500	15,739,367	16,101,372	16,471,703	16,850,553	81,764,495
2.14.3. Engage the community in raising awareness about the latest diagnostics and the rights of people affected by TB.	-	-	-	-	-	-
2.14.4. Introduce community-led monitoring to monitor and ensure access to the latest diagnostics, identify gaps and ensure access.	-	-	-	-	-	-
2.14.5. To determine TB diagnostic network through X-ray technologies, CAD for TB etc, current testing capacities, challenges, and evidence-based interventions, to improve access, capacity, and quality.	-	-	-	-	-	-
2.14.6. Procure more digital X-rays with CAD.	-	-	-	-	-	-

2.15. Strengthening forecasting and quantification						
2.15.1. Ensure availability of updated F&Q plan	11,588,500	10,557,360	10,800,179	11,048,583	11,302,701	55,297,324
2.16. Timely procurement of commodities-1st Line, 2nd line, TPT, Lab commodities, ancillary medicines and Nutritional commodities						
2.16.1. Tendering, Evaluation, contracting	-	-	-	-	-	-
2.16.2. Evaluation	1,800,000	1,841,400	1,883,752	1,927,079	1,971,401	9,423,632
2.16.3. TB commodities stock status Monitoring	4,200,000	4,296,600	4,395,422	4,496,517	4,599,936	21,988,475
2.16.4. Procurement of commodities	1,516,473,834	1,408,699,508	1,355,546,851	1,117,243,238	995,296,919	6,393,260,350
2.17. Decentralisation and digitise reporting of facility commodity reports from manual tools to KHIS.						
2.17.1. Capacity building for facilities to report through KHIS	27,610,500	24,552,000	25,116,696	25,694,380	26,285,351	129,258,927
2.18. Have a phased transition plan for new molecules						
2.18.1. Revise current timelines for reporting, allocation and order validation	2,536,000	-	-	-	-	2,536,000
2.19. Ensure 100% facility quality reports are submitted monthly						
2.19.1. Report validation and allocation of commodities	-	-	-	-	-	-
2.20. Sub-county order validation and submission to KEMSA						
2.20.1. Quality assurance for orders	14,584,000	14,919,432	15,262,579	15,613,618	15,972,731	76,352,361
2.21. Distribution of commodities						
2.21.1. Packaging and dispatching	-	-	-	-	-	-
2.22. Commodity security						
2.22.1. Preparation of National stock status reports	700,000	716,100	732,570	749,419	766,656	3,664,746
2.23. To automate dispensing data for TB medicine						
2.23.1. Integrate TB dispensing data into the existing electronic dispensing tool	18,118,000	1,264,428	1,293,510	1,323,261	1,353,696	23,352,894
2.24. Interoperability of electronic LMIS tools						

2.24.1. Seamless data exchange- (SOH at all levels, Consumption and Central level issue data)	4,500,000	4,603,500	4,709,381	4,817,696	4,928,503	23,559,080
2.25. Maintain 100 % quality assurance of program commodities						
2.25.1. Conduct TB commodities post-market surveillance (PSM)	16,133,700	16,504,775	16,884,385	17,272,726	17,669,998	84,465,584
2.26. Ensure 100% safety of the program commodities to the patients						
2.26.1. Strengthen spontaneous reporting in facilities	68,719,000	70,222,812	71,837,937	73,490,209	75,180,484	359,450,442
2.26.2. Hundred % of DR TB cases to be put on surveillance throughout the treatment	74,307,900	76,016,982	77,765,372	79,553,976	81,383,717	389,027,947
2.26.3. Integration and data exchange through linkage of PPB PVERs and DNTLDP PVERs.	45,202,500	40,526,145	41,458,246	42,411,786	43,387,257	212,985,934
2.27. Research and innovations						
2.27.1. Operational research on medicines and regimens in sentinel monitoring sites	5,430,000	7,248,978	5,682,652	5,813,353	5,947,061	30,122,045
2.27.2. OR on drug utilization	27,150,000	27,774,450	29,951,032	29,066,767	29,735,303	143,677,552
2.27.3. OR on perfomance of new regimen	16,290,000	16,664,670	17,047,957	20,198,780	17,841,182	88,042,590
2.28. Strengthen leadership, governance, and coordination towards TB human rights						
2.28.1. Coordinated approach in leadership and management of TB human rights at National, county and community levels.	-	23,350,998	27,895,230	24,195,541	24,752,039	100,193,808
2.29. To strengthen inclusion of key and vulnerable populations and implementation of HRG and barrier reduction interventions						
2.29.1. Identify key and vulnerable populations for TB at county level.	-	7,815,720	123,630,657	-	-	131,446,377
2.29.2. Implement TB interventions and activities targeting men who are at a higher risk for TB especially at their workplaces: Increase men involvement in TB services and care seeking behavior change communication approaches	210,000,000	214,830,000	233,113,811	224,825,825	229,996,819	1,112,766,456
2.29.3. Address social cultural barriers hindering women and children from accessing health care	-	-	-	-	-	-

