REPUBLIC OF KENYA

MINISTRY OF HEALTH

National Strategic Plan for Tuberculosis, Leprosy and Lung Health

2015 - 2018

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FOREWORD

The Kenya National Strategic Plan on Tuberculosis, Leprosy and Lung Diseases 2015 – 2018, marks a milestone in our nation's response to these diseases.

This national strategic plan has been birthed through a robust country dialogue, which brought together various stakeholders, including the national and county governments, bilateral and multilateral development partners, non-governmental organizations, civil society organizations, tertiary medical training institutions and key affected population representatives, among others.

The strategic plan is based on epidemiological analysis of the burden of these diseases and information gleaned from the program review. The plan is aligned to the Kenya Health Sector Strategic and Investment Plan 2013 - 2017 and the global post – 2015 plan. It promotes strategic interventions unique for each county, and which have the greatest impact for case notification, childhood tuberculosis, drug resistant tuberculosis, leprosy and lung diseases. For the first time, priority interventions related to key affected populations, gender and human rights are covered.

On the same note, we must endeavor to put together our synergistic efforts and pull in the same direction so as to deliver on Chapter IV Article 43 I (a) of the Kenyan Constitution that envisages access to the highest attainable standard of health to our people.

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ACKNOWLEDGEMENTS

The 2015-2018 National Strategic Plan (NSP) for the Control of Tuberculosis, Leprosy and Lung Diseases represents the leadership and commitment of the Ministry of Health, Kenya. The team wishes to acknowledge the leadership of the National Tuberculosis, Leprosy and Lung Diseases Program (NTLD Program). Additionally, the writing team benefitted from the extensive knowledge and expertise of Ministry of Health staff and partners at all levels of the health system.

The planning secretariat included Dr Joseph Sitienei, Head, Division of Communicable Disease Prevention and Control, MoH; Dr Jackson Kioko, Head, NTLD Program; Dr Enos Masini (NTLD Program); Dr Samuel Kinyanjui, Chief of Party, Centre for Health Solutions (CHS); Dr Brenda Mungai, Deputy Chief of Party, CHS; Dr Kadondi Kasera, CHS; Dr Maurice Maina, U.S. Agency for International Development (USAID); Dr Herman Weyenga, U.S. Centers for Disease Control and Prevention (CDC); Dr Joel Kang'angi, World Health Organization (WHO)/ Kenya; and Dr Jane Ong'ang'o, Kenya Medical Research Institute (KEMRI).

The full list of the writing team is included as **Annex 1**.

The staff of various units and departments within the Ministry of Health, county and sub-county officials, as well as bilateral and multilateral donors and agencies, and non-governmental and civil society organizations made, valuable contributions.

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We also wish to make special mention of the following long-term partners of the NTLD Program: National HIV/AIDS and STI Control Programme (NASCOP), WHO, USAID, Centre for Health Solutions - Kenya (CHS), Amref Health Africa, Management Sciences for Health (MSH), Programme for Appropriate Technologies in Health (PATH), Kenya Association for the Prevention of Tuberculosis and Lung Disease (KAPTLD), Kenyatta National Hospital (KNH), Kenya AIDS NGOs Consortium (KANCO), KEMRI, CDC, International Organization for Migration (IOM), Japanese Agency for Cooperation (JICA), Tuberculosis Advocacy Consortium (TAC), and the World Bank.

This multi-sectoral and partnership approach ensured that the NSP represents the collective best thinking of a broad range of stakeholders. A full list is available as **Annex 2**.

The writing team wishes to thank Macalester College in the United States, and Professor Christy Hanson for her leadership in the NSP development. The Ministry also wishes to thank students and staff, including Omar Mansour, Riccardo Maddalozzo, Asad Zaidi, Chloe Schumaker and Karla Nagy for their support in conducting background literature reviews, data analysis, geographic mapping, and document formatting.

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ACRONYMS

ACSM	Advocacy, Communication, and Social Mobilization
ADR	Adverse Drug Reaction
AFB	Acid-Fast Bacilli
AFRO	African Regional Office (of the World Health Organization)
AIDS	Acquired Immune Deficiency Syndrome
AMREF	African Medical and Research Foundation
ARI	Acute Respiratory Infection
ART	Anti-Retroviral Therapy
BOLD	Burden of Lung Disease
BSC	Bio-Safety Cabinet
BSR	Blinded Slide Rechecking
C+	Culture Positive
C-	Culture Negative
CAP	Community Acquired Pneumonia
cART	Combined Anti-Retroviral Therapy
CBO	Community-Based Organization
CBHIS	Community-Based Health Information System
CCT	Conditional Cash Transfer
CDC	United States Centers for Disease Control
CDR	Case Detection Rate
CHEW	Community Health Extension Workers
CHU	Community Health Program
CHS	Centre for Health Solutions - Kenya
CHSU	Community Health Service Units
CME	Continuing Medical Education
CNR	Case Notification Rate
CoEs	Centers of Excellence
COPD	Chronically Obstructive Pulmonary Disease
CPT	Cotrimoxazole Preventive Therapy
CR	Cure Rate
CQIs	Continuous Quality Improvements
CSO	Civil Society Organization
CSR	Corporate Social Responsibility
CTBC	Community Tuberculosis Care
CTLC	County TB and Leprosy Coordinator
CU	Central Program
CXR	Chest X Ray
DALY	Disability-Adjusted Life Year
DCDPC	Division of Communicable Disease Prevention and Control
DOT	Directly Observed Treatment
DOTS	Directly Observed Treatment, Short-Course
DQA	Data Quality Assessment
DRS	Drug Resistance Surveillance
DR-TB	Drug Resistant Tuberculosis
DSSM	Direct Sputum Smear Microscopy
DST	Drug Susceptibility Testing
DTLC	District TB Lab Coordinator
DMLT	District Medical Laboratory Technologist
EQA	External Quality Assessment
ETR	Electronic TB Registry
FBC	Full Blood Count
FBO	Faith-Based Organizations

FIND	Foundation for Innovative New Diagnostics
FDC	Fixed Dose Combination
FM	Fluorescence Microscopy
GDF	Global Drug Facility
GF	Global Fund to Fight AIDS, Tuberculosis, and Malaria
GLC	Green Light Committee
GoK	Government of Kenya
H	Isoniazid
HC	Health Center
HCP	Health Care Provider
HCW	Health Care Workers
HISP	Health Insurance Subsidy Programme
HIV	Human Immunodeficiency Virus
HMIS	Health Management Information System
HSSF	Health Sector Services Fund
HTC	HIV Testing And Counseling
IC	Infection Control
ICC	Inter-Agency Coordinating Committee
ICF	Intensified Case Finding
ICT	Information, Communication and Technology
IEC	Information, Education, and Communication
IOM	International Organization for Migration
INH	Isoniazid
IPC	Infection Prevention and Control
IPT	Isoniazid Preventive Therapy
ISAAC	International Studies of Asthma and Allergic Disease in Childhood
ISTC	International Standards on TB Care
IT	Information Technology
JICA	Japanese Agency for Cooperation
KAD	Kenya Association of Dermatologists
KDVO	Kenya Dermato-Venereology Officer
KAIS	Kenya AIDS Indicator Survey
KANCO	Kenya AIDS NGOs Consortium
KAP	Knowledge, Attitude And Practices
KAPTLD	Kenyan Association for the Prevention of Tuberculosis and Lung Diseases
KCOA	Kenya Clinical Officers Association
KEMRI	Kenyan Medical Research Institute
KEMSA	Kenya Medical Supplies Agency
KHPF	Kenya Health Policy Framework
KMA	Kenya Medical Association
KNCV	Koninklijke Nederlandse Chemische Vereniging (Royal Netherlands Tuberculosis Foundation)
KPA	Kenya Pediatric Association
LED	Light-Emitting Diode Microscopes
LFT	Liver Function Test
LMIS	Laboratory Management Information System
M&E	Monitoring and Evaluation
MB	Multi-Bacillary Leprosy
MC	Microscopy Center
MCH	Maternal and Child Health
MDG	Millennium Development Goal
MDR-TB	Multi-drug Resistant Tuberculosis
MNCH	Maternal, New Born and Child Health
MOH	Ministry of Health
MOP	Manual Of Procedures
MOPC	Medical Outpatient Clinic
MSF	Medecins Sans Frontieres
MSH	Management Sciences For Health
MTB	Mycobacterium Tuberculosis
MTEF	Medium Term Expenditure Framework
MTR	Mid-Term Review
NACC	National AIDS Control Council
NASCOP	National AIDS and Sexually Transmitted Infections Control Programme
NCC	National Coordinating Committee

NGO	Non-Governmental Organization
NHA	National Health Accounts
NHSSP	National Health Sector Strategic Plan
NHIF	National Hospital Insurance Fund
NSR	No Smear Result
NTLD Program	National Leprosy, Tuberculosis and Lung Disease Program
NTRL	National TB Reference Laboratory
NPS/NTPS	National TB Prevalence Survey
OOP	Out-Of-Pocket
OR	Operational Research
PAL	Practical Approach To Lung Health
PATH	Program for Appropriate Technologies in Health
PBG	Performance-Based Grant
PCR	Polymerase Chain Reaction
PHC	Primary Health Care
PHO	Physician Hospital Organization
PLHIV	People Living With HIV
PMDT	Programmatic Management of Drug-resistant Tuberculosis
PMTCT	Prevention of Mother-To-Child Transmission of HIV
PNK	Pharmaceutical Society of Kenya
PP	Private Practitioners
PPB	Pharmacy and Poisons Board
PPE	Personal Preventive Equipment
PPM	Public-Private Mix DOTS
PSM	Procurement and Supply Management
PPR	Policy Planning and Research
PT	Proficiency Testing
QA	Quality Assurance
QAS	Quality Assurance System
QC	Quality Control
QMRL	Queensland Mycobacterium Reference Laboratory
QMS	Quality Management System
R	Rifampicin
RCC	Regional Coordinating Committee
S+	Smear Positive
S-	Smear Negative
SCTLC	Sub-County TB and Leprosy Coordinator
SHA	System Of Health Account
SOP	Standard Operating Procedures
SRL	Supranational Reference Laboratory
STI	Sexually Transmitted Infections
TA	Technical Assistance
TAG	Tuberculosis Action Group
TAT	Turn-Around Time
TB	Tuberculosis
TB/HIV	TB Disease and HIV Infection
TIBU	Treatment Information from Basic Program
TOT	Training of Trainers
TSH	Thyroid Stimulating Hormone
TSR	Treatment Success Rate
TST	Tuberculin Skin Test
TWG	Technical Working Group
UEC	Urea, Electrolytes, Creatinine
USAID	United States Agency for International Development
WHO	World Health Organization
ZN	Ziehl-Neelsen

EXECUTIVE SUMMARY

The Government of Kenya has a vision to reduce the burden of lung disease in Kenya and render Kenya free of TB and leprosy. Towards this aim, the National Tuberculosis, Leprosy and Lung Disease Program (NTLD Program) has been implementing activities within the framework of a five-year (2011-2015) national strategy. TB is a major cause of morbidity, with nearly 90,000 cases notified in 2013. It is the 4th leading cause of death in the country.

Kenya is globally recognized as a **pathfinder for TB and leprosy control**. Within Africa, Kenya was the first country to achieve World Health Organization (WHO) targets for case detection and treatment success of new smear-positive pulmonary TB cases. Treatment success continues to be a hallmark of the NTLD Program, with rates among new smear-positive cases averaging over 88% among HIV-negative patients, 82% among PLHIV, and approximately 68% among those being treated for MDR-TB. The country has been a leader in rolling out TB/HIV collaborative activities. In 2013, over 93% of patients with TB disease were tested for HIV. About 98% of those with TB and HIV co-infection (TB/HIV) received cotrimoxazole preventive therapy (CPT), and 83% started on anti-retroviral therapy (ART).

In line with the constitution, devolution of government functions and resources to **47 newly created counties is swiftly changing the mode of operations** in the health sector, including the management of TB, leprosy and lung disease. The health sector, previously characterized by central-level planning and supply-side financing, is shifting to devolved planning and demand-side financing modalities, including national health insurance, conditional and performance-based grants, and equity-enhancing allocations of national resources.

Devolution presents **opportunities for local prioritization and adaptation of TB and leprosy control activities** that are targeted and patient-centered. Translating the cascade model of technical excellence and assistance into the new structure is ongoing and will require additional human resources and new skill sets, given the expanded number of administrative units and new requirements for planning capacity at county level. The NSP describes how the **gains of the past five years will be sustained** under this new system of governance.

With an already **declining rate of TB case notification**, it is time to build on the Program's solid foundation with a stronger focus on the prevention of transmission. The Health Sector Policy calls for a 62% decline in deaths due to communicable diseases by 2018. To build towards achieving this goal, the NTLD Program will: a) **implement quality enhancements**; b) **re-align the program's operations to the new governance structure, ensuring unified commitment from both national and county levels**; and c) **rapidly introduce/expand prevention efforts, including reducing diagnostic delays to diminish transmission**.

This four-year National Strategic Plan (NSP) for TB, leprosy and lung disease represents a transition to: a) **program implementation through the newly established 47 counties**; and b) **intentional acceleration of declining incidence**.

The NSP is based on **robust evidence** generated by the national case-based electronic data system, Tuberculosis Information from Basic Units (TIBU) as well as results of small-scale pilot projects and operational research. The NSP intentionally capitalizes on well-performing counties as mentors and training hubs for others, while also **scaling up high impact** pilot projects. It describes a county-tailored approach to the prioritization of technical assistance and programmatic enhancements addressing particular challenges of each county and sub-population.

KENYA NATIONAL STRATEGIC PLAN FOR TB, LEPROSY AND LUNG HEALTH 2015-2018

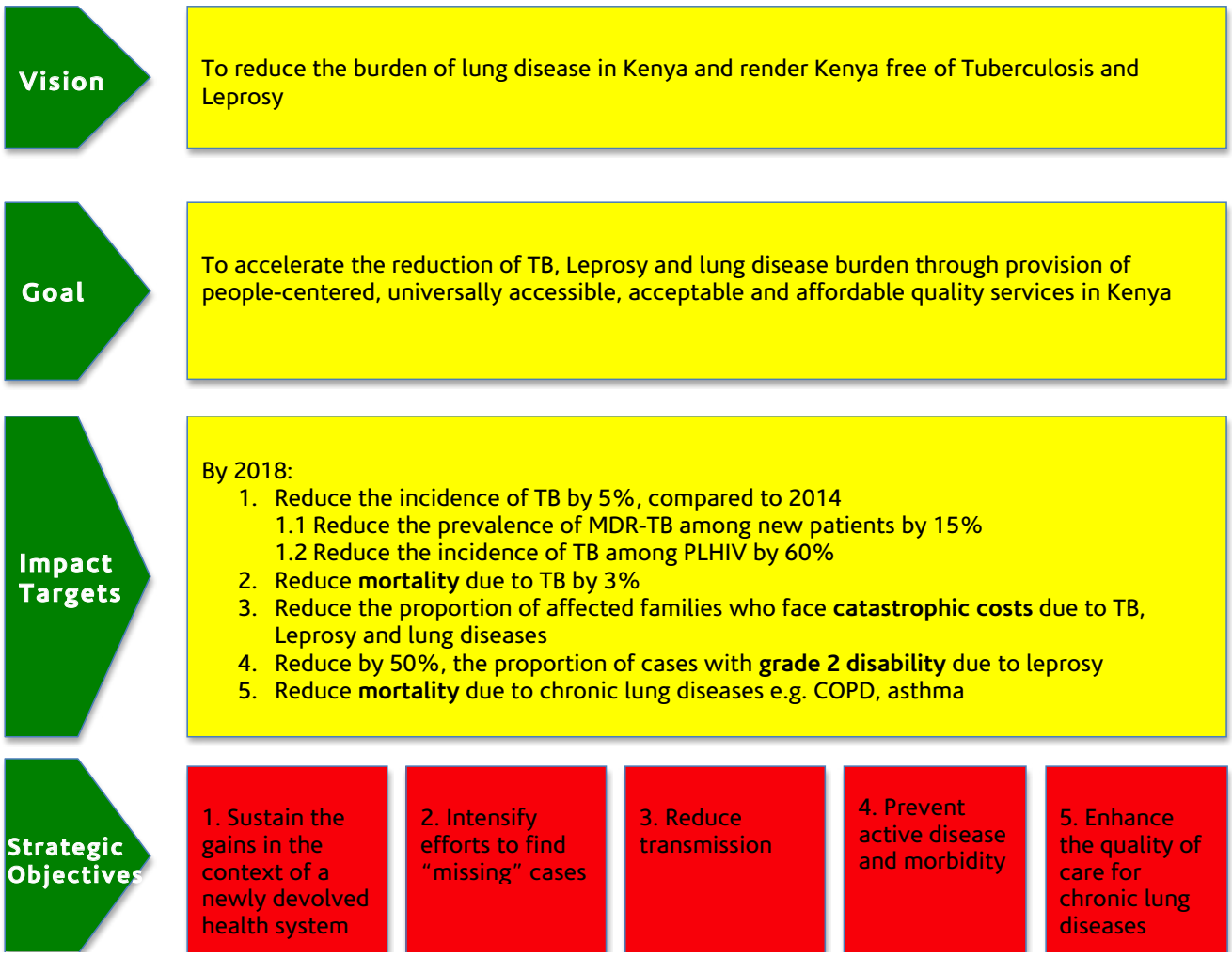


Figure 1: Strategic Plan Vision, Goals, Impact Targets and Strategic Objectives

CHAPTER 1

RATIONALE AND METHODOLOGY OF NSP DEVELOPMENT

1.1. Rationale for Planning Period

The current Health Sector Strategic Plan covers 2013-2017. To align this NSP with the national planning cycles, it will cover four years, running from 2015 to mid 2018. Subsequent NSPs will be aligned to the country's medium term plans.

1.2. Methodology

The development of the NSP started in earnest with the NTLD Program carrying out an epidemiological assessment and impact evaluation with technical assistance from WHO Kenya and CDC. The Epidemiological Assessment and Impact Evaluation Report 2014, served as a critical background document for the mid-term review (MTR) of the 2011 - 2015 NSP, which took place in March 2014. The findings from both the assessment and review were shared widely.

As part of the country's dialogue spirit, two stakeholder meetings were convened under the leadership of the NTLD Program that brought together the national government, county governments, donors, technical partners, civil society organizations, non – governmental organizations, medical institutions of higher learning, medical research institutes, key populations, private health providers and medical insurance companies.

To support the writing of the document, a drafting team was drawn from the participants of the stakeholder meetings. This drafting team was diverse in both composition and sector representation. The stakeholder meetings were held interchangeably with drafting retreats. The first stakeholder meeting fed into the first drafting retreat that led to a sub–zero NSP draft. The second stakeholder meeting was held to share and further develop the sub –zero NSP draft. Subsequently, the final drafting retreat was held to incorporate the feedback from the second stakeholder meeting.

This entire process ultimately gave birth to the country's prioritized needs with county–specific interventions. Consensus was reached on the goal, the impact and outcome targets, and the strategic objectives for the 2015 – 2018 NSP. A costing plan, operational plan, and monitoring and evaluation plan were developed at the conclusion of the drafting. The final draft was shared electronically with all the stakeholders and feedback incorporated by the NSP development secretariat.

CHAPTER 2
BACKGROUND

2.1. Country Profile

2.1.1. Geography and Demographics

Kenya is located in the African Great Lakes region, in the Eastern part of the continent. It has a total surface area of 581,309 km^2 (or 224,445 sq mi) and it borders Tanzania to the south, Uganda to the west, South Sudan to the northwest, Ethiopia to the north and Somalia to the northeast.

According to July 2013 estimates, Kenya has a total population of 44 million[1], making it the seventh most populated country in Africa. The population increased by 14% between 2009 and 2013, based on the most recent census. The total fertility rate in 2012 was 4.46. This was a decline from 4.54 in 2011, but an increase from 3.66 children per woman of childbearing age reported in 2000. Kenya's population is thus rapidly growing. World Bank projections predict that it could increase further to 85 million by 2050. Reflecting this rapid surge, Kenya's population is young, with UN statistics reporting that 42.2% of the population is below the age of 15. According to the World Health Organization (WHO), life expectancy is 58.1 for men and 61.4 for women, making an average life expectancy at birth of 59.7 years.

Kenya's population is mostly rural, with only 24% of Kenyans living in urban settlements[2]. The main urban area being the capital city of Nairobi, which hosts over three million people. The country has experienced sustained economic growth, with GDP per capita increasing from US$404 in 2000 to US$943 in 2012. Nonetheless, Kenya continues to have chronically high levels of poverty. The World Bank poverty estimates range between 34 to 42% indicating that a huge part of the Kenyan population was living below the poverty line in 2013. Estimates suggest that 72.2% of adults are literate, but there are significant inequities and age distribution[3]. Encouragingly, literacy is higher (82.4%) among people aged 15-24[3].

Kenya is a demographically and linguistically diverse country with 42 different ethnic tribes and 69 languages[4].

1 CIA Factbook
2 WHO
3 UNESCO
4 Ethnologue

2.1.2. Political structure and policy context

Kenya's Vision 2030, the country's development blueprint, was finalized in 2007. It aims to achieve "a globally competitive and prosperous Kenya with a high quality of life by 2030." The key role that health plays in maintaining the healthy and skilled workforce needed to drive the economy made health one of the key components of the vision's social pillar.

To align with Vision 2030, the health sector defined priority reforms as well as flagship projects and programs, including restructuring of the sector's leadership and governance mechanisms; improving procurement and availability of essential medicines and medical supplies; modernizing health information systems; accelerating health facility infrastructure development to improve access; development of human resource for health; strengthening of equitable financing mechanisms; and establishment of social health insurance.

The new Constitution, adopted in 2010, replaced a governance structure of eight provinces with 47 newly created counties. Kenya adopted a bicameral legislature composed of Senate (Upper house) and The National Assembly (Lower House). The senate was re-established with the 2010 Constitution. It has 47 members elected directly by the counties with powers to represent the interests of counties, participate in law making and determine budgeting allocation and has powers of impeachment over President, Deputy President, County Governor and Deputy Governor. The National Assembly, on the other hand, has 349 members; 290 elected from constituencies, 47 women elected from the counties and 12 nominated members.

In line with the new Constitution, the devolution of government functions and resources to the 47 counties is swiftly changing the mode of operations for the health sector including the management of TB, leprosy and lung disease. The health sector, previously characterized by central-level planning and supply-side financing, is shifting to devolved planning and demand-side financing modalities including national health insurance, conditional and performance-based grants, and equity-enhancing allocations of national resources.

2.1.3. Economic development agenda

Kenya's Medium Term Expenditure Framework (MTEF) 2012/2013 – 2015/2016 aims to facilitate "an effective and efficient use of Government resources", considering that internal reviews of performance noted an ineffective management of public spending. The MTEF has three specific goals:

1. Maintain aggregate fiscal discipline by ensuring that policy changes are consistent with fiscal norms and program objectives
2. Increase efficiency in resource allocation
3. Promote efficient delivery of services.

2.2. Health Profile

2.2.1. Health status of the population

The principal causes of deaths and of Disability-Adjusted Life-Years (DALYs) reported by the Kenyan Government Review of the Health Policy Framework 1994 - 2010 are listed in Table 1 below.

The main risk factors to health in Kenya include unsafe sex, suboptimal breastfeeding, alcohol and tobacco use, obesity and physical inactivity, amongst others. Such factors, particularly tobacco use and unsafe sex, are asscociated with TB/HIV co-infection and contribute to the burden of lung diseases, and are considered in this NSP.

Available evidence suggests a reduction in unsafe sexual practices, though the HIV incidence remains high in selected counties. This is attributed to steady improvements in knowledge and attitudes of communities regarding sexually transmitted infections and conditions.

Breastfeeding practices have also changed, with exclusive breastfeeding for up to five (5) months showing significant improvements.

Tobacco use remains high, particularly among productive populations in urban areas and among males. Evidence shows that one in five males aged 18 – 29 years and one in two males aged 40 – 49 years are using tobacco products. Tobacco use has been associated with chronic obstructive lung disease, recurrent UTIs, malignancies, including lung cancer and increased risk of developing active TB disease.

Obesity appears to be on the rise, with an increasing population of Kenyans being overweight. It is anticipated that this will fuel an increase in diabetes, a known co-morbidity for TB. It is estimated that 25% of all persons in Kenya are overweight or obese, with the prevalence being highest among women in their mid to late 40s and in urban areas.

A 2007 Household Health Expenditures and Utilization Survey reports that more than half of outpatient visits (57%) occur in government facilities, while private and mission facilities account for 24%, and traditional healers for about 1%. Chemists are the first visit for around 15% of patients. Approximately 38% of people who did not seek care cited financial concerns/constraints as the reason. Gender was also an important determinant of outpatient services utilization, with women making for 1.3 times as many visits per capita as males (2.9 vs. 2.3).

The 2007 Survey also highlighted a major improvement in access to outpatient services, with the poor more likely to seek outpatient medical attention than their wealthier counterparts. Urban dwellers reported seeking inpatient services more than their rural counterparts (38/1,000 vs. 24/1,000). Unlike outpatient care, inpatient services were strongly correlated with wealth index, with individuals in the richest quintile twice as likely to use inpatient care compared to those in the lowest one, a trend that remained largely unchanged since 2003.

Lastly, while 75% of the richest household and 55% of the poorest had money to cover immediate inpatient services, 14% still reported having to either borrow or sell property to be able to comply with the payments, suggesting the importance of pursuing social protection programs.

Cause of Death			Cause of DALYs		
Rank	**Disease**	**% of deaths**	**Rank**	**Disease**	**% of DALYs**
1	HIV/AIDS	29.3	1	HIV/AIDS	24.2
2	Conditions arising during perinatal period	9.0	2	Conditions arising during perinatal period	10.7
3	Lower respiratory infections	8.1	3	Malaria	7.2
4	Tuberculosis	6.3	4	Lower respiratory infections	7.1
5	Diarrheal diseases	6.0	5	Diarrheal diseases	6.0
6	Malaria	5.8	6	Tuberculosis	4.8
7	Cerebrovascular disease	3.3	7	Road traffic accidents	2.0
8	Ischemic Heart Disease	2.8	8	Congenital anomalies	1.7
9	Road traffic accidents	1.9	9	Violence	1.6
10	Violence	1.6	10	Unipolar depressive disorders	1.5

Source: Kenya Health Policy (2012-2030)

Table 1: Principal causes of deaths and of DALYs

2.2.2. Health sector strategy and health policy

The Kenya Health Policy Framework (KHPF) was the basis for the health development agenda in Kenya from 1994-2012. The framework emphasized "quality health care that is acceptable, affordable and accessible to all."

The implementation of this framework was divided into two five-year strategic plans: the National Health Sector Strategic Plan (NHSSP I, 1999-2004), and the National Health Sector Strategic Plan II (NHSSP II, 2005-2010).

The Kenya Health Policy 2012 – 2030 aims at attaining the highest possible health standards in a manner responsive to the population needs.

The policy aims to achieve this goal through supporting provision of equitable, affordable and quality health and related services at the highest attainable standards to all Kenyans. It also aims at attaining a level and distribution of health that is commensurate with a middle-income country through attainment of specific health impact targets. The policy directions in the Kenya Health Policy are structured around Six Service Delivery outcomes and Seven System investment orientations.

Consistent with the Health Policy, the National Health Sector Strategic Plan III (NHSSP III, 2012-2017) is currently being implemented. NHSSP III has the following policy objectives that relate to the control of TB, leprosy and improvement of lung health; all of which are aligned with the realization of the Health Sector Vision:

1. **Eliminate communicable conditions:** This is to be achieved through reducing the burden of communicable diseases, until they are not of major public health concern.

2. **Halt, and reverse the rising burden of non-communicable conditions:** This is to be achieved by ensuring clear strategies for implementation to address all the identified non-communicable conditions in the country.

3. **Provide essential health care:** These shall be medical services that are affordable, equitable, accessible and responsive to client needs.

4. **Minimize exposure to health risk factors:** This aims at strengthening the health promoting interventions, which address risk factors to health, plus facilitating use of products and services that lead to healthy behavior in the population.

5. **Strengthen collaboration with other sectors:** This aims at adopting a 'Health in all Policies' approach, which ensures the Health Sector interacts with and influences design, implementation and monitoring processes in all health related sector actions. In addition, it is critical that other sectors of government and non-state actors reach populations for prevention, screening, communication, and treatment follow-up.

2.2.3. Health financing

Overall, expenditures for the health sector are estimated at US$40 having increased from US$17 per capita. This is due to increased government and donor resources, with the proportion of household expenditures reducing as a proportion of the total expenditures. The health expenditure as a proportion of the GDP and the general government expenditure stagnated during the same period.

Out of pocket spending is highest in the wealthier provinces of the country. Financial risk protection has steadily increased with an estimated 17% of the total population benefiting from the same. Evidence from the National Health Accounts 2010 demonstrated improvements in allocation efficiencies, with more services being provided using the same amounts of resources in real terms. However, resources are increasingly being directed to management functions as opposed to service delivery.

Looking at actual expenditures, limited real improvements in human resources for health and infrastructure were noted during the previous policy period. There have been limited improvements in human resource for health and infrastructure despite an increase in investment in the two areas in the 2005-2010 period. This is a reflection of the stagnation of real resources for health. Improvements in real terms are only notable in the last two (2) years of the policy period (2009 and 2010).

2.2.4 HIV/AIDS policy and financing context[5]

Kenya's response to HIV is guided by a strategic plan that aims to harmonize and align the HIV-related activities of diverse partners and stakeholders. Coordinated by the National AIDS Control Council (NACC), HIV response builds on the robust engagement of civil society and people living with HIV. The National AIDS and STI Control Programme (NASCOP) within the Ministry of Health, administers the bulk of HIV-related services in Kenya. The country has developed a series of performance indicators to drive progress and promote accountability in the response.

Declaring HIV a national disaster in 1999, the Government established the National AIDS Control Council (NACC) within the Office of the President to coordinate national response to the epidemic. An important step in establishing a rights-based framework for effective action on HIV occurred in September 2003, when the Government approved legislation making it illegal to engage in employment discrimination on the basis of a person's HIV status. The law also prohibited insurers from withholding services to people living with HIV or from imposing discriminatory premiums on HIV-infected individuals.

In 2006, Kenya enacted the HIV and AIDS Prevention and Control Act. The law formally protects the rights of people living with HIV, prohibits mandatory HIV testing, and authorizes various measures to mitigate the epidemic's impact. It also prohibits discrimination on the basis of one's HIV status and disallows insurers from withholding services to people living with HIV. Although this law does not specifically address vulnerable populations, other laws, such as the Sexual Offence Act and the Children's Act, provide explicit protection to women, children and young people. Formal policies and guidelines have been developed to support program planning and implementation with respect to specific aspects of HIV response. These normative frameworks aim to ensure that Kenya's HIV response is firmly grounded in available evidence.

Financing for HIV programs in Kenya rose roughly seven-fold from 2000–2001 to 2008–2009. However, the continuing global financial and economic downturn threatens future HIV funding. The U.S. Government, the single largest source of HIV funding in Kenya, is capping its financial support for HIV programs in the country. In response to the uncertainty of future international HIV assistance, Kenya has embarked on a national effort to mobilize new sources of financing, with particular focus on increasing domestic funding for HIV. The Government of Kenya has already taken steps to increase domestic support for HIV programmes, with domestic HIV outlays nearly doubling between 2006–2007 and 2008–2009.

5 Taken directly from "The Kenya AIDS Epidemic – Update 2012" – National AIDS Control Council

2.3. Epidemiology of TB, HIV, Leprosy and Lung Diseases

2.3.1. Tuberculosis

From the TB Epidemiological and Impact Analysis Report of 2014, various trends were noted and these have been highlighted in this section.

Analysis of the trends in estimates of TB incidence (Figure 2) suggests a consistent decline in new TB cases over time. The decline in TB cases started in 2005 following the decline in TB/HIV cases, which started in 2004. Furthermore, after a peak in 2006, the TB prevalence declined and thereafter plateaued from 2009 (Figure 3). TB mortality estimates suggest an increase in TB deaths in 2011-2012 (Figure 4). However, the wide confidence intervals indicate considerable uncertainty in the estimates, suggesting the need for other more direct methods to measure prevalence and mortality.

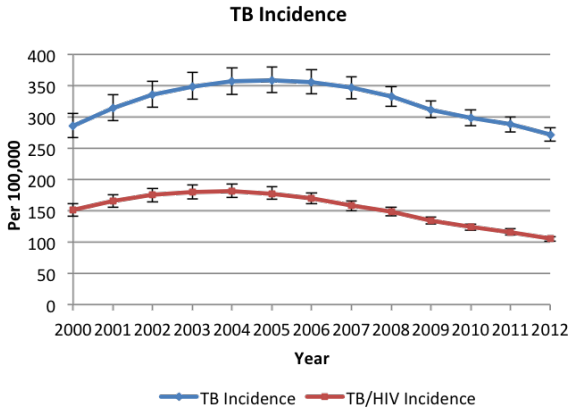


Figure 2: Trends in TB Incidence

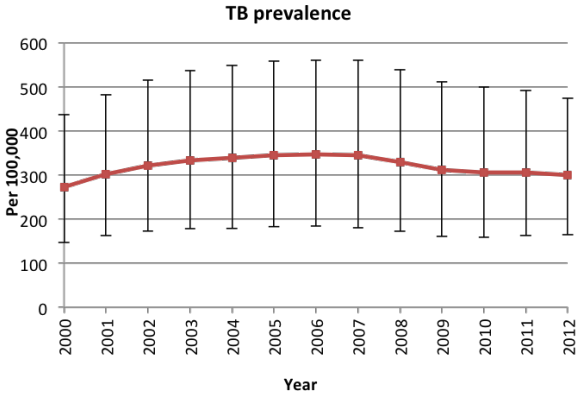


Figure 3: Trends in TB Prevalence

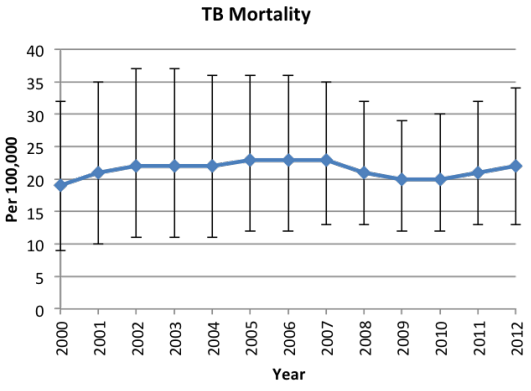


Figure 4: Trends in TB Mortality

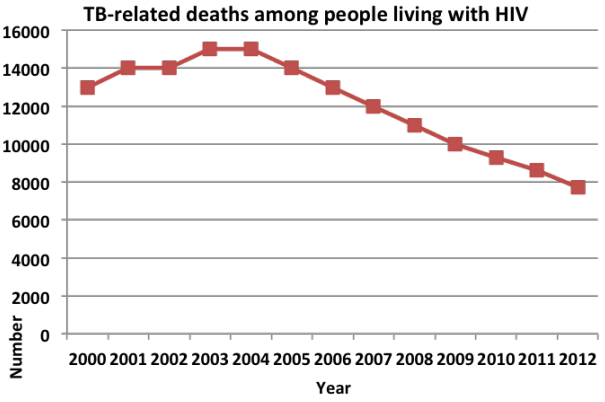


Figure 5: Trends in TB Related Deaths among PLWHIV

Data on TB prevalence and mortality are sparse. Kenya has not conducted a national TB prevalence survey in the recent past (the last TB prevalence survey was conducted in 1956), but the NTLD Program is planning to carry out a prevalence survey in 2015.

There is currently no national level vital registration system with standard ICD-10 coding in place. Less than half of deaths are recorded, and approximately 10% of deaths receive an ICD code. Results from a prevalence survey and vital registration systems would provide data on the current status of the TB burden and the effectiveness of TB control interventions.

The TB case notification showed an upward trend from 2003 to 2007, when it peaked with 116,000 cases. Thereafter, it has steadily declined, reaching an all time low of 89,000 in 2013 (Figure 5)[6]. This may be explained by better TB and HIV control efforts, as well as the recent introduction of the electronic case based surveillance. An inventory study would, however, be necessary to confirm this sharp decline.

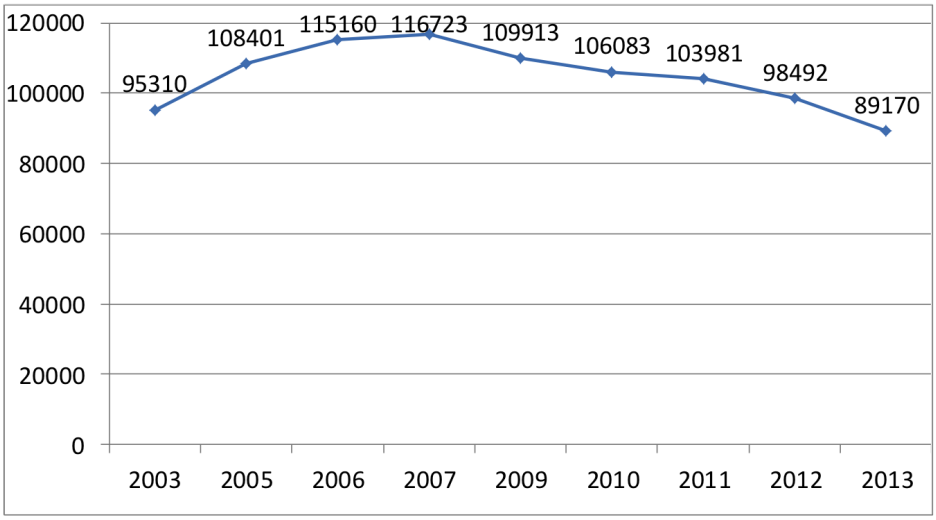


Figure 6: Trends in Notified TB Cases in Kenya (2003-2013)

TB case notification patterns vary across reporting zones. A majority of zones experienced gradual decline in notified cases from 2007-2012 (e.g. Western, Nyanza South, Nairobi South). On the contrary, a few zones showed an increase. They included Rift Valley South and North Eastern, especially those harbouring refugee groups. Some zones like Nyanza North and Nairobi North had variable case notification reporting. These stark differences are likely evidence of data management problems.

Males had higher TB case notification rates than females among all age groups, except for children (0-15 years) and young adults (15-24 years). Adults aged 35 - 44 years had the highest CNR with the rates of TB among males being 30% greater than that of females.

The NTLD Program has continued to successfully screen about 93% of all notified TB cases for HIV. The current prevalence of HIV among notified TB cases is about 37%. The HIV prevalence among notified TB cases is also 37%[7] but varies by region. Zones with higher HIV prevalence are associated with higher co-infection rates. Prisons contributed to about 1% of the notified TB cases in 2013. Surveillance for DR-TB among retreatment cases has led to increased reporting with 290 cases notified in 2013. Refugees constituted 28% of the MDR-TB cases detected in 2013.