2.29.4. Create awareness on TB HRG and reduce HRG related barriers including stigma	27,957,500	19,610,399	17,721,922	14,432,747	25,966,641	105,689,209
2.30. Ensure that the Legal environment promotes appropriate laws, policies and practices in implementation of TB interventions						
2.30.1. Promote legal Literacy/know your rights in relation to TB, leprosy and Lung health.	7,967,000	29,094,120	57,142,786	25,099,127	-	119,303,033
2.30.2. Implementation of supportive laws, policies and practices	7,794,000	33,282,282	8,633,864	31,912,420	32,646,406	114,268,972
2.31. Promote monitoring, accountability, and responsiveness for enhanced TB human rights protection						
2.31.1. Coordinated mechanism to monitor and reform policies, regulations and laws that impede TB services including GBV	-	59,342,184	-	62,103,316	63,531,693	184,977,193
2.31.2. Activate community led monitoring and evaluation of human rights sensitive TB response	10,847,500	3,338,561	2,266,259	9,294,942	-	25,747,261
2.32. Improve TB case detection among children and adolescents by increasing the proportion of children with TB who are detected to 70%						
2.32.1. Roll out of simplified diagnostic algorithms (PTB and EPTB) adopted from the WHO consolidated guidelines on management of management of tuberculosis in children and adolescents 2022 to enhance health care workers capacity to make early diagnosis of TB in children.	143,582,500	-	-	-	-	143,582,500
2.32.2. Improve access to diagnostic tools for children	52,948,600	51,204,731	54,737,130	57,601,982	60,569,662	277,062,105
2.33. Build capacity of healthcare workers including peadiatricians and CHWs to diagnose and manage childhood tuberculosis						
2.33.1. Training, mentorship and supervision of Health Care workers	43,287,000	44,282,601	45,301,101	46,343,026	35,580,508	214,794,236
2.33.2. Involvement of county paediatricians, paediatric association to drive programme and support capacity building to boost confidence of HCWs, including peer to peer mentorship	39,503,500	40,412,081	41,341,558	42,292,414	43,265,140	206,814,693

2.34. Increase awareness of/demand for child and adolescent TB services						
2.34.1. Develop community and patient information materials on childhood TB (prevention, diagnosis and treatment including TPT)	8,766,200	-	-	-	-	8,766,200
2.34.2. Training of CHVs on contact screening and geocoding	4,488,500	4,591,736	4,697,345	4,805,384	4,915,908	23,498,873
2.35. Operationalization of Lung unit within NTLD-P						
2.35.1. Set up a unit within the NTLD program consisting of a unit head and other technical officers (lung health)	-	-	-	-	-	-
2.35.2. Roll out coordination structures to the sub-county level	-	-	-	-	-	-
2.35.3. Strengthen coordinating mechanisms for lung health by revamping the national and county technical working groups (TWGs) and ensure regular quarterly meetings.	21,379,600	13,521,605	14,179,003	14,150,752	-	63,230,959
2.35.4. Mobilize resources to support lung health interventions, and support advocacy for inclusion of lung health in the National and County strategies and budgets	64,000	65,472	66,978	68,518	70,094	335,062
2.35.5. Support effort towards Partner mapping and resource mobilization for lung health, from organizations and institutions with common interests for leveraging	3,810,600	1,346,268	3,089,354	1,408,909	1,441,313	11,096,444
2.35.7. Lobby for NHIF to include a package for diagnosis and management of chronic lung disease patients with TB	506,000	517,638	529,544	541,723	554,183	2,649,088
2.35.8. Develop a policy and review the guidelines to make a popular version on chronic lung diseases	15,990,700	-	267,358,857	-	-	283,349,557
2.36. Identify people with presumptive chronic lung diseases and diagnosis for chronic lung disease						
2.36.1. Provision of Chronic Lung Disease services from Level 3 Health Facilities and above	48,131,000	-	49,186,863	-	-	97,317,863