The relative numbers of new bacteriologically confirmed (smear positive) cases and extra pulmonary TB cases have remained fairly consistent over time. From 2003 to 2012 the proportion of new cases that were bacteriologically confirmed ranged from 37.3 – 43.0%, while the proportion of new extra pulmonary cases increased gradually since 2003, but maintained a narrower range: 15.1% to 18.2%.

For the past five years, the proportion of retreatment cases has remained just below 10% of all notified TB cases. (Figure 14). Data on TB in other high-risk populations and in patients with underlying comorbidities is not readily available from TIBU.

2.3.2. HIV/AIDS

In 2014, the Kenya AIDS Indicator Survey was published. This section highlights some of the findings of the report.

According to the UNAIDS Global Report 2013, Kenya is ranked 4th in the world in terms of HIV prevalence, with an estimated 1,600,000 people living with HIV in the country.

Kenya's HIV prevalence has declined from 7.2% in the general population in 2007 to 5.6% in 2014 (KAIS 2014 Report). Women have consistently been more affected by HIV than men. Currently 6.9% of women in Kenya are living with HIV (down from 8.5% in 2007) compared to 4.4% of men (down from 5.5% in 2007). Women with secondary education reported having higher infection rates (7.4%) compared to those with no primary education at all (4%). A similar pattern is observed in men with 2.4% among those with no primary education and 4.4% in those with secondary education. However, the prevalence is highest at 4.8% among men who completed primary education.

HIV is not evenly spread throughout the country, with the Eastern North (2.1%) and North Eastern (0.5%) having significantly lower prevalence compared to other parts, particularly the West.

Nyanza region reported a prevalence of 15.1%, increasing slightly from 14.9% in 2007. Nyanza was also one of the only two regions that experienced an increase, although limited, in the prevalence, together with Central region where the prevalence rose from 3.6% to 3.8%. The rest of the country has witnessed a considerable decline in HIV prevalence, especially the Coast region (from 8.1% to 4.3%) and Nairobi (from 8.8% to 4.9%).

HIV prevalence was higher among urban dwellers compared to rural dwellers, being 6.5% and 5.1% respectively. About 8% of urban females were HIV infected compared to 6.2% of rural females, and 5.1% of urban males were living with HIV compared to 3.9% or rural men.

Marital status also shaped different patterns of the disease, particularly negatively affecting widowed men and women with an infection rate of about 20% (M: 19.2% and F: 20.3%), ten times higher than among individuals who never married or cohabited (1.8%).

Among HIV infected adults, 58% were eligible for anti-retroviral therapy (ART). They had a CD4+ cell count equal to, or below 350 or in stage III or IV and with co-infections. Among those eligible, 63% reported using ART and 78% of them also reported achieving viral suppression. About 11.9% of all HIV infected persons reported having a history of TB.

2.3.3. Socioeconomic burden of TB

Tuberculosis is known to have a strong association with poverty[8]. Patients and households affected by TB are likely to be caught in a 'medical poverty trap' – a situation where treatment expenditures increase as income levels decrease.

In one study, the median total cost incurred as a result of TB infection in Kenya was KSH 22,753 (US$ 350), a figure that was roughly equivalent to a quarter of the median household income measured before the onset of the illness. Most patients must borrow money or sell assets to meet the expenses they face due to illness. Indirect costs, primarily in the form of loss or reduction of income, account for about 85% of the economic burden Kenyan individuals and households affected by TB incur, with median indirect costs amounting to an estimated KSH 19,123 (US$ 294). Significant decreases in productivity are reported as a result of TB illness. During treatment, direct costs are incurred when patients have to travel to get medication or for follow-up sputum tests. Food, accommodation, and drug administration also contribute to direct costs. Costs due to Direct Observation of Treatment (DOT) are rarely incurred as most patients receive DOT from their family members. As a result of the high prevalence of HIV/TB co-infection, many TB patients must also cover expenses brought about by their HIV+ status[9].

Over half of the TB patients are malnourished to some degree at the onset of treatment, with 17% being severely malnourished and a further 22% being moderately malnourished[10].

The TB control strategies outlined in this NSP take into consideration these socioeconomic determinants and aim to cushion patients from the negative impact.

8 WHO Addressing Poverty in TB Control Guidelines 2005
9 Mauch, V., Woods, N., Kirubi, B., Kipruto, H., Sitienei, J., & Klinkenberg, E. (2011). Assessing access barriers to tuberculosis care with the tool to Estimate Patients' Costs: pilot results from two districts in Kenya. BMC Public Health, 11(1), 43.
10 http://digitalcommons.calpoly.edu/cgi/viewcontent.cgi?article=1009&context=fsn_fac

2.3.4. Progress and trends in control of TB and leprosy

Kenya is one of the 22 high burden TB countries that together account for more than 80% of the world's TB cases. WHO estimated that there were 120,000 new cases of TB in Kenya in 2012. The estimated 9,500 (5,400-15,000) deaths due to TB make it the fourth leading cause of mortality in the country. Since 2006, a gradual decline in case notification has persisted, suggesting that incidence may be declining following years of high treatment success, currently at over 88%. Case detection has been enhanced through community engagement, inclusion of the private sector, intensified case finding, pro-poor enablers such as nutritional support, TB/HIV collaborative activities, and an increased focus on identifying TB in children.

HIV/AIDS continues to be an important driver of the TB epidemic in Kenya, with approximately 37% of patients with TB also living with HIV (TB/HIV). TB-related deaths among people living with HIV have declined from a high of 12% in 2004 to 5% in 2012, as access to anti-retroviral therapy (ART) and cotrimoxazole preventive therapy (CPT) have increased. Approximately 74% of TB patients co-infected with HIV were initiated on HAART in 2012. Nearly all (98%) HIV infected TB patients were initiated on CPT in the same year (NTLD Program Annual Report 2013).

Programmatic Management of Drug-Resistant TB (PMDT) was initiated in 2007. In 2013, 254 cases of multi-drug resistant TB (MDR-TB) were identified and started on treatment compared to 60 in 2007. Twenty eight percent of notified MDR-TB cases occurred among refugees residing in Kenya. The Kenyan Government made an important humanitarian and public health decision to manage these cases with the resources and infrastructure of the Ministry of Health. WHO currently estimates that there are 2,750 cases of MDR-TB in the country. A drug-resistance survey is ongoing to define the estimates of prevalence of DR-TB in the country.

The number of new leprosy cases detected in the country has declined from 6,000 in 1989 to 139 cases notified in 2013. The health system currently manages grade 1 or 2 disabilities in 48% of the cases notified.

Sustained political commitment for TB has been fundamental to the success of the NTLD Program. Among the performance indicators of the new HSSP is TB treatment success rate, with a goal of reaching 90%. In addition to the government's commitment, the NTLD Program has nurtured strong partnerships at national and county levels, with donors, international and national NGOs, CSOs, and technical partners through its inter-agency coordinating committees (ICCs). For two consecutive fiscal years of 2013/14 and 2014/15, the National Treasury devolved all funds for TB control to the counties, including commodity procurement funds.

Kenya will remain a legacy in sub-Saharan Africa for being the first country to reach WHO targets for both TB case detection and treatment success. The NTLD Program has successfully managed a high quality program through a cascade of TB and leprosy coordinators at decentralized levels. A network of trained and skilled health workers has consistently enabled the rapid uptake of new policies and technologies, while also providing the platform for supportive supervision to address operational challenges on a systematic basis. The full integration of TB and leprosy service provision into the primary care system has enabled mentorship and decentralized touch points for coordination with community based organizations and care providers.

Kenya maintains a policy of evidence-based strategy development and program implementation. Having the first real-time electronic case-based surveillance system is evidence of the desire for data for action. New approaches, such as the engagement of all care providers and collaborative TB/HIV activities have been successfully scaled up rapidly in Kenya due to the cascade system and the use of evidence of their effectiveness to achieve buy-in at all levels.

Leprosy has also been controlled successfully through the cascade system, and within the primary health care network. Kenya is now in the post-elimination phase of leprosy control.

2.3.5. Summary of findings from mid-term review 2014

A mid-term review for the just concluded Strategic Plan 2011-2015 was conducted in March 2014 to review progress and give a way forward especially in the changing health context and the new constitutional dispensation. The key findings of this review are highlighted in this section.

Tuberculosis

Treatment success continues to be a hallmark of the NTLD Program, with rates among new smear-positive cases averaging over 88% among HIV-negative patients, 82% among PLHIV, and approximately 68% among those being treated for MDR-TB.

In **TB/HIV collaborative activities**, over 93% of patients with TB were tested for HIV in 2012. Some 98% of TB/HIV co-infected patients received CPT and 74% were started on ART. The review found that in 75% of facilities visited, TB and HIV services were offered in the same room for patients with TB/HIV. The uptake of TB screening among PLHIV has improved, with 83% screened for TB at their last visit, across the sites visited.

Kenya was one of the first countries in the region to embrace systematic involvement of private providers in TB control, through its Public-Private Mix (PPM) model. In 2012, over **10% of notified cases** were reported from the **private sector**. Kenya was one of the first countries in the region to **introduce a nationwide case-based electronic recording system** for monitoring program activities known as TIBU.

Community engagement in TB control has been facilitated by the roll-out of a national strategy, with **an increasing number of civil society organizations and local partners** involved. Information, education and communication materials for TB have been developed and disseminated countrywide.

Activities to increase case detection and **improve the care of children with TB have also been intensified**. Guidelines, on-the-job tools and capacity building activities have been developed. All pediatric formulations of recommended medicines were available in many of the facilities visited. Currently, 11.4% of TB cases notified are in children.

These inaugural and sustained successes have led to what appears to be a **steady decline, since 2006, in the case notification rate (CNR), which may resemble a decline in the incidence of TB** (Figure 7).

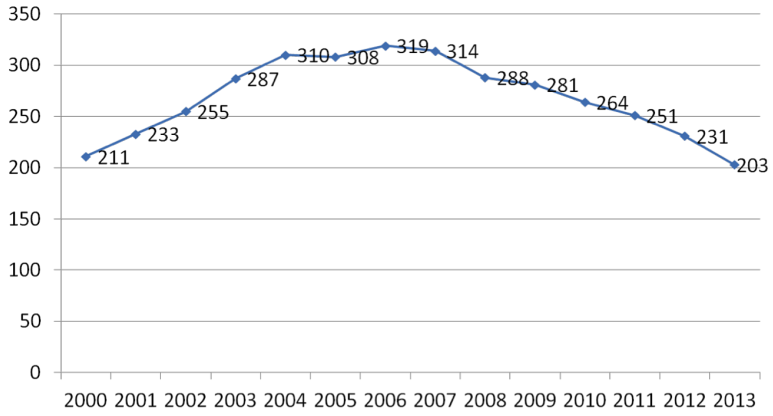


Figure 7: Declining Case Notification Rate suggests decline in TB incidence

The review acknowledged the presence of three pillars that seem to support the success of the NTLD Program. These include:

1. Sustained government commitment: The **government's financial contribution to TB has increased** gradually over the past decade and now accounts for approximately 28% of all spending on TB control in the country. The country has maintained government funding for commodities and a strong staffing structure that extended from the central level to the primary health care system, a key indicator of commitment. Stock-outs of anti-TB medicines at facility level were rarely reported. The review team commended the Government of Kenya on its humanitarian and important public health decision to treat MDR-TB cases among refugees residing in Kenya.

2. Evidence-based Innovation: The NTLD Program has historically adopted innovations in TB control, such as PPM, community-based care and TB/HIV collaborative activities. The Program continues to pilot and scale up new innovations like the **nationwide roll-out of TIBU**, an electronic case-based recording system. It will enable real-time evaluation of program performance, including early identification of emerging challenges at any level of the health system.

The **adoption and rollout of new diagnostic technologies** is noteworthy. The country currently has 70 GeneXpert MDR/RIF machines, 5 culture laboratories and 150 LED microscopes; operating within a network of 1,860 AFB microscopy sites (1:25,000 population). Scale-up of GeneXpert represents a tremendous opportunity to rapidly and accurately diagnose and treat TB in people living with HIV and among children, as well as to identify drug resistance.

3. Strong Partnerships: Under solid stewardship by the national government, the NTLD Program benefits from long-standing partnerships with its development and technical partners, especially USAID, Global Fund, WHO, CDC, KNCV, World Bank, GDF, and FIND. In addition, it has been able to mobilize and ensure collaboration with community-based organizations (CBOs), non-governmental organizations (NGOs), Stop TB Partnership, and the private sector. Its **sustained engagement with partners through the Inter-Agency Coordinating Committee (ICC)** and its five component working groups are to be applauded.

Leprosy

Leprosy control is fully integrated in the primary health care network. Kenya's successful efforts in leprosy control have placed the country in the post-elimination phase.

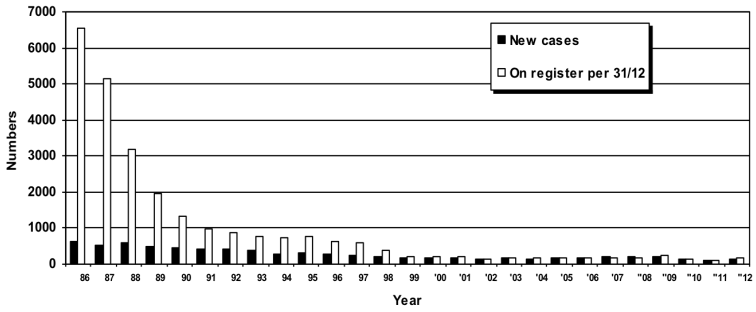


Figure 8: Declining Notification of Leprosy

Main Challenges

The NTLD Program is well positioned to emerge as a flagship program within the new health sector strategy, and to contribute to the sector-wide target of a 62% reduction in deaths due to communicable diseases by 2018. To do so, the review team identified challenges relating to:

a) Preventing transmission and disease
b) finding all TB and leprosy patients
c) ensuring that all TB and leprosy patients are cured
d) securing an enabling environment for quality TB control.

Preventing Transmission and Disease

The NTLD Program has excelled in establishing a solid foundation for the control of TB and leprosy disease through the primary health care network. While enhancing the quality of these operations, the NTLD Program can also move into the next era of TB control with an enhanced focus on preventing transmission and disease. Specifically, the team observed **limited use of Isoniazid Preventive Therapy (IPT)** among PLHIV, and among child contacts of people diagnosed with TB. **Infection control (IC) practices were found to be inconsistent**, and generally sub-optimal in many health facilities serving patients with TB.

Finding all TB and Leprosy Cases

a) Diagnostic Network: Four broad challenges to timely diagnosis of TB were identified. The first concerns the introduction of new diagnostic technologies. The review noted the **absence of an up-to-date strategic plan** that articulates the levels of placement and purpose of new technologies. In some cases, the new technologies may replace antique and error-prone methods. For example, the use of GeneXpert as the first diagnostic tool for TB in PLHIV is not yet routine. The second relates to the **limited access, high out of pocket cost, inferior quality and challenges with interpretation of radiographs** for TB diagnosis. Third, while the coverage of external quality assurance of AFB sputum microscopy was reported as 85%, the review team found **inadequate quality testing practices** and a lack of timely feedback of results to inform good practice. Mentorship and technical assistance to laboratory technicians was found to be irregular. F**inancial and geographic barriers** to high-quality diagnostic services, especially for children and vulnerable populations, was identified as a main challenge.

b) TB/HIV Collaborative Activities: HIV testing among patients with TB was routinely conducted and monitored. The recording of **TB screening among people living with HIV was done but it was not consistently reported** through standardized data capture systems. Limited access to diagnostics beyond smear microscopy was noted as a major barrier to clinicians screening for TB among PLHIV.

c) Intensified Case Finding (ICF) activities among contacts of TB and MDR-TB patients remains limited. **Barriers to ICF were noted**, including the costs of transport, food and radiography.

d) Childhood TB: There remains **limited access to diagnostics** for childhood TB, especially quality chest radiographs, TST and Xpert. Fee-based testing presents a financial barrier for many families. The team found poor integration between maternal and child health (MCH) clinics, pediatric clinics, emergency rooms and TB service providers. Health care providers at all levels of the health system showed a **low index of suspicion for pediatric TB** and were not aware of new treatment guidelines.

e) PMDT: Drug resistance testing is limited mostly to retreatment patients, potentially missing cases with primary resistance.

f) Leprosy: The review noted a low index of suspicion for leprosy among health care workers, even in endemic areas.

Ensuring that All Patients are Cured

a) Monitoring and Evaluation: Monitoring, supervision, quality control and evaluation of program activities were sub-optimal at all levels of the system. This deficit was most severe in the diagnostic network. The gaps appeared to be largely associated with a lack of clarity at county-level about the availability of funding for supervision, following devolution. The TIBU system may support more routine monitoring, but it is not yet utilized optimally and there are still challenges in data quality. Capacity to utilize the TIBU – generated local data for decision-making was inadequate.

b) Care for patients with MDR-TB: While the treatment outcomes for PMDT have improved every year since 2008, social and nutritional support for patients remain inconsistent. At the county level, there are limited isolation facilities, absence of functional PMDT clinical teams, and insufficient pharmacovigilance. The high burden of MDR-TB among refugees presents a public health challenge, particularly given the political sensitivities inherent in working with this population.

c) Community-based care: There were no systematic linkages between providers of community based care and health facilities. This left some community care providers without the needed mentorship and support required to deliver quality care.

d) Social determinants of TB: The World Bank estimates that Kenya's poverty rate in 2013 was between 34% and 42%. While this is down from 47% in 2005, the social determinants of TB cannot be overlooked. In the Kenyan Demographic and Health Survey of 2009, financial barriers were a primary cause of delayed seeking of health care. The review team identified financial barriers stemming from the following areas: transportation costs, fee-based diagnostic tests, and lack of nutritional and financial support during intensive phase of TB treatment. Malnutrition is known to negatively affect treatment outcomes. The NTLD Program estimated that 17% of notified TB cases were severely malnourished and a further 21% moderately malnourished.

e) Public-private mix: While evidence has suggested that nearly half of care seeking for TB and other lung health issues is done through the private sector, only 10.5% of TB cases were notified by the private sector in 2012. Further scale-up is needed for collaborative public-private mix interventions, which may require a nationwide application of the International Standards of TB Care, particularly through the private providers.

Sustaining government commitment and stewardship in a devolved system

The review acknowledged the potential for devolution to promote patient-centered care by enabling county and sub-county adaptations to relevant service delivery. However, the team also recognized risks that would need to be mitigated to ensure that the successes of a cohesive national program were sustained through the prioritization of TB and consideration of leprosy by all 47 counties.

Key challenges will include:

a) Ensuring a stable and quality assured drug supply: Limited capacity for commodity management was found at all levels of the system. There is no clear process for the procurement of drugs within the new framework despite the counties having the funds for commodity purchase. This needs to be clarified further and adapted with the growing capacity of county governments. A normal procurement cycle can take 6-9 months.

b) Closing the financing gap for TB control: The MTR estimated that the NTLD Program would face **a financing gap of nearly US$200 million** over the next five years, which represents half of its required funding. Data from the National Health Accounts (NHA) suggested that while TB accounted for over 6% of deaths and nearly 5% of DALYs in the country, **it received only 1% of total health expenditures** for priority areas. This is in contrast to malaria's contribution to nearly 6% of deaths and 7% of DALYs, but in receipt of 25% of total health expenditures for priority areas.

c) Ensuring sustained priority for TB prevention and control at central and county levels: TB is not fully considered within the health sector strategy (e.g. the only indicator for TB is treatment success rate), and is not an integral part of the essential health package that has formed the basis for emerging/expanding demand-side, performance-based and social support financing schemes. For example, the direct facility cash transfer program called the Health Sector Services Fund (HSSF) or the health insurance for poor families called the Health Insurance Subsidy Programme (HISP) does not include TB prevention and control services. At county level, health plans were not available for review as they were still being developed, but the inclusion of TB and leprosy activities was not guaranteed.

d) Re-profiling the functions and staff of the central program to support new roles: The functions of the NTLD Program have expanded to include: a) high-level policy formulation to include TB in emerging health system strategies, plans, and demand-side financing modalities including national health insurance and social protection programs; b) coordination of a comprehensive program through guidance/support to 47 counties; and c) continued technical leadership. This places more demand on the NTLD Program staff even as devolution continues. Additional skills, particularly related to economics and statistics are required.

e) Building the capacity of counties and renewing a comprehensive national program: Planning and budget tools to support county-level planning for TB and leprosy control activities, including drug quantification estimates are essential. Counties were unaware of the new funding structures for TB or leprosy control, including supervision and, therefore, activities were not optimal.

f) Shifting epidemiology of TB: The epidemiological profile of TB is bound to change in future due to the potential to detect drug resistance, as well as the improved capacity to detect TB in children and PLHIV, the cross border movement for TB services and the ageing epidemic. There is need to build the capacity of county-level planners to recognize these trends locally and to support relevant activities.

CHAPTER 3
OPERATIONAL STRUCTURE OF THE NTLD PROGRAM

3.1 Roles and Responsibilities

To achieve the country's aspirations envisioned in this strategic plan, strong and responsive organizational structures are required to guide the implmentation and monitoring of the Program activities. The exisiting structures, which may evolve with devolution, are anchored on the Constituion of Kenya 2010.

The constitution created two distinct (National and County) Governments that are mutually interdependent with a new level of management and structures that support health services at the County level. The country now has 47 Counties that enjoy relative autonomy in the management of health services. The National Government is made up of three arms: executive, including the Ministry responsible for health, the legislature and judiciary.

The Constitution mandates the National Government with development of Policies, Capacity Building and Technical Assistance to the Counties among other tasks, while empowering the County Governments to be responsible for county health services. These structures are further strengthened by the Kenya Health Policy 2012 - 2030 that provides the framework for seamless implementation of activities. The health service delivery has been reorganized into four tiers of care within which TB, leprosy and lung diseases control programs fit. These are:

- Tier 1: Community Level – as defined in the Kenya Essential Package of Health (KEPH)
- Tier 2: Primary Care Level – that provides basic outpatient services
- Tier 3: County Level – that provides primary referral services
- Tier 4: National Level – that provides secondary and specialized services

The National Leprosy, TB and Lung Disease Program is under the Division of Communicable Disease Prevention and Control in the Directorate of Preventive and Promotive Health Services of the Ministry of Health. Presently, this Program, popularly called Central Program, is made up of technical staff distributed across four sections: Prevention and Health Promotion, Care Services, Policy, Planning and Research (PPR) and Administration and Finance. The Program is linked to the County level through 47 County TB and Leprosy Coordinators (CTLCs), who provide technical and implementation support to 153 Sub-County TB and Leprosy Coordinators (SCTLC).

The overall development of the technical aspects of TB control, including policies, is mandated to the NTLD Program under the umbrella of the Ministry of Health. The NTLD Program has the additional role of setting standards (including providing technical specifications), identifying and mobilizing resources.

The recent increase in global attention to tuberculosis has encouraged local and international partners to support TB control activities in the country. This has created challenges in the coordination of the response of control activities and alignment to the National strategies and policies. The TB Inter Agency Coordination Committee (TB-ICC), initially created to meet the requirements of Global Fund to Fight AIDS, TB and Malaria has shaped the role of all major players in TB control, as membership is all-inclusive. This committee has Technical Working Groups (TWG) that respond to policy matters at scheduled quarterly meetings to deliberate on all issues pertaining to TB control in Kenya.

The Technical Working Groups of the TB ICC include National TB/HIV steering Committee, Laboratory, M&E, MDR-TB, Commodity, ACSM, Community and Gender, Special Groups, PPM and Lung Health. These technical working groups draw membership from both technical and development partners, including affected communities. Some of these working groups have been cascaded to lower levels and hold meetings in stakeholders' forums where critical issues of implementation and challenges are discussed and addressed.

3.2. Intra- and Inter-Ministry Partnerships

Tuberculosis, Leprosy and Lung diseases prevention, detection, diagnosis, treatment, care and control will benefit from a multidisciplinary approach that identifies and utilizes the varying core competencies of diverse stakeholders, including their complementary resources - human and/or financial, access to presumptive and confirmed patients and their communities, and skills.

While a fully multi-sectoral approach to the control of these diseases has not yet been achieved, its appeal is even greater in the context of devolution as a broad array of local stakeholders can optimize the ability to identify local solutions to the contextual nuances of the diseases. To achieve this, thorough mapping of needs and resources at county and sub-county level will be needed. A multipronged approach to working with and through other health and non-health actors, both in the public and private sectors, will be explored for each of the thematic areas covered in this NSP.

a) Public Sector: Inter- and Intra-Ministry collaborations and partnerships

In order to address the diverse social determinants and drivers of TB, leprosy and lung diseases at National and County levels, the NTLD Program will strengthen collaborations and partnerships with relevant departments/sectors within the Ministry of Health, e.g. HIV/AIDS, NHIF, KEMSA, NCDs, etc. In the same breadth, partnerships and collaborations across the Government Ministries/Sectors, which are non-health, will be sought for purposes of resource mobilization, efficiency in resource allocation (e.g. building TB screening into workplace settings), relevant policy formulation and enforcement, establishing forums and platforms for sustained health promotion and education, just to name a few. Such sectors would include but are not limited to:

1. Ministry of Devolution and Planning – for leadership, governance and resource mapping, mobilization and allocation
2. The National Treasury – for resource mobilization and allocation
3. Ministry of Labor, Social Security and Services - e.g. Workplace health/wellness policies and interventions; resource allocation for both public and private sectors
4. Ministry of Education – for health promotion and education
5. Ministry of Defense – for cross border TB
6. Ministry Foreign Affairs - for resource mapping, mobilization and allocation
7. Ministry of Information, Communication and Technology – for integrating health through ICT
8. Ministry of Sports, Culture and the Arts – for health promotion and education
9. Ministry of Land, Housing and Urban development – for disease control
10. Ministry of EAC Affairs, Commerce and Tourism – for resource mobilization and disease control
11. Ministry of Mining – for control of TB and Lung Disease; workplace and labor policies implementation
12. Ministry of Interior and Coordination of National Government – for internal migrants and refugees

b) Private Sector: Health and Non Health Actors

The NTLD Program will actively engage the private for-profit and non-profit health actors, at both national and county levels, to support interventions covered within the plan, either directly or indirectly. This will enable systematic application of the relevant standards of care in TB, leprosy and lung health.

Partnering with the private non-health actors may enable new avenues for resource mobilization, enhanced advocacy for the implementation of health policies, among other areas of involvement. If well engaged and sensitized, this sector may contribute substantially towards health through integrating/mainstreaming health in their core business, offer support through their core competencies, or even contribute towards health resources in kind or in cash. Examples exist in Kenya of innovative corporate partners supporting health care, but commonly at a small scale or through corporate social responsibility (CSR) programs.

The Stop TB Partnership in Kenya has been revitalized to spearhead the multi-sectoral approach for purposes of building synergy from the diverse competencies, through an advocacy and resource mobilization platform.

CHAPTER 4
2015-2018 NATIONAL STRATEGIC PLAN

4.1. NSP Goals and Objectives

Within the context of a newly devolved health system, the goal of the 2015-2018 NSP is to accelerate the reduction of TB, leprosy and lung disease burden through provision of people-centered, universally accessible, acceptable and affordable quality services in Kenya.

Specific objectives include:
a) Sustain the gains made over the past decade, in the context of a newly devolved health system
b) Intensify efforts to find the "missing" cases of TB, leprosy and lung disease;
c) Reduce transmission of TB and leprosy;
d) Prevent active disease and morbidity;
e) Enhance the quality of care for chronic diseases

4.2. Impact and Outcome Targets

The NSP seeks to achieve the following by 2018:

IMPACT AND KEY OUTCOME INDICATORS
Impact 1: Reduce the incidence of TB by 5% by 2018, compared to 2014
Outcomes
1. Increase case notification of new cases to 85% of estimated prevalence
2. Ensure treatment success of at least 90% among all drug – susceptible forms of TB
Impact 1.1. Reduce the prevalence of MDR-TB among new patients by 15% by 2018, compared to 2014
Outcomes
1. Increase case notification of MDR-TB to at least 75% of estimated prevalence (Baseline TBD: DR Survey)
2. Increase treatment success rate to at least 80% among all cases of DR-TB
Impact 1.2. Reduce the incidence of TB among PLHIV by 60% by 2018 compared to 2014
Outcomes
1. Increase treatment success rate to 85% among all HIV-infected TB patients
2. Reduce case fatality among HIV-infected TB patients to <5%

IMPACT AND KEY OUTCOME INDICATORS
Impact 2: Reduce mortality due to TB by 3% by 2018, compared to 2014
Outcomes
1. Ensure treatment success of at least 90% among all DS forms of TB
2. Reduce case fatality among HIV-infected TB patients to <5%
Impact 3: Reduce the proportion of affected families who face catastrophic costs due to TB, leprosy & other lung diseases by 2018 (baseline TBD)
Outcomes
1. Increase to at least 60% the proportion of eligible TB and leprosy patients who access nutritional support or other transport, or financial subsidies
2. Reduce out-of-pocket expenditures attributed to TB care seeking
Impact 4: Reduce by 50% the proportion of cases with grade 2 morbidity due to leprosy by 2018
Outcomes
1. Increase to 90% the proportion of leprosy patients notified prior to grade 2 morbidity
Impact 5: Reduce morbidity due to chronic lung diseases (e.g. COPD, asthma)
Outcomes
1. Reduce the average number of annual acute episodes for children with asthma by 15% in areas with established asthma clinics
2. Increase to 80% the proportion of controlled asthma patients

Table 2: NSP Impact and Key Outcome Indicators

4.3. Eliminate Communicable Diseases

4.3.1 Devolve implementation of activities and budgets

1. Situational Analysis (SWOT)

Sustained political commitment to TB has been fundamental to the past success of the NTLD Program.

In addition to the government's commitment, the NTLD Program has nurtured strong partnerships at national and decentralized levels. International and national NGOs, CSOs, technical and development partners have been engaged to benefit the plan.

The NTLD Program has successfully managed a high quality program through a cascade of TB and leprosy coordinators at decentralized levels; i.e. provincial and district level prior to devolution. The network of trained and skilled health workers has consistently enabled the rapid uptake of new policies and technologies, while also providing the platform for supportive supervision to address operational challenges on a systematic basis. The full integration of TB and leprosy service provision into the primary care system enabled mentorship and decentralized touch points for coordination with community based organizations and care providers.

Devolution presents opportunities for local prioritization and adaptation of TB and leprosy control, and support for targeted and patient-centered care. Since fiscal year 2013, all government funds for TB control have devolved to the counties, including funds for commodity procurement. In accordance with the Constitution, all devolved funds were bundled and no line item for health, or TB, was specified.

Translating the cascade model of technical excellence and assistance into the new structure is ongoing and will require additional human resources and new skill sets, given the expanded number of administrative units and new requirements for planning capacity at county level.

2. Strategic Direction(s) for 2015-2018

The priority in this period is to ensure a smooth transition to the county-based system of governance. Specifically, the NTLD Program, NTRL and county health offices will collaborate to ensure that a comprehensive national program is maintained within the devolved context. At a minimum, joint annual work plans between the Central Program and each county will be needed to yield a national plan built on county priorities.

3. Proposed Approaches

Establish Inter-Governmental Agreements between the NTLD Program and NTRL and each county

a) Articulate and document the devolution of responsibilities for all TB activities: i.e. considering all dimensions of program implementation and detailing which will be completed by central, county and sub-county levels (NTLD Program Operations Manual 2014)

b) Define financial and human resource commitments, including technical assistance and possibly commodity management support from central program(s).

Bolster county-level capacity for planning for TB, leprosy and lung health

a) Ensure the county and sub-county structure can support all designated activities: e.g. identify a TB and leprosy focal point for each level, take inventory and address any capacity building needs; and develop on-the-job tools and disseminate existing guidance to promote national standards.

b) Support and monitor the inclusion of TB and leprosy within county health plans

i) Develop a template(s) for planning and budgeting of TB control activities, including commodity requirements, for use at county level.

ii) Annual joint work planning between the NTLD Program and each county, ensuring TB and leprosy are appropriately represented in health plans. Detailed technical assistance plans will be included in each county

plan. Commodity estimates, based on past utilization, will be completed annually for inclusion in county health plans. The NTLD Program will monitor expenditures on TB through the NHA sub-account and via expenditure tracking from Treasury to facilities

iii) Stakeholder mapping will be completed at all levels, and annual planning meetings held to engage stakeholders in county planning

Establish County-based centres of excellence, based on strong performance, for:

a) PMDT
b) Pediatric TB
c) TB/HIV
d) Diagnostic services
e) PPM
f) PAL
g) Community engagement
h) Leprosy

Incentivize counties to serve as models and enable county-to-county technical assistance.

Develop and implement a technical assistance and quality assurance plan through a cascade from central to community levels

Given that many of the county and sub-county staff are new, capacity building will be required for TB and leprosy focal point persons in the counties. The nature of technical assistance from central to county level must be expanded to build capacity for planning, advocacy, budgeting, quality assurance of labs and facilities, and data monitoring.

Ensure county ownership and designated funding of supportive supervision to sub-counties, health facilities, laboratories and community-based treatment partners. Ensure implementation of technical standards including updated SOPs for new diagnostic technologies, and treatment protocols for management of TB e.g. pediatric and drug-resistant TB. Revise the tools available to guide county-level staff in their supervision of more decentralized levels, based on the new county structure.

Specific activities include:

a) Creation of on-the-job tools to serve as reference to key policy and implementation principles. As the infrastructure to support electronic data management, potential for web- based refresher training may be optimized to address the ongoing training needs that result from high staff turnover.

b) Promote the establishment of inter-agency coordinating committees to assist with planning, budgeting, implementing and monitoring activities. The ICCs include all partners, such as the private sector, MCH programme, CSOs and communities, at county and sub-county levels.

c) Establish and disseminate technical standards to guide delivery of services at County level and create buy-in for their implementation and monitoring.

d) Re-profile the staff of the central program to ensure in-house capacity for:

i) high-level policy formulation to include TB in emerging health system strategies, plans, and demand-side financing modalities including national health insurance and social protection programmes;
ii) coordination of health system structures for comprehensive program implementation to 47 counties; and
iii) continued technical leadership. Additional skills, particularly related to economics and statistics, are required at the Program level.

4.3.2 Identify and treat all cases (find the missing cases)

4.3.2.1. Core DOTS

1. Situational Analysis

TB incidence has shown a declining trend as illustrated in Figure 9. It is estimated that nearly 80% of new TB cases were notified in 2013. Map 1 and Figure 12 reflect case notification rates by county, showing the wide inter-country variance of case notification. It is not known if the variance reflects true epidemiological differences, but it can certainly be assumed that cases are missed in all counties to varying degrees.

During the last five years, the program has maintained a national treatment success rate above 85% as shown in Figure 10. Map 2 reflects cases that are lost to follow up, also known as 'out-of-control.' Figure 11 shows treatment success rates by county, similarly highlighting the variance in programmatic performance across the country.

Considering the well-documented relationship between poverty and TB, areas of lower case notification and high poverty density may provide hints as to the location of some of the 20% of cases that are undetected. Figure 12 shows markedly lower case notification rates in some counties that have high rates of poverty prevalence i.e. percentage of households that are below the poverty line. Nationwide, approximately 45% of households are estimated to live below the poverty line.