2.36.2. Improve the capacity of Level 3-6HFs to provide Chronic Lung Disease services	845,002,000	864,437,046	884,319,098	904,658,437	-	3,498,416,581
2.36.3. Improve Lung disease diagnostic capacity for chronic lung diseases	79,340,000	81,164,820	-	-	-	160,504,820
2.36.4. Development of lung health scale up and decentralization plans to the peripheral level	540,000,000	552,420,000	470,938,050	481,769,625	492,850,327	2,537,978,002
2.36.5. Quality management for chronic lung disease	10,000,000	10,230,000	10,465,290	10,705,992	10,952,229	52,353,511
2.37. Support for school health program						
2.37.1. Advocacy meetings with MoE policy makers on TB in training curricular at various levels-Meeting to senior Ministry of education policy makers regarding TB in institutions of learning at both national and county level	-	-	-	-	-	-
2.37.2. Workshop to train teachers and children as TB champions in addressing TB in school environments - patient support, reduction in stigma	-	-	-	-	-	-
2.38. Establish the burden of chronic lung disease including post TB lung diseases (COPD, asthma, post TB lung disease, Lung cancer, interstitial lung disease)						
2.38.1. Conduct baseline survey to establish burden of chronic lung diseases in Kenya	-	4,491,993	-	-	-	4,491,993
2.39. Create awareness on chronic lung diseases at different layers of the community						
2.39.1. Development of IEC materials on chronic lung diseases- posters, pamphlets, '	10,300,000	10,536,900	10,779,249	11,027,171	11,280,796	53,924,116
2.39.2. Engagement of Policy makers both at National and county levels	7,020,000	7,181,460	7,346,634	7,515,606	7,688,465	36,752,165
2.39.3. Mass media campaigns	21,150,000	21,636,450	22,134,088	22,643,172	23,163,965	110,727,676
2.39.4. Referral linkage between community and health facilities.	121,000,000	123,783,000	126,630,009	129,542,499	132,521,977	633,477,485
2.40. Strengthen TB services for high-risk groups: Healthcare workers (including CHVs)						

2.40.1. Improve health worker surveillance for TB	45,205,200	32,224,500	32,965,664	33,723,874	34,499,523	178,618,760
2.40.2. Review and print guidelines /Development of IPC facility Workplan	77,169,000	70,866,279	9,889,699	10,117,162	10,349,857	178,391,997
2.40.3. Identify/Equip isolation facilities in all level IV hospitals	-	-	-	-	-	-
2.41. Strengthen TB services for high-risk groups (Men, Truck drivers; elderly; people in congregate settings i.e., prisons, children's homes and schools, institutions of higher learning, factories and industries, flower farms; military/police barracks, mines, and among alcoholics and people who use drugs).						
2.41.1. Targeted TB case finding approaches	29,197,000	74,270,618	75,978,843	77,726,356	94,241,525	351,414,342
2.41.2. Review and print guidelines /Development of IPC facility Workplan	10,338,000	70,887,762	55,084,054	1,686,194	1,724,976	139,720,986
2.41.3. Identify/Equip isolation facilities in all level IV hospitals	-	-	-	-	-	-
2.43. Advocacy for TB, Leprosy and Lung Health at all levels						
2.43.1. Advocacy	257,975,500	222,945,000	218,974,500	221,142,500	220,777,000	1,141,814,500
2.43.2. Empowerment	360,000	360,000	360,000	360,000	360,000	1,800,000
2.43.3. Social Support	83,871,000	83,871,000	83,871,000	83,871,000	83,871,000	419,355,000
2.44. Placement of DR TB surveillance platforms at primary level facilities						
2.44.1. Operationalize ongoing DR TB sentinel surveillance	7,066,000	-	7,394,774	-	-	14,460,774
2.45. Strengthen biosafety and infection Prevention in TB laboratories						
2.45.1. Provision of PPEs at the laboratory, i.e. for National level to support for reference laboratories, as counties get support from their respective local government.	29,477,518	30,155,501	30,849,078	31,558,606	32,284,454	154,325,157

2.45.2. Support for Proper waste segregation and incineration in all sites.	9,319,000	6,112,937	6,253,534	6,397,365	6,544,505	34,627,341
SO3: To increase the treatment success rate for DS-TB and DR-TB from 84% and 77% in 2021 to 95% and 85% respectively by 2028						
3.1. Reduce mortality						
3.1.1. Enhance multidisciplinary approach in the management of DS-TB Patients	-	-	-	-	-	-
3.1.2. Improve evidence-based intervention (through mortality reviews)	17,532,000	17,935,236	18,347,746	18,769,745	9,600,724	82,185,451
3.1.3. Multidisciplinary approach in reviewing patients	-	-	-	-	-	-
3.1.4. Strengthen and scale up mortality audits	261,897,000	267,920,631	274,082,806	280,386,710	286,835,604	1,371,122,751
3.2. Promote nutritional care and support for all TB patients						
3.2.1. Build capacity of HCWs to provide quality nutritional care (nutrition Assessment, Counseling and Support) for TB patients	75,140,600	74,128,831	77,850,874	77,577,971	78,504,486	383,202,761
3.2.2. Provision of anthropometric equipment and nutrition commodities	300,900,000	298,613,700	305,481,815	322,143,289	319,695,578	1,546,834,383
3.3. Ensure appropriate TB treatment for all detected patients						
3.3.1. Support continuous supply of SLDs and ancillary medicines	6,980,000	502,293	7,304,772	525,664	7,644,656	22,957,386
3.3.2. Support baseline evaluation of DR TB patients	10,000,000	10,230,000	10,465,290	10,705,992	10,952,229	52,353,511
3.3. Ensure appropriate TB treatment for all detected patients.						
3.3.1. Sustain provision of adult and pediatric quality-assured formulations for all TB patients	-	-	-	-	-	-
3.3.2. Strengthen active TB drug safety monitoring and management (aDSM)	-	-	-	-	-	-