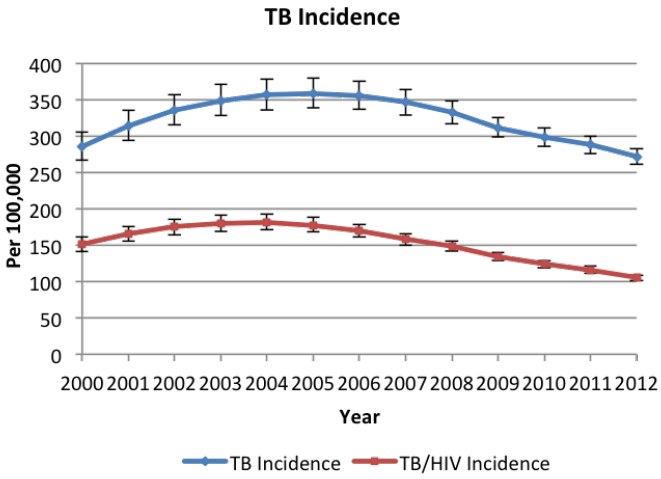


Figure 9: TB Incidence

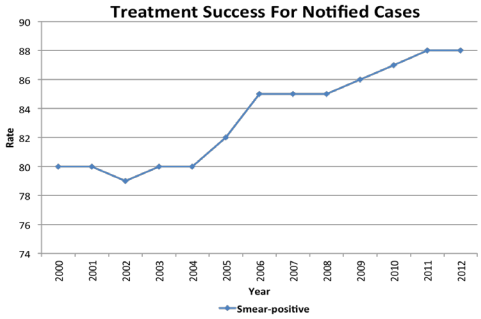
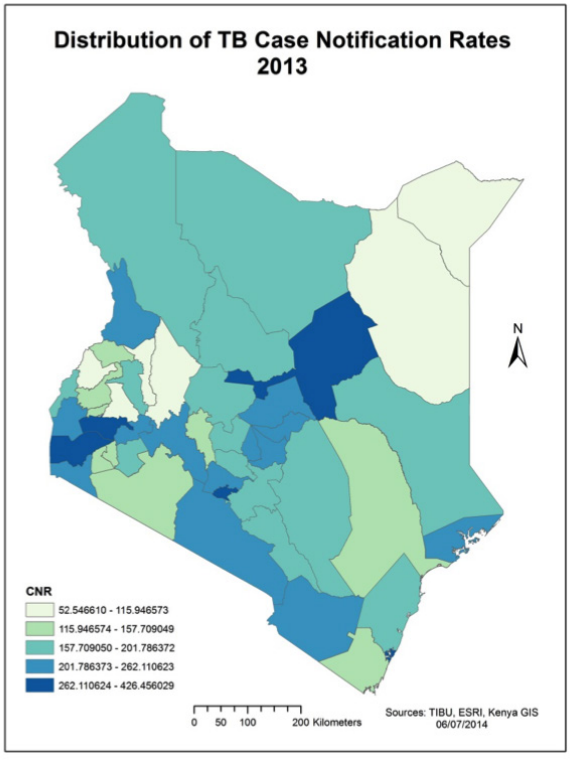
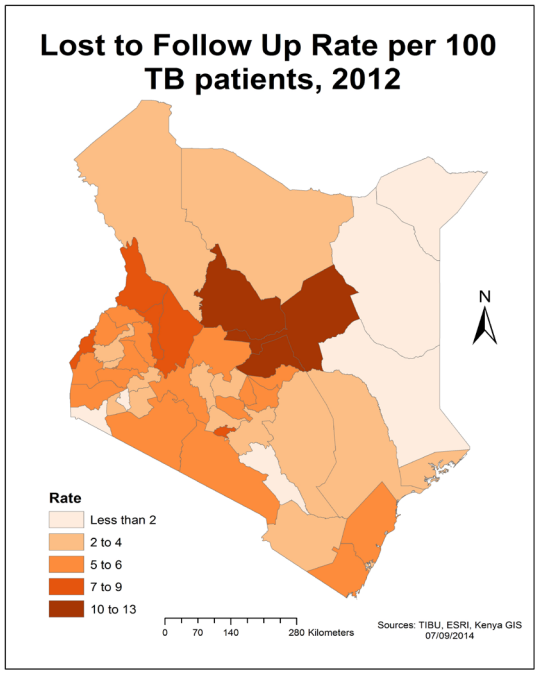


Figure 10: Treatment Success for Notified Cases



Map 1: Case Notification Rates, 2013



Map 2: Lost to Follow Up Rate, 2012

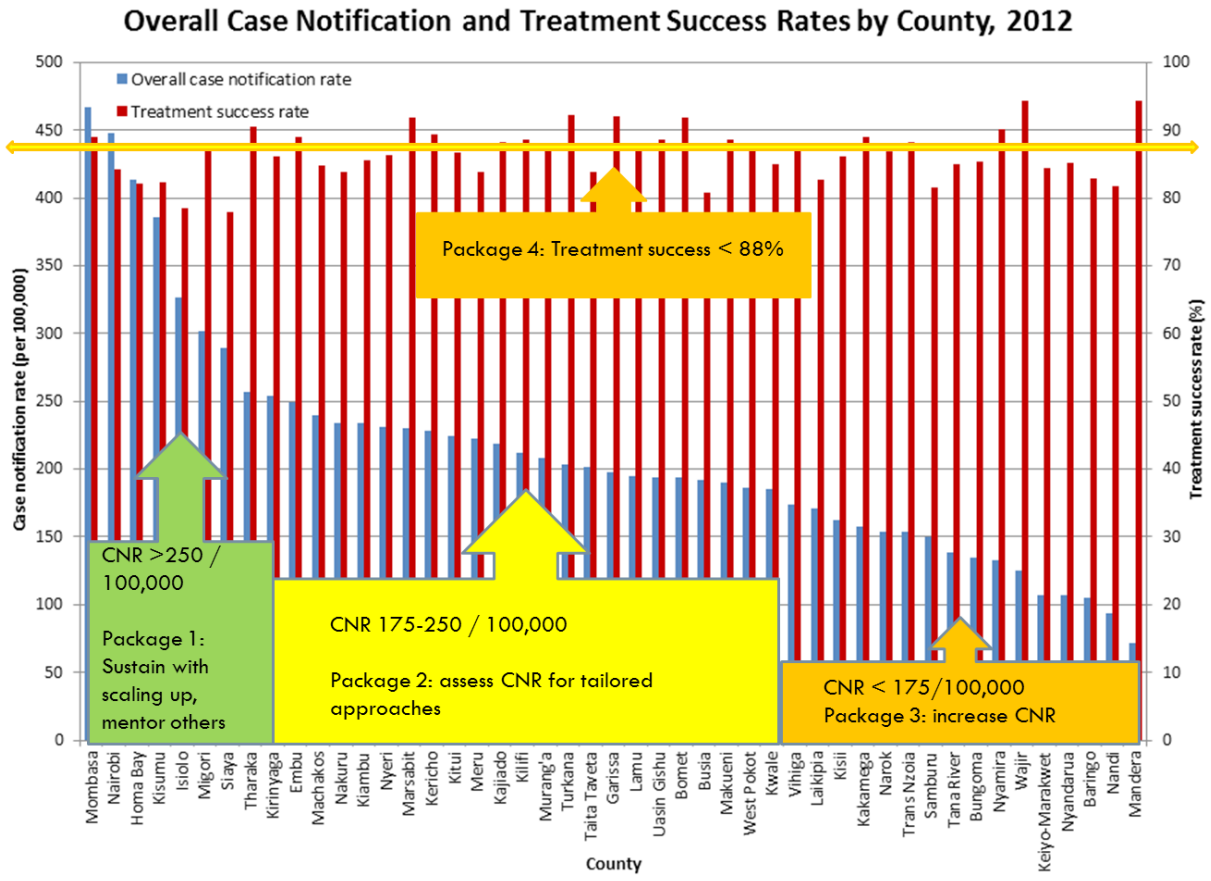


Figure 11: Overall Case Notification and Treatment Success Rates by County, 2012

The NTLD Program is planning a national prevalence survey to be completed during 2014-2015, which will provide more evidence regarding at-risk groups that are under-served by the current network of providers. Until the prevalence survey is completed, data from the national M&E system and operational research studies must guide the Program's priority setting.

Based on existing evidence from within Kenya and other neighboring countries, the following high-risk groups are recognized as hosting disproportionately high rates of TB and/or being underserved by health services:

a) Urban slums: While the incidence of TB in slum areas throughout Kenya is not known, slums are considered a high-risk setting given the ease of transmission due to overcrowding and financial, geographical and social barriers to care. A pilot project launched under TB-REACH in 2010 to provide affordable and accessible services in Kibera, an urban slum near Nairobi, has increased case notifications by 10%.

b) Health care workers: In Kenyatta National Hospital, a study showed that the rate of TB among health care workers was three times higher than in the surrounding community. In 2011, the notification rate was the equivalent of 772/100,000. Only 75% of cases among health care workers during 2006-2011 successfully completed treatment.

c) Mobile/migrant populations: Kenya is host/home to diverse migrant populations. Ethnic conflict, cattle raids, and climate change have driven internal movement and displacement. Labor-related movement between plantations across rural areas is common. Social determinants arising from migration, such as living in cramped settlements, and income and food instability, increase the risk of TB. Access to continuous care is constrained by many of the social dimensions of migration[1].

d) Refugees: Kenya absorbs migrants and refugees from Sudan, Somalia, Ethiopia, Tanzania and Uganda. While WHO estimates the incidence rate of TB to be similar in countries from which many of the refugees in Kenya originate, refugees currently account for 30% of all of the MDR-TB cases notified in the country.

e) Prisoners: TB case notification rates in two large prisons in Kenya, Meru and Embu, were 941 and 4,714/100,000 respectively in 2012. These rates are 4-10 times higher than in the surrounding population. It is estimated that similarly disproportionately high rates occur in other prison settings.

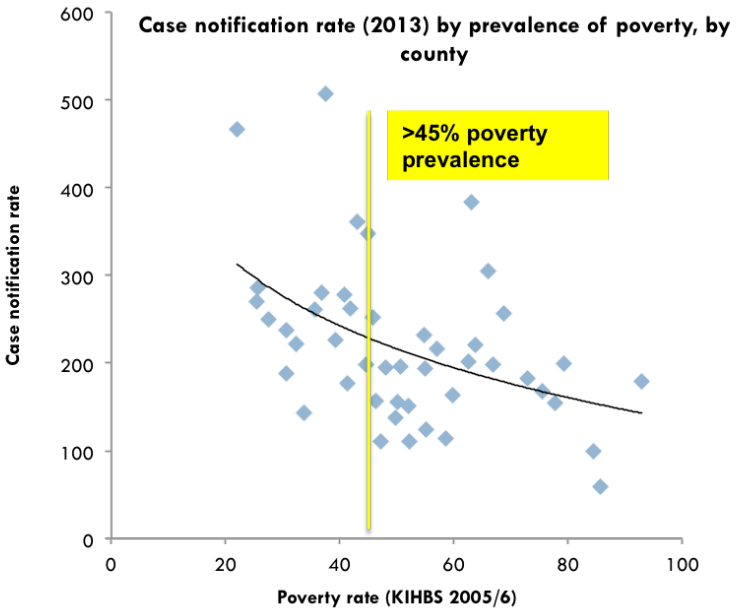


Figure 12: Case Notification Rate by Prevalence of Poverty, by County

1 International Organization for Migration, 2011: An Analysis of Migration Health in Kenya

f) Uniformed service personnel: Long recognized as a high-risk group for HIV infection in Kenya, this cadre of government personnel is relatively at higher risk for TB.

g) People living with HIV: A study[2] suggested that the incidence of TB is 8 times higher among PLHIV in Kenya.

h) Contacts of TB patients: Limited evidence is available from country-level practice regarding the benefits of contact tracing. However, the WHO global recommendation in favor of screening of close contacts of active TB patients is based on five cross-sectional studies showing that contact tracing contributed 2-19% of all cases, and two randomized control trials showing a 15% reduction in incidence and 22% reduction in prevalence due to contact tracing[3].

i) Diabetics: While less recognized than its relationship with HIV, TB is 2.5 times more likely to strike in people with diabetes. The International Diabetes Federation predicts the prevalence of diabetes in sub-Saharan Africa to rise by 98.1% between 2010 and 2030[4].

j) Moderately and severely malnourished individuals: The importance of nutrition for patient recovery has been documented in several studies as a key intervention to improve treatment outcomes and an incentive to promote treatment adherence. Almost 20% of all TB patients were severely malnourished in 2013; i.e. BMI<16. More than a quarter (27.4%) of severely malnourished patients did not receive any form of nutritional support.

The NTLD Program has established policies, strategies and guidelines that are in line with international recommendations and lessons learned from Kenya. The operationalization of national norms occurs through service delivery that is fully integrated into the public health network. Dedicated TB and leprosy coordinators assigned at devolved levels provide supportive supervision to sub-counties and health facilities.

Structured quality assurance for diagnosis and treatment, as well as case-based monitoring and evaluation provide the foundation for ensuring the quality of the program. Currently, one TB treatment or follow-up center serves fewer than 15,000 people. However, despite efforts to build capacity for TB prevention, detection and care at all levels of the health system, it is estimated that fewer than 40% of dispensaries are able to provide TB treatment.

2. Strategic Direction(s) for 2015-2018

The priorities for this period are to:

a) Ensure treatment success rate of at least 90% nationally among all drug-susceptible (DS) forms of TB.

b) Reach marginalized, high-risk and under-served populations, closing the case detection gap

c) Incorporate TB into existing and emerging social protection schemes, including nutritional support platforms.

STRATEGIC OBJECTIVES

Sustain the gains, in the context of a newly devolved system	Intensify efforts to find "missing" cases	Reduce transmission
•Expand treatment success rate of at least 90% among all DS forms of TB to all counties •Establish county-level centers of excellence for mentorship and training of other counties	•Identify and build capacity within poorly performing areas •Capitalize on social protection schemes to enable patient access •Use evidence (programmatic data, prevalence survey and operational research) to identify underserved populations and target with active case finding	•Improve capacity to rapidly detect TB and initiate treatment in high-risk / high-transmission settings, including urban slums, refugee camps and prisons; and among health care workers and uniformed service •Ensure modalities for diagnosis and treatment among mobile and migrant populations

2 Comparison of Trends in Tuberculosis Incidence among Adults Living with HIV and Adults without HIV – Kenya, 1998–2012
Courtney M. Yuen1, Herman O. Weyenga2, Andrea A. Kim3, Timothy Malika2, Hellen Muttai3, Abraham Katana3, Lucy Nganga3, Kevin P. Cain3*, Kevin M. De Cock3

3 Feasibility, yield, and cost of active tuberculosis case finding linked to a mobile HIV service in Cape Town, South Africa: a cross-sectional study.
Kranzer[1], Lawn SD, Meyer-Rath G, Vassall A, Raditlhalo E, Govindasamy D, van Schaik N, Wood R, Bekker LG., 2012

4 International Diabetes Federation. IDF Diabetes Atlas, 5th edn. Brussels, Belgium: International Diabetes Federation, 2011.
http://www.idf.org/diabetesatlas

3. Proposed Approaches

The proposed approaches reflect activities that will be needed nationwide to sustain a cohesive national program, in addition to targeted approaches that address specific epidemiological and programme performance contexts.

Sustain quality programme implementation

At the heart of this NSP is the acknowledgement that the NTLD Program has achieved important milestones in terms of case notification and treatment success. The factors contributing to these successes must be sustained nationwide while aligning to the newly devolved governance structure.

Among the key arrangements to be sustained are:

a) Human resource capacity, in sufficient numbers and adequately trained and supported to fully implement the activities of this NSP.

Specifically:

i. *TB and leprosy dedicated staff at national, county and sub-county levels:* This concerns the continued availability of TB and leprosy dedicated staff with technical expertise to guide implementation across the system.
ii. *Technical assistance to counties* to ensure technical excellence and the appropriate application or adaptation of national guidelines will reflect specific needs/gaps in counties (Tables 3- 4). Regular technical assistance from the central program or more devolved centers of excellence to individual counties is anticipated on a quarterly basis.
iii. *Supportive supervision* to systematically extend capacity building and knowledge sharing from the county to sub-county, health facility and community levels. Supportive supervision is planned in a cascade manner, on a monthly basis.
iv. *Training and professional development* tailored to the specific epidemiological and program performance contexts of each county, sub-county and facility type. Innovative formats for cost-efficient continuing education, such as web-based training, android applications and other on-the-job tools will be developed.
v. *International technical assistance* to enable continuous innovation and evidence-based program evolution that is enhanced by learning from other countries and experts.

b) Normative functions, guidelines and tools

The normative role of the central program has not changed with the devolution of other responsibility to counties. Gradual updating of all guidelines to align with implementation through the newly devolved system will be required.

i. *Guidelines:* Guidelines will be updated as new technical standards emerge internationally and/or where local evidence drives a policy shift.
ii. *Training tools:* Updated planning, budgeting and technical training tools will be required to support devolution and the roll-out of new approaches
iii. *Information Technology (IT):* Pilot testing and roll-out of new IT solutions to enhance patient-centered care, such as SMS treatment reminders, are planned
iv. *Data management system:* Continued enhancement of TIBU is detailed in the M&E section

c) Coordination forums

The 2014 mid-term review cited the strength of programme coordination internally and with partners as central to its success. Among the forums to be sustained with regular meetings and follow-up activities are the:

i. Technical working groups
ii. Inter-agency coordinating committee
iii. Stop TB Partnership
iv. Data dissemination forums.

d) Stable supply of commodities including drugs, laboratory supplies and equipment, vehicles, and stationery, as described in the commodities section of this NSP.

Target activities to increase case notifications and treatment success

This NSP aims to reduce the disparities between counties in terms of case detection and treatment success, elevating and sustaining programmatic performance at a high level within each county. It is expected that treatment success will reach at least 90% in all counties, and all counties will make targeted efforts to increase case notification.

An assessment of the county-specific epidemiological and programme performance contexts is provided in Table 3

and Figure 12. Based on each county's context, intensified effort will be given to scaling up proven interventions as described below:

a) Package 1: TB Case Notification Rate <175/100,000

16 counties have case notification rates at or below 175/100,000.

While it is recognized that incidence may be lower in these counties, ensuring that capacity exists to detect and diagnose cases is a priority.

In these counties, intensified effort will be given to:

i. *Build capacity* of health workers and laboratory technicians to identify and diagnose TB
ii. *Employ active case finding*, with county-based tailoring of the modalities and target groups
iii. *Strengthen implementation and monitoring of systematic TB screening* at health facility, in-patient wards and community levels, with improved documentation of presumptive TB cases and linkages to diagnostic and care sites
iv. *Engage all care providers* with an emphasis on systematic screening for TB and reporting of presumptive and active cases, through private, NGO, CSO, MCH and HIV-specialty care facilities
v. Expand communication efforts in communities to stimulate care seeking
vi. *Ensure the availability of referral networks* for sputum samples and patient care
vii. *Intensify technical assistance* and supportive supervision from Centers of Excellence or the NTLD Program

Evidence for Targeting

Case Notifications

- *16 counties have low TB case notification (<175/100,000)*
- *10 counties have relatively high TB caseloads (around or above 250/100,000)*
- *Case notification rates are loosely, yet inversely related to the prevalence of poverty in counties, suggesting missing cases among the poor*

Treatment Successes

- *27 counties have treatment success rates below 88%*

Defaulters

- *Three counties; Nairobi, Meru and Mombasa account for 27% of all cases notified, but 36% of cases of treatment default*
- *9 counties have default rates >7%*

Box 1

b) Package 2: TB Case Notification Rate 175-250/ 100,000

There are 22 counties with case notification rates between 175 – 250/100,000. In these counties, assessment of the sub-county epidemiology and programme performance will shape the focus of intensified case finding or other tailored approaches. Capacity in these counties should be sufficient to deploy active contact tracing, especially among child contacts of active TB cases and PLHIV.

c) Package 3: Case Notification Rate >250/100,000

There are nine (9) counties with case notification rates near or above 250/100,000. These counties may host successful models of case finding and human resource expertise that can be shared in other counties. Center(s) of Excellence within these counties will be established to serve as referral points, and to host HCWs and TB and leprosy coordinators from other counties for on-site mentorship, training and technical assistance.

These counties may also host particularly high incidence among sub-populations. Intensified efforts to reach *high-risk groups* will be supported. *Contact tracing* will be further enhanced.

d) Package 4: Treatment success <88%

In 27 counties, treatment success rates in 2012 were below the national target of 88%. In these counties, intensified efforts will be mobilized for:

i. Defaulter tracing
ii. Strengthen access to critical enablers i.e. nutrition support and other social protections
iii. Improved health education for patients, including innovations in the use of technology platforms for communicating with patients
iv. Building CHEW capacity to oversee family-based and community volunteer-supported DOT
v. Strengthen referral networks to bring care closer to patients.

e) Package 5: Poverty prevalence > 45%

There are 26 counties in which >45% of households live below the poverty line. The poorest TB patients face particular socio-economic barriers to care that will be addressed through:

i. Strengthening access to social protections, especially nutritional support, transport vouchers, and health insurance.

ii. Strengthening referral networks, such as sputum collection points to connect to laboratories, to bring care closer to patients
iii. Prioritize the engagement of communities

County-specific needs to be addressed are summarized in the following table:

County-Specific Contexts

COUNTY	Low CNR (< 175/ 100,000)	Mid CNR (175-250/ 100,000)	Low treatment success (< 88%)	High poverty prevalence (> 45%)	>40% of TB patients with BMI < 18	High HIV prevalence in general population (>5%)	HIV prevalence 2.5-5%	Low community case notification (< 9% of total)	Low pediatric case notification (<8% of total)
Baringo	X		X	X	X		X	X	X
Bomet		X		X	X	X		X	
Bungoma	X		X	X			X	X	X
Busia		X	X	X		X			
Embu		X					X	X	X
Garissa		X		X	X			X	
Homa Bay			X			X		X	
Isiolo			X	X	X		X	X	
Kajiado		X			X		X	X	X
Kakamega	X			X		X		X	X
Keiyo-Marakwet	X		X	X			X	X	
Kericho		X			X		X	X	
Kiambu		X	X				X	X	X
Kilifi		X		X	X		X	X	
Kirinyaga			X		X		X	X	X
Kisii	X		X	X		X		X	X
Kisumu			X			X		X	X
Kitui		X	X	X	X		X	X	X
Kwale		X	X	X	X	X			X
Laikipia	X		X	X	X		X	X	X
Lamu		X			X			X	
Machakos		X	X	X	X	X		X	X
Makueni		X		X	X	X		X	X
Mandera	X			X	X			X	
Marsabit		X		X	X			X	X
Meru		X	X		X		X	X	X
Migori					X	X		X	X
Mombasa						X		X	X
Murang'a		X	X		X	X		X	X
Nairobi			X			X		X	X
Nakuru		X	X			X		X	X
Nandi	X		X	X	X		X		X
Narok	X		X		X	X		X	
Nyamira	X					X			X
Nyandarua	X		X	X			X	X	X
Nyeri		X	X				X	X	X
Samburu	X		X	X	X	X		X	
Siaya			X		X	X		X	X
Taita Taveta		X	X	X		X		X	X
Tana River	X		X	X	X			X	X
Tharaka							X	X	
Trans Nzoia	X			X		X		X	X
Turkana		X		X	X	X		X	
Uasin Gishu		X					X	X	X

COUNTY	Low CNR (< 175/ 100,000)	Mid CNR (175-250/ 100,000)	Low treatment success (< 88%)	High poverty prevalence (> 45%)	>40% of TB patients with BMI < 18	High HIV prevalence in general population (>5%)	HIV prevalence 2.5-5%	Low community case notification (< 9% of total)	Low pediatric case notification (<8% of total)
Vihiga	X				X		X		X
Wajir	X			X	X			X	
West Pokot		X	X	X			X		X

Table 3: County Specific Contexts

Expand special initiatives to reach most at-risk

The most at-risk populations defined above warrant targeted approaches. Successful pilots will be scaled-up and new approaches introduced with attention to monitoring the impact on case notification and treatment outcomes. The table below summarizes the approaches by high-risk group:

High-Risk Group	Approaches
Health care workers	Implement infection control plans in all government health facilities
	Conduct annual screening for HCWs as part of a revised workplace-based policy on TB control
	Assess and respond to socio-economic barriers to treatment initiation and treatment completion
Prisoners	Implement screening upon entry to prisons
	Enhance infection control practices
	Introduce diagnostic and DOT capacity on-site
	Develop health education tools for prisoners and prison staff
	Develop referral mechanisms for prisoners who are transferred or released
Mobile populations	Integrate TB screening and control activities within service delivery platforms reaching these populations; e.g. MCH mobile outreach, HIV activities along transport corridors
Refugees	Enhance infection control capacity within camps
	Ensure diagnostic and DOT capacity, including Rif-resistance identification (Xpert), on-site
Uniformed service	Introduce diagnostic and DOT capacity on-site
	Update the workplace-based policy to allow 1 month of paid leave for new cases
	Intensify contact tracing
Urban slums	Intensify community engagement and outreach
	Increase the engagement of non-state providers already present in the slums or reaching slum dwellers, including employers
	Expand the availability of diagnostic sites and/or referral networks, including sputum collection points, to bring services closer to patients
	Expand eligibility of social protection programs to include TB patients
Diabetics	Pilot systematic screening for TB among all diabetics followed by hospitals and other providers (Year 1); and screen TB patients for diabetes (Year 3)

Table 4: Approaches by High-Risk Group

Contribution to NSP Impacts	Outcomes (Core DOTS)
Impact 1: Reduce the incidence of TB by 5% by 2018, compared to 2014	Increase case notification (in each county) of new cases to 85% of estimated prevalence
Impact 1.2: Reduce the incidence of TB among PLHIV by 60% by 2018, compared to 2014	Increase the treatment success rate among HIV-infected TB patients to 85%
Impact 2: Reduce mortality due to TB by 3% by 2018, compared to 2014	Ensure treatment success rate (in each county) of at least 90% among all DS forms of TB
Impact 3: Reduce the proportion of affected families who face catastrophic costs due to TB, leprosy & other lung diseases, by 2018 (baseline TBD)	Increase to 100% the proportion of severely and moderately malnourished people with TB who access appropriate nutritional support

Table 5: Impact and Outcome Indicators for Core DOTS

Core DOTS Operational Plan									
Output Indicator(s)	**Intervention(s)**	**Year 1 Activities**	**Yr 1 Target**	**Year 2 Activities**	**Yr 2 Target**	**Year 3 Actitivies**	**Yr 3 Target**	**Year 4 Activities**	**Yr 4 Target**
Strategic Approach 1: Sustain Quality Program Implementation									
1.1 Human Resource Capacity									
Number of counties provided with quarterly technical assistance from NTLD Program	Conduct regular technical assistance to the counties from the NTLD Program	Provide quarterly TA to 47 counties for all years	47	Provide quarterly TA to 47 counties for all years	47	Provide quarterly TA to 47 counties for all years	47	Provide quarterly TA to 47 counties for all years	47
Number of sub-counties whose TB and Leprosy Cordinators conduct monthly support supervision to TB health facilities	Conduct regular support supervision to the TB health facilities by sub-County TB & Leprosy coordinators (SCTLC)	Provide monthly support supervision to TB health facilities in 286 sub-counties by SCTLC	286	Provide monthly support supervision to TB health facilities in 286 subcounties by SCTLC	286	Provide monthly support supervision to TB health facilities in 286 subcounties by SCTLC	286	Provide monthly support supervision to TB health facilities in 286 subcounties by SCTLC	286
Proportion of sub-counties provided with quarterly support supervision by county coordinators	Conduct regular supportive supervision: County to sub-county level	Conduct quarterly support supervsion to 286 sub-counties by CTLC	100%	Conduct quarterly support supervsion to 286 sub-counties by CTLC	100%	Conduct quarterly support supervsion to 286 sub-counties by CTLC	100%	Conduct quarterly support supervsion to 286 sub-counties by CTLC	100%
Number of laboratory staff, TB coordinators and project management program officers retained	Retain laboratory technologists, County TB and leprosy coordinators and project management program officers	Retain 10 project management program staff, 50 clinical officers and 115 laboratory technologists	175	Retain 10 project management program staff, 50 clinical officers and 115 laboratory technologists	175	Retain 10 project management program staff, 50 clinical officers and 115 laboratory technologists	175	Retain 10 project management program staff, 50 clinical officers and 115 laboratory technologists	175
Number of staff supported to undertake professional courses at the Kenya School of Governement	Support staff from NTLD Program and counties to undertake proffesional courses at Kenya School of Government	Support staff from NTLD Program and counties to undertake proffesional courses at Kenya School of Government	60	Support staff from NTLD Program and counties to undertake proffesional courses at Kenya School of Government	60	Support staff from NTLD Program and counties to undertake proffesional courses at Kenya School of Government	60	Support staff from NTLD Program and counties to undertake proffesional courses at Kenya School of Government	60
Number of staff supported to attend international courses	Support staff from NTLD and counties to attend international courses	Support staff from NTLD Program and counties to attend international courses	6	Support staff from NTLD Program and counties to attend international courses	6	Support staff from NTLD Program and counties to attend international courses	6	Support staff from NTLD Program and counties to attend international courses	6
Number of auditors trained on ISO	Train internal auditors on ISO	Train internal auditors on ISO	5	Train internal auditors on ISO	5	Train internal auditors on ISO	5		
Number of lead auditors trained on ISO	Train lead auditors on ISO	Train lead auditors on ISO	2	Train ISO lead auditors	2				
Number of NTLD Program staff sensitized on ISO	Sensitize NTLD Program staff on ISO	Sensitize NTLD Program staff on ISO	40			Sensitize NTLD Program staff on ISO	40		
ISO certification retained by NTLD Program	Meet ISO certification requirements for retention including fees	Annual ISO fees	1	Annual ISO fees	1	Annual ISO fees	1	Annual ISO fees	1
Number of CTLCs oriented annually	Conduct ISO orientation training for CTLCs	Conduct ISO orientation training for CTLCs	30	Conduct ISO orientation training for CTLCs	30	Conduct ISO orientation training for CTLCs	30	Conduct ISO orientation training for CTLCs	30
1.2 Normative Functions, Guidelines and Tools									

Core DOTS Operational Plan									
Output Indicator(s)	**Intervention(s)**	**Year 1 Activities**	**Yr 1 Target**	**Year 2 Activities**	**Yr 2 Target**	**Year 3 Actitivies**	**Yr 3 Target**	**Year 4 Activities**	**Yr 4 Target**
Percentage of 'retreatment' patients started on category 2 regimen	Develop a policy for phasing out TB Category II regimen	TWG to phase out CAT II regimen	1						
	Dissemination of guidelines and sensitization		100%	Dissemination of new guidelines on phasing out of CAT II regimen	80%	Patients receiving CAT II regimen	60%	Patients receiving CAT II regimen	40%
Number of training needs assessments conducted and disseminated	Training needs assessment (TNA) to identify the gaps and opportunities of the current TB training curriculum			National training needs assessment (TNA) to identify the gaps and opportunities of the current curriculum	1			_	
	Stakeholders meetings to disseminate findings of the TNA and share need for curriculum review			Stakeholders meetings to disseminate findings of the TNA and share need for curriculum review	1				
	Stakeholder meetings to develop required competencies of different cadres in TB, leprosy & lung disease service delivery (based on TNA feedback and stakeholder input) and development of a curriculum framework based on the output of the workshops			Technical working group meetings to develop required competencies of different cadres in TB, leprosy & lung disease service delivery (based on TNA feedback and stakeholder input) and development of a curriculum framework based on the output of the workshops					
An integrated TB training curricullum	Develop an integrated TB training curriculum		n/a	Conduct writing workshops to convert previous training materials into distance learning format (included training in writing in this format)	n/a	Technical review workshops by experts in the different modules (and development of adjunct material – tests, log books etc.)	n/a	Writing workshops to convert previous training materials into distance learning format (included training in writing in this format)	1
						Educational review of the modules	n/a		n/a
						Pilot of the curriculum at selected sites country-wide			
						Evaluation of the pilot			
						Post-pilot review workshops for feedback from pilot sites and revision of curriculum materials			
						Educational review and final editing			
						Roll out including monitoring			
A TB technical assistance manual developed	Support development and dissemination of a TB technical assistance manual	Conduct TWGs meetings on development of TA manual	n/a	Dissemination of TA manual	n/a		1		n/a

Core DOTS Operational Plan									
Output Indicator(s)	**Intervention(s)**	**Year 1 Activities**	**Yr 1 Target**	**Year 2 Activities**	**Yr 2 Target**	**Year 3 Actitivies**	**Yr 3 Target**	**Year 4 Activities**	**Yr 4 Target**
Number of TB contact tracing tools and defaulter tracing tools printed	Develop tools for contact tracing of TB patients	Revise/develop defaulter tracing & contact tracing tools to incorporate contact tracing & TB screening in all clinical settings tools	15,000		15,000		15,000		15,000
	Print TB contact tracing tools	Print 5,000 contact tracing booklets, 5,000 contact registers, 5,000 defaulter tracing booklets		Print 5,000 contact tracing booklets, 5,000 contact registers, 5,000 defaulter tracing booklets		Print 5,000 contact tracing booklets, 5,000 contact registers, 5,000 defaulter tracing booklets		Print 5,000 contact tracing booklets, 5,000 contact registers, 5,000 defaulter tracing booklets	
	Dissemination of contact tracing tools			Conduct a national dissemination workshop and develop and rapid advice sent to all counties		_		_	
Number of TB intensified case finding tools developed and printed	Support printing of algorithms, SOPs & protocols on TB-DM and extended TB Intensified case finding			Support printing of algorithms, SOPs & protocols on TB-DM and extended TB Intensified case finding	5000				
Number of county dissemination workshops for TB-DM and intensified case finding tools conducted	Dissemination of TB-DM algorithms to all counties	n/a	n/a	Conduct dissemination meetings of algorithms, SOPS and protocols on TB - DM and extended ICF	24	Conduct dissemination meetings of algorithms, SOPS and protocols on TB - DM and extended ICF	23	n/a	n/a
1.3 Coordination Fora									
Number of national TWG meetings held	Support quarterly national TWG meetings (Ped, Leprosy, TB/HIV and MDR-TB,Community and Gender, core DOTS)	TWG meetings held	20	TWG meetings held	20	TWG meetings held	20	TWG meetings held	20
Number monthly NTLD Program staff meetings held	Hold monthly NTLD Program staff meetings	12 NTLD Program staff meetings held	12	12 NTLD Program staff meetings held	12	12 NTLD Program staff meetings held	12	12 NTLD Program staff meetings held	12
Number of quarterly TB Inter Agency Cordinating Committe (TB ICC) meetings held	Hold quarterly TB ICC ICC meetings	TB ICC meetings held	4	TB ICC meetings held	4	TB ICC meetings held	4	TB ICC meetings held	4
Proportion of counties conducting biannual county level TB inter agency cordination meetings	Support biannual county-level TB interagency coordinating fora	Hold biannual county-level TB interagency coordinating fora	100%	Hold biannual county-level TB interagency coordinating fora	100%	Hold biannual county-level TB interagency coordinating fora	100%	Hold biannual county-level TB interagency coordinating fora	100%
Number of STOP TB partnership business conferences held	Conduct STOP TB Partnership and resource mobilization conferences	Conduct STOP TB Partnership and resource mobilization conference	1	Conduct STOP TB Partnership and resource mobilization conference	1	Conduct STOP TB Partnership and resource mobilization conference	1	Conduct STOP TB Partnership and resource mobilization conference	1
Propotion of scheduled TB performance review meetings held	Conduct biannual national performance review meetings	Biannual national performance review meetings	100%		100%	Biannual national performance review meetings	100%	Biannual national performance review meetings	100%
Proportion of sub counties participating in quarterly review meetings	Conduct county-based quarterly performance review meetings	Conduct county-based quartely performance review meetings	100%	Conduct county-based quartely performance review meetings	100%	Conduct county-based quartely performance review meetings	100%	Conduct county-based quartely performance review meetings	100%
Number of national TB partner review meetings held	Hold quarterly national partners' review meetings to align interventions and activities	Hold quarterly partners review meetings	4	Hold quarterly partners review meetings	4	Hold quarterly partners review meetings	4	Hold quarterly partners review meetings	4
1.4 Supportive Supervision									
Number of vehicles procured	Procure vehicle transport for the NTLD Program to facilitate regular technical assistance to the counties	n/a		Procure vehicles	4	Procure vehicles	4	n/a	

Core DOTS Operational Plan									
Output Indicator(s)	**Intervention(s)**	**Year 1 Activities**	**Yr 1 Target**	**Year 2 Activities**	**Yr 2 Target**	**Year 3 Actitivies**	**Yr 3 Target**	**Year 4 Activities**	**Yr 4 Target**
Proportion of the NTLD Program vehicles with no downtime of more than 2 weeks due to lack of maintenance	Maintanance of NTLD Program motor vehicles	Conduct scheduled maintainance of NTLD Program vehicles	100%	Conduct scheduled maintainance of NTLD Program vehicles	100%	Conduct scheduled maintainance of NTLD Program vehicles	100%	Conduct scheduled maintainance of NTLD Program vehicles	100%
Proportion of NTLD Program vehicles fitted with new set of tires annually	Procure tyres for NTLD Program motor vehicles	Procure 44 motor tyres for NTLD Program vehicles	100%	Procure 60 motor tyres for NTLD Program vehicles	100%	Procure76 motor tyres for NTLD Program vehicles	100%	Procure 76 motor tyres for NTLD Program vehicles	100%
Proportion of NTLD Program vehicles with no downtime of more than 1 day due to lack of fuel	Procure fuel for NTLD Program vehicles	Procure fuel for 11 vehicles	100%	Procure fuel for 11 vehicles	100%	Procure fuel for 11 vehicles	100%	Procure fuel for 11 vehicles	100%
Proportion of county vehicles with no downtime of more than 2 weeks due to lack of maintenance	Maintanance of county -based motor vehicles	Conduct scheduled maintainace of 10 county-based vehicles	100%	Conduct scheduled maintainace of 10 county-based vehicles	100%	Conduct scheduled maintainace of 10 county-based vehicles	100%	Conduct scheduled maintainace of 10 county-based vehicles	100%
Proportion of county vehicles fitted with new set of tires annually	Procure tyres for county-based motor vehicles	Procure tyres for 10 county-based motor vehicles	100%	Procure tyres for 10 county-based motor vehicles	100%	Procure tyres for 10 county-based motor vehicles	100%	Procure tyres for 10 county-based motor vehicles	100%
Proportion of county vehicles with no downtime of more than 1 day due to lack of fuel	Procure fuel for county-based vehicles	Procure fuel for 10 county-based vehicles	100%	Procure fuel for 10 county-based vehicles	100%	Procure fuel for 10 county-based vehicles	100%	Procure fuel for 10 county-based vehicles	100%
Proportion of county motorcycles with no downtime of more than 1 week due to lack of maintenance	Maintanance of county-based motorcycles	Maintanance of 150 county-based motorcycles	100%	Maintanance of 150 county-based motorcycles	100%	Maintanance of 150 county-based motorcycles	100%	Maintanance of 150 county-based motorcycles	100%
Proportion of county motorcycles fitted with new set of tires annually	Procure tyres for county-based motor cycles	Procure 300 tyres for county-based motor cycles	100%	Procure 300 tyres for county-based motor cycles	100%	Procure 300 tyres for county-based motor cycles	100%	Procure 300 tyres for county-based motor cycles	100%
Proportion of county motorcycles with no downtime of more than 1 day due to lack of fuel	Procure fuel for motorcycles for the sub-counties to facilitate regular support supervision to the facilities	Procure fuel for 150 county-based motorcycles	100%	Procure fuel for 150 county-based motorcycles	100%	Procure fuel for 150 county-based motorcycles	100%	Procure fuel for 150 county-based motorcycles	100%
Proportion of Sub County TB & Leprosy cordinators(SCTLCs) with no motorcycles receiving monthly reimbursement for public transport	Support public transport for the sub-counties TB cordinators (without motor-cycles) to facilitate regular support supervision to the TB facilities	Support public transport for 150 sub-counties TB cordinators (without motor-cycles) to facilitate regular support supervision to the facilities	100%	Support public transport for 150 sub-counties TB cordinators (without motor-cycles) to facilitate regular support supervision to the facilities	100%	Support public transport for 150 sub-counties TB cordinators (without motor-cycles) to facilitate regular support supervision to the facilities	100%	Support public transport for 150 sub-counties TB cordinators (without motor-cycles) to facilitate regular support supervision to the facilities	100%
Proportion of NTLD Program staff provided with monthly airtime (including drivers)	Provide monthly cell phone airtime for NTLD Program staff	Provide cell phone airtime for 44 NTLD Program staff	100%	Provide cell phone airtime for 44 NTLD Program staff	100%	Provide cell phone airtime for 44 NTLD Program staff	100%	Provide cell phone airtime for 44 NTLD staff	100%
Proportion of county TB staff provided with monthly airtime (including drivers)	Provide monthly cell phone airtime for CTLCs	Provide cell phone airtime for 50 County TB & leprosy coordinators and 10 drivers	100%	Provide cell phone airtime for 50 County TB & leprosy coordinators and 10 drivers	100%	Provide cell phone airtime for 50 County TB & leprosy coordinators and 10 drivers	100%	Provide cell phone airtime for 50 County TB & leprosy coordinators and 10 drivers	100%
Proportion of CTLCs provided with monthly office stationery support	Provide CTLCs with monthly office stationary	Provide 50 CTLCs with monthly office stationary	100%	Provide 50 CTLCs with monthly office stationary	100%	Provide 50 CTLCs with monthly office stationary	100%	Provide 50 CTLCs with monthly office stationary	100%
Proportion of SCTLCs provided with monthly airtime	Provide SCTLCs with monthly cell phone airtime	Provide 286 SCTLCs with monthly cell phone airtime	100%	Provide 286 SCTLCs with monthly cell phone airtime	100%	Provide 286 SCTLCs with monthly cell phone airtime	100%	Provide 286 SCTLCs with monthly cell phone airtime	100%
Proportion of SCTLCs provided with monthly office stationery support	Provide SCTLCs with monthly office stationary	Provide 286 SCTLCs with monthly office stationary	100%	Provide 286 SCTLCs with monthly office stationary	100%	Provide 286 SCTLCs with monthly office stationary	100%	Provide 286 SCTLCs with monthly office stationary	100%

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Output Indicator(s)	Intervention(s)	Year 1 Activities	Yr 1 Target	Year 2 Activities	Yr 2 Target	Year 3 Actitivies	Yr 3 Target	Year 4 Activities	Yr 4 Target
Proportion of necessary and sufficient office equipment, supplies and infrastructure in place and in good working order	Procure office equipment, supplies and support IT maintainance	n/a	100%	Procure 3 printers	100%	n/a	100%	Procure 3 printers	100%
		Procure assorted office supplies for the NTLD Program		Procure assorted office supplies for the NTLD Program		Procure assorted office supplies for the NTLD Program		Procure assorted office supplies for the NTLD Program	
		Support IT maintanance		Support IT maintanance		Support IT maintanance		Support IT maintanance	
		Support purchase of laptop computers for County TB & Leprosy Coordinators	n/a	0%	Purchase 50 laptops for CTLCs	100%	n/a		Purchase 50 laptops for CTLCs
Proportion of CTLCs provided with computers	Support Purchase of Laptops for County TB & Leprosy Coordinators	n/a	0%	Purchase 50 laptops for CTLCs	100%	n/a		Purchase 50 laptops for CTLCs	100%
Strategic Approach 2: Target Activities to Increase Case Notification									
Package 1 CNR < 175/100000 Counties - Vihiga, Laikipia, Kisii, Kakamega, Narok, Trans Nzoia, Samburu, Tana River, Bungoma, Nyamira, Wajir, Elgeyo Marakwet, Nyandarua, Baringo, Nandi, Mandera									
Proportion of health facilities screening coughers for TB	Capacity build HCWs to diagnose and manage TB	10 TB/HIV trainings	50%	20 TBHIV trainings	60%	20 TBHIV trainings	75%	10 TB/HIV trainings	100
	Conduct universal screening for TB of all coughers at all clinical care points	Screen all coughers for TB at all outpatient points		Screen all coughers for TB at all outpatient points		Screen all coughers for TB at all outpatient points		Screen all coughers for TB at all outpatient points	
Proportion of smear positive TB patients whose household contacts were traced and screened for TB	Conduct contact tracing of all notified smear positive TB patients	n/a		Carry out contact tracing of all TB patients	60%	Carry out contact tracing of all TB patients	80%	Carry out contact tracing of all TB patients	>80%
Package 2 CNR 175-250/100,000 Counties - Embu, Machakos, Nakuru, Kiambu, Nyeri, Marsabit, Kericho, Kitui, Meru, Kajiado, Kilifi, Murang'a, Turkana, Taita Taveta, Garissa, Lamu, Uasin Gishu, Bomet, Busia, Makueni, West Pokot, Kwale									
Number of health care workers trained on TB diagnosis and management disaggregated by cadre, type of training and county	Capacity build HCWs to diagnose and manage TB	11 TB/HIV trainings	275	22 TB/HIV trainings	550	22 TB/HIV trainings	550	11 TB/HIV trainings	275
Proportion of household contacts of notified TB patients traced and screened for TB	Carry out contact tracing of all TB patients	Carry out contact tracing of all TB patients	40%	Carry out contact tracing of all TB patients	50%	Carry out contact tracing of all TB patients	75%	Carry out contact tracing of all TB patients	>80%
Package 3 CNR > 250/100,000 Counties - Mombasa, Nairobi, Homa Bay, Kisumu, Isiolo, Migori, Siaya, Tharaka, Kirinyaga									

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Output Indicator(s)	**Intervention(s)**	**Year 1 Activities**	**Yr 1 Target**	**Year 2 Activities**	**Yr 2 Target**	**Year 3 Actitivies**	**Yr 3 Target**	**Year 4 Activities**	**Yr 4 Target**
Proportion of TB patients in target counties provided with nutritional support	Strengthening access to social protection	Activities covered under social protection		Activities covered under social protection		Activities covered under social protection		Activities covered under social protection	
Percentage of counties with effective sputum referral networks	Strengthening sputum sample referral networks	Activities covered under acceleration of approriate diagnosis		Activities covered under acceleration of approriate diagnosis		Activities covered under acceleration of approriate diagnosis		Activities covered under acceleration of approriate diagnosis	
Strategic Approach 3: Expand special initiatives to reach most a risk populations									
Proportion of trained health facilities screening for TB in diabetic clinics	Systematic screening for TB in patients with diabetes and in other clinical settings	0		Sensitize healthcare workers from 2 facilities per county in 16 counties to initiate screening for TB (DM clinics, MCH, in-patient and outpatient)	100%	Sensitize healthcare workers from 2 facilities per county in 16 counties to initiate screening for TB (DM clinics, MCH, in-patient and outpatient)	100%	Sensitize healthcare workers from 2 facilities per county in 16 counties to initiate screening for TB (DM clinics, MCH, in-patient and outpatient)	100%
Number of prison wardens trained	Print TB screening tools for prisons	Print booklets for TB screening in prisons	1,500	Print booklets for TB screening in prisons	1,500	0		0	
	Train 480 prison wardens on a comprehensive service delivery package (TB screening upon entry to prisons,providing health education and DOT to inmates)	Conduct 4 training for prison wardens	120	Conduct 4 training for prison wardens	120	Conduct 4 training for prison wardens	120	Conduct 4 training for prison wardens	120
Number of prisons with TB IPC plans	Enhance TB infection control practices in prisons	0		Conduct 15 TB IPC training targetting prison staff	15	0	15	Conduct 5 TB IPC training targetting prison staff	5
		0		Conduct TB infection risk assesment in 15 prisons		0		Conduct TB infection risk assesment in 5 prisons	
		0		0		Develop TB IPC plans for 15 prisons		Develop TB IPC plans for 5 prisons	
Number of prisons providing TB management as per national guidelines	Develop TB health education tools for prisoners and prison staff including supporting the review of TB content in the recruit training curriculum at the KPS Training College and review and update the PF10.	0		Conduct a workshop to develop health education tools for prisoners and prison staff	15	Conduct a workshop to introduce health education tools for prisoners and prison staff	15	Conduct a workshop to develop health education tools for prisoners and prison staff	20
1. Number of prisons provided with light microscopes 2. Number of prisons with Xpert machines	Procure and install 15 light microscopes and 3 Xpert MTB/RIF for prison health services	Covered under accelerating approriate diagnosis		Procure and install 15 light microscopes and 3 Xpert MTB/RIF for prison health services	1. 15 2				
1. Number of health care workers in prisons trained on use of Xpert machine 2. Number of health care workers in GoK prisons trained on DOTs	Ensure on-site diagnostic and DOT capacity in prisons	Develop screening algorithm for prisons; provide sensitization	n/a	Training of HCWs in prisons on DOTS and Xpert	9	Introduce annual TB screening as part of routine/periodic wellness examination for prison staff	40%	Introduce annual TB screening as part of routine/periodic wellness examination for prison staff	50%

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Output Indicator(s)	Intervention(s)	Year 1 Activities	Yr 1 Target	Year 2 Activities	Yr 2 Target	Year 3 Actitivies	Yr 3 Target	Year 4 Activities	Yr 4 Target
Number of centers of excellence established	Establish Centers of Excellence (CoE) for management of TB,TB/HIV,MDR-TB and Lung Disease in Nairobi, Mombasa, Kisumu, Homa Bay & Garissa (refugees/Daadab) counties	Identify CoE	0	Build capacity staff at the site for CoE function	3	Build capacity staff at the site for CoE function	5	Build capacity staff at the site for CoE function	5
	Capacity building of HCWs to diagnose and manage TB	5 TB/HIV trainings		9 TB/HIV trainings		9 TB/HIV trainings		9 TB/HIV trainings	
	Capacity building of lab staff to diagnose TB	Activities covered under acceleration of approriate diagnosis		Activities covered under acceleration of approriate diagnosis		Activities covered under acceleration of approriate diagnosis		Activities covered under acceleration of approriate diagnosis	
Proportion of household contacts of notified TB patients traced and screened for TB	Carry out contact tracing of all TB patients	Carry out contact tracing of all TB patients		Carry out contact tracing of all TB patients		Carry out contact tracing of all TB patients		Carry out contact tracing of all TB patients	
Number of directories of informal health care providers in Nairobi, Kisumu and Mombasa cities developed	Map out informal health care providers, chemists and phamacists in urban slums in Nairobi, Mombasa and Kisumu cities			Conduct mapping of urban slums in Nairobi, Kisumu (Kisumu), Mombasa					
Number of CHEWs covering urban slums trained on intensive case finding	Train community health extension workers covering urban slums on intensified case finding tools		0	Train 50 per county for Nairobi, Kisumu, Mombasa	150	Train 50 per county for Nakuru, Uasin Gishu, Kiambu, Embu CHEWs	200		0
Percentage of mapped informal health providers conducting active Case finding in urban slums	Incorporate the informal health care providers, chemists and pharmacies in active TB case finding interventions in low-income urban settlements		0	Incorporate pharmacists, chemists and informal health care providers for 104 days per annum per county by 50 CHEWs per county	20%	Incorporate pharmacists, chemists and informal health care providers for 104 days per annum per county by 50 CHEWs per county	40%	Incorporate pharmacists, chemists and informal health care providers for 104 days per annum per county by 50 CHEWs per county	>60%
Proportion of trained CHEWs participating in quarterly feedback meetings	Hold quarterly feedback forums for the CHEWs involved in TB case finding in urban slums		0	Conduct quarterly feedback meetings for CHEWS in Nairobi, Kisumu, Mombasa	100%	Conduct quarterly feedback meetings in Nairobi, Kisumu, Mombasa, Kiambu (Thika), Nakuru, Uasin Gishu (Eldoret), Embu	100%	Conduct quarterly feedback meetings in Nairobi, Kisumu, Mombasa, Kiambu (Thika), Nakuru, Uasin Gishu (Eldoret), Embu	100%
Package 4 Treatment Success Rate < 88% Counties - Nairobi, Homa Bay, Kisumu, Isiolo, Siaya, Kirinyaga, Machakos, Nakuru, Kiambu, Nyeri, Kitui, Meru, Taita Taveta, Busia, Laikipia, Kisii, Samburu, Tana River, Bungoma, Elgeyo Marakwet, Nyandarua, Baringo, Nandi									
Proportion of defaulters traced and returned to care	Carry out defaulter tracing of TB patients	Carry out defaulter tracing of 5,000 TB patients	60%	Carry out defaulter tracing of 5,000 TB patients	>80%	Carry out defaulter tracing of 5,000 TB patients	>80%	Carry out defaulter tracing of 5,000 TB patients	>80%
	Strengthen access to critical enablers			Weeky SMSs to all patients as reminders of clinic appointments		Weeky SMSs to all patients as reminders of clinic appointments		Weeky SMSs to all patients as reminders of clinic appointments	
	Improve health education			Weeky SMSs to patients on expected Aes and other health education messages		Weeky SMSs to patients on expected Aes and other health education messages		Weeky SMSs to patients on expected Aes and other health education messages	
	Build CHEW capacity to oversee family-based & community supported DOT	Activities covered under community engagement		Activities covered under community engagement		Activities covered under community engagement			
Package 5 Poverty Prevalence > 45% Counties - Baringo, Bomet, Bungoma, Busia, Garissa, Isiolo, Kakamega, Elgeyo Marakwet, Kilifi, Kisii, Kitui, Kwale, Laikipia, Machakos, Makueni, Mandera, Marsabit, Nandi, Nyandarua, Samburu, Taita Taveta, Tana River, Trans Nzoia, Turkana, Wajir, West Pokot									

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Output Indicator(s)	**Intervention(s)**	**Year 1 Activities**	**Yr 1 Target**	**Year 2 Activities**	**Yr 2 Target**	**Year 3 Actitivies**	**Yr 3 Target**	**Year 4 Activities**	**Yr 4 Target**
Number of prisons with documented referral for patients released or transferred	Develop referral mechanisms for prisoners who are transferred or released	0		Hold two day consultative meeting to develop referral mechanisms for prisoners	15	Sensitize HCWs in prisons and receiving facilities about referrals for prisoners	15	Sensitize HCWs in prisons and receiving facilities about referrals for prisoners	15
Proportion of GoK prison staff screened for TB annually	Introduce annual TB screening as part of routine/ periodic wellness examination for prison staff	Develop screening algorithm for prisons and conduct sensitization	n/a	Perform annual TB screening as part of routine/periodic wellness examination for prison staff	25%	Perform annual TB screening as part of routine/periodic wellness examination for prison staff	40%	Perform annual TB screening as part of routine/periodic wellness examination for prison staff	50%
	Number of laboratory technologists hired and retrained for prison health services	Recruit 15 laboratory technologists for prison health services	0	n/a	Recruit and deploy laboratory technologists for prison health services	15	Train laboratory technologists for prison health services	15	train laboratory technologists for prison health services
Proportion of health facilities providing TB management services with TB IPC plans	Implement TB infection control in all health facilities	Covered under TB/HIV activities	n/a	0	n/a	0	n/a	0	n/a
Percentage of tiers 2,3 health facilities conducting annual screening of HCW for TB	Disseminate revised TB workpace policy that recommends routine annual screening of HCWs	Covered under TB/HIV activities		Covered under TB/HIV activities	25%	Covered under TB/HIV activities	50%	Covered under TB/HIV activities	>50%
	Conduct annual TB screening for HCWs as part of a revised workplace-based policy on TB control	n/a		Conduct annual TB screening for all HCWs in all tier 5 and 6 health facilities		Conduct annual TB screening for all HCWs in tiers 4,5 and 6 health facilities		Conduct annual TB screening for all HCWs in tier 4,5 and 6 health facilities	
Number of health care workers serving mobile populations trained on TB/HIV integration	Integrate TB services in the already existing HIV services for mobile and migrant populations	n/a		Train health staff from HIV clinics serving mobile populations on TB,TB/HIV and integration of services	150	Train health staff from HIV clinics serving mobile populations on TB,TB/HIV and integration of services	150	n/a	0
Proportion of documented contacts of index TB patients notified among mobile populations who are traced by phone	Conduct cell-phone tracing for all contacts of index TB patients notified among mobile populations	n/a		Conduct cell-phone tracing for all contacts of index TB patients notified among mobile populations	100%	Conduct cell-phone tracing for all contacts of index TB patients notified among mobile populations	100%	Conduct cell-phone tracing for all contacts of index TB patients notified among mobile populations	100%
Number of health care workers from uniformed services trained on TB/HIV integration	Support integration of TB services in already existing HIV services to support case finding , case holding and improve uptake of interventions for the co-infected	Train 120 health staff on TB,TB/HIV and integration of services	120	Train 120 health staff on TB,TB/HIV and integration of services	120	Train 120 health staff on TB,TB/HIV and integration of services	120	Train 120 health staff on TB,TB/HIV and integration of services	120
Proportion of documented contacts of index TB patients notified by uniform service personnel who are traced and screened for TB	Conduct active tracing for all contacts of index TB patients notified by uniformed service personell health services	n/a		Conduct active tracing for all contacts of index TB patients notified by uniformed service personell health services	50%	Conduct active tracing for all contacts of index TB patients notified by uniformed service personell health services	>80%	Conduct active tracing for all contacts of index TB patients notified by uniformed service personell health services	>80%
Proportion of GoK uniformed service personnel screened for TB annually	Introduce annual TB screening as part of routine/ periodic wellness examination for uniformed service personell			Perform annual TB screening as part of routine/periodic wellness examination for uniformed service personell	50%	Introduce annual TB screening as part of routine/periodic wellness examination for uniformed service personell	70%	Introduce annual TB screening as part of routine/periodic wellness examination for uniformed service personell	70%
1. Number of health care workers at refugee camps trained on infection control 2. Number of refugee camps with IPC plans	Enhance infection control capacity within refugee camps	Covered under TBHIV and drug resistant TB		Covered under TBHIV and drug resistant TB	0	Covered under TB/HIV and drug resistant TB	0	n/a	

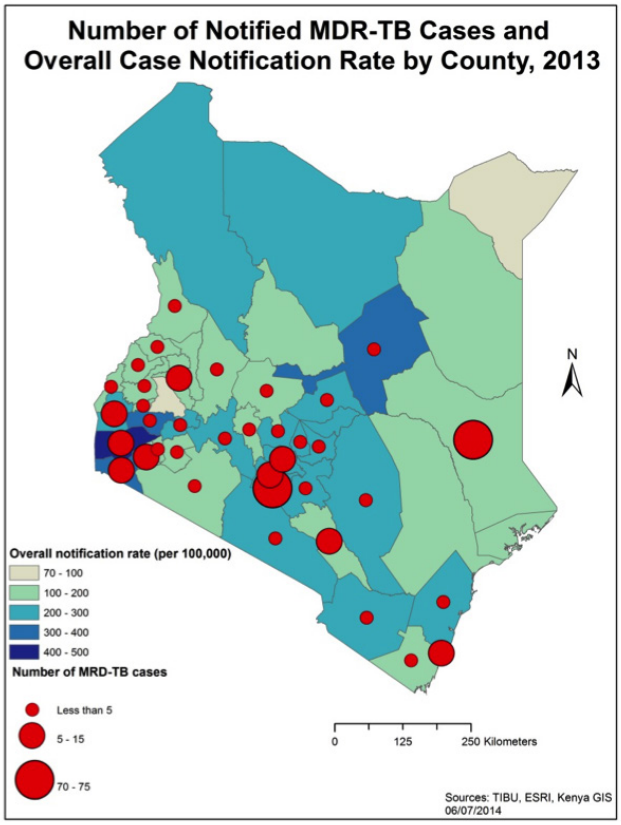
4.3.2.2. Programmatic Management of Drug Resistant TB

1. Situational Analysis

Kenya notified 254 cases of MDR-TB in 2013, 28% of who were refugees from neighboring Somalia. The number of MDR-TB cases detected in Kenya has risen steadily since 2010, when only 112 cases were detected. World Health Organization estimates that there were 1,800 new MDR-TB cases in Kenya in 2012. A drug-resistance survey is underway to determine a more precise DR-TB estimate. With GeneXpert rollout, it is expected that the number of MDR-TB cases detected will increase dramatically.

In 2013, there were 226 MDR-TB treatment sites for the 254 newly registered MDR-TB patients across the country. The treatment success rate for the 135 MDR-TB cases notified in 2011 was 68%. The country revised the Programmatic Management of Drug Resistant TB (PMDT) guidelines in 2013. A national MDR-TB focal person provides technical assistance to the counties, and is supported by a national MDR-TB committee. At county level, county tuberculosis and leprosy coordinators are responsible for linkage of MDR-TB patients to care, treatment initiation and follow-up. The country largely uses ambulatory and community – based models of care. The country has 114 hospital-bed capacity to manage MDR–TB patients spread across the following four sites: Kenyatta National Hospital (15 beds), MTRH (8 beds), Homa Bay (11 beds) and Dadaab (80 beds). DOT is provided at selected health facilities networked to community health workers who treat patients in the community.

MDR-TB patients receive KSH 6000 (approx. US$ 75) per month for their transport costs to health care facilities and nutritional support if needed.



Map 3: Number of Notified MDR-TB Cases and Overall Case Notification Rate by County, 2013

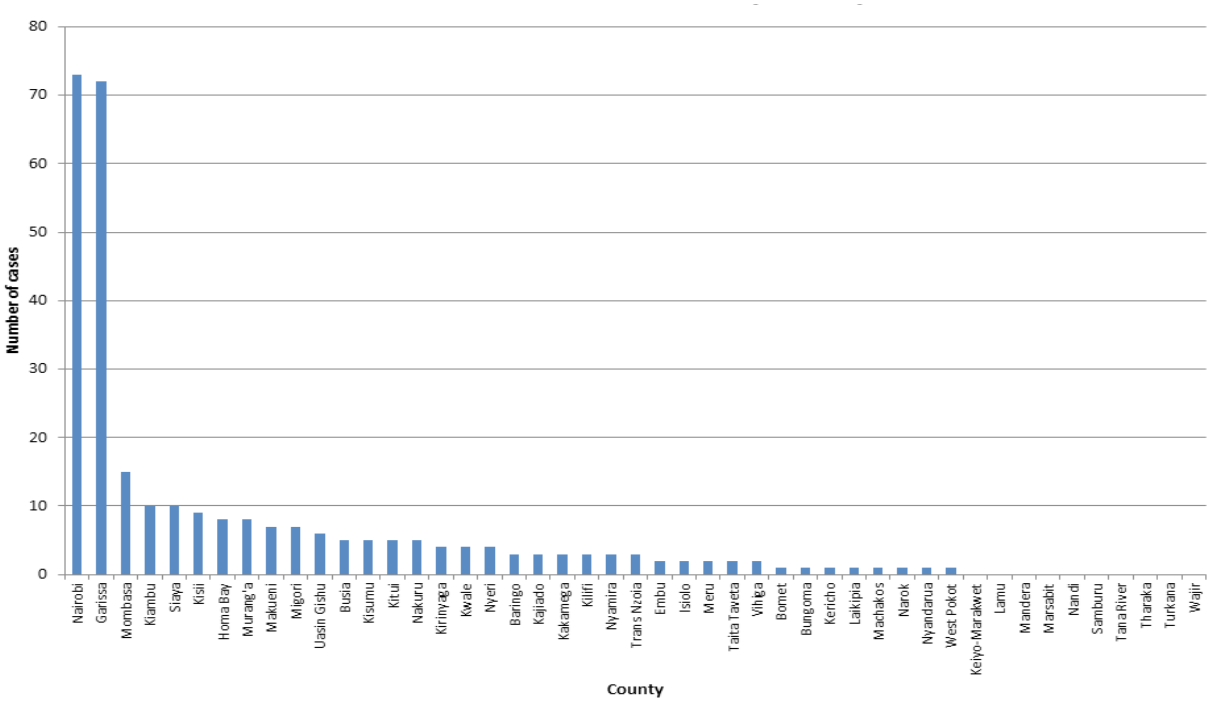


Figure 13: Number of Notified MDR-TB Cases by County, 2013

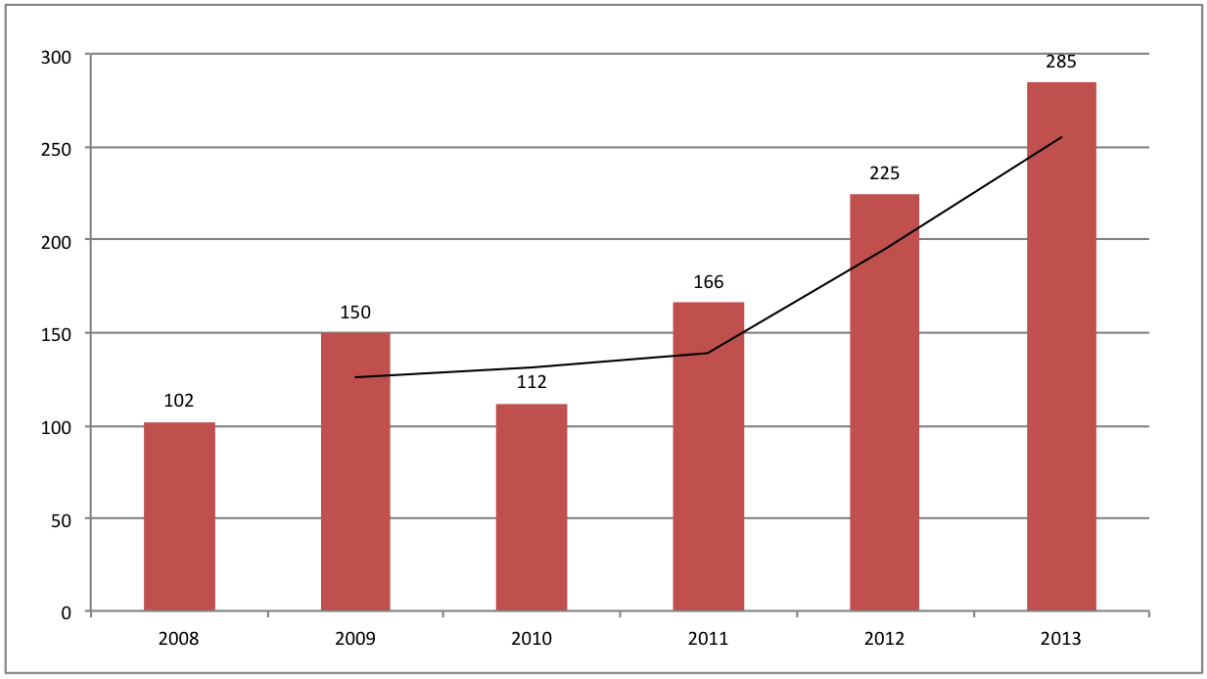


Figure 14: DR-TB Case Notification Trends 2008-2013

Case finding strategies are in accordance with WHO recommendations, including DR-TB surveillance among the populations most at risk, especially retreatment cases and refugees. The treatment regimens are also in line with WHO recommendations using WHO pre–qualified, quality assured second line drugs. The current treatment regimen is administered for a total of 20 months; Intensive phase of at least 8 months of Kanamycin, Levofloxacin, Cycloserine, prothionamide and pyrazinamide, and continuation phase of 12 months of Levofloxacin, Cycloserine, Prothionamide and Pyrazinamide.

Some of the drugs to manage side effects are also available free-of-charge at the treatment sites, while adverse drug events are reported using a pharmacovigilance platform provided by the Pharmacy and Poisons Board. DST for first-line drugs is done at NTRL, and second-line drugs (Kanamycin, Capreomycin and Ofloxacin) outside the country. There is an external quality assurance program for the NTRL provided by a supra-national laboratory.

2. Strategic Directions for 2015-2018

Priorities for the three-year period are geared towards increasing the case notification of DR-TB to at least 75% of estimated prevalence by 2017, and attaining a treatment success rate of at least 80% among all cases of DR TB by 2017. The NTLD Program is committed to ensuring that human rights principles are taken into account as the PMDT strategies are implemented.

These strategies include:

a) Strengthening systems that support PMDT
b) Systematic surveillance of DR-TB, including children
c) Reducing time to diagnosis of DR-TB
d) Ensuring timely initiation of treatment (within 1-2 weeks of diagnosis)
e) Improve monitoring and evaluation of presumptive and confirmed DR-TB cases
f) Improve treatment outcomes for DR-TB patients, including children.

3. Proposed Approaches

Strengthening Systems that Support PMDT

The NTLD Program will continue offering oversight in the implementation of PMDT services in the country through the PMDT focal person, with the support of a national Technical Working Group meeting quarterly.

With extensive decentralization of PMDT services across the country, strengthening the quality of clinical care is imperative. As such, PMDT teams shall be established at each level of care to monitor patient management. The county PMDT committees will offer oversight and support for the sub-county teams. The sub-county TWGs will conduct mentorship and monthly patient reviews at a central site (sub-county or county hospital). The formation of sub-county TWGs will be targeted to sub counties with existing DR-TB patients.

Admission facilities shall be expanded across the country for DR-TB patients. The GLC review conducted during the MTR advised that each county have at least 4 beds for admission with appropriate infection control measures in place.

Development and dissemination of a tool for assessment of social security needs (i.e. nutrition & other social support) will be done as part of social protection for DR-TB patients. Promotion of availability of nutritional and other social support for eligible DR-TB patients on ambulatory and community-based models of care will also be done.

An interagency/inter-ministerial team to address the problem of cross border DR-TB will be set up and meetings will be held biannually.

The checklist for supervisory/support visits shall be updated to adequately cover DR-TB.

Strengthening Systematic Surveillance of DR-TB

To enhance surveillance of DR-TB, the country shall strive to improve the capacity of HCWs through sensitization, mentorship and training on DR-TB surveillance including the use of GeneXpert technology.

The NTLD Program shall disseminate and aggressively encourage the use of the updated GeneXpert diagnostic algorithm across all service delivery points. These guidelines shall be updated as often as possible to keep pace with the emerging evidence on Xpert use even in non-sputum specimens. In collaboration with the lab program, all the existing and new Xpert machines in the counties shall be networked while taking advantage of other existing and innovative strategies to improve sample referrals e.g. appending Xpert samples transport to the CD4 and viral load transport network in the HIV system and use of other locally available means of transport. These strategies shall go hand in hand with the plans to ensure there are 250 GeneXpert machines in the country by end of 2017. They shall be rationally distributed considering factors like TB burden, accessibility and existing machines.

New strategies to expand DR-TB surveillance in congregate settings (schools, prisons, HCWs, migrant populations, public transport - *matatus* through their associations) will be explored. In addition to ensuring that all TB retreatment cases access Xpert tests at start of TB therapy, special emphasis has been put on the use of Xpert as first line of testing among PLHIV and the pediatric age group.

Active contact tracing of all children exposed to DR-TB shall be logistically supported and quarterly screening of all DR-TB contacts done for up to a period of 2 years post culture conversion of the index DR-TB case. All symptomatic contacts of DR-TB (including children) will be prioritized to benefit from Xpert testing. More awareness in the community and congregate settings on DR-TB shall be carried out while at the same time strengthening systems to ensure early referrals among presumptive DR-TB cases.

The NTRL shall be encouraged to invest in second line DST for all MDR-TB patients systematically prior to treatment initiation to identify XDR-TB early enough to impact morbidity and mortality.

Reduction of time to diagnosis of DR-TB

GeneXpert test will be the first diagnostic tool for all presumptive DR-TB cases. Once the samples are networked to the GeneXpert laboratories, results shall be dispatched electronically as soon as they are run, and no later than 24-48 hours. Electronic real time result dispatch software shall be installed in all GeneXpert machines.

The system shall be used for automatic results transmissions to ordering clinicians, patients and the programs. How fast Xpert (and culture and DST) results are relayed back, received and acted on shall be actively monitored to improve the programs. Timely GeneXpert equipment servicing and secondary networking of new Xpert sites will also be done to reduce downtime of machines. For culture and DST results, a link will also be created between LIMS and TIBU to ensure timely dissemination of results.

Ensure timely initiation of treatment (within 1-2 weeks of diagnosis)

DR-TB patients will be registered immediately at diagnosis, baseline investigations (FBC, UECs, LFTs, TSH) done within 1-2 days of diagnosis and results dispatched electronically. The baseline investigations (including chest radiographs and audiometry) will be standardized and made free for the patients with the support of USAID and Global Fund.

The target is to ensure each county has a functional, portable and accessible audiometer machine for DR-TB patients by 2017. Structured clinical teams (DR-TB/HIV multidisciplinary teams) shall be set up and used to initiate and follow up treatment. The composition of such teams shall, at a minimum, have the sub-county TB and Lab coordinators, Pharmacist, DOT Nurse, PHO, Physician, Counselor, Nutritionist and Social Worker.

To ensure no delays in treatment initiation, county pharmacists should have buffer stock to start patients on treatment while awaiting the ordered supply of second line medications. In collaboration with the counties, we shall work to establish a structured way for ordering and delivery of both DR-TB as well as other first line anti-TB medicines from the procuring and distributing agent/authority direct to the counties.

Improve treatment outcomes for DR-TB patients, including:

- Strengthening active pharmacovigilance (monitoring, recording and reporting of ADR through TIBU and PPB platforms) and their management, including the availability of auxiliary drugs e.g. Thyroxin, antipsychotics, hearing aids and implants
- Lobbying for, procuring, distribution and use of pediatric friendly DR-TB combinations
- Revision of the DR-TB clinical tools used for the day-to-day management of patients
- Introduction of case management of DR-TB in the TIBU system, which includes robust pharmacovigilance and checks and reminders for lab and clinical monitoring. Linkages to NTRL's LIMS shall also be explored
- Planning for, procuring, distribution and use of capreomycin as first choice injectable for new MDR TB patients (and existing patients intolerant to the current injectables)
- Advocating for acceleration and uptake of new molecules, such as bedaquiline and delaminid once available in the market
- Establishing 7 regionally distributed Centers of Excellence (CoEs) in the country to offer mentorship and technical assistance, support supervision, referrals, investigations, admissions, and ADR managements
- Provision of financial support to DR-TB patients and DOTS nurses in community-based models
- In consultation with the central government, ensure health insurance coverage for all DR-TB patients - both in-patient and ambulatory. This can be done by enrolling DR-TB patients onto NHIF scheme using part of their social support funds
- Finalizing, printing and dissemination of DR-TB workplace policy documents
- Developing, printing and distributing guidelines on community-based DR-TB care
- Availing 12 portable digital X-rays for hard-to-reach areas and MDR-TB contacts
- Conducting DR-TB sensitization and CME meetings in the private sector in a bid to standardize DR-TB surveillance and treatment across the country.

Contribution to NSP Impacts	Outcomes (MDR-TB)
Impact 1.1: Reduce the prevalence of MDR-TB among new patients by 15%, by 2018 compared to 2014	• Increase case notification of MDR-TB to at least 75% of estimated prevalence (baseline TBD following DR survey) • Ensure treatment success of at least 80% among all cases of DR-TB, by 2018 • Reduce by 50% severe adverse events caused by second-line drugs
Impact 3: Reduce the proportion of affected families who face catastrophic costs due to TB, by 2018 (baseline TBD)	• Increase to 100% the proportion of MDR-TB patients who receive social protections, including food support and transportation subsidies

Table 6: Impact and Outcome Indicators for PMDT

PMDT Operational Plan									
Output Indicator(s)	**Intervention(s)**	**Year 1 Activities**	**Yr 1 Target**	**Year 2 Activities**	**Yr 2 Target**	**Year 3 Activities**	**Yr 3 Target**	**Year 4 Activities**	**Yr 4 Target**
Strategic Approach 1: Strengthen systems that support PMDT									
Number of PMDT focal persons at NTLD Program	Retention of PMDT focal person at NTLD Program	Retention of PMDT focal person at NTLD Program	1	Retention of PMDT focal person at NTLD Program	1	Retention of PMDT focal person at NTLD Program	1	Retention of PMDT focal person at NTLD Program	1
Proportion of scheduled quarterly PMDT TWG meetings held	4 PMDT TWG meetings held yearly	Hold quarterly PMDT TWG meetings	100%	Hold quarterly PMDT TWG meetings	100%	Hold quarterly PMDT TWG meetings	100%	Hold quarterly PMDT TWG meetings	100%
Proportion of counties with DR patients with functional PMDT teams *functional=documented/minuted meetings at least once quarterly	Establish county-based PMDT teams* to oversee DR-TB patient management, logistics and DR-TB surveillance *Composed of the following specialities at a minimum - TB, HIV, Lab, Pharmacy, PHO, Physician, Counselor, Nutrition, social support, partners and county admin/finance/HR	Establish the composition, criteria and TOR of the PMDT county teams	10%	The county PMDT teams transact business (at least quarterly meetings). Initial under TA from national office	60%	Quarterly review meetings	100%	1. Quarterly review meetings 2. Review of the performance of the PMDT teams	100%
Proportion of sub-counties with functional PMDT teams	Establish subcounty teams in 200 subcounties	Establish subcounty teams in 20 subcounties	5%	Establish subcounty teams in 80 subcounties	25%	Establish subcounty teams in 80 subcounties	60%	Establish subcounty teams in 20 subcounties	75%
Proportion of counties with at least 2 beds for admission of DR-TB patients in critical condition	Expand admissions facilities equitably across the country for DR-TB patients (at least 2 beds per county for DR-TB)	Engage the county teams and carry out facility assessment/ mapping	100%	Establish admission facilities in 20 counties	40%	Establish admission facilities in further 17 counties	75%	Establish admission facilities in further 10 counties	100%
Proportion of malnourished DR-TB patients accessing nutritional support	Development and dissemination of a tool for social security needs (i.e. nutrition & other social support); Promote the availability of nutritional and other social support for DRTB patients ***(Strengthen nutrition assessment, counselling and social support (NACS))***	a) Develop a tool for assessing social security needs and b) Pilot test it c) Continue providing RUTF/FBF	20%	a) Provision of nutritional support to deserving DR TB patients b) Print and disseminate the tool for social needs assessment	50%	Provision of comprehensive social support (including nutrition) to deserving DR TB patients	60%	Provision of comprehensive social support (including nutrition) to deserving DR TB patients	70%
Policy document on cross-border DRTB	Set up an interagency/inter-ministerial team and other relevant bodies to address the cross border DR-TB problem	Establish the interagency/inter-ministerial team on cross-border DR-TB		Finalize policy document; Biannual metings	1	Biannual metings		Biannual metings	
Number of CMEs on PMDT targeting the private sector held	Conduct DR-TB sensitization/CME meetings in the private sector	Quarterly sensitization of the private practitioners in CMEs and other professional organizations in main towns	25	Bi-annual sensitization of the private practitioners in CMEs and other professional organizations in main towns	20	Bi-annual sensitization of the private practitioners in CMEs and other professional organizations in main towns	40	Bi-annual sensitization of the private practitioners in CMEs and other professional organizations in main towns	60

PMDT Operational Plan									
Output Indicator(s)	**Intervention(s)**	**Year 1 Activities**	**Yr 1 Target**	**Year 2 Activities**	**Yr 2 Target**	**Year 3 Activities**	**Yr 3 Target**	**Year 4 Activities**	**Yr 4 Target**
Strategic Approach 2: Strengthen systematic surveillance of DR-TB									
Proportion of eligible patients according to algorithm tested using GeneXpert	6,000 HCWs sensitized and trained on DR-TB* (surveillance and management) **Should preferably be integrated into the comprehensive TB/HIV curriculum*	Develop HCWs sensitization curricullum	40%	Sensitize 2,000 HCWs	60%	Sensitize 2,000 more HCWs	80%	Sensitize 2,000 more HCWs	100%
	Dissemination and use of updated GeneXpert diagnostic algorithm across all service delivery points	Sensitize CTLCs and sub-county coordinators on revised gene Xpert algorithm during quarterly data review meetings		Sensitize HCWs at the gene expert sites (120 facilities)		Sensitize HCWs at the additional gene expert sites (80 facilities)		Sensitize HCWs at the additional gene expert sites (50 facilities)	
	Expand DR-TB surveillance to congregate settings (schools, prisons, HCWs, migrants populations, public transport - matatus through associations). Utilize other existing and innovative strategies to improve sample referral e.g. use of local means to transport samples	Map out the target groups and lay a basic plan with assistance of the counties on how to carry out this activity		Engage the target groups through sensitization. Engage a few matatu saccos in the identified hard to reach areas and establish a working relationship on sample referral system		Continue with sensitization of more of the target groups and matatu saccos		a) Continue with sensitization of more of the target groups and matatu saccos b) Review the performance of these approaches with the aim of learning best approaches"	
Proportion of TB retreatment patients who access Gene Xpert test at treatment initiation	Strengthen routine DR-TB surveilance among all TB retreatment cases by use of GeneXpert test	TB retreatment patients tested using Gene Xpert annually	75%	TB retreatment patients tested using Gene Xpert annually	85%	TB retreatment patients tested using Gene Xpert annually	95%	TB retreatment patients tested using Gene Xpert annually	100%
Proportion of symptomatic household* contacts of DR TB access Gene Xpert test **household includes sharing the same accomodation facilities in dormitories, prisons etc*	Strengthen routine DR TB surveillance among all symptomatic household contacts of DR-TB cases	a) Sensitize the county teams on the use of GXpert for symptomatic contacts of DR-TB at quarterly review meetings b) All symptomatic contacts of new DR-TB patients undergo Gxpert test	100%	a) All symptomatic contacts of new DR-TB patients undergo Gxpert test b) Quarterly review of all non-symptomatic contacts of DR TB patients	100%	a) All symptomatic contacts of new DR-TB patients undergo Gxpert test b) Quarterly review of all non-symptomatic contacts of DR-TB patients	100%	a) All symptomatic contacts of current DR-TB patients undergo Gxpert test b) Quarterly review of all non-symptomatic contacts of DR-TB patients	100%
Strategic Approach 3: Ensure timely initiation of DR-TB treatment (within 1-2 weeks of diagnosis)									
Proportion of new DR-TB patients enrolled into care within 1-2 weeks of diagnosis	Patient registration immediately after diagnosis	Establish and disseminate policy and mechanism to ensure patient registration immediately after diagnosis		Monitoring to ensure implementation of this policy	75%	Review of policy to ensure adaptation	100%	Monitoring to ensure implementation of the revised policy	100%
Proportion of new DR-TB patients with standardized baseline investigations done within 48 hours of diagnosis	Standardized laboratory investigations for all new DR TB patients done within 1-2 days of diagnosis(receipt of results at county) and results electronically dispatched within 24-48 hours	Establish and disseminate policy	50%	a) Policy implementation b) Monitoring of policy	75%	a) Policy implementation b) Review of policy	100%	a) Revised policy implementation b) Monitoring of policy	100%
	Availability of standardized and free baselineand follow up investigations (FBC, UECs, LFTs, TSH) including chest radiograph and audiometry in all the counties	Establish mechanisms to support free investigations including audiometry and CXR. Support 200 new patients for baselines and 600 for follow up investigations		Establish mechanisms to support free investigations including audiometry and CXR. Support 400 new patients for baselines and 600 for follow up investigations		Establish mechanisms to support free investigations including audiometry and CXR. Support 400 new patients for baselines and 600 for follow up investigations		Establish mechanisms to support free investigations including audiometry and CXR. Support 400 new patients for baselines and 600 for follow up investigations	
Proportion of counties reporting no stock-out of DR-TB drugs	Availability of 2nd line TB medications at the county level to allow faster initiation of treatment	Establish mechanisms to avail 2nd line TB meds at the county	60%	a) Policy implementation b) Monitoring of policy	60%	a) Policy implementation b) Review of policy	80%	a) Revised policy implementation b) Monitoring of policy	100%
Proportion of sub-counties with functional MDT teams for DR-TB/HIV	Constitute structured multi-disciplinary (DR-TB/HIV multidisciplinary teams) clinical teams at the lowest level possible (sub county) to initiate treatment and follow up care (composed of subcounty TB coordinator, sCMLT, sCASCO, Lab, Pharmacist, DOT Nurse, PHO, Physician, Counselors, nutritionist)	Support establishment of monthly DR-TB clinical meetings in each county (10 pax to discuss DR-TB patients management)	30%	Support establishment of monthly DR-TB clinical meetings in each county (10 pax to discuss DR-TB patients management)	60%	Support establishment of monthly DR-TB clinical meetings in each county (10 pax to discuss DR-TB patients management)	80%	Support establishment of monthly DR-TB clinical meetings in each county (10 pax to discuss DR-TB patients management)	100%