3.3.3. Introduce new treatment regimens in line with global evidence	4,814,800	11,227,220	-	-	-	16,042,020
3.3.4. Improve DS-TB training for health care providers (Capacity building of Health care workers)	110,837,300	134,071,925	-	-	-	244,909,225
3.3.5. Strengthen Diagnosis, and Management of NTMs (Treatment protocols and Job aids	-	-	-	-	-	-
3.4. To strengthen linkage to post TB and lung health care						
3.4.1. Support multi-disciplinary review of patients at baseline and monthly through t treatment	-	-	-	-	-	-
3.4.2. Institionalise post TB follow up of patients	2,000,000	2,046,000	2,093,058	2,141,198	2,190,446	10,470,702
3.5. Expand and strengthen capacity for treatment of DR-TB						
3.5.1. Strengthen the multidisciplinary approach in the management of DR-TB Patient (including community-based support and stigma reduction)	209,509,200	209,539,044	219,257,454	219,288,686	229,459,284	1,087,053,667
3.5.2. Enhance decentralization of DR-TB management, including management of SLDs	3,996,000	-	4,181,930	-	4,376,511	12,554,441
3.5.3. Strengthen active TB drug safety monitoring and management (aDSM)	179,450,600	10,449,434	187,800,257	10,935,635	196,538,415	585,174,341
3.5.4. Strengthening TB centers of excellence	15,707,200	1,826,976	14,313,586	1,911,983	14,979,583	48,739,328
3.5.5. Introduce new WHO recommended treatment regimen for DR TB	75,480,400	81,102,417	78,992,428	84,876,031	82,667,866	403,119,142
3.5.6. Introduction of electronic patient recording and monitoring systems.	-	-	-	-	-	-
3.5.7. Conduct community awareness and advocacy for new treatment regimens of DR TB.	56,606,000	57,907,938	59,239,821	60,602,336	61,996,190	296,352,285
3.6. Improve the social welfare of MDR/RR-TB patients						
3.6.1. Provide social protection support to MDR/RR TB patients	6,100,000	6,240,300	6,383,827	6,530,655	6,680,860	31,935,642

3.6.2. Nutritional care and support	51,712,000	52,696,776	54,118,108	55,148,704	56,636,169	270,311,757
3.6.3. Introduce community-led monitoring to identify and overcome barriers to nutritional and other social welfare support services for people with MDR/RR-TB.	-	-	-	-	-	-
3.7. Reduce loss to follow-up and unevaluated outcomes						
3.7.1. Create awareness among DR TB patients	-	107,415	-	112,413	-	219,828
3.7.2. Reaching under reached DR TB patients	-	-	-	-	-	-
3.7.3. Management of ADRs	-	-	-	-	-	-
3.8. Strengthen Patient-centered care/Optimization of quality of care						
3.8.1. Support DR TB patients through a multi-disciplinary approach	70,973,300	-	74,275,617	-	77,731,587	222,980,504
3.9. Reduce loss to follow-up and unevaluated outcomes						
3.9.1. Strengthen Patient support	1,000,000	2,724,761	1,046,529	2,851,541	1,095,223	8,718,053
3.10. Improve treatment success rate for children and adolescents to 95%						
3.10.1. Adopt the use of shorter term and child friendly formulations for both DS and DR TB	-	-	-	-	-	-
3.10.2. Support adolescent friendly services	-	-	-	-	-	-
3.11. Addressing quality of care provided to TB patients through mentorship and OJT						
3.11.1. Supervision of TB control units by the NTP	21,413,200	21,905,704	22,409,535	22,924,954	23,452,228	112,105,620
3.12. Addressing loss to follow up among TB cases						
3.12.1. Strengthening patient adherence to TB treatment 2.1.1. Adoption of innovations to enhance treatment adherence (DAT)	12,202,000	12,014,112	355,820	364,004	372,376	25,308,311