PMDT Operational Plan

Output Indicator(s)	Intervention(s)	Year 1 Activities	Yr 1 Target	Year 2 Activities	Yr 2 Target	Year 3 Activities	Yr 3 Target	Year 4 Activities	Yr 4 Target
Strategic Approach 4: Improve M&E and treatment outcomes for DR TB patients, including children									
Proportion of DR-TB patients for whom ADR reports are recorded, and reflect adequate management, in TIBU	Strengthen active pharmacovigilance (monitoring, recording & reporting of ADR through TIBU and PPB platforms) and their management including the availability of auxiliary drugs e.g. thyroxin, antipsychotics, hearing aids and implants	a) Integration of PV into the TIBU system b) Planning for the auxiliary drugs and aids		a) Integration of PV into the TIBU system and sensitization of the (sub) county coordinators in QRMs b) Procurement, distribution and use of the auxiliary drugs and aids"	50%	a) Monitoring the use of TIBU PV platforms and strengthen existing gaps b) Procurement, distribution and use of the auxiliary drugs and aids	60%	a) Review of the TIBU PV platforms in line with previous year's findings b) Procurement, distribution and use of the auxiliary drugs and aids"	75%
Number of Audiometer machines available in the counties	Procure 47 audiometer machines one for each county	Procure 10 audiometer machines for the High budern counties	10	Procure 20 audiometer machines	30	Procure 17 audiometer machines	47	n/a	n/a
Proportion of TB coordinators using the updated supervisory checklist covering DR-TB	Update check list for supervisory/support visits to adequately cover DR-TB or design a specific DR-TB tool	Revise/design checklist for supervisory/support visit to cover DR-TB	n/a	Reprint and distribute the supervisory checklis	30%	Monitor the use of the checklist	100%	Revise the checklist	100%
Proportion of children with DR-TB accessing the pediatric formulations	Procure, distribute and use pediatric friendly DR-TB combinations	Plan for procurement of pediatric friendly DR-TB formulations	n/a	Procure, distribute and use pediatric friendly DR-TB formulations	30%	Procure, distribute and use pediatric friendly DR-TB formulations	60%	Procure, distribute and use pediatric friendly DR-TB formulations	100%
Proportion of facilities providing TB care services supplied with revised DR-TB tools	Revise the DR-TB clinical tools* used for the day to day management of patients **patient tools, registers, IEC materials etc"*	Revise the clinical tools, plan for procurement	n/a	Procurement, distribution and use of the tools	100%	Monitor the use of the tools	100%	Revise the tools, Procure and distribute the updated tools	100%
Updated TIBU system which incorporates DR-TB case management	Introduce case management of DR-TB in the TIBU system which includes robust pharmacovigilance and checks and reminders for lab and clinical monitoring. Explore linkages to NTRL's LIMS	Design and introduce a robust DR-TB case management into TIBU system	1	Pilot test the new design, make revisions and conduct trainings of the TB officers countrywide		Monitor use		Revise the DR-TB interface and contents in TIBU in line with new protocols. Update officers in QRM	
Proportion of eligible new DR-TB patients accessing capreomycin as first injectable of choice	Plan for, procure, distribute and use capreomycin as first choice injectable for new MDR-TB patients (& existing patients intolerant to the current injectables)	Plan for the procurement of adequate stocks of capreomycin	25%	Procure, distribute and use the capreomycin	50%	Procure, distribute and use the capreomycin	75%	Procure, distribute and use the capreomycin	100%
Proportion of new DR-TB patients accessing the new molecules	Advocate for acceleration and uptake of new molecules such as bedaquiline and delamanid once availability in the market	Advocate for the availability of the new molecules in the country	n/a	Plan for, procure and distribute the new molecules for use	n/a	Plan for, procure and distribute the new molecules for use	10%	Plan for, procure and distribute the new molecules for use	25%
Number of workplace DR-TB policies distributed	Finalize, print and disseminate 18,000 DR-TB workplace policy documents	Workplace policy copies printed and distributed	6,000	Workplace policy copies printed and distributed	4,000	Workplace policy copies printed and distributed	4,000	Workplace policy copies printed and distributed	4,000
Number of N95 masks procured and distributed	Procure and distribute 60,000 N95 masks	Procure and distribute N95 masks	10,000	Procure and distribute N95 masks	20,000	Procure and distribute N95 masks	20,000	Procure and distribute N95 masks	10,000
Number of DR-TB CoEs established	Establish 7 regionally distributed Centres of Excellence (CoEs) in the country to offer mentorship/TA, support supervision, referrals, investigations, admissions, and ADR managements(The proposed sites are Kenyatta National Hospital, Daadab, Moi Teaching and Refferal, Jaramogi Oginga Odinga teaching and refferal hospital, Homabay, PortReitz and .....)	Develop the basic requirements for a model DR-TB CoE,and a packgae carry out mapping	n/a	Establish 3 selected model DR-TB CoE	3	Establish 4 more DR-TB CoEs	4	Mentorship	7
Proportion of eligible DR-TB patients receiving social support	Provision of financial support to DR-TB patients and DOTS nurses in community based models	Provide support to 600 patients at KSHS 6,000 each and 200 HCWs	60%	Provide support to 600 patients at KSHS 6,000 each and 200 HCWs	80%	Provide support to 600 patients at KSHS 6,000 each and 200 HCWs	80%	Provide support to 600 patients at KSHS 6,000 each and 200 HCWs	80%
Proportion of TB patients enrolled on NHIF scheme	Yearly payment to NHIF until after completion of treatment	NHIF yearly subscription for 600 patients		NHIF yearly subscription for 600 patients	20%	NHIF yearly subscription for 600 patients	30%	NHIF yearly subscription for 600 patients	50%
Proportion of counties utilitizing community-based DR-TB guidelines	Develop and print guidelines on community based DR-TB care	Develop the community based DR-TB care guidelines		Print, disseminate and distribute 6,000 community DR-TB care guidelines	20%	Sensitization of 2,000 community members on Community DR-TB care	40%	Sensitization of 2,000 community members on community DR-TB care	50%

PMDT Operational Plan									
Output Indicator(s)	**Intervention(s)**	**Year 1 Activities**	**Yr 1 Target**	**Year 2 Activities**	**Yr 2 Target**	**Year 3 Activities**	**Yr 3 Target**	**Year 4 Activities**	**Yr 4 Target**
Number of digital x-ray facilities in the country	12 Digital X-rays for hard to reach areas and MDR-TB contacts	Maping of the hard to reach areas and plan for acquisition of the mobile X-ray equipment		Install and operationalize 4 xray machines	4	Install and operationalize 4 xray machines	4	Install and operationalize 4 xray machines	4

4.3.2.3. Pediatric TB

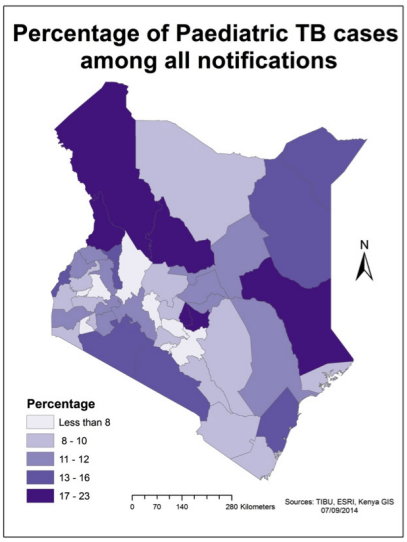
1. Situational Analysis

The infant mortality rate in Kenya dropped from 68 per 1,000 live births in 2000 to 43.6 per 1,000 in 2012, indicating an improvement in the Kenyan health system. In 2012, 10,634 TB cases were reported among children under the age of 15, comprising 10.7% of all TB cases.

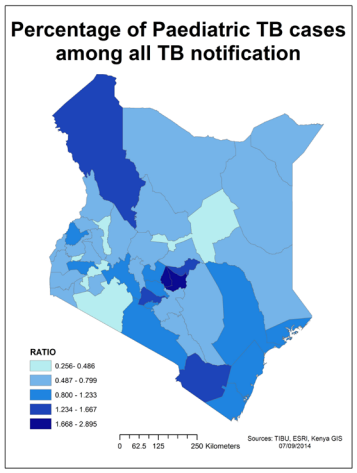
Almost 28% of all child TB cases were in children under the age of one. Of the reported TB cases, 93% were tested for HIV and 30% were found to be HIV positive. Of those found positive, 90% were initiated on cART and 99% on cotrimoxazole. In 2012, 10 children were diagnosed with MDR-TB and treatment started. Among the pediatric MDR-TB cases, 20% were HIV positive. In Kenya, it is estimated that 20% of the children under the age of 5 years suffer from moderate malnutrition, while 6% suffer from severe malnutrition. The pediatric case notification chart below highlights the disparities among counties in the percentage of notified paediatric cases.

There are counties that notified a very high number of children with Turkana and Samburu having >12% of their total cases being children while some have child TB cases being less than 5% of the total TB cases notified. It is also important to note that counties where there is food insecurity due to climatic characteristics had more children diagnosed with TB. Map 5 indicates the ratio of children <5 years to those 5-15 years diagnosed with TB.

According to WHO, it is expected this ratio is 1:1.5-3.0. However, over 70% of the counties have a ratio of less than 1.5. This is indicative of under-diagnosis of children below the age of 5 years. There is therefore a need to evaluate the actual diagnostic practices among health care workers in



Map 4: % of Pediatric TB Cases among All Notifications



Map 5: Ratio of <5 to 5-15 Year Olds, 2013 TB Notifications

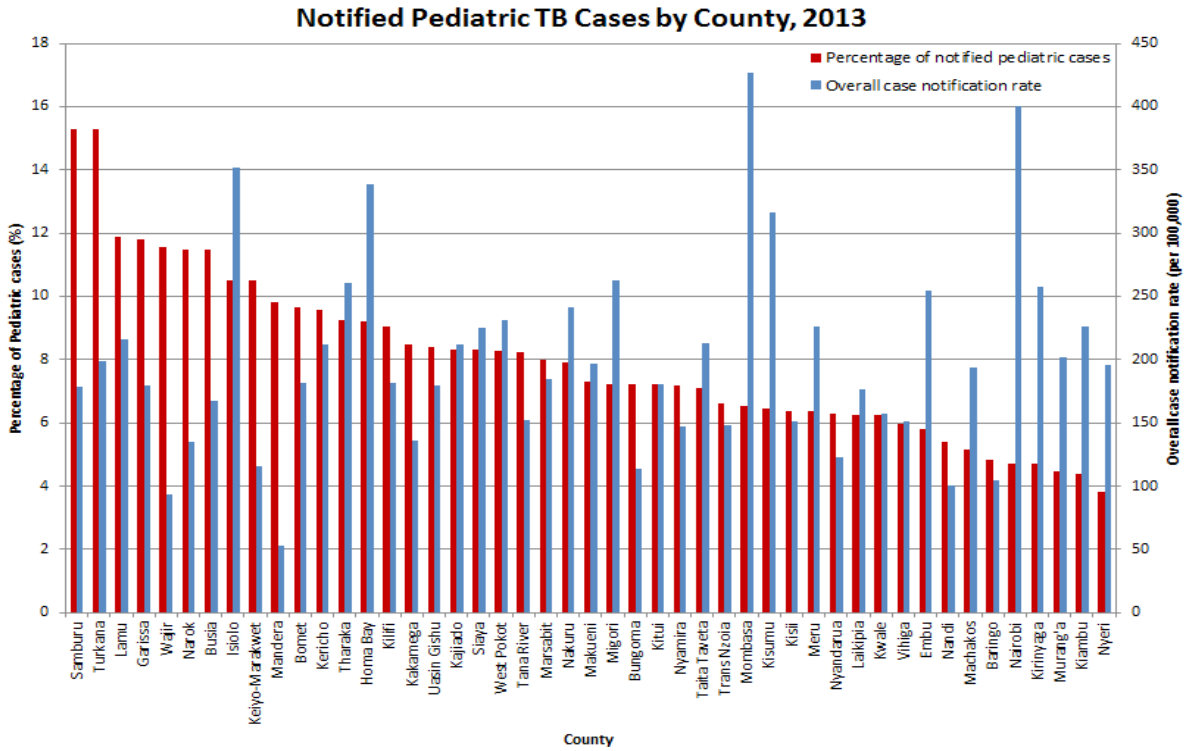


Figure 15: Notified Pediatric TB Cases by County, 2013

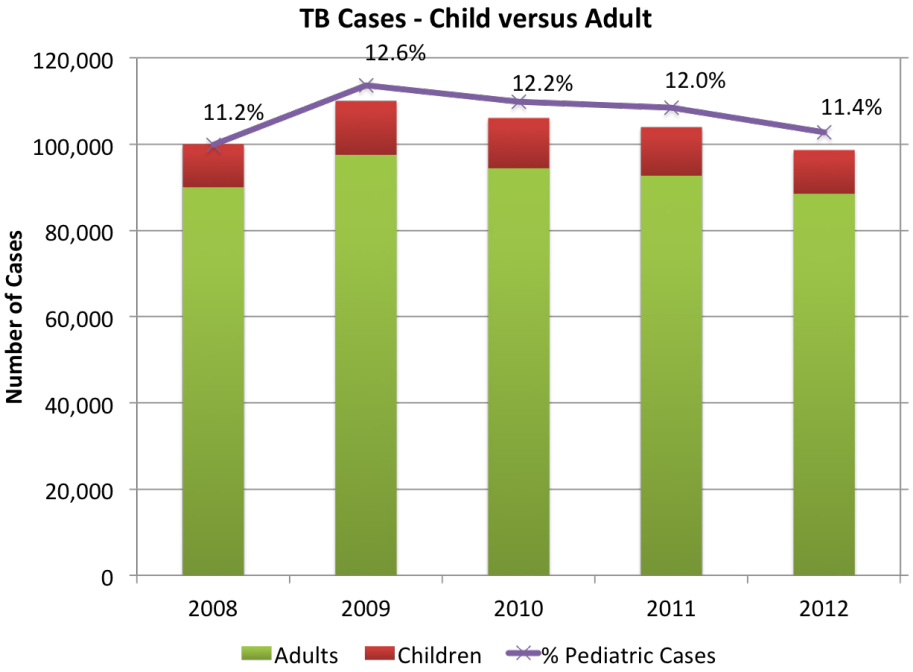


Figure 16: Child Versus Adult TB Cases

these very high and very low case notification areas to ensure that we are not over or under-diagnosing the children.

Several strides have been made to support childhood TB as well as the case notification of TB among children under the age of 15. A pediatric TB focal person is currently based in the central program, and is supported by a Pediatric TB technical working group with expert representation from the NTLD Program, KEMRI, NASCOP, University of Nairobi, Moi Teaching and Referral Hospital, CDC Kenya, CHS and ICAP. National guidelines for management of childhood TB, job aids; including diagnostic and preventive algorithms, treatment charts, training curricula and tools have been developed with the working group's consensus.

The treatment guidelines are in-line with current WHO recommendations, while health care worker trainings are in progress, based on the revised pediatric TB treatment algorithms. The GeneXpert algorithm supports the diagnosis of children under the age of 15 years using Xpert. Pediatric anti-TB formulations (dispersible fixed dose combinations, Isoniazid 100mg and Ethambutol 100mg) are available in Kenya through KEMSA. In addition, there exists a case based electronic recording system for monitoring TB program activities allowing evaluation of child TB data. However, this system does not capture nutrition assessment data for children with TB. There is need to improve the facility TB register to ensure it captures the nutrition indicators for children and the same should be incorporated into TIBU.

Currently, there is limited screening for TB among child TB contacts and children living with HIV, with a small proportion of those eligible receiving Isoniazid prophylaxis. Diagnosis of TB in children has been a major challenge in the scale up of child TB services. There is a low index of suspicion by HCWs for TB among children and most are ill equipped to make an accurate diagnosis of TB in children. Diagnosis is limited to the chest clinic with missed opportunities in maternal and child health (MCH) clinics, pediatric clinics, emergency rooms and in-patient wards. There remain financial and geographical barriers to quality diagnostic services for children due to limited access to affordable, high quality x-rays for TB diagnosis. GeneXpert machines, though currently available, are not strategically placed and networked to ensure equitable access to all children. In addition, TST is not readily available in most health facilities.

Children exposed to DR-TB have a high risk of acquiring the infection. Once a case of DR-TB has been diagnosed, it is important to screen all household contacts including the children for any signs and symptoms of disease. This is not routinely done, hence, some of these cases may be missed. Follow up should be done for all contacts for at least two years because the signs and symptoms may develop after some time. Diagnosis of DR-TB in children is a challenge as the index of suspicion is low among health care workers. Diagnosis may be delayed as attempts to obtain specimens for bacteriological confirmation may be challenging without adequate capacity building. Once DR-TB has been diagnosed, few health care workers are trained to adequately manage children. Adult formulations are used to treat DR-TB in children with dose challenges, which result in a higher risk of toxicity from the drugs.

For all children with TB, malnutrition is often comorbidity. There is need to train health care workers to effectively conduct a nutritional assessment for all children with TB and once diagnosed with malnutrition, these children need nutritional support and supplementation. This is not consistently available.

2. Strategic Direction(s) for 2015-2018

The focus for the next three (3) years is to ensure that there is more emphasis on distinct pediatric TB control activities. These will include: a) active pediatric TB case finding; b) management, prevention, advocacy and integration of child TB services in other departments; c) scale up and sustain gains made in child TB surveillance; d) strengthen TB/HIV care for children; and e) continue with capacity building activities for HCWs.

The adoption and rollout of new diagnostic technologies with improved diagnosis of TB in children using GeneXpert, chest x-rays and TST will be fast-tracked to ensure equitable access. The capacity of HCWs will be developed to enable them conduct nutritional assessments and manage malnutrition in children with TB. Capacity will also be developed for HCWs on child TB case detection, diagnosis and treatment. All child contacts of patients with TB will be actively traced, screened and offered Isoniazid Preventive Therapy if eligible. Community engagement in TB control will be enhanced, allowing for contact and defaulter tracing of children and for care of OVCs. There will be institutional based TB screening for children in schools and children homes.

Increased awareness and advocacy is required on childhood TB. There will be systematic involvement of private providers, pediatric providers' associations and all other stakeholders in child TB control.

There is need to focus on scale up activities for child asthma and management of chronic lung conditions in children as well as better case detection and rehabilitation for children with leprosy. Counties will be encouraged to engage pediatric experts in management of children with TB, leprosy and lung disease and equip county hospitals with all relevant tools to support this.

3. Proposed Approaches

Interventions towards pediatric TB management have significantly improved over the last year with introduction of revised treatment schedules, pediatric friendly TB medicines and a simplified approach to diagnosis and availability of GeneXpert.

Currently, there are disparities in the rate of child TB notification across the country. Though it would be more strategic to use these disparities as a basis for targeting the interventions in this strategic plan, this will not be done because there is need to first establish the origin of these disparities. Therefore, in the first year of implementation, a retrospective evaluation of the patients and their characteristics may shed light as to why these disparities exist. In the meantime, the proposed approaches will be rolled out countrywide.

In the final phase of the implementation of this strategic plan, an evaluation to establish the impact and effectiveness of these approaches will be conducted.

Lessons learnt from this evaluation will form the basis for targeted interventions in subsequent strategic plans.

Lessons Learned

TB-REACH: Eldoret, Kenya

A pilot project supported by TB-REACH has nurtured collaboration with communities to screen symptomatic individuals and transport sputum samples to smear microscopy centers, while making linkages to care. AMPATH has introduced a cough monitoring system to monitor case detection activity. A child tracking component registers children living in smear positive households to establish a way to locate children at high risk of TB. Children benefit from a screening package through TB REACH, including transportation costs, registration fees, chest radiograph and physical exam. If a child tests positive, he/she begins treatment immediately, and if negative, begins Isoniazid preventative therapy. GeneXpert laboratories at district and sub-levels are facilitating timely diagnosis.

Box 2

Geographical Focus

Centre(s) of Excellence

As the implementation of pediatric TB services is rolled out countrywide, some sites will be identified and strengthened as centers of excellence. These will be centers that will be able to offer comprehensive child TB, MDR TB and Lung health services from diagnosis, treatment and prevention. They will be model sites for mentorship of other service provision sites.

Intensified Technical Support

Training and technical assistance will be offered to all sites to build capacity to implement the revised treatment guidelines for child TB.

Box 3

Sustain the gains, in the context of a newly devolved system	Intensify efforts to find "missing" cases	Reduce transmission	Prevent active disease and morbidity	Enhance the quality of care for chronic lung diseases

• Build the capacity and political will of counties to take on responsibilities previously of the central level
• Establish county-level centers of excellence for management of childhood TB to provide mentorship to other counties
	• Identify and build capacity within poorly performing areas
	• Integrate child TB with other specialties
	• Roll-out successful models of community engagement
	• Expand private sector engagement
	• Enhance capacity to rapidly detect and treat DR TB in children
	• Systematize TB/HIV collaborative activities for children
	• Capitalize on social protection schemes to enable patient access
		• Accelerate access to diagnostic services and results
		  • Make TB diagnosis free for children
		  • Update technical guidelines to incorporate Xpert
		• Intensify active case finding among contacts of TB cases, especially children
		• Pilot a school-based model for prevention, detection and care
			• Scale-up INH prophylaxis among children	• Establish and equip chronic care clinics for asthma and childhood lung conditions

Strengthen coordination of child TB services

Coordination of pediatric TB services will be done by a focal person at the program. The pediatric TB TWG will continue to provide policy direction and oversight for the implementation of child TB services.

Build capacity of health care workers for pediatric TB control

Continuous training for health care workers on child TB diagnosis, management and prevention as part of routine TB trainings will build their capacity to better manage children with TB. We will ensure printing and dissemination of up-to-date guidelines and job aids to facilitate the HCWs in service provision. There is need to support mentorship programs and on job training.

Child TB should be included in pre-service training for all HCWs to build their capacity on the current pediatric curriculum, including the nutritional aspects. Additionally, registering the NTLD Program as a CPD provider may encourage senior doctors to attend trainings and CMEs on TB.

Integrate child TB with other specialties

There is need to develop linkages between MCH clinics, PMTCT sites, pediatric outpatient clinics, casualty, pediatric inpatient wards and the TB clinic. This will strengthen TB systems in these different areas to close any present gaps in the screening, diagnosis, treatment and prevention of child TB. Additionally, this will help monitor and facilitate patient and information flow between departments, while surveillance data needs to be improved, in order to capture nutritional aspects of TB in children.

To minimize TB transmission to children within the health care settings, efforts will be made to improve IPC activities in health facilities through triaging all adults with cough and separating them from children.

Child TB drug procurement and ordering should be in line with program needs to avoid over and under-stocking. All children should be actively monitored for adverse drug reactions. To facilitate this, ADR monitoring questions are to be incorporated in the current patient monitoring tools.

Ensure affordable, high quality TB diagnostics

All children need to access quality TB diagnostics at no cost. This requires setting aside funds at national and county government levels towards basic child TB diagnostics. CXR facilities will need to be availed, either through mobile digital CXR services or installation of quality CXR services that are accessible to lower level health facilities with improved capacity for reliable interpretation by linking these facilities with adequately trained radiologists. This can be done through web linkage.

Current child TB diagnostic algorithms and tools will have to be made available at all facilities dealing with children at all key areas of child-care. Xpert testing should be the first diagnostic test for children with expectorated/induced sputum samples or gastric aspirate samples. There will be skills development for HCWs through mentorship to develop their capacity to obtain sputum samples from children. In addition, there is need to link all TB diagnostic facilities to available Xpert sites to ensure access to diagnosis.

Prevention of TB through community engagement and IPT provision

Communities should be actively engaged in the management of TB through contact tracing, supervision of DOTS for TB patients and tracing patients who default from treatment. Child TB contacts can be actively traced through engagement of community health workers to ensure the children are screened and either put on TB treatment or preventive therapy. The Orphans and Vulnerable children are more likely to fall off their TB treatment due to a lack of social support. Community based programs can be developed for them to ensure completion of treatment and other social support they may need.

Awareness and TB screening campaigns shall be conducted in schools, colleges and orphanages to increase awareness about TB and intensify detection of new cases. Through the engagement of community health workers, there shall be active tracing for child contacts among various TB patients, including smear positive and MDR-TB patients. Reverse contact tracing has also been done among children with TB.

IPT has been shown to have a protective benefit for children exposed to TB and those living with HIV.

Contact tracing and intensified case finding should be done at the facility level to exclude active TB. Success in this will depend on collaboration between facilities and communities. Children diagnosed with TB should be started on effective treatment regimen, while those without TB should be initiated on Isoniazid therapy for a period of six months with periodic review to identify suggestive symptoms or to be reviewed as soon as suggestive symptoms of TB arise.

Scale up nutrition interventions among children with TB

All health facilities need to be adequately equipped with anthropometric equipment to ensure that HCWs can assess the nutrition status of children with TB. Children found to have moderate and severe malnutrition will then be given nutrition supplementation. The surveillance system needs to be improved to adequately capture nutrition indicators for children.

Strengthen TB/HIV management in children

All children with TB must be tested for HIV. There is need to strengthen early infant diagnosis for all children under 18 months of age with PCR. All children found with HIV should be offered cART and CPT at the earliest opportunity. Children under five years exposed to smear positive TB and those above one year of age living with HIV should all be initiated on IPT once active TB disease has been ruled out.

DR-TB among children

All child DR-TB contacts should be traced and screened for TB. Those who screen positive should be initiated on the appropriate DR-TB regimen and followed up appropriately. These children should be reviewed by specialists to ensure appropriate management. Social support will be necessary to enable the caregivers of these children bring them for daily DOTS and to enable them to access follow up investigations. Those who screen negative during DR-TB screening should be followed up regularly for at least two years. There is need for continuous lobbying for pediatric friendly DR-TB drug formulations.

Senior clinicians managing children with MDR-TB should receive further specialized training to enable them effectively offer the service and to train other clinicians.

Establish and equip chronic care clinics for asthma and other chronic childhood lung conditions

Children with chronic respiratory conditions need special care. Medications and equipment for managing chronic lung conditions in children are neither readily available nor affordable. These commodities and equipment need to be procured and distributed to peripheral health facilities at no cost to these children. There is need to establish specialized lung health clinics for children in at least all county referral health facilities. Capacity building for HCWs in the identification, management and follow-up of asthma and chronic childhood lung conditions. All children with chronic lung conditions should be screened for risk factors. There is also need to establish a surveillance system to capture data on child chronic lung conditions.

Operational research

There is need to strengthen operational research on child TB and chronic lung health. This can be achieved through a mentorship program steered by the NTLD Program to enable the CTLCs and sub-county TB coordinators to plan and implement operational research projects. Operational research should be conducted on:

1. Evaluation of pediatric TB over and under diagnosis in Kenya
2. Diagnostic effectiveness of the screening algorithm and treatment of TB in children
3. Outcome of MDR-TB in children and child MDR-TB contacts
4. Evaluate adverse drug effects with the new pediatric regimen
5. MDR-TB prophylaxis for young children.

Contribution to NSP Impacts	Outcomes (Pediatric)
Impact 1: Reduce the incidence of TB by 5% by 2018, compared to 2014	Increase the proportion of children among all notified cases (TBD: prevalence survey)
Impact 1.1: Reduce the prevalence of MDR-TB among new patients by 15% by 2018, compared to 2014	Increase case notifications of MDR-TB in children by 10-15%
Impact 1.2: Reduce the incidence of TB among PLHIV by 60% by 2018, compared to 2014	• Increase to 90% the proportion of children with TB and HIV who are initiated on cART within 2 months of TB treatment initiation • Increase to 80% the proportion of child contacts, without TB, who receive IPT
Impact 2: Reduce mortality due to TB by 3% by 2018, compared to 2014	Ensure treatment success of at least 90% among all DS forms of TB
Impact 3: Reduce the proportion of affected families who face catastrophic costs due to TB, leprosy & other lung diseases, by 2018 (baseline TBD)	Increase to 95% the proportion of malnourished children with TB who access nutritional support
Impact 4: Reduce by 50% the proportion of cases with grade 2 morbidity due to leprosy by 2018	Increase by 10% the number of leprosy cases notified among children
Impact 5: Reduce morbidity due to chronic lung diseases (e.g. COPD, asthma)	Reduce the average number of acute episodes for children with asthma

Table 7: Impact and Outcome Indicators for Pediatric TB

Pediatric TB Operational Plan

Output Indicator(s)	Intervention(s)	Year 1 Activities	Yr 1 Target	Year 2 Activities	Yr 2 Target	Year 3 Actitivies	Yr 3 Target	Year 4 Activities	Yr 4 Target
Strategic Approach 1: Strengthen coordination of child TB services									
Number of pediatrician focal persons at NTLD Program supported	Retention of pediatric focal person at NTLD Program	Retention of pediatric focal person at NTLD Program	1	Retention of pediatric focal person at NTLD Program	1	Retention of pediatric focal person at NTLD Program	1	Retention of pediatric focal person at NTLD Program	1
Proportion of scheduled quarterly TWG meetings held	Hold quarterly ped TB TWG meetings	Hold quarterly ped TB TWG meetings	100%	Hold quarterly paed TB TWG meetings	100%	Hold quarterly ped TB TWG meetings	100%	Hold quarterly ped TB TWG meetings	100%
Strategic Approach 2: Build capacity of HCWs for pediatric TB, leprosy and lung health									
Proportion of facilities provided with and using pediatric-related material by type	Printing and distribution of 8,000 copies of pediatric TB guidelines and 10,000 flipcharts jobaids, mantoux posters 9000, diagnostic algorithm posters 9,000	Printing and distribution of 4,000 copies of pediatric TB guidelines and 6,000 flipcharts jobaids, mantoux posters 6,000, diagnostic algorithm posters 6,000	50%	Printing and distribution of 4,000 copies of pediatric TB guidelines and 4,000 flipcharts jobaids, mantoux posters 3,000, diagnostic algorithm posters 3,000	100%	n/a	100%	n/a	100%
Updated pediatric TB guidelines	Review of pediatric TB guidelines			Review of pediatric TB guidelines	1			Review of pediatric TB guidelines	1
Number of HCW trained on pediatric TB	Training of 8,460 HCWs on pediatric TB	Train 1,410 HCWs(1 training per county, 30pax each for 3 days)	1,410	Train 2,820 HCWs (2 trainings per county, 30pax each for 3 days)	2,820	Train 2,820 HCWs (2 trainings per county, 30pax each for 3 days)	2,820	Train 1,410 HCWs (1 training per county, 30pax each for 3 days)	1,410
Number of HCW reached through e-learning	Develop e-module component of the pediatric TB guideline					Ped TB training curriculum updated to include e-module			300
	Train 300 HCWs using the E module pediatric TB training							Train 300 HCWs using the E module pediatric TB training	
Number of HCWs and pediatric professionals reached through CMEs and accredited	752 Facility based CMEs conducted on pediatric TB(1 per year per county)	Facility based CMEs conducted on pediatric TB(5 per year per county)	90	235 Facility based CMEs conducted on pediatric TB (5 per year per county)	241	235 Facility based CMEs conducted on peadiatric TB (5 per year per county)	241	235 Facility based CMEs conducted on pediatric TB (5 per year per county)	180
	278 pediatric TB CMEs for professional associations(2 per year per county)	45 pediatric TB CMEs for professional associations(2 per year per county)	45	94 pediatric TB CMEs for professional associations (2 per year per county)	94	94 pediatric TB CMEs for professional associations (2 per year per county)	94	45 pediatric TB CMEs for professional associations(2 per year per county)	45
NTLD Program registered as a CPD provider	NTLD Program registered as a CPD provider	Link ped TB training to CPD award systems to increase attendance/demand (Registration cost approx 40,000)	1						
Number of HCWs mentored on childhood TB and HIV	Develop a mentorship checklist for pediatric TB	Develop a mentorship checklist for pediatric TB	20 in 10 counties		20 in 10 counties		20 in 14 counties		20 in 13 counties
	Print and distribute 6,000 mentorship checklists to health facilities			Print and distribute 3,000 mentorship checklists to health facilities (No. to be determined)	3,000	Print and distribute 3,000 mentorship checklists to health facilities (No. to be determined)	3,000	Print and distribute 3,000 mentorship checklists to health facilities (No. to be determined)	
	TA of HCWs on child TB and HIV services			TA of HCWs on child TB and HIV services in areas with low testing uptake		TA of HCWs on child TB and HIV services in areas with low testing uptake		TA of HCWs on child TB and HIV services in areas with low testing uptake	
Strategic Approach 3: Integrate child TB with other specialties									
Number of other child health guidelines with child TB screening and diagnostic algorithms	Incorporate peads screening and diagnostic algorithm into IMCI, IMAM and other child health guidelines	Incorporate peads screening and diagnostic algorithm into IMCI, IMAM and other child health guidelines	1					0	

Pediatric TB Operational Plan									
Output Indicator(s)	**Intervention(s)**	**Year 1 Activities**	**Yr 1 Target**	**Year 2 Activities**	**Yr 2 Target**	**Year 3 Actitivies**	**Yr 3 Target**	**Year 4 Activities**	**Yr 4 Target**
Proportion of children seen in health facilities screened for TB and documented	Document all presumptive child TB cases screened for TB			Document all presumptive child TB cases screened for TB	60%	Document all presumptive child TB cases screened for TB	80%	Document all presumptive child TB cases screened for TB	95%
Strategic Approach 4: Ensure access to high-quality TB diagnostics for all children at no cost; improve access to x-ray services for children									
Proportion of intended x-ray macines procured	48 digital xray machines procured(atleast 1 per county, 38 fixed and 10 portable)	n/a	n/a	Procure 16 digital xrays	100%	Procure 16 digital xrays	100%	Procure 16 digital xrays	100%
Number of radiographers/HCWs trained on x-ray taking and interpretation	Training of 200 HCWs on xray interpretation	n/a	n/a	Training of HCWs on Xray taking and interpretation	100	Training of HCWs on Xray taking and interpretation	50	Training of HCWs on Xray taking and interpretation	50
Proportion of presumptive child TB cases receiving diagnostic services for active TB through Xpert, with gastric aspiration and mantoux	Scale up utilization of geneXpert utilisation for child TB diagnosis by strengthening referral networks for sputum	Scale up utilization of geneXpert utilization for child TB diagnosis by strengthening referral networks for sputum	n/a	Scale up utilization of geneXpert utilization for child TB diagnosis by strengthening referral networks for sputum	60%	Scale up utilization of geneXpert utilization for child TB diagnosis by strengthening referral networks for sputum	80%	Scale up utilization of geneXpert utilization for child TB diagnosis by strengthening referral networks for sputum	95%
	Mentorship of HCWS on Xpert : gastric aspiration and mantoux in all counties	Mentorship of HCWS on Xpert :gastric aspiration and mantoux to 180 HCWs (TOTs)	n/a	2 mentorship sessions/ county/year each 20 pax for HCWs on Xpert, gastric aspiration and mantoux		2 mentorship sessions/county/ year each 20 pax for HCWs on Xpert, gastric aspiration and mantoux		2 mentorship sessions/county/ year each 20 pax for HCWs on Xpert, gastric aspiration and mantoux	
Strategic Approach 5: Prevention of TB through community engagement and IPT provision									
Proportion of the contacts of smear-positive TB, MDR-TB and child TB cases that are traced and screened	Scale up child contact screening and referral: Train 1,200 CHWs on contact screening(atleast 1 training per county)		20%	Train 400 CHWs on contact screening	40%	Train 400 CHWs on contact screening	60%	Train 400 CHWs on contact screening	80%
	Facilitate CHWs to conduct active contact tracing and defaulter tracing for 150,000 TB patients			Facilitate CHWs to conduct active contact tracing and defaulter tracing for 50,000 TB patients		Facilitate CHWs to conduct active contact tracing and defaulter tracing for 50,000 TB patients		Facilitate CHWs to conduct active contact tracing for 50,000 TB patients	
	Establish linkages for OVCs with TB to community support	Establish linkages for OVCs with TB to community support		Establish linkages for OVCs with TB to community support		Establish linkages for OVCs with TB to community support		Establish linkages for OVCs with TB to community support	
Number of schools/colleges/orphanages in which all children have been screened for TB	Conduct targeted contact/mass screening campaigns to 108 schools/colleges/orphanages (4 schools per county per year in Kirinyaga, Nairobi, Embu, Mombasa, Kisumu, Migori, Homa Bay, Tharaka and Isiolo)	n/a	n/a	Conduct targeted school-based contact/mass screening campaigns to 36 schools/colleges (4 schools per county per year in Kirinyaga, Nairobi, Embu, Mombasa, Kisumu, Migori, Homa Bay, Tharaka and Isiolo)	36	Conduct targeted school-based contact/mass screening campaigns to 36 schools/ colleges (4 schools per county per year in Kirinyaga, Nairobi, Embu, Mombasa, Kisumu, Migori, Homa Bay, Tharaka and Isiolo)	36	Conduct targeted school-based contact/mass screening campaigns to 36 schools/ colleges	36
Number of schools/colleges in which TB awareness campaigns were conducted	Conduct school-based awareness campaigns to 228 schools/colleges (at least 4 schools per county per year)	n/a	n/a	Conduct targeted school-based awareness campaigns to 76 schools/ colleges (4 schools per county per year in Kiambu, Murang'a, Meru, Kerich, Lamu, Taita Taveta, Nakuru, West Pokot, Siaya, Kajiado Kirinyaga, Nairobi, Embu, Mombasa, Kisumu, Migori, Homa Bay, Tharaka and Isiolo)	76	Conduct targeted school-based awareness campaigns to 76 schools/colleges (4 schools per county per year in Kiambu, Murang'a, Meru, Kerich, Lamu, Taita Taveta, Nakuru, West Pokot, Siaya, Kajiado Kirinyaga, Nairobi, Embu, Mombasa, Kisumu, Migori, Homa Bay, Tharaka and Isiolo)	76	Conduct targeted school-based awareness campaigns to 76 schools/colleges (4 schools per county per year in Kiambu, Murang'a, Meru, Kerich, Lamu, Taita Taveta, Nakuru, West Pokot, Siaya, Kajiado Kirinyaga, Nairobi, Embu, Mombasa, Kisumu, Migori, Homa Bay, Tharaka and Isiolo)	76
Proportion of child contacts, without TB, who receive IPT	Initiate IPT for all eligible child contacts	Initiate IPT for eligible child contacts	20%	Initiate IPT for eligible child contacts	40%	Initiate IPT for eligible child contacts	60%	Initiate IPT for eligible child contacts	80%

Pediatric TB Operational Plan									
Output Indicator(s)	**Intervention(s)**	**Year 1 Activities**	**Yr 1 Target**	**Year 2 Activities**	**Yr 2 Target**	**Year 3 Actitivies**	**Yr 3 Target**	**Year 4 Activities**	**Yr 4 Target**
Printed IPT algorithm posters	Number of IPT algorithm posters printed and distributed	Print and distribute IPT algorithm posters	8,000	Print and distribute IPT algorithm posters	4,000	Print and distribute IPT algorithm posters	4,000	n/a	n/a
Proportion of pregnant women screened for TB at ANC sites	Disseminate screening algorithm and cards to ANC sites	Disseminate screening algorithm and cards to ANC sites	10%	Disseminate screening algorithm and cards to ANC sites	40%	Disseminate screening algorithm and cards to ANC sites	60%	Disseminate screening algorithm and cards to ANC sites	80%
	Sensitize all HCWs in ANC on TB screening in pregnancy	Sensitize all HCWs in ANC on TB screening in pregnancy		Sensitize all HCWs in ANC on TB screening in pregnancy		Sensitize all HCWs in ANC on TB screening in pregnancy		Sensitize all HCWs in ANC on TB screening in pregnancy	
	Screen all pregnant women for TB in pregnancy	Screen all pregnant women for TB in pregnancy		Screen all pregnant women for TB in pregnancy		Screen all pregnant women for TB in pregnancy		Screen all pregnant women for TB in pregnancy	
	Offer IPT to all eligible pregnant mothers with HIV found not to have active TB	Offer IPT to all eligible pregnant mothers with HIV found not to have active TB		Offer IPT to all eligible pregnant mothers with HIV found not to have active TB		Offer IPT to all eligible pregnant mothers with HIV found not to have active TB		Offer IPT to all eligible pregnant mothers with HIV found not to have active TB	
Strategic Approach 6: Scale up nutrition interventions among children with TB									
Proportion of children with TB assessed for nutritional status	Baseline assessment of nutrition equipment distribution and status	Baseline assessment of nutrition equipment distribution and status	n/a		100%		100%		100%
	Procure and distribute 1,500 adult weighing scales with stadiometers, 4,000 pediatric beam balance scales	n/a		Procure 500 adult weighing scales with stadiometers, 2,000 pediatric beam balance scales		Procure 500 adult weighing scales with stadiometers,1,000 pediatric beam balance scales		Procure 500 adult weighing scales with stadiometers, 1,000 pediatric beam balance scales	
				Distribute 500 adult weighing scales with stadiometers, 2,000 pediatric beam balance scales		Distribute 500 adult weighing scales with stadiometers, 1,000 pediatric beam balance scales		Distribute 500 adult weighing scales with stadiometers, 1,000 pediatric beam balance scales	
	Service contracts for 1,500 adult weighing scales with stadiometers and 4,000 pediatric beam balance scales	n/a		Service contracts for 500 adult weighing scales with stadiometers and 2,000 pediatric beam balance scales		Service contracts for 1,000 adult weighing scales with stadiometers and 3,000 pediatric beam balance scales		Service contracts for 1,500 adult weighing scales with stadiometers and 4,000 pediatric beam balance scales	
	Improve TB surveillance data tools to capture child TB nutrition assessment data	Improve TB surveillance data tools to capture child TB nutrition assessment data		n/a		n/a		n/a	
Proportion of children with moderate/severe malnutrition and TB who receive nutritional support	Provide nutrition support to 80% of children with moderate/severe malnutrition and TB	Assess all children with TB for nutrition status	40%	Assess all children with TB for nutrition status	60%	Assess all children with TB for nutrition status	80%	Assess all children with TB for nutrition status	95%
		40% of children with moderate/severe malnutrition and TB receive nutrition support		60% of children with moderate/severe malnutrition and TB receive nutrition support		80% of children with moderate/severe malnutrition and TB receive nutrition support		95% of children with moderate/severe malnutrition and TB receive nutrition support	
		Procure and distribute nutritional supplementation(ready to use therapeutic foods RUTF, fortified blended foods FBFs, Multiple micronutrients) for children with moderate/ severe malnutrition and TB		Procure and distribute nutritional supplementation(ready to use therapeutic foods RUTF, fortified blended foods FBFs, Multiple micronutrients) for children with moderate / severe malnutrition and TB		Procure and distribute nutritional supplementation(ready to use therapeutic foods RUTF, fortified blended foods FBFs, Multiple micronutrients) for children with moderate / severe malnutrition and TB		Procure and distribute nutritional supplementation(ready to use therapeutic foods RUTF, fortified blended foods FBFs, Multiple micronutrients) for children with moderate / severe malnutrition and TB	

Pediatric TB Operational Plan									
Output Indicator(s)	**Intervention(s)**	**Year 1 Activities**	**Yr 1 Target**	**Year 2 Activities**	**Yr 2 Target**	**Year 3 Actitivies**	**Yr 3 Target**	**Year 4 Activities**	**Yr 4 Target**
Strategic Approach 7: Strengthen TB/HIV management in children									
Proportion of children with TB who are tested for HIV	Test 95% of children with TB for HIV	Test children with TB for HIV	93%	Test children with TB for HIV	94%	Test children with TB for HIV	95%	Test children with TB for HIV	95%
Percentage of HIV exposed children < 18months with TB with confirmatory HIV PCR testing	Test 95% HIV exposed children < 18months with TB with confirmatory HIV PCR testing	Test HIV exposed children < 18months with TB with confirmatory HIV PCR testing	75%	Test HIV exposed children < 18months with TB with confirmatory HIV PCR testing	80%	Test HIV exposed children < 18months with TB with confirmatory HIV PCR testing	90%	Test HIV exposed children < 18months with TB with confirmatory HIV PCR testing	95%
Percentage of children with TB and HIV initiated on ART within 2 months of TB treatment initiation	Initiate 90% of children with TB and HIV on ART within 2 months of TB treatment initiation	Initiate children with TB and HIV on ART within 2 months of TB treatment initiation	84%	Initiate children with TB and HIV on ART within 2 months of TB treatment initiation	87%	Initiate children with TB and HIV on ART within 2 months of TB treatment initiation	90%	Initiate children with TB and HIV on ART within 2 months of TB treatment initiation	90%
Proportion of children with TB and HIV who are initiated on CPT	Initiate 100% of children with TB and HIV on CPT	Initiate children with TB and HIV on CPT	99%	Initiate children with TB and HIV on CPT	100%	Initiate children with TB and HIV on CPT	100%	Initiate children with TB and HIV on CPT	100%
Strategic Approach 8: Strengthen PMDT and contact tracing among children									
Proportion of child contacts actively traced and screened	Conduct active contact tracing and screening of child contacts for 100% of patients with DRTB-	Conduct active contact tracing and screening of child contacts for patients with DR-TB	50%	Conduct active contact tracing and screening of child contacts for patients with DR-TB	100%	Conduct active contact tracing and screening of child contacts for patients with DR-TB	100%	Conduct active contact tracing and screening of child contacts for patients with DR-TB	100%
Number of senior clinicians trained on management of DR-TB	Train 6 senior clinicians on management of DR-TB (The UNION training)	n/a	n/a	Train senior clinicians on management of DR-TB (The UNION training)	2	Train senior clinicians on management of DR-TB (The UNION training)	2	Train senior clinicians on management of DR-TB (The UNION training)	2
Number of paed DR-TB formulations available for children	Ensure uninterrupted supply of paed friendly paed DR-TB formulations for 110 children-	Ensure uninterrupted supply of paed friendly paed DR-TB formulations for children	20	Ensure uninterrupted supply of paed friendly paed DR-TB formulations for children	25	Ensure uninterrupted supply of paed friendly paed DRTB formulations for children	30	Ensure uninterrupted supply of ped friendly ped DR-TB formulations for children	35
Number of children with DR-TB attending treatment and DOTS	Provide support for 110 children with DR-TB to attend treatment and DOTS	Provide support for children with DR-TB to attend treatment and DOTS	20	Provide support for children with DR-TB to attend treatment and DOTS	25	Provide support for children with DR-TB to attend treatment and DOTS	30	Provide support for children with DR-TB to attend treatment and DOTS	35
Number of children with DR-TB receiving nutritional support	Provide nutrition support for 110 children with DR-TB	Provide nutrition support for children with DR-TB	20	Provide nutrition support for children with DR-TB	25	Provide nutrition support for children with DR-TB	30	Provide nutrition support for children with DR-TB	35
Number of follow-up investigations conducted for children with DR-TB	Provide support for follow-up investigations for 110 children with DR-TB	Provide support for follow-up investigations for children with DR-TB	20	Provide support for follow-up investigations for children with DR-TB	25	Provide support for follow-up investigations for children with DR-TB	30	Provide support for follow-up investigations for children with DR-TB	35
Proportion of DR-TB child contacts followed up for at least 2 years	Follow up 90% DR-TB child contacts for at least 2 years	Follow up DR-TB child contacts for at least 2 years	50%	Follow up DR-TB child contacts for at least 2 years	70%	Follow up DR-TB child contacts for at least 2 years	80%	Follow up DR-TB child contacts for at least 2 years	90%
Strategic Approach 8: Commodity Management and Pharmacovigilance									
Number of stock outs of paediatric TB formulations	Ensure steady supply of paed TB formulations	Ensure steady supply of paed TB formulations		Ensure steady supply of paed TB formulations		Ensure steady supply of paed TB formulations		Ensure steady supply of paed TB formulations	
Proportion of children on TB treatment reviewed for ADRs	Revise the patient record card to capture pharmacovigilance information. ADR monitoring for 100% children on TB treatment	Revise the patient record card to capture pharmacovigilance information. ADR monitoring for 100% children on TB treatment	100%	ADR monitoring for 100% children on TB treatment	100%	ADR monitoring for 100% children on TB treatment	100%	ADR monitoring for 100% children on TB treatment	100%

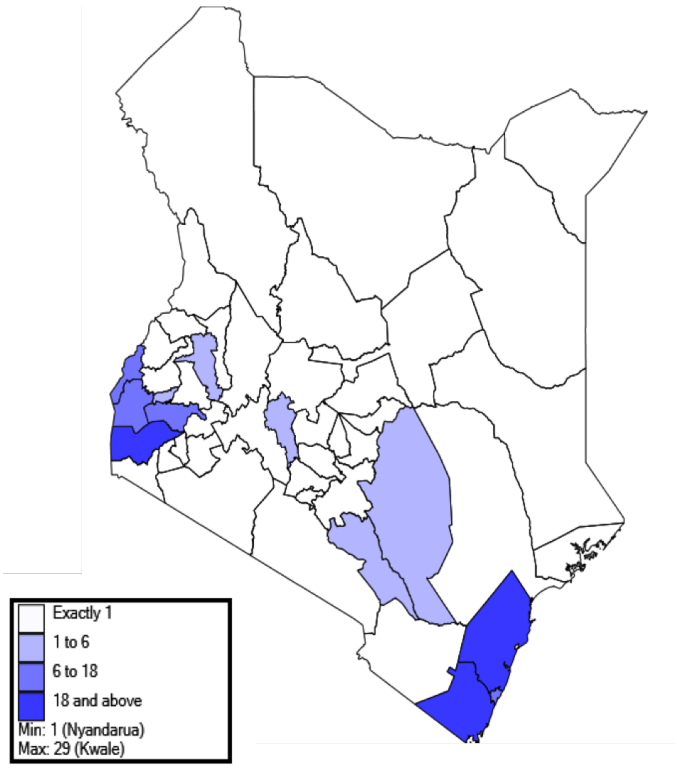
4.3.2.4. Leprosy

1. Situational Analysis

Kenya is considered to be in the post-elimination phase of leprosy, having achieved the WHO elimination target of less than 1 case per 10,000 people in 1989. The number of new leprosy cases in the country has continued to steadily decline over the past three decades from more than 600 to 139 in 1986 and 2013 respectively. Despite the low number of reported cases, leprosy continues to cause high morbidity among those infected, with 48% of new cases notified in 2013 having advanced disease with disability grade 1 and 2.

Active transmission is ongoing in communities in both endemic and non-endemic areas. Childhood cases (the marker of active transmission) account for 1 in 5 (21%) of all new cases[1]. There are still pockets of leprosy in a number of counties. Kwale and Kilifi reported the most new cases in 2012, followed closely by Kisumu, as shown in Map 6.

Recent active leprosy case-finding exercises conducted in Kwale and Kisumu counties yielded remarkable numbers of new cases. Most cases were infectious Multi-Bacillary (MB) leprosy, including those affecting children. A large proportion of disability grade 2 among patients reported in 2013 implied late diagnosis of leprosy in Kenya.



Map 6: Leprosy Case Notification

The country continues to build the capacity of county and sub-county TB/Leprosy coordinators to diagnose and manage uncomplicated cases, and has recently developed a training curriculum for health care providers. Guidelines for leprosy management have been integrated within the National TB treatment guidelines, and are available country-wide. Similarly, recording and reporting structures have been integrated within the national web-based surveillance system (TIBU), making leprosy case-based data available at the national level.

Leprosy is a debilitating disease common among the poor. Thus, there is need for a multi-sectorial approach to ensure successful integration of those affected, into the community. Other than physical presence of disease, there are social, economic and legal issues that work against the patient. They must be addressed (Public Health Act, Cap 242). Deliberate efforts need to be made to ensure that leprosy patients with disabilities benefit from the disability management program as provided for in the constitution.

Despite the gains made in leprosy control, the recently concluded mid-term review highlighted a number of gaps and challenges that impact on leprosy control. They include:

- Low index of suspicion for leprosy among general health care workers in geographically endemic areas, suggesting that not all leprosy cases are being detected and late diagnosis remains a challenge as reflected by the high rates of disability
- Low level of awareness in the community/general population on leprosy, delaying health seeking behavior as underscored by high disability rates
- Inadequate attention paid to rehabilitative services, including those for special patient needs, such as prevention of disabilities, physical and social rehabilitation
- Lack of educational materials on leprosy in the entire country.

2. Strategic Direction(s) for 2015-2018

During the four-year period, a two-tiered strategy will differentially address: a) endemic areas; and b) non-endemic areas. Specifically, the strategy will aim to: a) appropriately increase the index of suspicion among health workers, especially in the 5 endemic counties; b) raise public awareness; and c) improve the quality of surveillance, clinical care and rehabilitation, and monitoring and evaluation.

1 Endemic areas include: Kilifi, Kwale, Malindi, Kisumu, Siaya, Busia; and non-endemic areas include Mbeere, Nyatike, Isiolo, Igembe, Kisumu east, Kericho/Buret, Nakuru, Mumias, Nandi, Bugoma South, Busia, Kakamega Central, Bunyala, Butere, Teso, Dagoretti , Kirinyaga, Nyeri North, GanjoniMombasa), Taita , Taveta, Tharaka, Kitui , Kyuso, Mwingi, Kibwezi, Maara.

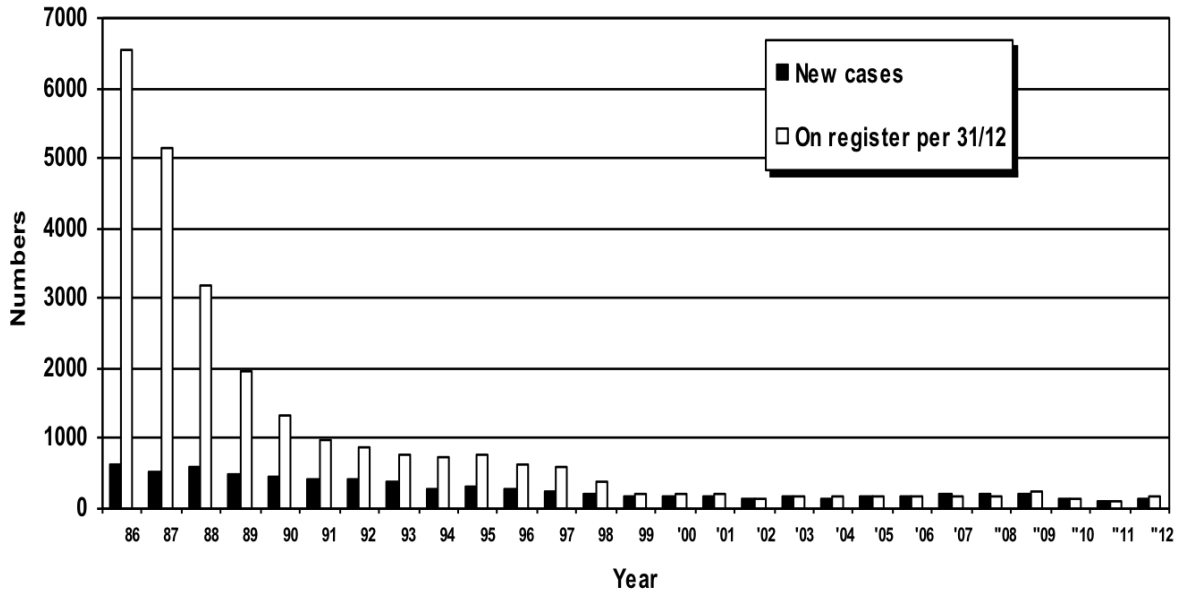


Figure 17: Leprosy New Case and Cases on Register by end of Year, 1986-2012

3. Proposed Approaches

Improving public awareness and political commitment

A communication strategy will be developed. It will consider the different needs for endemic and non-endemic areas, and will include activities such as the relevant use of IEC materials, circulated and displayed in appropriate public areas. The communication strategy will also include commemoration of World Leprosy Day. In endemic areas, there should be radio and television messages as well as public campaign activities to raise awareness about leprosy, encouraging early care seeking and discouraging stigma. School health talks on leprosy will be initiated in endemic areas.

Capacity building of general care providers

a) Human resource capacity building will be done by the county, with technical assistance from the NTLD Program, in both endemic and non-endemic areas through:

i. Inclusion of a leprosy training module in the ongoing TB/HIV, DR-TB and CTBC trainings.

ii. Training of general health care workers on the use of the revised recording and reporting tools. Training of new county and sub coordinators in leprosy clinical and programmatic management. Capacity building of leprosy managers on advanced leprosy control management will also be rolled out in the five endemic areas.

b) In endemic areas:

i. Develop a robust plan for building and sustaining capacity for leprosy identification and management by all health care workers. Train and retrain general health care workers on diagnosis, management, and recording and reporting of leprosy cases at all levels. Develop on-the-job training tools and disseminate for use by general health care workers. These concern the use of the revised recording and reporting tools. Hold refresher courses for lab staff of AFB–leprosy (Microscopy) and histo-pathologists. Engage skin specialists in training of health care workers on leprosy. Intensify training of new county and sub-county coordinators in leprosy clinical and programmatic management.

ii. Continuously sensitize/orientate health care providers to improve the index of suspicion for early leprosy diagnosis and management.

Leprosy surveillance and active case finding

Several approaches will be used for surveillance and active case finding. In both endemic and non-endemic areas, the following strategies will be conducted:

a) Mapping of all leprosy cases diagnosed in the past two years to identify hot spots of transmission and to conduct contact tracing
b) Strengthening contact tracing in skin clinics by integrating leprosy screening activities
c) Engaging and sensitizing CSOs implementing TB activities to integrate leprosy activities in their agenda.

In endemic areas:
a) Tracing and screening of contacts of all children diagnosed with leprosy and adults in endemic areas
b) Conducting dermatology polyclinics in endemic areas
c) School contact tracing and educational campaigns to enhance detection
d) Integration of leprosy communication and active case finding material into the national community health service kit.

Enhancing clinical care and rehabilitation

Enhancing clinical care and rehabilitation is core in leprosy elimination phase. Interventions will be implemented in both endemic and non-endemic areas. In both cases, there will be interventions aimed at:

a) Strengthening of linkages with local and international partners to ensure a continuous supply of MDTs and procurement and distribution of leprosy commodities, including MDT, auxiliary drugs for prevention and management of reactions
b) Mapping leprosy patient support groups and linking them to organizations that can help such groups to develop income generating activities
c) Engagement of skin experts in leprosy patient management and in mentoring health care workers on leprosy; e.g. Kenya Association of Dermatologist (KAD) and Kenya Association of Dermato-Venereology Officers (KDVO)
d) The national level will provide technical assistance to all counties.

In the five endemic areas, the strategic direction will focus on the following:

a) Training surgeons, medical and clinical officers and nurses on prevention of disabilities, rehabilitation and septic surgery
b) Training of physiotherapist, occupational therapist and social workers on leprosy rehabilitation
c) Procurement of materials and equipment for patient's rehabilitation, including crutches, other orthopedic appliances and materials for their fabrication
d) Reviving or integrating leprosy rehabilitative services in existing rehabilitative centers in the counties
e) Training occupational therapists, physiotherapists, social workers and surgeons on rehabilitation of post-leprosy disability management.

Strengthening monitoring and evaluation

In both endemic and non-endemic areas, recording and reporting will be strengthened through various approaches including:

a) Revision, printing and distribution of the existing data capture tools
b) Training of health care workers on the use of the recording and reporting tools and leprosy control indicators
c) Revision of the leprosy module in TIBU
d) Promotion of the inclusion of leprosy targets and M&E strategies within county health strategies and work plans
e) Conducting a Leprosy KAP survey
f) Undertaking operational research to assess the quality of care, including the patient perspective

In endemic areas:

a) Provide leprosy-specific mentorship, technical assistance and supportive supervision to the counties reporting leprosy cases
b) The NTLD Program to dialogue with County Executives through various stakeholders' forums to strategize on leprosy control at county levels
c) Engagement of clinicians belonging to the Kenya Association of Dermatologist (KAD) and Kenya Association of Dermato-Venereology Officers (KDVO) in mentoring health care workers on leprosy.

Contribution to NSP Impacts	Outcomes (Leprosy)
Impact 3. Reduce the proportion of affected families who face catastrophic costs due to TB, leprosy and lung diseases by 2018 (baseline TBD)	• Increase to at least 60% the proportion of eligible leprosy patients who access nutritional support, transport or financial subsidies, especially to facilitate diagnosis and treatment
Impact 4. Reduce by 50% the proportion of cases with grade 2 morbidity due to leprosy by 2018	• Increase the proportion of leprosy patients receiving rehabilitative services by 25% • Increase by 10% the number of leprosy cases notified among children • Increase to 85% the proportion of leprosy patients notified prior to grade 2 disability

Table 8: Impact and Outcome Indicators for Leprosy

Leprosy Operational Plan

Output Indicator(s)	Intervention(s)	Year 1 Activities	Yr 1 Target	Year 2 Activities	Yr 2 Target	Year 3 Activities	Yr 3 Target	Year 4 Activities	Yr 4 Target
Strategic Approach 1: Improving Public Awareness and Political Commitment									
1. Number of counties with leprosy guidelines in place 2. Number of sensitization meetings for leprosy among policy makers conducted	1. Develop a investment manual on post elimination 2. Conducting sensitization meetings on leprosy for policy makers and stakeholders	1. Hold a 5 day workshop for 15 pax outside nairobi to develop a leprosy post elimination investment manual 2. Print and distribute 500 copies of the leprosy post elimination manual 3. Hold a 2 days sensitization seminars at national level for stakeholders and Health policy makers for 25Pax in Nairobi to dialogue on the roadmap to leprosy post elimination strategies disceminate the leprosy post elimination manual, communicate the position in change in the Health bill and Pubic Health Act and advocate for relevant changes	0 1	1. Conduct, 1 day county level stakeholder sensitization meetings for 30 Pax each on leprosy to disseminate the leprosy manual and advocate for resource allocation	20 2	1. Conduct, 1 day 30 pax county level stakeholder meeting to review the leprosy control and resource allocation situation in the 6 endemic counties	30 2	1. Conduct, 1 day 30 pax county level stakeholder meeting to review the leprosy control and resource allocation situation in the 6 endemic counties	47 2
Strategic Approach 2: Capacity building of general care providers									
Proportion of counties both endemic and non endemic reporting new leprosy cases presenting with disability grade 2	1. Conduct a national TOT training (to train county ToTs on leprosy) 2. Conduct trainings for health care workers at the county level 3. Sensitization meetings to CHWS 4. Sponsor officers for leprosy courses 5. Refresher courses for Lab staff on skin slit smear and bacteriological diagnosis.	1. Conduct two central training for County and national TOT Training: 25pax each from endemic areas and national level 2.Sponsor 2 Surgeons for Reconstructive course 3. To sponsor two leprosy officers(One National, one County) to attend the leprosy advance course in ALERT 4. Train 180 pax of HCWs on leprosy diagnosis and management in 6 endemic areas 5. Hold CHWs Sensitization meeting of 120 Pax per County in endemic areas 6. Train 50 CHEWs per endemic County on leprosy 7. Conduct refresher training to 30 lab. staff in endemic areas on slit skin smear and bacteriological diagnosis	30%	1.Train 100 pax (HCWs) on leprosy diagnosis and management in endemic areas and 150 in non- endemic areas for 3 days 2. Hold 2 CHWs Sensitization meeting for 30 Pax in endemic area and 4 non- endemic reporting areas	25%	1.Train 100 pax (HCWs) on leprosy diagnosis and management in endemic areas and 150 in non- endemic areas for 3 days 2. Hold 2 CHWs Sensitization meeting for 30 Pax in endemic area and 4 non- endemic reporting areas.	20%	1.Train 100 pax (HCWs) on leprosy diagnosis and management in endemic areas and 150 in non- endemic areas for 3 days 2. Hold 2 CHWs Sensitization meeting for 30 Pax in endemic area and 4 non-endemic reporting areas.	15%
Strategic Approach 3: Leprosy surveillance and active case finding									
A functional surveillance system reporting on all leprosy indicators	1. Conduct consultative workshop to develop a surveillance system on leprosy and refer for diagnosis 2. Procure lab consumables for SSS &Histologies 3. Conduct Operational research	1. Mapping out of all leprosy cases diagnosed in the past 2 years (2013/14) and conducting contact tracing 2. To organize and conduct a 5 day consultative forum to review mapping results and develop a surveillance system	1	1. Conduct contact tracing of all index cases in all counties reporting new cases. 2. Conduct OR on quality of care of patients receiving leprosy services 3. Malnutrition levels among leprosy patients determined	1	Review workshop to evaluate performance of the system	1	1. Validation of leprosy data for the NSP period 2. Documentation leprosy partners for the 4 year period	1

Leprosy Operational Plan									
Output Indicator(s)	**Intervention(s)**	**Year 1 Activities**	**Yr 1 Target**	**Year 2 Activities**	**Yr 2 Target**	**Year 3 Activities**	**Yr 3 Target**	**Year 4 Activities**	**Yr 4 Target**
Proportion of leprosy referred for screening from community	1. Contact tracing activities at community level 2. Facilitate examination of skin patches and referals	1. Sensitize and support CSOs implementing ENGAGE TB activities to integrate leprosy in their programs 2. Hold sensitization meetings for CHWs to include screening for leprosy during house-to-house campaigns 3. To conduct house-to-house screening for skin lesions 4. Conduct routine 'SKIN Patch' examiniation on all patients presenting with hypopigmented skin patches 5. Conducting Slit skin smears tests in patients presenting with suspecious skin lessions but without leprosy cardinal signs laboratories 6. Training of health care workers at county level to increase their level of suspecion of leprosy 7. Referral of presumptive leprosy cases for screening	70%	1. CHWs to conduct house-to-house screening for skin lesions 2. Conduct routine 'SKIN Patch' examiniation on all patients presenting with atypical presentations(cardinal signs unclear) in all facilities within endemic sites 3. Conducting Slit skin smears tests done in County laboratories 4. Training of health care workers at county level to increase their level of suspicion of leprosy 5. Referral of presumptive leprosy cases for screening	80%	1. Conduct house-to-house screening for skin lesions 2. Conduct routine 'SKIN Patch' examiniation on all patients with atypical presentations in all facilities within endemic sites 3. Conducting Slit skin smears tests done in County laboratories 4. Training of health care workers at county level to increase their level of suspicion of leprosy 5. Referral of presumptive leprosy cases for screening	90%	1. Conduct house-to-house screening for skin lesions 2. Conduct routine 'SKIN Patch' examiniation on all patients presenting with atypical presentations(cardinal signs unclear) in all facilities within endemic sites 3. Conducting Slit skin smears tests done in County laboratories 4. Training of health care workers at county level to increase their level of suspecion of leprosy 5. Referral of presumptive leprosy cases for screening	100%
Proportion of planned school health programs conducted	School health programs: conduct health education in schools in endemic areas every quarter on leprosy			Conduct health education in schools in endemic areas every quarter on leprosy	100%	Conduct health education in schools in endemic areas every quarter on leprosy	100%	Conduct health education in schools in endemic areas every quarter on leprosy	100%
Propotion of schools in endemic areas in which children were screened for leprosy	Conduct school health program and screening for leprosy	Training of school going children on and screening for skin patches in schools neighbouring a homestead of a new leprosy case		1. Sensitization meetings (20 pax) for Community health commitee in all 6 endemic areas 2. Conduct 15 public Barasa meetings per County in each endemic areas per year 3. Training of school going children on and screening for skin patches in schools neighbouring a homestead of a new leprosy case	100%	1. Conduct 15 public Barasa meetings in endemic areas 2. Conduct school health education and screening in 20 schools in each endemic area.	100%	1. Conduct 15 public Baraza meetings in endemic areas 2. Conduct school health education and screening in 20 schools in each endemic area.	100%
Strategic Approach 4: Enhancing clinical care and rehabilitation									
1. Proportion of poly skin clinics conducted in the endemic counties per quarter 2. Proportion of leprosy patients who are malnourished who receive therapeutic food	1. Development of treatment manual 2. Renovation and equiping of regional specialised centre to improve clinical care 3. Provide therapeutic feed to malnourished patients	1. To conduct a 5 days workshop to develop a leprosy post elimination manual 2. To orientate the physio and occupational therapist in the identified facilities on management and rehabilitation of leprosy patients 3. Assessment and identification of appropriate facilities to provide rehabilitative services 4. Procurement of materials and equipments 5. Link malnourished patient with nutrition clinic for therapeutic feeds	30% N/A	1. Conduct Poly skin clincs in endemic ares on quarterly basis 2. Active contact tracing 3. Assessment and identification of appropriate facilities to provide rehabilitative services 4. Procurement of materials and equipments 5. Link malnourished patient with nutrition clinic for therapeutic feeds	60% 30%	1. Conduct Poly skin clincs in endemic ares on quarterly basis 2. Active contact tracing 3. Assessment and identification of appropriate facilities to provide rehabilitative services 4. Procurement of materials and equipments 5. Link malnourished patient with nutrition clinic for therapeutic feeds	80% 60%	1. Conduct Poly skin clincs in endemic ares on quarterly basis 2. Active contact tracing 3. Assessment and identification of appropriate facilities to provide rehabilitative services 4. Procurement of materials and equipments 5. Link malnourished patient with nutrition clinic for therapeutic feeds	100% 100%

Leprosy Operational Plan									
Output Indicator(s)	**Intervention(s)**	**Year 1 Activities**	**Yr 1 Target**	**Year 2 Activities**	**Yr 2 Target**	**Year 3 Activities**	**Yr 3 Target**	**Year 4 Activities**	**Yr 4 Target**
Strategic Approach 5: Strengthening monitoring and evaluation									
Proportion of counties both endemic and non endemic reporting timely and completely on leprosy	1. Updating system on leprosy 2. Conduct operational research	1. Updating TIBU system to accurately record disability grading	80%	1. Revision, printing and distribution of the existing data capture tools 2. Training of health care workers on the use of the recording and reporting tools and leprosy control indicators 3. Revision of the leprosy module in TIBU 4. Promotion of the inclusion of leprosy targets and M&E strategies within county health strategies and work plans 5. Leprosy KAP survey will be conducted 6. OR on quality of care (from the eye of the Patient) to be conducted	85%	On job training on use of data tools and on propmt reporting	90%	1. Printing and distribution of the existing data capture tools 2. On job training of new health care workers on the use of the recording and reporting 3. OR on quality of care (from the eye of the Patient) to be conducted 4. KAP survey on leprosy conducted	>95%

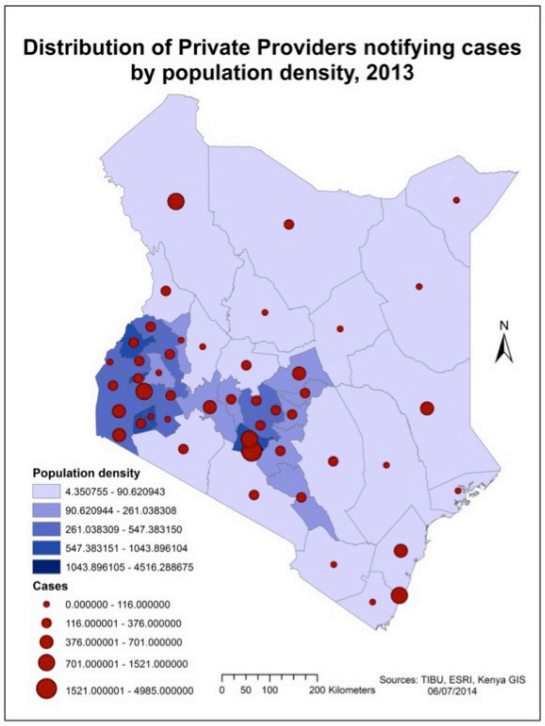
4.3.3. Engage All Care Providers - PPM

1. Situational Analysis

Kenya has been a frontrunner in the implementation of the 4th component of the STOP TB strategy: Engaging All Care Providers. The non-state or private health care sector collectively provides almost 50% of all health care provided to Kenyans.

The range of providers in this sector is wide, extending from large health institutions that offer state of the art health care services to informal providers, some of whom are not approved by relevant regulatory bodies. The private sector in Kenya has both private not-for-profit and private self-financing sectors. The private not-for-profit includes faith-based (FBO) and non-governmental organizations (NGOs). They are the second largest providers of health services in Kenya after the public sector. The government supports most of the FBO/NGO-based health care facilities.

The FBO/NGO network of health care facilities has long been part of the network of TB service providers supported by the NTLD Program. Public-private mix (PPM) activities will target the inclusion of the private self-financing sector.



Map 7: Distribution of Private Providers Notifying Cases by Population Density, 2013

Kenya has been implementing a PPM initiative involving the private self-financing sector for over 15 years. The total number of cases notified from this sector rose from 7,160 in 2010 to 11,000 in 2012, representing 19% of total cases notified by the NTLD Program. The treatment success rate for new smear positive patients rose from 83% in 2010 to 88% in 2012. Though it is implemented in almost all counties in the country, the initiative is currently most vibrant in 15 urban centers in Kenya. About 255 private health facilities are included along with 185 private laboratories that are linked to the national public sector-led external quality assurance system for TB bacteriology. Currently, out of the 245 laboratories involved in PPM, only 75% are linked to the national EQA system. Therefore, the engagement of private health care providers and especially solo private providers remains a challenge.

In addition to the conventional private sector, other players, such as the corporate sector, traditional healers, herbalists and faith healers who interact with TB patients, need to be engaged. There is an opportunity to involve all these providers in TB control.

2. Strategic Direction(s) for 2015-2018

The priority is to scale-up the number and diversity of private sector actors engaged in quality TB case detection and management.

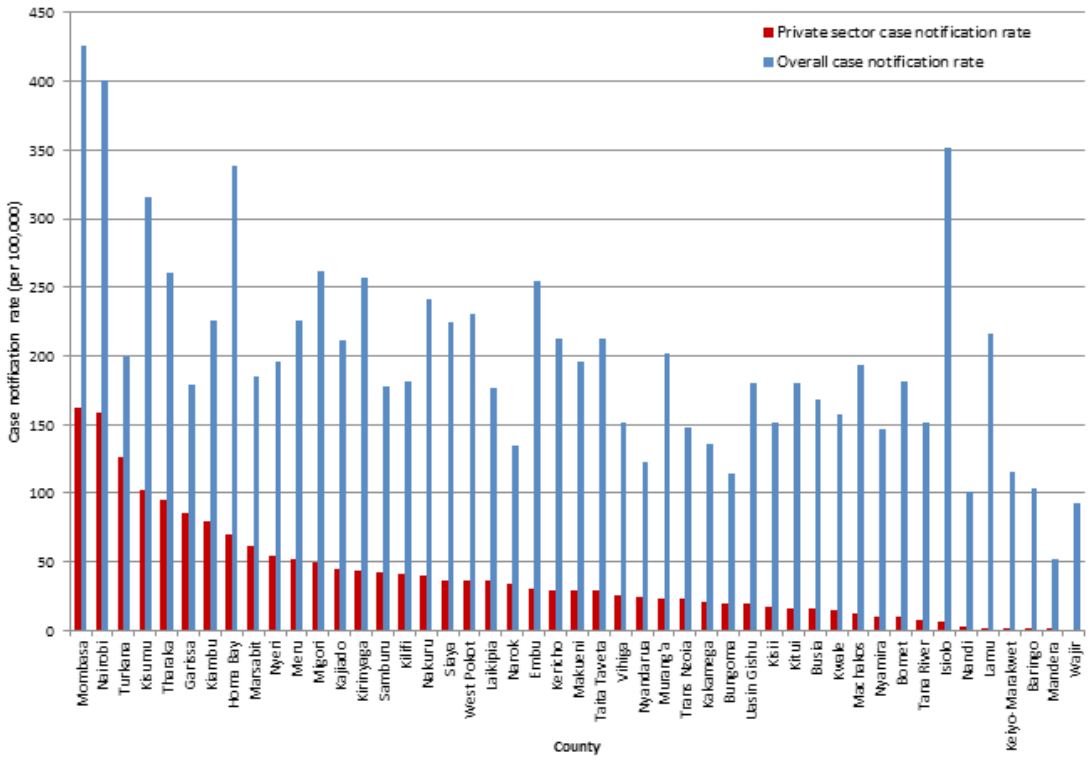


Figure 18: Private Sector Contribution to Indentification of TB Patients, 2013

Proposed Approaches

The approaches for engaging all health care providers include sustaining the capacity of those that are already engaged and extending the network of quality-assured actors to those that are not yet engaged in TB control activities.