3.12.2. Accelerate the scale up of Electronic Health Management system	-	-	-	-	-	-
3.12.3. Improve adherence counseling and peer led support	2,407,400	3,330,888	3,407,498	3,485,871	3,566,046	16,197,703
3.12.4. Improve access to services through TB mobile services and opening of new treatment facilities, and rolling out DSD	359,809,787	368,085,412	-	-	-	727,895,200
3.13. Promote nutritional care and support for TB patients						
3.13.1. See 3.2.8.2.	-	-	-	-	-	-
3.14. Improve Treatment outcome of Childhood and Adolescent DR TB cases.						
3.14.1. Capacity buidling of paeditricians	15,083,500	10,989,578	15,785,320	11,500,912	16,519,795	69,879,105
3.14.2. Improve access to child friendly SLDs	22,489,500	-	20,499,933	-	21,453,775	64,443,208
3.14.3. Provide support to children on treament	166,582,000	170,413,386	174,332,894	178,342,550	182,444,429	872,115,259
3.15. Community Systems Strengthening						
3.15.1. Capacity building and leadership development for community actors (CHA, CHV, TB Champions, CSOs)	8,067,200	21,088,000	25,490,400	-	-	54,645,600
3.15.2. Strengthen Community Engagement	209,845,000	180,441,000	184,527,000	180,441,000	180,501,000	935,755,000
3.15.3. Community Led Monitoring	80,254,500	4,473,500	67,370,000	14,644,500	1,760,000	168,502,500
3.15.4. Community stewardship (Coordination)	105,204,300	32,996,000	103,255,800	32,996,000	34,896,000	309,348,100
3.15.5. Community Data integration	2,726,000	2,726,000	2,726,000	2,726,000	2,726,000	13,630,000
3.15.6. Monitoring and Evaluation of community engagement	73,624,500	50,127,000	61,251,000	39,199,000	58,029,000	282,230,500
3.15.7. Community TB Prevention and care	455,122,000	362,563,000	455,122,000	351,539,000	361,112,000	1,985,458,000

3.15.8. Demand creation for TB services	56,300,000	56,300,000	56,300,000	56,300,000	56,300,000	281,500,000
3.16. Targeted Communication on TB, Leprosy and Lung disease (360-degree targeted campaigns)						
3.16.1. Develop TB, Leprosy and Lung health BCC implementation toolkit	51,205,500	40,790,000	11,782,000	11,782,000	11,782,000	127,341,500
3.16.2. Conduct creative awareness outreaches	175,714,000	300,583,500	300,583,500	300,583,500	300,583,500	1,378,048,000
3.16.3. Publish targeted IEC / BCC Materials	3,920,961,000	-	3,920,961,000	-	-	7,841,922,000
3.16.4. Run Social Media Campaign	16,027,000	16,027,000	16,027,000	16,027,000	16,027,000	80,135,000
3.16.5. Conduct school health TB awareness promotion	262,769,000	241,666,000	238,069,000	241,666,000	238,069,000	1,222,239,000
3.16.6. End TB Dance Challenge	7,516,000	7,516,000	7,516,000	7,516,000	7,516,000	37,580,000
3.16.8. Engage opinion leaders from diverse sectors in enhanced TB awareness and demand creation	81,696,000	81,696,000	81,696,000	81,696,000	81,696,000	408,480,000
3.16.9. Run mass media campaigns	892,267,500	892,267,500	919,315,500	892,267,500	866,167,500	4,462,285,500
3.16.10. Run out of home TB, Leprosy and Lung Health campaigns	285,334,000	285,334,000	288,334,000	285,334,000	285,334,000	1,429,670,000
3.16.11. Document best practices and lessons learned and human-interest stories for scale up and adoption by other stakeholders.	115,483,500	115,483,500	115,483,500	115,483,500	115,483,500	577,417,500
3.16.12. Integrate TB awareness and demand creation activities into other health promotion activities	21,701,000	-	21,701,000	-	21,701,000	65,103,000
3.16.13. Influence social norms (Stigma reduction and positive attitudes and perceptions)	353,121,000	353,121,000	353,121,000	353,121,000	353,121,000	1,765,605,000
3.16.14. Leverage brand positioning for social and political impact	17,942,000	17,942,000	42,593,500	17,942,000	17,942,000	114,361,500

3.16.16. Develop Advocacy communication and social mobilization strategy	20,037,500	-	9,885,500	-	-	29,923,000
3.16.7. Engage TB affected communities from different sectors on awareness promotion	37,360,000	37,360,000	37,360,000	37,360,000	37,360,000	186,800,000
SO4: To strengthen provision of integrated TB/HIV and other co-comorbidities services at national and sub-national levels by 2028						
4.1. Early identification of TB disease among PLHIVs						
4.1.1. Improve the Quality of TB symptom Screening among PLHIV	28,202,000	34,903,737	29,514,211	30,193,038	37,367,912	160,180,897
4.1.2. Use of digital CXR with CAD as a screening tool	-	18,892,764	-	-	20,226,577	39,119,341
4.2. Prompt diagnosis of TB among HIV clients						
4.2.1. Use of mWRD tests for TB diagnosis	-	-	-	-	-	-
4.2.2. Scale up use of TB LAM for TB detection among eligible PLHIV	-	-	-	-	-	-
4.3. Addressing loss to follow up among TB/HIV coinfected clients						
4.3.1. Strengthening patient adherence to TB treatment	600,000	10,606,464	627,917	642,360	11,355,272	23,832,012
4.3.2. Improve adherence counseling and peer led support	-	10,529,739	-	-	11,273,130	21,802,869
4.3.3. Enhance treatment supporters and community management of patients	133,050,000	136,110,150	139,240,683	142,443,219	145,719,413	696,563,466
4.4. Test all TB patients for HIV						
4.4.1. Provision of HIV test kits	-	-	-	-	-	-
4.4.2. TBHIV data review meeting	8,608,000	8,805,984	9,008,522	9,215,718	9,427,679	45,065,902
4.5. Improve coordination of TB and key NCDs at national and sub-national levels						

4.5.1. Set up regular representative coordination bodies and forums for TB and key NCDs at national and subnational levels	34,804,000	17,802,246	-	-	-	52,606,246
4.5.2. Define their TORs and Operationalize their functions at national and subnational levels	34,804,000	17,802,246	-	-	-	52,606,246
4.6. Increase the proportion of patients with key NCDs being screened for active TB disease						
4.6.1. Capacity build health workers working in NCD SDPs on quality screening approaches for TB	3,271,000	3,346,233	3,423,196	3,501,930	3,582,474	17,124,833
4.6.2. Strengthen diagnostic and care approaches for NCD patients presumed to have TB	-	-	2,282,480	2,334,977	2,388,681	7,006,138
4.6.3. Standardize the recording, reporting, monitoring and evaluation of TB care and control among patients with key NCDs	-	-	-	-	-	-
4.7. Increase the proportion of patients with TB being screened for key NCDs						
4.7.1. Capacity build health workers working in TB settings on quality screening and testing approaches for key NCDs (including diabetes, mental health and lung cancer)	4,351,000	4,451,073	4,553,448	4,658,177	4,765,315	22,779,013
4.7.2. Strengthen diagnosis and care approaches for TB patients with NCDs	-	-	-	-	-	-
4.7.3. Standardize the recording, reporting, monitoring and evaluation of NCDs care among TB patients	-	-	-	-	-	-
4.8. Provide bidirectional screening and diagnosis of TB and Covid 19						
4.8.1. Screen and test patient with Covid 19 for TB and patient with TB for Covid 19.	3,842,000	3,930,366	4,020,764	4,113,242	4,207,847	20,114,219
4.8.2. Review Covid 19/TB guidelines	3,436,000	-	-	3,678,579	-	7,114,579

4.8.3. Contact management and linkage for either TB or Covid 19 cases as well engage the community to enhance contact tracking and tracing.	4,251,000	4,348,773	4,448,795	4,551,117	4,655,793	22,255,478
4.8.4. Document and report TB/ COVID-19 data from health facilities to the national surveillance system	-	-	-	-	-	-
SO5: To reduce the number of people diagnosed with Multibacillary Leprosy amongst new cases from 95% to <25% by 2028						
5.1. Strengthen coordination and implementation of Leprosy interventions at all levels to achieve progress towards zero leprosy						
5.1.1. Establish national partnerships for zero leprosy, incorporating government, development Partners and persons affected by leprosy	11,307,000	11,567,061	11,833,103	12,105,265	12,383,686	59,196,115
5.1.2. Allocate share of leprosy budget financed by domestic sources and resources mobilization from development partners	6,009,900	6,148,128	6,289,535	6,434,194	6,582,180	31,463,937
5.1.3. Cross-border collaboration to ensure continuity of care and the interruption of transmission	12,508,800	12,796,502	13,090,822	13,391,911	13,699,925	65,487,960
5.1.4. Continuous advocacy and communication within and across ministries on leprosy	12,872,900	13,168,977	13,471,863	13,781,716	14,098,695	67,394,151
5.1.5. Develop and monitor Leprosy implementation plans at all levels	32,185,200	32,925,460	33,682,745	34,457,448	35,249,970	168,500,823
5.1.6. Mobilize resources for Leprosy activities	10,881,000	11,131,263	11,387,282	11,649,190	11,917,121	56,965,855
5.2. Carry out case-based surveillance and active case-finding of leprosy at health facility and community level.						
5.2.1. Mapping of hot spot areas in leprosy endemic counties	-	12,735,839	-	-	-	12,735,839
5.2.2. Conduct contact tracing of all index cases with MB leprosy, in all counties.	2,550,000	4,942,113	2,668,649	5,172,065	2,792,819	18,125,645