Currently, PPM is being implemented in health facilities in urban areas of 14 counties. In these counties, the priority will be to ensure the continued quality of care through the private sector. PPM activities will be scaled up in the other 33 counties through a step-wise approach. Specific activities include:

a) Sustain the gain in areas where PPM is currently being implemented

i. Refresher training and on-the-job tools to support sustained capacity among health care workers engaged in PPM

   a. undertake task-specific training, determined by cadre of health care provider, using the ISTC training materials and national TB/HIV training manual
   b. Develop a web based training using the ISTC training materials and other TB/HIV training manuals
   c. Develop appropriate mechanisms to evaluate the training to different cadres of health care workers

ii. Support symposia, special sessions, workshops and other relevant forums at the annual scientific conferences of professional associations, including KMA, KPA, KAPT, KCOA, NNAK and PSK, and to reach individual members of these associations with TB task-specific messages

iii. Provide regular technical assistance by county TB and leprosy coordinators to link private providers to NTLD Program implementing facilities and ensure quality

iv. Identify and strengthen capacity for PMDT in at least one private health facility in each of the DR-TB high burden counties

v. Intensify the engagement of private-sector laboratories, including:
   a. Technical assistance on TB bacteriology to private laboratories
   b. Linkages between the public and private health facilities
   c. Networking of laboratories to the national EQA system
   d. Engaging a pool of TB laboratory experts to support establishment of new diagnostic sites through the PPL taskforce

e. Promoting referral of TB specimens between sectors

vi. Increase reporting by the private sector through dissemination of paper-based tools and capacity building for wider use of TIBU; incorporate private providers in NTLD Program data quality audits, capacity building for M&E, and use of data for decision-making.

b) Scale-up the number and diversity of private providers contributing to TB control activities, in all counties

i. Map all care providers in each county and prioritize new partners to engage, based on geographic coverage and potential to provide quality service

ii. Establish national guidance on the functions expected for various cadres of private providers

iii. Establish MOUs between the care providers and appropriate level of the NTLD Program (national, county or sub-county); provide technical assistance to facilities to organize the incorporation of quality TB, leprosy and lung health services

iv. Ensure availability of commodities and M&E tools for assessing progress around TB, leprosy and lung diseases

v. Revise, disseminate and distribute the PPM policy guidelines.

c) Strengthen coordination mechanisms for PPM at the national and county levels

i. Strengthen the national steering team /technical working group (TWG) on PPM and promote county-level TWGs

ii. Identify county level PPM focal person(s), and define functions to support PPM

iii. Hold an annual national PPM workshop to disseminate PPM norms and standards, practices, reporting systems and review progress

iv. Hold annual regional PPM workshops to sensitize regional TB control teams on PPM norms and standards, practices, reporting systems and review progress

v. Establish a multi-sectoral collaboration forum with other ministries (e.g. Ministry of Environment, Water and Natural Resources; Ministry of Labor, Social Security and Services; Ministry of Education; Ministry of Land, Housing and Urban Development; and Ministry of Sports, Culture and the Arts), the health and non-health private sector players, health professional organizations, training institutions etc.

d) Ensure quality of PPM activities for TB, leprosy and lung disease

i. Identify centers of excellence in PPM from the 14 established counties to provide on-site mentorship, training and technical assistance to new sites. Establish a roster of experts/consultants at national and county level to provide mentorship in the private sector

ii. Empower regional TB, leprosy and lung disease coordinators to provide supervision and monitoring of services in the private sector

Non-state providers to be targeted

- *Private for-profit or self-financing hospitals: Health institutions that offer services similar to what is offered in national referral hospital or more*
- *Corporate Health Services: A number of corporate organizations provide health care services at the workplace or other site for their workers and their dependents. A range of other workplace TB care programs have been initiated and will be scaled up. These include training and support of peer educators, active screening of workers for TB, workplace treatment support for patients on TB medications and other activities*
- *Individual private for-profit health care providers (solo providers): This group comprises of medical doctors, clinical officers, nurses, medical laboratory technologists and others. A mapping exercise carried out in 20 urban areas in 2011 came up with a total of 1,745 providers, of which 45% were solo providers. Most of the solo private health providers of all cadres are concentrated in urban areas*
- *Retail pharmacies, chemists and drug shops: These are found in both urban and rural areas. These tend to be the first point of contact for patients, including TB patients, and can be networked for referral of presumptive TB cases*
- *Informal Care Providers: These include, but are not limited to, traditional healers and herbalists, faith healers, home-based care groups providing care to HIV positive patients and other health volunteers.*

Box 4

iii. Ensure involvement of all private health providers in quality improvement activities, such as continuous quality improvements (CQIs) and data quality assessments (DQA), to improve the surveillance of TB, leprosy and lung diseases from the private sector

iv. Enforce mechanism for ensuring the government is notified of all TB patients

v. Assess the availability of anti-TB drugs in retail pharmacies and chemists; develop and enforce appropriate regulations to restrict and promote rational use of anti-TB drugs that become available through the retail pharmacies and chemists.

Contribution to NSP Impacts	Outcomes (PPM)
Impact 1: Reduce the incidence of TB by 5% by 2018, compared to 2014	• Increase case notification by the private and non-state sectors by 25% • Ensure treatment success of at least 90% of all DS TB patients managed by private providers
Impact 1.1: Reduce the prevalence of MDR-TB among new patients by 15%, by 2018	• Ensure treatment success of at least 80% of MDR-TB patients managed by private providers
Impact 2: Reduce mortality due to TB by 3% by 2018	• Ensure treatment success of at least 90% of all DS TB patients managed by private providers • Reduce deaths among HIV-infected TB patients managed by private providers to 5% or lower
Impact 3. Reduce the proportion of affected families who face catastrophic costs due to TB, leprosy and other lung diseases, by 2018	• Introduce reimbursements for TB-related expenses in all private and public health insurance schemes
Impact 4. Reduce by 50% the proportion of cases with grade 2 morbidity due to leprosy by 2018	• Increase to 90% the proportion of patients notified by the private sector prior to grade 2 morbidity

Table 9: Impact and Outcome Indicators for PPM

Engaging All Care Providers Operational Plan									
Output Indicator(s)	**Intervention(s)**	**Year 1 Activities**	**Yr 1 Target**	**Year 2 Activities**	**Yr 2 Target**	**Year 3 Activities**	**Yr 3 Target**	**Year 4 Activities**	**Yr 4 Target**
Strategic Approach 1; Sustain the gains in areas where PPM is currently being implemented									
Number of HCWs trained on TB/HIV, PMDT, Paediatric TB, PAL	Train HCWs on TB using the national TB/HIV curricullum (15 counties)	n/a		5 trainings	150	5 trainings	150	5 trainings	150
	Train HCWs on MDR-TB using the national DR-TB curricullum (15 counties)	n/a		5 trainings	150	5 trainings	150	5 trainings	150
	Train HCWs on Ped TB using the national curricullum (5 counties)	n/a		5 trainings	150	5 trainings	150	5 trainings	150
	Train HCWs on PAL using the national curricullum (15 counties)	n/a		5 trainings	150	5 trainings	150	5 trainings	150
Number of conferences with TB symposia held at annual scientific conferences of professional associations	Support symposia and special sessions on TB at the annual scientific conferences of professional associations including KMA, KPA, KAPT, KCOA, NAK, PSK, to reach individual members of these associations with TB task specific messages	n/a		1/2 day symposia in six conferences	6	1/2 day symposia in six conferences	6	1/2 day symposia in six conferences	6
Number of facility dialogue meetings held with private health facility managers and staff	Hold dialogue meetings with 85 private health facility managers and staff to design and implement facility specific TB and TB/HIV service (approx 10 staff per facility)	10 dialogue meetings held at selected facilities	10	25 dialogue meetings at selected facilities	25	25 dialogue meetings at selected facilities	25	25 dialogue meetings at selected facilities	25
Number of supervision visits to private facility/ clinic owners	Provide TA (Sub CTLCs, PPM Coordinators) to private facility/ clinic owners	Hold quarterly supportive supervision in all 255	1,020	Hold quarterly supportive supervision in all 255	1,020	Hold quarterly supportive supervision in all 255	1,020	Hold quarterly supportive supervision in all 255	1,020
Number of counties offered technical assistance by national team	Provide Technical support/ support supervision by national level team	Integrated mission for private facility supervision yearly in 15 counties	15	Integrated mission for private facility supervision yearly in 15 counties	15	Integrated mission for private facility supervision yearly in 15 counties	15	Integrated mission for private facility supervision yearly in 15 counties	15
Number of private HCWs sensitized on recording & reporting	Support the national TB surveillance system among private providers	Conduct one day sensitization meetings on data collection tools targetting 30 health care providers from private DOT facilities	30	Conduct one day sensitization meetings on data collection tools targetting 90 health providers from private DOT facilities	90	Conduct one day sensitization meetings on data collection tools targetting 90 health providers from private DOT facilities	90	Conduct one day sensitization meetings on data collection tools targetting 90 health providers from private DOT facilities	90
Number of private facilities trained to use data from recording & reporting		Support 2 day data feedback/CQI forums (health care providers and TB coordinators) in 15 counties bi annually. (County clustering 3 counties per meeting, 5 meetings with 45pax)	30	Support 2 day data feedback/CQI forums (health care providers and TB coordinators) in 15 counties bi annually. (County clustering 3 counties per meeting, 5 meetings with 45pax)	30	Support 2 day data feedback/CQI forums (health care providers and TB coordinators) in 15 counties bi annually. (County clustering 3 counties per meeting, 5 meetings with 45pax)	30	Support 2 day data feedback/CQI forums (health care providers and TB coordinators) in 15 counties bi annually. (County clustering 3 counties per meeting, 5 meetings with 45pax)	30
Strategic Approach 2: Scale-up the number and diversity of private providers contributing to NTLD Program aims, in all counties									
Proportion of counties that have mapped private health providers	Map of all private care providers 32 urban centers in 32 counties	Conduct 10 day mapping exercise for private providers in 8 urban centres in 8 counties	25%	Conduct 10 day mapping exercise for private providers in 8 urban centres in 8 counties	50%	Conduct 10 day mapping exercise for private providers in 8 urban centres in 8 counties	75%	Conduct 10 day mapping exercise for private providers in 8 urban centres in 8 counties	100%
PPM policy guidelines updated	Revise the PPM policy guidelines	n/a		Conduct a 5 day policy revision workshop for PPM policy guidelines	1	n/a		n/a	
Number of PPM policy guidelines printed	Print the PPM policy guidelines	n/a		Print 1,000 copies of PPM policy	1,000	Print 1,000 copies of PPM policy	1000	n/a	

Engaging All Care Providers Operational Plan

Output Indicator(s)	Intervention(s)	Year 1 Activities	Yr 1 Target	Year 2 Activities	Yr 2 Target	Year 3 Activities	Yr 3 Target	Year 4 Activities	Yr 4 Target
Proportion of counties with PPM policy guidelines	Distribute the PPM policy to all counties	n/a		Distribute PPM policy guidelines to 47 counties	100%	Distribute PPM policy guidelines to 47 counties	100%	n/a	
Proportion of counties with dissemination meetings for PPM policy guidelines held	Hold dissemination meetings for PPM policy documents targetting 32 urbarn centers in 32 counties	n/a		Hold dissemination meetings for PPM policy documents targetting 16 urbarn centers in 16 counties	50%	Hold dissemination meetings for PPM policy documents targetting 16 urbarn centers in 16 counties	50%	n/a	
Strategic Approach 3: Strengthen coordination mechanisms for PPM at the national and county levels									
Number of TWG meetings held	Supporting the national PPM TWG	Hold quartely PPM TWG meetings at national level	4	Hold quartely PPM TWG meetings at national level	4	Hold quartely PPM TWG meetings at national level	4	Hold quartely PPM TWG meetings at national level	4
Number of annual county PPM stakeholder meetings held	Support annual county PPM stakeholders meetings	n/a		Hold one day annual PPM stakeholders meeting in each of the 47 counties	47	Hold one day annual PPM stakeholders meeting in each of the 47 counties	47	Hold one day annual PPM stakeholders meeting in each of the 47 counties	47
Number of plaques and certificates printed and awarded	Print recognition certificates and plaques	n/a		47 plaques and 141 recognition certificates for best performing sites printed and awarded	47 141	47 plaques and 141 recognition certificates for best performing sites printed and awarded	47 141	47 plaques and 141 recognition certificates for best performing sites printed and awarded	47 141
Number of annual PPM meetings held	Hold an annual national PPM workshop for 150pax to disseminate PPM norms and standards, practices reporting systems and review progress	n/a		Hold a 2 day national PPM meeting	1	Hold a 2 day national PPM meeting	1	Hold a 2 day national PPM meeting	1
Strategic Approach 4: Ensure the quality of PPM activities for TB, leprosy and lung diseases									
Number of counties with peer to peer supportive supervision held	Development of the peer review tools			Development of the peer review tools	15	n/a	15	n/a	15
	Support a team of consultants in lung health at national and County level to provide mentorship in the Private sector	n/a		Support a team of consultant to conduct peer to peer support supervision in 15 counties		Support a team of consultant to conduct peer to peer support supervision in 15 counties		Support a team of consultant to conduct peer to peer support supervision in 15 counties	
	Support data quality assessments (DQA)/CQIs to improve the surveillance of TB, leprosy and lung diseases from private sector	na		Conduct DQA in selected private health facilites		Conduct DQA in selected private health facilites		Conduct DQA in selected private health facilites	

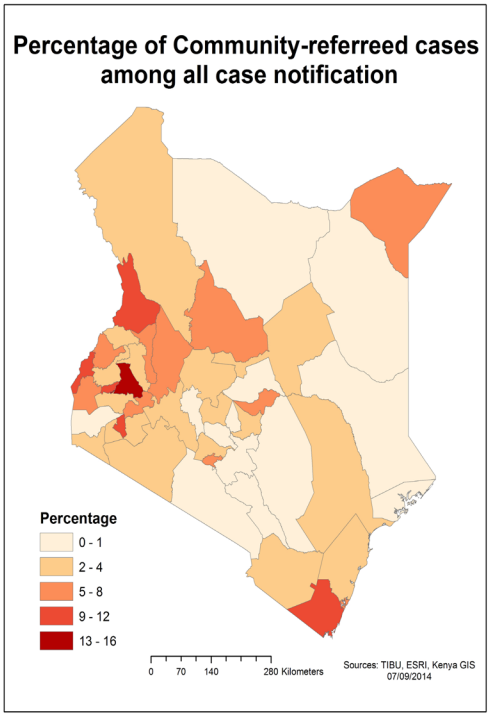
4.3.4. Promote and strengthen community engagement and build national commitment to TB, leprosy and lung disease

1. Situational Analysis

In 2013, the NTLD Program Annual Report indicated that 3,255 (4%, n=89,760) TB patients reached health facilities through referrals from community approaches, specifically CHWs, and 883 TB patients (1%, n=89,760) received treatment in the community, (map 8). Only 6 counties had more than 9% of cases referred by the community.

In the Kenya Health Policy Framework 2012-30, the community is recognized as a level of health service delivery (Tier 1). This policy boosts Kenya's focus on the role of community participation in health and general socio-economic development actions. At community level, platforms exist which can be utilized for implementation of systematic contact investigation, referrals between health facilities and community members, as well as promotion of adherence to treatment.

In 1998, community-based TB care (CBTC) was launched nationally with the introduction of community health workers for case finding, case holding and health promotion activities in collaboration with the MOH. In 2006, the MOH developed a community health strategy to enable health service delivery at



Map 8: % of Community-Referred Cases among All Case Notifications

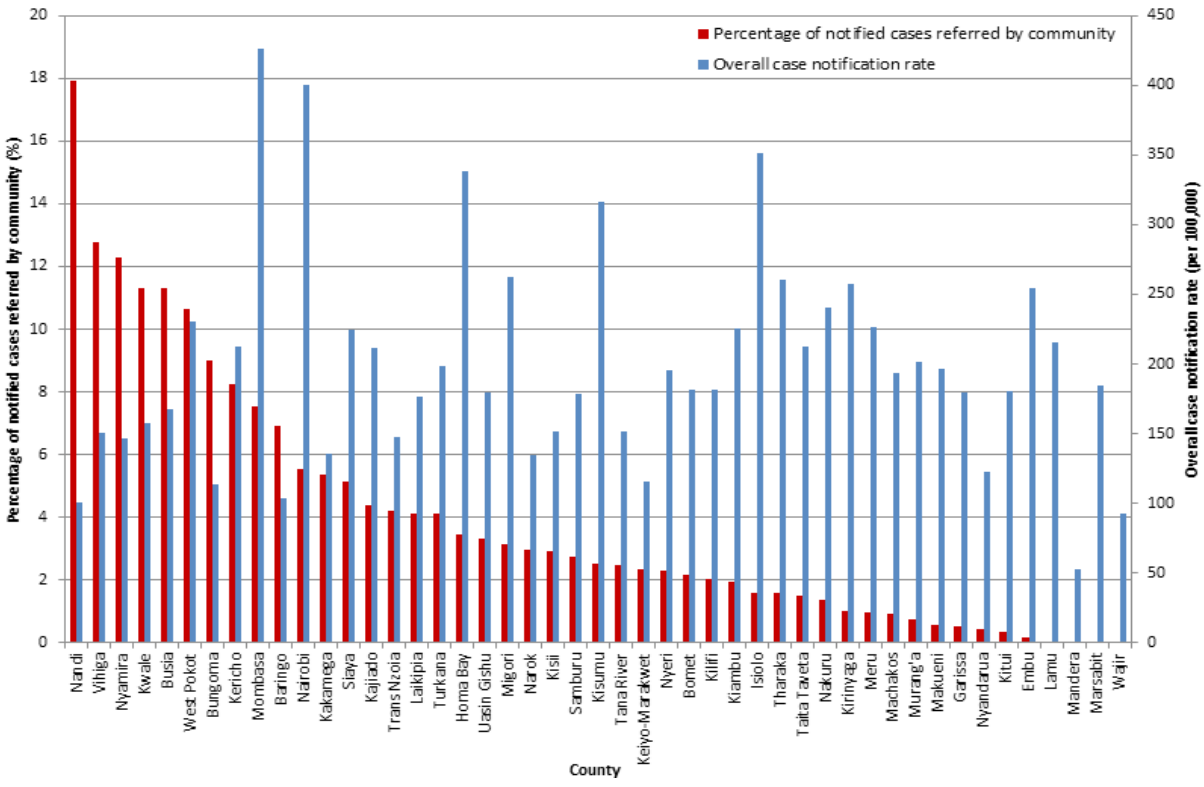


Figure 19: Community Contribution to Identification of TB Patients, 2013

the household and community level through the introduction of 6,000 community units. The plan aimed to link each community program to a health facility under the management of a Community Health Extension Worker (CHEW), covering a population of 1,000 individuals and 25 community health workers (CHWs). In 2012, a national TB Civil Society Organzations (CSOs) coordination forum was established.

There are now 2,943 Community Health Units (CHUs) established across the country, although only 1,587 are fully functional. Figure 19 shows community-referred case notification, highlighting strong community contributions to case notification particularly in some urban areas, providing models of success upon which further expansion can be based.

The Ministry of Health, through the Community Health Services Program (CHS-Program) and the NTLD Program, together with development and implementing partners, have developed policies, guidelines and training manuals to harmonize the engagement and implementation of TB, leprosy and lung diseases activities at community level.

Two community-based care models were established in 1998 and 2010 respectively (see lessons learned).

Documentation of community TB interventions including presumptive TB screening and food security at community level are not yet incorporated into the systemic monitoring and evaluation of the NTLD Program. A mechanism for retrieval of treatment interrupters is in place but these efforts are not captured in the e-reporting (TIBU) system.

A national communication strategy exists and an advocacy strategy is still in its draft form. These two documents have not yet been fully disseminated and are underutilized at the community level.

2. Strategic Direction(s) for 2015-2018

To optimize the use of community-level platforms for TB, leprosy and lung health, priority will be given to *broadening and diversifying* the array of partners at community level who incorporate TB, leprosy and lung health into their priorities, *especially in areas with low levels of community-referred TB cases* at present and in areas endemic to leprosy. Secondly, this plan aims to *empower community-level partners* and populations to develop and implement *locally-relevant solutions* to delayed case finding, morbidity and poor treatment outcomes.

3. Proposed Approaches

Build the foundation for systematic community and partner engagement

a) Identify opportunities for expansion of proven models: conduct mapping of community platforms and partners that may reach populations in need of TB, leprosy and lung health services. Examples include other health and development related programs such as nutrition and MNCH programs. Emphasis will be given to mapping areas with low community engagement.

b) Build a web of community organizations linked to the NTLD Program: Develop MoUs between NTLD Program or county health offices and CSOs, NGOs and community partners to define roles, responsibilities and resources. Use MoUs

Lessons Learned

Improved treatment adherence utilizing community health workers[1]

A retrospective cohort study of patients registered for treatment between the periods 2005 to 2011 was conducted. 54% of the reviewed 2,778 TB patients utilized a Community Health Worker. Adherence was shown to be higher in patients who utilized CHW, especially in urban settings.

ENGAGE-TB

The Engage-TB Model brings on board health and non-health stakeholders that have not previously been involved in TB management. Its operational guidance and policies support NGOs/ CSOs to integrate TB into their community-based work in sectors such as maternal, newborn and child health (MNCH), HIV care, primary health care (PHC), education, agriculture and livelihoods development programmes.

Other innovations in pilot phase

a) *Livelihood and food security initiatives for eligible TB patients. MDR-TB patient support, including food support, in place through AMPATH*

b) *Use of mobiles technology platforms to send SMS reminders for TB clinic attendance (AMPATH)*

c) *Existence of psychosocial support groups for TB e.g. TB clubs, TB Ambassadors, TB Pamoja, Kinunga, Waso, Kibera Post Test*

d) *Health education forums - through barazas and radio programs, annual national events i.e. World TB Day*

Box 5

1 EOng'ang'o JR, Mwachari C, Kipruto H, Karanja S (2014) The Effects on Tuberculosis Treatment Adherence from Utilising Community Health Workers: A Comparison of Selected Rural and Urban Settings in Kenya. PLoS ONE 9(2): e88937. doi:10.1371/journal.pone.0088937

to connect community-level actors to service delivery points for mentorship, monitoring and support.

c) Enhance capacity at community level: Develop a capacity building plan for CTBC, based on needs and capacities of newly identified community-level partners. Engage the implementers of successful models as Centers of Excellence, for on-site mentoring and training.

d) Engage communities and counties in planning: Include community stakeholders in coordination, annual planning, implementation, monitoring, and evaluation of activities at national and county level. Ensure NTLD Program participation in county health and NGO forums. Support county coordination committees to oversee implementation of community engagement and communication activities. Organize forums with governors to advocate for resource allocation for community based TB and Leprosy activities.

e) Create patient engagement guidelines and update other policy tools.

f) Actively participate in the harmonization of payment levels of CHWs across programs according to MoH guidelines.

Operationalize patient-centered care through community structures, scaling up proven community-based models

a) Train, mentor and support new community-level partners: Based on proven models of community-based engagement, provide targeted training, supportive supervision and mentorship in collaboration with county governments targeting CHWs and CHEWs. Disseminate updated CTBC policies, manuals and guidelines, including ENGAGE-TB guidelines.
b) Pilot new approaches to supporting patients through community structures, such as sustainable livelihood and nutritional support programs.

Improve monitoring and evaluation of community-based TB, leprosy and lung disease interventions to increase accountability to all stakeholders

a) Integrate community-based TB, leprosy and lung disease care indicators in the TIBU and DHIS systems to mirror the reporting of CSO involvement captured in the NTLD Program monitoring system; develop and disseminate related tools to ensure data capture and reporting by NGOs/CSOs and CHEWs.
b) Introduce a register for presumptive TB to allow capturing of screening and referral results, and to enable treatment follow-up.
c) Revise and update peripheral level health facility chalk boards to include comprehensive community TB indicators.
d) Identify priority areas for OR jointly with key community stakeholders, including learning institutions. Fully evaluate pilot projects.

STRATEGIC OBJECTIVES

Sustain the gains, in the context of a newly devolved system	Intensify efforts to find "missing" cases	Reduce transmission	Prevent active disease and morbidity	Enhance the quality of care for chronic lung diseases
•Sustain and expand successful models of community engagement, such as ENGAGE-TB	•Diversify and expand the community-based platforms that incorporate TB, leprosy and lung disease case identification and care	•Accelerate case finding through community-based partners •Expand network of sputum collection sites	•Ensure quality case management by community providers	•Ensure quality case management by community providers

Contribution to NSP Impacts	Outcomes (Community Engagement)
Impact 1: Reduce the incidence of TB by 5% by 2018, compared to 2014	• Ensure treatment success of at least 90% among all DS forms of TB • All newly diagnosed TB patients to be initiated on treatment within 2 days
Impact 1.1: Reduce the prevalence of MDR-TB among new patients by 15% by 2018, compared to 2014	• Increase case notification of MDR-TB to at least 75% of estimated prevalence (baseline TBD: DR survey) • Ensure treatment success of at least 80% among all DR cases
Impact 2: Reduce mortality due to TB by 3% by 2018, compared to 2014	• Increase treatment success via CHWs to 90%
Impact 3: Reduce the proportion of affected families who face catastrophic costs due to TB, leprosy and other lung diseases, by 2018	• Increased proportion of TB patients accessing social and nutritional support • Reduction in out-of-pocket expenditures attributed to TB care seeking

Table 10: Impact and Outcome Indicators for Community Engagement

Community Engagement Operational Plan

Output Indicator(s)	Interventions	Year 1 Activities	Yr 1 Target	Year 2 Activities	Yr 2 Target	Year 3 Activities	Yr 3 Target	Year 4 Activities	Yr 4 Target
Strategic Approach 1: Identify opportunities for expansion of proven models									
Proportion of CSOs implementing ENGAGE TB activities	1. New CSOs identified and funded to implement ENGAGE TB 2. Sensitization workshops for CSOs on CBTBC, Leprosy and lung disease activities	1. Mapping of CSOs by National government in collaboration with County government 2. Hold one national and 15 County meetings to disseminate mapping results as well as operational guidelines on ENGAGE TB 3. Hold quarterly County stakeholders review meetings to update and hermonize activities implemented by all actors 4. Provide Financial support to CSOs to establish community models on ENGAGE TB	25%	1. Provide Financial support to CSOs to establish community Models on ENGAGE TB 2. Hold one national and 15 County meetings to disseminate mapping results as well as operational guidelines	50%	Provide financial support to CSOs to establish community models on ENGAGE TB	75%	Provide financial support to CSOs to establish community models on ENGAGE TB	100%
Proportion of lost to follow up	Roll-out use of mobile technologies, including SMS, for case detection and patient follow-up	n/a	n/a	1. Consultative meetings with potential service providers 2. Procurement and distribution of phones 3. Sensitization meetings		1. Consultative meetings with potential service providers 2. Procurement and distribution of phones 3. Sensitization meetings		1. Consultative meetings with potential service providers 2. Procurement and distribution of phones 3. Sensitization meetings	
Number of TB peers engaged for counseling	Scale-up peer-based models for case detection and treatment support among vulnerable and at-risk populations	n/a	n/a	1. Recruit TB peers in 8 counties 2. Train TB peers in 8 counties 3. Hold outreaches in 8 counties	60	1. Recruit TB peers in 8 counties 2. Train TB peers in 8 counties 3. Hold outreaches in 8 counties	120	1. Recruit TB peers in 8 counties 2. Train TB peers in 8 counties 3. Hold outreaches in 8 counties	120
% increase in the number of presumptive TB referred for screening from the Community "	1. CSO Linked to Community Units 2. Dissemination meetings on ENGAGE TB operational guidelines to both national and county levels 3. Harmonization of TB Actors within County health commitees and NGOs	Hold one national stakeholders meeting		1. Hold one national and 15 County meetings to disseminate CSOS mapping and operational guidelines on ENGAGE TB 2. Hold quarterly County stakeholders review meetings to update and hermonize activities implemented by all actors"		Hold quarterly County stakeholders review meetings to update and hermonize activities implemented by all actors		Hold quarterly County stakeholders review meetings to update and hermonize activities implemented by all actors	
Strategic Approach 2: Build a web of community organizations linked to the NTLD Program									
1. Proportion of CSOs and partners implementing community-based TB, leprosy and lung health services 2. Proportion of counties with formal inter-governmental agreements with NTLD Program 3. Percentage of counties holding quarterly community stakeholders meetings of those engaged in TB, leprosy and lung health	1. Dissemination meetings on ENGAGE TB operational guidelines to both national and county levels 2. Harmonization of TB actors within County health commitees and NGOs 3. Formalize inter-governmental agreements between the NTLD Program and county governments to define roles, responsibilities and resources"	Hold quarterly County stakeholders review meetings to update and harmonize activities implemented by all actors; establish inter-governmental agreements	20%	1. Hold one national and 15 County meetings to disseminate operational guidelines on ENGAGE TB; establish inter-governmental agreements 2. Hold quarterly County stakeholders review meetings to update and harmonize activities implemented by all actors	40%	1. Hold one national and 15 County meetings to disseminate operational guidelines on ENGAGE TB; establish inter-governmental agreements 2. Hold quarterly County stakeholders review meetings to update and harmonize activities implemented by all actors	60%	1. Hold one national and 15 County meetings to disseminate operational guidelines on ENGAGE TB; establish inter-governmental agreements 2. Hold quarterly County stakeholders review meetings to update and harmonize activities implemented by all actors	80%
Strategic Approach 3: Enhance capacity at community level									
Proportion of TB patient referrals from the community	1. Sensitization of community health commitees on TB, Leprosy and Lung Disease 2. Provide incentives for CHWs based on assigned tasks (performance based) interventions	1. Sensitization meetings for stakeholders including CSOs	6%	Sensitization meetings for stakeholders including CSOs	10%	Sensitization meetings for stakeholders including CSOs.	12%	Sensitization meetings for stakeholders including CSOs.	15%

Community Engagement Operational Plan

Output Indicator(s)	Interventions	Year 1 Activities	Yr 1 Target	Year 2 Activities	Yr 2 Target	Year 3 Activities	Yr 3 Target	Year 4 Activities	Yr 4 Target
Strategic Approach 1: Identify opportunities for expansion of proven models									
Proportion of increase in the number of CSOs implementing ENGAGE TB activities	1. New CSOs identified and funded to implement ENGAGE TB 2. Sensitization workshops for CSOs on CBTBC, Leprosy and lung disease activities	1. Mapping of CSOs by National government in collaboration with County government 2. Hold one national and 15 County meetings to disseminate mapping results as well as operational guidelines on ENGAGE TB 3. Hold quarterly County stakeholders review meetings to update and hermonize activities implemented by all actors 4. Provide Financial support to CSOs to establish community models on ENGAGE TB	25%	1. Provide Financial support to CSOs to establish community Models on ENGAGE TB 2. Hold one national and 15 County meetings to disseminate mapping results as well as operational guidelines	50%	Provide financial support to CSOs to establish community models on ENGAGE TB	75%	Provide financial support to CSOs to establish community models on ENGAGE TB	100%
Proportion of reduction in lost to follow up	Roll-out use of mobile technologies, including SMS, for case detection and patient follow-up	n/a	n/a	1. Consultative meetings with potential service providers 2. Procurement and distribution of phones 3. Sensitization meetings		1. Consultative meetings with potential service providers 2. Procurement and distribution of phones 3. Sensitization meetings		1. Consultative meetings with potential service providers 2. Procurement and distribution of phones 3. Sensitization meetings	
Number of TB peers engaged for counseling	Scale-up peer-based models for case detection and treatment support among vulnerable and at-risk populations	n/a	n/a	1. Recruit TB peers in 8 counties 2. Train TB peers in 8 counties 3. Hold outreaches in 8 counties	60	1. Recruit TB peers in 8 counties 2. Train TB peers in 8 counties 3. Hold outreaches in 8 counties	120	1. Recruit TB peers in 8 counties 2. Train TB peers in 8 counties 3. Hold outreaches in 8 counties	120
% increase in the number of presumptive TB referred for screening from the Community"	1. CSO Linked to Community Units 2. Dissemination meetings on ENGAGE TB operational guidelines to both national and county levels 3. Harmonization of TB Actors within County health commitees and NGOs	Hold one national stakeholders meeting		1. Hold one national and 15 County meetings to disseminate CSOS mapping and operational guidelines on ENGAGE TB 2. Hold quarterly County stakeholders review meetings to update and hermonize activities implemented by all actors"		Hold quarterly County stakeholders review meetings to update and hermonize activities implemented by all actors		Hold quarterly County stakeholders review meetings to update and hermonize activities implemented by all actors	
Strategic Approach 2: Build a web of community organizations linked to the NTLD Program									
1. Proportion of increase in the number of CSOs and partners implementing community-based TB, leprosy and lung health services 2. Proportion of counties with formal inter-governmental agreements with NTLD Program 3. Percentage of counties holding quarterly community stakeholders meetings of those engaged in TB, leprosy and lung health	1. Dissemination meetings on ENGAGE TB operational guidelines to both national and county levels 2. Hermonization of TB actors within County health commitees and NGOs 3. Formalize inter-governmental agreements between the NTLD Program and county governments to define roles, responsibilities and resources"	Hold quarterly County stakeholders review meetings to update and hermonize activities implemented by all actors; establish inter-governmental agreements	20%	1. Hold one national and 15 County meetings to disseminate operational guidelines on ENGAGE TB; establish inter-governmental agreements 2. Hold quarterly County stakeholders review meetings to update and hermonize activities implemented by all actors	40%	1. Hold one national and 15 County meetings to disseminate operational guidelines on ENGAGE TB; establish inter-governmental agreements 2. Hold quarterly County stakeholders review meetings to update and hermonize activities implemented by all actors"	60%	1. Hold one national and 15 County meetings to disseminate operational guidelines on ENGAGE TB; establish inter-governmental agreements 2. Hold quarterly County stakeholders review meetings to update and hermonize activities implemented by all actors	80%
Strategic Approach 3: Enhance capacity at community level									
Proportion of TB patient referrals from the community	1. Sensitization of community health commitees on TB, Leprosy and Lung Disease 2. Provide incentives for CHWs based on assigned tasks (performance based) interventions	1. Sensitization meetings stakeholders including CSOs.	6%	Sensitization meetings stakeholders including CSOs.	10%	Sensitization meetings stakeholders including CSOs.	12%	Sensitization meetings stakeholders including CSOs.	15%

Community Engagement Operational Plan									
Output Indicator(s)	**Interventions**	**Year 1 Activities**	**Yr 1 Target**	**Year 2 Activities**	**Yr 2 Target**	**Year 3 Activities**	**Yr 3 Target**	**Year 4 Activities**	**Yr 4 Target**
Proportion of TB patient referrals from the community		1. Support CHWs with allowances when undertaking assigned tasks 2. Support CHEWs with transport allowance to conduct supervisions on TB, Leprosy & lung diseas activities once a week per CU 3. Support monthly dialogue days in all functional CUs		1. Support CHWs with allowance when undertaking assigned tasks 2. Support Monthly dialogue days in all Functional CUs		1. Support CHWs with allowance when undertaking assigned tasks 2. Support Monthly dialogue days in all Functional CUs		1. Support CHWs with allowances when undertaking assigned tasks 2. Support Monthly dialogue days in all Functional CUs	
Number of HCWs trained	1. Capacity building for community TB actors (CHEWs, CHWs, CSOs) on TB, leprosy and lung diseases. This will involve training including on-job-training and support supervision 2. Mentorship program, through well performing centres of excellence (other counties) on community-based TB and leposy activities	n/a		Training of HCWs from 10 counties on TB care	500	Training of HCWs from 10 counties on TB care	500	Training of HCWs from 10 counties on TB care	500
		n/a		Training of CHEWs from 10 counties on TB care	500	Training of CHEWs from 10 counties on TB care	500	Training of CHEWs from 10 counties on TB care	500
		n/a		Training of CHWs from 10 counties on TB care	1,750	Training of CHWs from 10 counties on TB care	1,750	Training of CHWs from 10 counties on TB care	1,750
Number of peer groups trained and coordinated by CHEWs	Mentorship by CHEWS and CHWs to peer groups on community TB, Leprosy and Lung health activities	n/a		Mentorship by CHEWS and CHWs to peer groups on community TB, Leprosy and Lung health activities	100	Mentorship by CHEWS and CHWs to peer groups on community TB, Leprosy and Lung health activities	100	Mentorship by CHEWS and CHWs to peer groups on community TB, Leprosy and Lung health activities	100
Proportion of facilities participating in community and facility dialogue forums	Support Quarterly Dialogue forums for CHEWS and Community actors on Community TB, Leprosy and Lung Health	n/a		Support Quarterly Dialogue forums for CHEWS and Community actors on Community TB, Leprosy and Lung Health	50%	Support Quarterly Dialogue forums for CHEWS and Community actors on Community TB, Leprosy and Lung Health	75%		75%
Number of community units providing TB, leprosy and lung disease services	Strengthen the established but non-functional community units to implement TB.	n/a		Strengthen the established but non-functional community units to implement TB.	8	Strengthen the established but non-functional community units to implement TB.	15		24
Strategic Approach 4: Engage communities and counties in planning									
Number of community TB policies ,manuals and guidelines distributed	Distribution of standardized and updated Community TB care documents such as policies, manuals and guidelines to all implementers, actors and stakeholders on community TB interventions and implementation to facilitate and harmonize approaches for reaching the unreached			Distribute community TB documents	4,500	Distribute community TB policies, manuals and guidelines to counties	2,500	Distribute community TB policies, manuals and guidelines to counties	2,000
Number of stakeholders sensitized	Sensitize stakeholders on new tools and policies	n/a		Sensitization meetings for new stakeholders	100	n/a		n/a	
Number of communication and awareness raising events targeting the public	Promote awareness creation through public forums and exhibitions	n/a		Sensitize schools on TB during annual schools festivals	1	Sensitize schools on TB during annual schools festivals	1	Sensitize schools on TB during annual schools festivals	1
	Recruit celebrities as TB Ambassadors	n/a		Recruit celebrities as TB Ambassadors	1	Recruit celebrities as TB Ambassadors	1	Recruit celebrities as TB Ambassadors	1
	Sensitize the community on TB through media and in public barazas	Work with local media organi-zations to develop and air a play on TB		Sensitize the community on TB in public barazas		Sensitize the community on TB in public barazas		Sensitize the community on TB in public barazas	
	Incorporate TB stands into ASK shows	Put up a stand in the ASK shows in all counties	2	Put up a stand in the ASK shows in all counties	10	Put up a stand in the ASK shows in all counties	20	Put up a stand in the ASK shows in all counties	30

Community Engagement Operational Plan

Output Indicator(s)	Interventions	Year 1 Activities	Yr 1 Target	Year 2 Activities	Yr 2 Target	Year 3 Activities	Yr 3 Target	Year 4 Activities	Yr 4 Target
Strategic Approach 5: Create patient engagement guidelines and update other policies and tools									
Number of policies, manuals, guideline revised, printed and disseminated	1. Develop patient engagement guidelines for CHWs and CHEWs 2. Update existing policies, guidelines and tools related to community-based care	Develop patient engagement guidelines	1	Revise community TB policies, manuals and guidelines	2				
Strategic Approach 6: Harmonize payment levels for CHWs									
Harmonized payment levels for CHWs and CHEWs across programmes, in line with MoH strategy	Develop and disseminate a community delivery model of care for Tuberculosis			Recruit and engage a consultant to lead the team in developing a model of care	1				
				Hold county forums to disseminate the community delivery model of care for TB	1				
						Support a one day training at sub counties for CHWs, and other implementers on the new Community delivery model of care for TB	1,250	Support a one day training at sub counties for CHWs, and other implementers on the new Community delivery model of care for TB	1,250
				Hold annually forums for all impelementers at the county levels to evaluate, review, share experiences and document progress of impelementing the model	188	Hold annually forums for all impelementers at the county levels to evaluate, review, share experiences and document progress of impelementing the model	188	Hold annually forums for all impelementers at the county levels to evaluate, review, share experiences and document progress of impelementing the model	188
				Recruit and engage a consultant to conduct a survey with CHEWs establish their preffered mode of compensation and develop ToRs to guide compensation	1				
				Hold a dissemination forum with stakeholders					

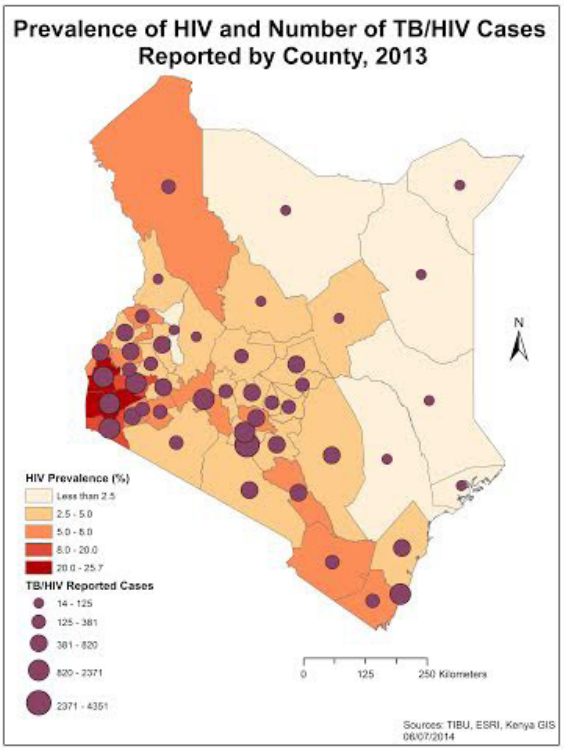
4.3.5. Enhance multi-sectoral response to TB/HIV

1. Situational Analysis

Kenya has a heavy dual burden of TB and HIV. HIV remains a key driver of the TB epidemic, with six in one hundred (5.6%) Kenyans aged 15-64 years being HIV infected. Some counties have reported up to four times the national HIV prevalence (See Map 9).