5.2.3. Building capacity of HCWs and CHWs to diagnose Leprosy cases early and manage accordingly/ recording/reporting/ surveillance	11,287,000	54,798,836	11,812,173	57,348,571	12,361,781	147,608,362
5.2.4. To update and improve effective surveillance system for leprosy	2,281,000	2,755,451	2,387,133	2,883,659	2,498,204	12,805,446
5.2.5. Increase provision of single dose rifampicin from the current 0% to over 80% by 2026	15,525,670	15,882,760	16,248,064	16,621,769	17,004,070	81,282,334
5.2.6. Organize active case-finding campaigns in areas reporting high cases i.e., where such campaigns are more likely to be cost-effective in terms of higher chances of finding cases	3,481,000	3,937,527	3,642,967	4,120,736	3,812,471	18,994,702
5.3. To reduce stigma and discrimination against people living with Leprosy						
5.3.1. Inclusion of persons with Leprosy as a population among people living with disability	14,190,000	12,842,742	14,850,247	13,440,302	13,749,429	69,072,719
5.4. To enhance awareness and sensitization at the community level on Leprosy						
5.4.1. Development and dissemination of IEC materials	-	2,180,013	-	2,281,447	-	4,461,460
5.4.2. Inclusion of leprosy shows and talks on TV/ Radio and leprosy articles in print media	1,856,000	1,898,688	1,942,358	1,987,032	2,032,734	9,716,812
5.4.3. Conducting community dialogues/action days on leprosy in the endemic Counties.	3,272,000	1,673,628	3,424,243	1,751,500	1,791,785	11,913,156
5.5. To successfully treat leprosy cases and manage the complications and minimize the upgrade in disability						
5.5.1. Early case detection, accurate diagnosis, and prompt treatment	1,636,000	1,673,628	1,712,121	1,751,500	1,791,785	8,565,034
5.5.2. Access to comprehensive rehabilitative services	-	-	-	-	-	-
5.5.3. Diagnosis and management of leprosy reactions, neuritis, and disabilities	29,400	1,703,704	30,768	1,782,976	32,200	3,579,048

5.5.4. Mental well-being through psychological care and therapeutic counseling.	4,908,000	5,082,264	5,199,156	5,318,737	5,441,068	25,949,224
5.6. To Prevent development of disability among leprosy patients						
5.6.1. Conduct elimination campaigns in the Leprosy endemic counties	6,716,000	26,395,446	1,892,124	7,190,144	28,258,943	70,452,657
5.6.2. Addressing disability grade 2 including self-care interventions.	28,004,000	38,689,860	29,306,998	40,490,060	30,670,623	167,161,542
5.6.3. Monitoring, support, and training in self-care for persons with leprosy	5,696,000	15,868,776	5,961,029	16,607,134	6,238,390	50,371,329
5.7. To prioritize PEP in the endemic districts						
5.7.1. Conduct active case finding	2,984,000	3,052,632	3,122,843	3,194,668	3,268,145	15,622,288
5.7.2. Conduct targeted campaigns	408,000	6,605,511	426,984	6,912,859	446,851	14,800,205
5.7.3. Conduct household contact investigation	5,376,000	5,499,648	5,626,140	5,755,541	5,887,919	28,145,248
5.7.4. Scale-up PEP.	7,151,807	12,725,923	7,484,574	13,318,047	7,832,823	48,513,174
SO6: To strengthen programme management, coordination, and accountability of TB services by 2028						
6.1. Strengthen monitoring, evaluation, and learning of TB and Leprosy services						
6.1.1. Strengthen the quality in recording and reporting of TB data	528,632,050	967,788,741	533,245,823	797,972,749	554,096,891	3,381,736,254
6.1.2. Strengthen data analysis & optimize utilization of TB, leprosy, and lung diseases data for decision-making	159,483,500	164,812,461	164,064,351	172,481,020	171,698,102	832,539,434
6.1.3. Strengthen the quality and coverage of the Vital Registration System	3,803,000	3,890,469	36,994,277	2,907,747	2,974,626	50,570,119
6.1.4. Develop and implement research and evaluation studies for TB, Leprosy, and lung diseases	182,242,695	103,647,291	131,300,145	1,155,514,494	126,255,111	1,698,959,736

6.1.5. Optimize co-ordination among partners, sectors and other organizations in M&E	4,522,000	2,643,432	2,704,231	2,766,428	2,830,056	15,466,147
6.2. Institutionalize dedicated leadership at the National, County & Sub County (Sub National) levels for the successful implementation of all TB, Leprosy and Lung Health objectives						
6.2.1. Establishment of a deputy head of program office to ensure continuity of leadership and ensure handover processes are clear	-	-	-	-	-	-
6.2.2. Establishment of a clear transition plan/ mechanism for key management and leadership positions at National and county levels be put in place including orientation for new officeholders	1,000	1,023	-	-	-	2,023
6.2.3. Development of a standardized induction package in collaboration with the county health management team for CTLCs/SCTLCs	-	12,859,008	-	-	-	12,859,008
6.3. Strengthen linkages between National, County and Sub County levels in matters planning, programming, and advocacy						
6.3.1. CHMT conduct induction for CTLCs/SCTLCs (county driven)	-	6,475,795	13,035,565	13,069,339	-	32,580,699
6.3.2. Develop a calendar of events for tracking key county processes for inclusion of TB, Leprosy, and Lung Health initiatives	94,000	96,162	98,374	100,636	102,951	492,123
6.3.3. Capacity-build a pool of national and county officers on advocacy to push TB, Leprosy, and Lung Health inclusion in all resouces planning	11,850,000	23,077,346	36,009,493	24,151,111	12,978,392	108,066,342
6.4. To ensure availability and optimal distribution of human resources at NTP/NTRL and counties who are government supported						
6.4.1. Ensure availability of necessary human resources for the management of TB at the facility level	-	-	-	-	-	-

6.4.2. Ensure sustained discharge of TB Program responsibilities during staff movement	-	94,116	96,281	-	-	190,397
6.4.3. Ensure sustained competence for management of TB, Leprosy and lung diseases.	-	539,121	551,521	564,206	-	1,654,848
6.5. Strengthen monitoring, evaluation, and learning of TB and Leprosy services						
6.5.1. Harmonization of CIDPs with the TB, Leprosy, and Lung health NSP	-	-	-	-	-	-
6.5.2. See MER summary document	-	-	12,380,647	-	-	12,380,647
6.6. Ensure the profile of TB, Leprosy and Lung Health is elevated and prioritized among decision makers and among all stakeholders						
6.6.1. Integrate TB NSP in the implementation of other existing frameworks (health and non-health)	-	16,622,829	17,005,154	-	-	33,627,984
6.6.2. Advocate for goodwill and support for TB priorities among high level stakeholders (e.g., parliamentary Health committees, COGs, professional associations)	-	12,762,232	13,055,763	8,653,760	-	34,471,755
6.6.3. Operationalize effective implementation of the Multi-Sectoral Accountability Framework (MAF)	1,750,000	21,862,635	2,178,873	19,227,426	1,916,640	46,935,575
6.7. Ensure optimal and sustainable financing for TB, Leprosy and Lung Health that is efficiently utilized						
6.7.1. Mainstream TB, leprosy and lung health agenda into additional government and non-government activities and interventions	-	-	-	-	-	-
6.7.2. High level advocacy for increased funding for TB, leprosy, and lung diseases at National and County level	-	10,183,454	8,109,553	8,296,073	-	26,589,080
6.7.3. Expand avenues for domestic resource mobilization for TB, leprosy and lung diseases intervention.	-	7,865,847	2,387,133	-	-	10,252,980

6.7.4. Build the capacity of the County Health leadership and CLTCs to be able to advocate better for TB funding and prioritization at county level e.g., Medium Term Expenditure Framework (MTEF)	-	30,210,213	40,188,807	8,307,850	-	78,706,869
6.7.5. Advocate for TB, leprosy and lung health services inclusion in the in social protection mechanisms/ services	-	24,176,150	4,559,832	23,648,465	-	52,384,446
6.8. Coordination of Childhood TB activities in the country						
6.8.1. Childhood TB point person at national and county level	-	-	-	-	-	-
6.8.2. Support for quarterly Childhood TB COEs	3,988,000	4,079,724	4,173,558	4,269,549	4,367,749	20,878,580
6.8.3. Integrate TB services to all other childhood and adolescent health services in the facilities and communities	-	1,117,116	-	-	-	1,117,116
Grand Total	**21,072,945,046**	**17,748,514,946**	**21,541,911,593**	**17,597,276,112**	**15,243,718,475**	**93,204,366,172**

ANNEX 2

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3	Ministry of Education
4	Ministry of Transport
5	Ministry of Interior and Coordination
6	World Health Organization (WHO)
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8	STOP TB Partnership
9	Centre of Disease Control, CDC-Kenya Office
10	Global Fund
11	Kenya Coordinating Mechanism
12	National Syndemic Disease Control Council
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19	Amref Health Africa
20	Management Sciences for Health (MSH)
18	Network of TB Champions
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