In 2013, over one-third (37%) of notified TB patients nationally were HIV infected, compared to 13% globally. Some regions reported up to 75% HIV infection among TB patients.

Despite the disease burden, Kenya has been recognized as a leader in implementing the recommended WHO TB/HIV collaborative activities. In 2013, 19 out of every 20 patients with TB disease (95%) had a documented HIV test result with 83% of those HIV-infected being put on cART and almost all on CPT. Intensified TB case finding has been strengthened. Data collected during the 2014 mid-term review revealed that 83% of PLHIV in care and treatment were screened for TB during their clinical visit. It was however noted that only 2% of those screening negative for TB were initiated on isoniazid preventive therapy (IPT). Guidelines for TB infection prevention and control (IPC) in health care and congregate settings were developed and disseminated in 2009. However, full operationalization at facility and community level is yet to be realized.



Map 9: Prevalence of HIV and Number of TB/HIV Cases Reported by County

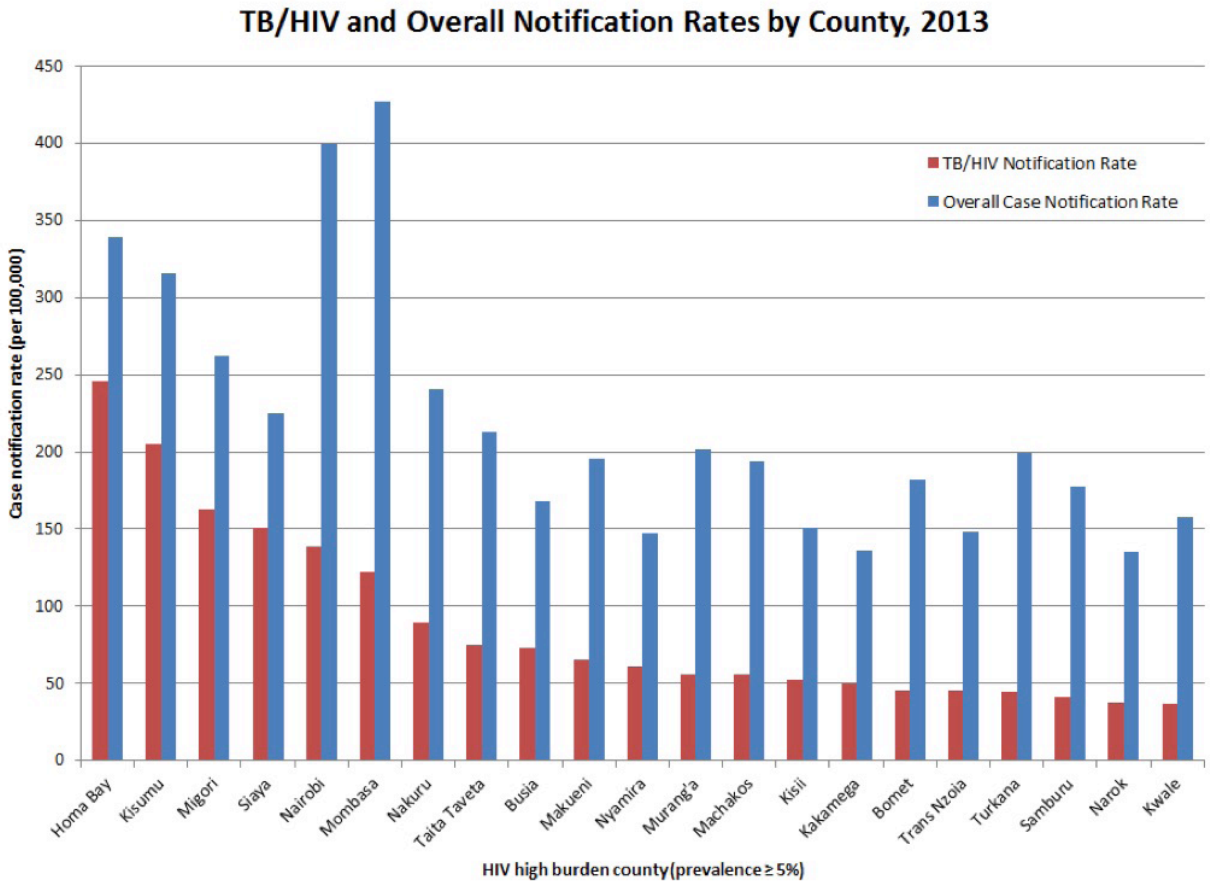


Figure 20: TB/HIV and Overall Notification Rates by County, 2013

National TB surveillance data indicates that HIV-infected TB patients are three times more likely to die compared to those who are HIV negative. Similarly TB patients who decline an HIV test are two times more likely to die or get lost to follow-up compared to HIV negative TB patients. While there is near-universal HIV Testing and Counseling (HTC) coverage for TB patients, there is need to characterize populations not being tested for HIV to close the gaps in HTC. Sexual partner and family HIV testing needs to be enhanced by leveraging on the gains made by the HIV program.

This strategic plan focuses on closing gaps using innovative approaches in PITC, infection prevention and control, early initiation of cART, intensified TB case finding, as well as addressing TB/HIV program quality issues and institutionalizing TB/HIV collaborative activities.

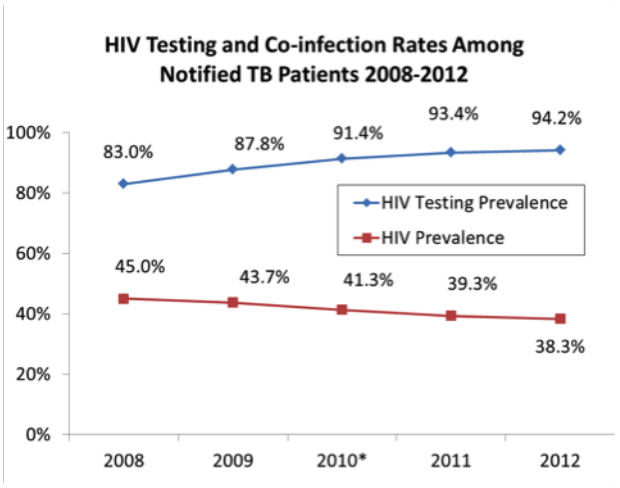


Figure 21: HIV Testing and Co-infection Rates among Notified TB Patients, 2008-2012

2. Strategic Direction(s) for 2015-2018

Though gains have been made in Kenya in the implementation of TB/HIV collaborative activities, particularly of the 5Is, key elements to support sustainable TB/HIV practices are weak or lacking. The following TB/HIV strategic directions will be geared towards addressing these weaknesses to ensure sustainability in implementing all the TB/HIV collaborative activities, while drawing on innovations to scale up any successes achieved, such as those made during piloting of IPT in some regions. In addition, there will be need to leverage on devolution to support any gains made so far. Strategic interventions must include formation of TB/HIV coordinating bodies, scaling up IPT, and strengthening infection prevention and control at health care and congregate settings.

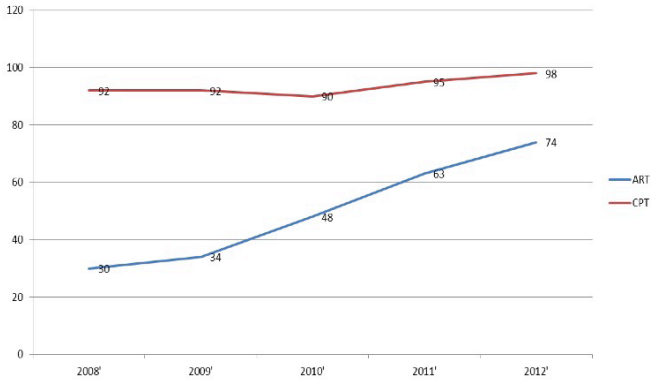


Figure 22: ART and CPT Uptake

3. Proposed Approaches

a) Formation of TB/HIV coordinating bodies

TB/HIV coordinating bodies will support TB/HIV collaborative activities with clear terms of reference outlining the scope of work at each level of service provision, as developed by the national TB/HIV coordinating body. The coordinating body at national level will be charged with the revision and dissemination of the new TB/HIV guidelines using an integrated approach towards guideline development and dissemination. Guideline dissemination will involve the use of faster, low cost electronic/digital methods.

The national and county level coordinating bodies will seek sufficient human resources for health to support the expanded TB/HIV collaborative activities from national and county governments. This will include hiring or task shifting of health care workers, both at the national and county levels, to enable the planned scale up of TB/HIV collaborative activities. Increasing the capacity of existing health care workers to provide quality services is also a priority, and training will reflect the geographic focus (see box). Due to high staff turnover and the inherent need for refresher training, continuous capacity building is critical, and innovative sustainable approaches for conducting in-service staff training will include having structured and updated continuous medical education programs held at regular intervals (web-based learning modules, web-based CPD accredited self-taught modules). To capitalize on the successful models employed by some facilities, the evolution of these facilities as TB/HIV centres of excellence is envisioned to create hubs for more decentralized capacity building and mentorship.

The national coordinating body will also develop a TB/HIV Continuous Quality Improvement (CQI) framework as part of the larger TB CQI framework to give guidance on quality review of the TB/HIV program. The TB/HIV coordinating body at county level will be charged with coordinating TB/HIV CQI reviews at sub-county, facility and community levels. TB/HIV coordinating bodies and stakeholders at all levels will conduct regular TB/HIV performance reviews and agree on corrective

measure to address unmet targets.

b) TB/HIV monitoring and evaluation system

The establishment of monitoring and evaluation systems that comprehensively address all TB/HIV collaborative activities will be achieved through the development of a comprehensive TB/HIV M&E framework, integrated into the NTLD Program and NASCOP M&E framework.

This comprehensive TB/HIV M&E framework will guide the tracking of TB/HIV performance indicators by counties, uniformed forces, and key populations. Additionally, TB/HIV standardized program indicators will also be integrated into the national health management information system (HMIS).

Counties and sub-counties will have their capacities to analyze TB/HIV data enhanced. This will boost the utilization of data in decision making and for programme improvement.

c) IPT for all eligible PLHIV

IPT has been implemented successfully in a few select facilities in Kenya. The rapid scale-up of this strategic intervention to reduce development of TB disease among PLHIV will be pegged on collaborative efforts with NASCOP and NACC. In particular, strategies will be implemented to improve isoniazid commodity security, strengthen IPT M&E systems and scale up contact investigation.

d) Scale up of TB IPC in health care and congregate settings

The implementation of TB infection prevention and control measures within health facilities and congregate settings has been largely unsuccessful, despite the development of the national TB infection control guidelines in 2009. This strategic plan lays emphasis on preventing TB transmission within the health facilities and the community. It is a key component of the prevention strategy.

The scale up and institutionalization of TB IPC activities at facility and community levels will be achieved through revision and dissemination of new TB IPC guidelines to include development and implementation of TB and TB/HIV work place policies, continuous capacity building of TB managers, health facility managers, and HCWs using trained TB IC TOTs and mentors from an established web-based training database. In addition, resource mobilization for health facility infrastructural improvement at national and county levels will be required to ensure that infrastructural development is carried out in line with TB IC measures through leveraging on other ministries, such as the Ministry of Housing to change planning policies. Additionally, there is need to develop TB IPC CQI and M&E systems.

e) Integration of TB and HIV services

During the 2014 mid-term review, 79% of the evaluated facilities reported integrated TB and HIV services, providing an

STRATEGIC OBJECTIVES

Sustain the gains, in the context of a newly devolved system	Intensify efforts to find "missing" cases	Reduce transmission	Prevent active disease and morbidity
•Sustaining nationwide coverage of HIV testing among TB patients and cART among TB/HIV co-infected	•Scale-up IPT, IPC and TB/HIV service delivery integration in counties with HIV prevalence of >5% in Year 1, and in counties with HIV prevalence of 2.5-5% in subsequent years •Enhance M&E of TB/HIV collaborative activities to better identfy gaps in programme performance	•Intensify infection control in high HIV prevalence contexts	•Scale up CPT and cARTfor all TB/HIV co-infected patients

opportunity for Kenya to scale-up IPT, implement improved TB infection control practices, and refine other elements of the TB/HIV collaborative activities. There is need to leverage on the on-going scale up of eMTCT through option B plus (ART for all pregnant women living with HIV) to integrate TB services within all HIV providing facilities.

f) TB intensified case finding

Screening for TB among PLHIV is routinely offered to identify those with presumptive TB. Scaling up this strategic intervention to improve coverage of TB ICF will be done through leveraging on the national PITC strategy to conduct TB ICF in all HTC settings, addressing quality issues in screening and scaling up new diagnostic technologies, including making the Xpert MTB Rif test the first test for all PLHIV with presumptive TB.

Coverage of TB intensified case finding will be increased by leveraging on the PITC strategy to conduct TB ICF in all HTC settings, as well as the aforementioned eMTCT strategy to introduce TB ICF to key populations and in high risk settings. In addition, TB diagnostics will be supported by procuring more CXR machines, capacity building on X-ray interpretation and zero costing CXRs to improve access to quality radiography. In addition, there will be need to conduct remote (web-based) clinical and radiological consultations. CQI processes will be established to monitor the quality of TB ICF.

g) Immediate cART and CPT uptake

Geographic Focus

Sustaining gains nationwide: The current efforts and gains already made in HIV testing and CPT uptake will be sustained in all the counties. Activities related to TB-HIV coordination, monitoring and evaluation for TB HIV activities, TB intensified case finding among PLHIV, immediate ART for TB HIV co-infected and IPT for children less than 5 years old exposed to smear positive index cases will be accelerated across all the 47 counties in Kenya.

Intensified action in most at-risk populations: focus on the scale-up of isoniazid prophylaxis, integration of TB/HIV service delivery and TB infection prevention and control in health facilities

>5% HIV prevalence: Year 1 focus in 21 counties with HIV prevalence in the general population above 5% (see chart)

2.5-5% HIV prevalence: Year 2-4 scale-up in 19 counties with HIV prevalence in the general population between 2.5-5%

<2.5% HIV prevalence: Sustained IPT, IPC and service delivery integration in 7 counties with HIV prevalence in the general population below 2.5%

Box 6

Major achievements have been made in the provision of cART for TB/HIV co-infected patients. This strategic plan will address opportunities for further scale-up, ensuring that at least 95% of TB/HIV co-infected patients are initiated on ART and that the initiation of cART is done early in the course of TB treatment, i.e, within two months.

The scale-up of immediate cART and CPT will be achieved by ensuring the dissemination of revised national TB/HIV policies and clinical guidelines to all care providers, using innovative approaches to implement evidence based practices, integration of TB and HIV service delivery, leveraging on the decentralization of cART through the national eMTCT strategy, availing TB/HIV patient friendly treatment regimens, institutionalization of TB/HIV CQI activities, conducting routine monitoring, evaluation of early cART uptake and monitoring of TB/HIV treatment outcomes. It is necessary to use gains in HIV testing among TB patients to screen family members for TB/HIV, to reduce the burden of HIV.

h) ***Conduct operations research on 5I's implementation***

There is need to evaluate performance of the ICF/IPT screening tool to assess reasons why only 7% of all PLHIV screened positive. Measurement of the timing of cART initiation among co-infected TB patients will assess timeliness regarding the quality of care offered to co-infected TB patients. Additionally, there is need to evaluate implemented innovative approaches to improving access to TB diagnostics, such as the use of GeneXpert as an initial test for PLHIV, as well as incentives provided for diagnostic evaluation.

Contribution to NSP Impacts	Outcomes (TB/HIV)
Impact 1.2: Reduce the incidence of TB among PLHIV by 60% by 2018, compared to 2014	• Increase to 100% the proportion of counties with functional TB/HIV coordinating bodies • Increase to 95% the proportion of PLHIV in care screened for TB at their last clinical visit using the ICF screening tool in HIV clinics • Sustain universal CPT coverage among HIV+ TB patients • Increase to 90% the proportion of HIV+ TB patients accessing cART • Increase to 90%, the proportion of health facilities implementing the minimum TB IPC package • Increase to 80% the proportion of eligible persons for IPT who receive INH
Impact 2: Reduce mortality due to TB by 3% by 2018, compared to 2014.	• Increase to 75% the proportion of facilities implementing CQI in TB/HIV

Table 11: Impact and Outcome Indicators for Multi-sectoral Response to TB/HIV

TB/HIV Operational Plan

Output Indicator(s)	Intervention(s)	Year 1 Activities	Yr 1 Target	Year 2 Activities	Yr 2 Target	Year 3 Activities	Yr 3 Target	Year 4 Activities	Yr 4 Target
Strategic Approach 1: Formation of TB/HIV coordinating bodies									
Proportion of counties and sub-counties with active TB/HIV coordinating bodies	Hold national, county and subcounty TB/HIV coordinating bodies meetings	4 meetings at national,county and sub-county	25	4 meetings at national, county and sub-county	100	4 meetings at national, county and sub-county	100	4 meetings at national, county and sub-county	100
	Conduct national TB/HIV stakeholders' meeting	2 meetings		2 meetings		2 meetings		1 meeting	
	Develop ToRs outlining the scope of work of national and county TB/HIV cordinating bodies	1 meeting		n/a		n/a		n/a	
	Hold county TB/HIV planning meetings	1 meeting/county		n/a		n/a		n/a	
	Hold quartely TB/HIV TWG meetings at national level	4 meetings		4 meetings		4 meetings		4 meetings	
Number of active national TB/HIV coordinating bodies	Hold bi annual national level TB/HIV implementing partners' meeting highlighting provisional support by partners	2 meetings	1	2 meetings	1	2 meetings	1	2 meetings	1
Strategic Approach 2: Strengthen TB/HIV monitoring and evaluation system									
Proportion of facilities reporting on all TB/HIV indicators monthly through the national reporting system (DHIS)	National level worshop to develop TB/HIV program indicators for integration into national HMIS (IPT , ICF, contact tracing, IPC) and TB/HIV CQIs framework.	1 workshop	80	0	>90	0	>90	0	>90
	County sensitizations on TB HIV data analysis and utilization of data for decision making including improving the TB-HIV quality of care.	1 sensitization/county		1		1		1	
	Sub-County sensitizations on TB HIV data analysis and utilization of data for decision making including improving the TB-HIV quality of care.	47 sensitization/county		0		0		0	
	Quarterly county TB/HIV performance review meetings	4 county data review meetings for the 40 mid and high burden HIV prevalence counties	100	4 county data review meetings for the 40 mid and high burden HIV prevalence counties	100	4 county data review meetings for the 40 mid and high burden HIV prevalence counties	100	4 county data review meetings for the 40 mid and high burden HIV prevalence counties	100
Proportion of planned bi annual support supervision of high burden countries done by TB/HIV national coordinating body	Conduct bi annual national level technical assistance of the 21 high burden counties on implementation of TB/HIV activities	21 counties (counties with HIV prevalence >5 %)		21 counties (counties with HIV prevalence >5 %)		21 counties (counties with HIV prevalence >5 %)		21 counties (counties with HIV prevalence >5 %)	
Strategic Approach 3: IPT for all eligible PLHIV and children under 5 exposed to TB contacts									
Proportion of planned workshops for development of IPT tools and sensitization package conducted	Development of comprehensive IPT sensitization package at TWG level	1 meeting	2	n/a	0	n/a	0	n/a	0
	Conduct a workshop to develop an IPT M&E framework including IPT data reporting at county and national levels, as well as standardization of all ICF/IPT cards, IPT register, IPT appointment cards and contact tracing registers	1 meeting		n/a		n/a		n/a	
Proportion of eligible PLHIV and children under 5 who are contacts of smear-positive TB patients put on IPT	National roll out of IPT implementation to include implementing partners, MoH (NLTD-Program & NASCOP), as well as county heads	1 meeting	25%	n/a	50%	n/a	80%	n/a	>80%

TB/HIV Operational Plan									
Output Indicator(s)	**Intervention(s)**	**Year 1 Activities**	**Yr 1 Target**	**Year 2 Activities**	**Yr 2 Target**	**Year 3 Activities**	**Yr 3 Target**	**Year 4 Activities**	**Yr 4 Target**
Strategic Approach 1: Formation of TB/HIV coordinating bodies									
Proportion of counties and sub-counties with active TB/HIV coordinating bodies	Hold national, county and subcounty TB/ HIV coordinating bodies meetings	4 meetings at national,county and sub-county	25	4 meetings at national, county and sub-county	100	4 meetings at national, county and sub-county	100	4 meetings at national, county and sub-county	100
	Conduct national TB/HIV stakeholders' meeting	2 meetings		2 meetings		2 meetings		1 meeting	
	Develop ToRs outlining the scope of work of national and county TB/HIV cordinating bodies	1 meeting		n/a		n/a		n/a	
	Hold county TB/HIV planning meetings	1 meeting/county		n/a		n/a		n/a	
	Hold quartely TB/HIV TWG meetings at national level	4 meetings		4 meetings		4 meetings		4 meetings	
Number of active national TB/HIV coordinating bodies	Hold bi annual national level TB/ HIV implementing partners' meeting highlighting provisional support by partners	2 meetings	1	2 meetings	1	2 meetings	1	2 meetings	1
Strategic Approach 2: Strengthen TB/HIV monitoring and evaluation system									
Proportion of facilities reporting on all TB/HIV indicators monthly through the national reporting system (DHIS)	National level worshop to develop TB/HIV program indicators for integration into national HMIS (IPT , ICF, contact tracing, IPC) and TB/HIV CQIs framework.	1 workshop	80	0	>90	0	>90	0	>90
	County sensitizations on TB HIV data analysis and utilization of data for decision making including improving the TB-HIV quality of care.	1 sensitization/county		1		1		1	
	Sub-County sensitizations on TB HIV data analysis and utilization of data for decision making including improving the TB-HIV quality of care.	47 sensitization/county		0		0		0	
Proportion of planned bi annual support supervision of high burden countries done by TB/HIV national coordinating body	Quarterly county TB/HIV performance review meetings	4 county data review meetings for the 40 mid and high burden HIV prevalence counties	100	4 county data review meetings for the 40 mid and high burden HIV prevalence counties	100	4 county data review meetings for the 40 mid and high burden HIV prevalence counties	100	4 county data review meetings for the 40 mid and high burden HIV prevalence counties	100
	Conduct bi annual national level technical assistance of the 21 high burden counties on implementation of TB/HIV activities	21 counties (counties with HIV prevalence >5 %)		21 counties (counties with HIV prevalence >5 %)		21 counties (counties with HIV prevalence >5 %)		21 counties (counties with HIV prevalence >5 %)	
Strategic Approach 3: IPT for all eligible PLHIV and children under 5 exposed to TB contacts									
Proportion of planned workshops for development of IPT tools and sensitization package conducted	Development of comprehensive IPT sensitization package at TWG level	1 meeting	2	n/a	0	n/a	0	n/a	0
	Conduct a workshop to develop an IPT M&E framework including IPT data reporting at county and national levels, as well as standardization of all ICF/IPT cards, IPT register, IPT appointment cards and contact tracing registers	1 meeting		n/a		n/a		n/a	
Proportion of eligible PLHIV and children under 5 who are contacts of smear-positive TB patients put on IPT	National roll out of IPT implementation to include implementing partners, MoH (NLTD-Program & NASCOP), as well as county heads	1 meeting	25%	n/a	50%	n/a	80%	n/a	>80%

TB/HIV Operational Plan

Output Indicator(s)	Intervention(s)	Year 1 Activities	Yr 1 Target	Year 2 Activities	Yr 2 Target	Year 3 Activities	Yr 3 Target	Year 4 Activities	Yr 4 Target
	Conduct county level IPT sensitizations through implementing partners	IPT county level sensitizations for 21 high HIV burden counties		IPT county level sensitizations for 19 counties		n/a		n/a	
	Conduct facility level mentorship and training through CHMT and Implementing partners	Facility level training and mentorshio for IPT implementing sites in high burdened counties		Facility level training and mentorshio for IPT implementing sites in all high and medium burdened counties		Facility level training and mentorshio for IPT implementing sites in all high and medium burdened counties		Facility level training and mentorshio for IPT implementing sites in all high and medium burdened counties	
	Print contact tracing registers	0		6,000		2,000		0	
	Print ICF/IPT cards	Print 500,000 ICF/IPT cards		Print 500,000 ICF/IPT cards		Print 500,000 ICF/IPT cards		0	
	IPT patient appointment cards	Print 200,000 IPT appointment cards		Print 200,000 IPT appointment cards		Print 200,000 IPT appointment cards		0	
	IPT register	Print 2000 IPT registers		0		Print 2,000 IPT registers		0	
Strategic Approach 4: Scale up of TB IPC in health care and congregate settings									
Number of workshops for the development of TB IPC tools and policy guidelines conducted	Multi-sectoral stakeholder's forum including other non-medical stakeholders to leverage on IPC support by other ministries such as Ministry of Housing, ministry of education.	1 workshop	4	n/a	n/a	n/a	n/a	n/a	n/a
	Develop TB/HIV workplace policy	2 workshops		n/a		n/a		n/a	
	Work shop to revise IPC guidelines, development of IPC CQI and IPC indicators	1 workshop							
Number of IPC policy documents and tools printed	Print TB/HIV workplace documents	6,000 TB/HIV policy documents	12,000	0	n/a	0	n/a	0	n/a
	Print and distribute revised IPC guidelines	6,000 IPC guideline copies printed		0		0		0	
Proportion of health facilities and congregate settings implementing TB IPC	Disseminate IPC guidelines and TB/HIV workplace policy document	0		1 meeting for coth TB/HIV policy and IPC guideline dissemination	25%	0	50%	0	50%
	County level trainings of revised IPC guidelines	0		1 training/county for 21 high burden counties		1 training/county for 19 mid burden counties		0	
	Conduct facility level TB infection training and risk assessments	0		Conduct TB risk assesment in 21 HIV high prevalnce counties (7 health facilities per county)		0		0	
	Development of facility level IPC work plans	0		Develop health facility IPC plans in 21 HIV high prevalent counties (7 health facilities per county)		0		0	
Strategic Approach 5: Immediate cART and CPT uptake									
Proportion of HIV positive TB patients put on cART	Establish eMTCT sites as cART providing facilities for TB patients (NASCOP)		80%	Establish 650 eMTCT sites as cART providing sites	85%	Establish 1,000 eMTCT sites as c ART providing sites	90%	n/a	90%
	Conduct 3 national ToT trainings on TB/HIV for all counties	TB/HIV ToT trainings for 100 ToTs (representatives from 47counties)		n/a		n/a		n/a	
	Conduct county level HCW trainings on TB/HIV	0		21 county TB/HIV trainings for 35 particpants/county		19 county TB/HIV trainings for 35 particpants/county		n/a	
	Conduct facility level mentorship of care providers in TB settings in provision of ART	0		All TB clinics located in sites where ART is provided to pregnant women		All TB clinics located in sites where ART is provided to pregnant women		All TB clinics located in sites where ART is provided to pregnant women	
	Revision of the TB/HIV guidelines, Editing and formatting of revised TB/HIV guidelines	1 workshop, contract a consultant for editing and formatting of guidelines		n/a		n/a		n/a	

TB/HIV Operational Plan									
Output Indicator(s)	**Intervention(s)**	**Year 1 Activities**	**Yr 1 Target**	**Year 2 Activities**	**Yr 2 Target**	**Year 3 Activities**	**Yr 3 Target**	**Year 4 Activities**	**Yr 4 Target**
	Conduct county level IPT sensitizations through implementing partners	IPT county level sensitizations for 21 high HIV burden counties		IPT county level sensitizations for 19 counties		n/a		n/a	
	Conduct facility level mentorship and training through CHMT and Implementing partners	Facility level training and mentorshio for IPT implementing sites in high burdened counties		Facility level training and mentorshio for IPT implementing sites in all high and medium burdened counties		Facility level training and mentorshio for IPT implementing sites in all high and medium burdened counties		Facility level training and mentorshio for IPT implementing sites in all high and medium burdened counties	
	Print contact tracing registers	0		6,000		2,000		0	
	Print ICF/IPT cards	Print 500,000 ICF/IPT cards		Print 500,000 ICF/IPT cards		Print 500,000 ICF/IPT cards		0	
	IPT patient appointment cards	Print 200,000 IPT appointment cards		Print 200,000 IPT appointment cards		Print 200,000 IPT appointment cards		0	
	IPT register	Print 2000 IPT registers		0		Print 2,000 IPT registers		0	
Strategic Approach 4: Scale up of TB IPC in healthcare and congregate settings									
Number of workshops for the development of TB IPC tools and policy guidelines conducted	Multi-sectoral stakeholder's forum including other non-medical stakeholders to leverage on IPC support by other ministries such as Ministry of Housing, ministry of education.	1 workshop	4	n/a	n/a	n/a	n/a	n/a	n/a
	Develop TB/HIV workplace policy	2 workshops		n/a		n/a		n/a	
	Work shop to revise IPC guidelines, development of IPC CQI and IPC indicators	1 workshop							
Number of IPC policy documents and tools printed	Print TB/HIV workplace documents	6,000 TB/HIV policy documents	12,000	0	n/a	0	n/a	0	n/a
	Print and distribute revised IPC guidelines	6,000 IPC guideline copies printed		0		0		0	
Proportion of health facilities and congregate settings implementing TB IPC	Disseminate IPC guidelines and TB/HIV workplace policy document	0		1 meeting for coth TB/HIV policy and IPC guideline dissemination	25%	0	50%	0	50%
	County level trainings of revised IPC guidelines	0		1 training/county for 21 high burden counties		1 training/county for 19 mid burden counties		0	
	Conduct facility level TB infection training and risk assessments	0		Conduct TB risk assesment in 21 HIV high prevalnce counties (7 health facilities per county)		0		0	
	Development of facility level IPC work plans	0		Develop health facility IPC plans in 21 HIV high prevalent counties (7 health facilities per county)		0		0	
Strategic Approach 5: Immediate cART and CPT uptake									
Proportion of HIV positive TB patients put on cART	Establish eMTCT sites as cART providing facilities for TB patients (NASCOP)		80%	Establish 650 eMTCT sites as cART providing sites	85%	Establish 1,000 eMTCT sites as c ART providing sites	90%	n/a	90%
	Conduct 3 national ToT trainings on TB/HIV for all counties	TB/HIV ToT trainings for 100 ToTs (representatives from 47counties)		n/a		n/a		n/a	
	Conduct county level HCW trainings on TB/ HIV	0		21 county TB/HIV trainings for 35 particpants/county		19 county TB/HIV trainings for 35 particpants/county		n/a	
	Conduct facility level mentorship of care providers in TB settings in provision of ART	0		All TB clinics located in sites where ART is provided to pregnant women		All TB clinics located in sites where ART is provided to pregnant women		All TB clinics located in sites where ART is provided to pregnant women	
	Revision of the TB/HIV guidelines, Editing and formatting of revised TB/HIV guidelines	1 workshop, contract a consultant for editing and formatting of guidelines		n/a		n/a		n/a	

TB/HIV Operational Plan

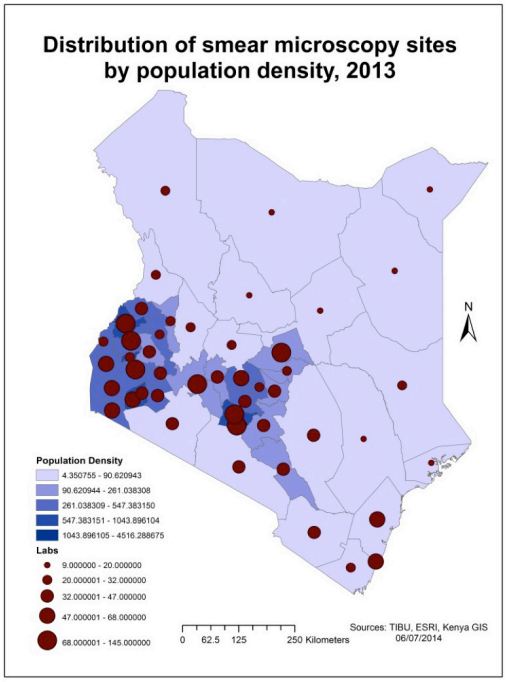
Output Indicator(s)	Intervention(s)	Year 1 Activities	Yr 1 Target	Year 2 Activities	Yr 2 Target	Year 3 Activities	Yr 3 Target	Year 4 Activities	Yr 4 Target
Proportion of HIV positive TB patients put on CART	Printing of TB/HIV guidelines	Print 6,000 copies of revised guidelines		n/a		n/a		n/a	
	Hold national TB/HIV guideline dissemination meeting	1 meeting		n/a		n/a		n/a	
	Hold County level TB/HIV guideline dissemination meetings	47 counties		n/a		n/a		n/a	
	Hold subcounty and County level TB/HIV guideline dissemination meetings	Facility level training and mentorship on new guidelines using implementing partners		Facility level training and mentorship on new guidelines using implementing partners		Facility level training and mentorship on new guidelines using implementing partners		Facility level training and mentorship on new guidelines using implementing partners	
	Hold a three day workshop to develop content for the electronic TB/HIV treatment guidelines	1 meeting for content development							
	Develop a TB/HIV guidelines mobile app	Contract consultant to create mobile app for TB/HIV guidelines		n/a		n/a		n/a	
	Pilot the TB/HIV guidelines mobile app	Support site visits to pilot sites in 2 selected counties		n/a		n/a		n/a	
	Launch mobile TB/HIV guidelines			News paper advert					
	SMS to clinicians nurses and other pactitioners	n/a		n/a					

4.3.6. Accelerate appropriate diagnosis

1. Situational Analysis

Laboratory services play a key role in TB diagnosis, prevention and control in Kenya. Smear microscopy (both light and fluorescence), molecular techniques (Line Probe Assay and Xpert MTB/RIF) and culture (solid and liquid media) are all available in the country for TB and MDR TB diagnosis. Both the NTLD Program and the National TB Reference Laboratory (NTRL) coordinate diagnostic services, while a laboratory technical working group guides in implementation of TB laboratory services. TB diagnosis is embedded in various national guidelines.

Sputum smear microscopy has been the mainstay of TB diagnosis in Kenya. Smear microscopy is provided through a network of 1,860 laboratories embedded within the general health services. Of these labs, 70% are public, 20% faith-based organizations and 10% private sector. In terms of coverage, most hospitals (91%) and health centers (78%) have TB diagnostic capacity. At lower levels, only 20% of dispensaries and 15% of clinics offer TB diagnostic services. The coverage of sputum microscopy currently stands at 1 light microscope for 25,000 persons, which is above the WHO recommendation of 1:50,000. A map of the geographic distribution of laboratories shows continued barriers to access in remote areas. Following WHO's policy recommendation in 2010, Xpert MTB/RIF assay was introduced in 2011 and has been rolled out to 70 facilities nationwide.



Map 10: Distribution of Smear Microscopy Sites by Population Density, 2013

The laboratory network is divided into three levels i.e. periphery, intermediate and central levels, with different technologies available at different levels, as indicated in Figure 23 below.

a) Peripheral/Level I: Laboratories at this level perform microscopy using ZN or FM, depending on the workload. They refer specimens for GeneXpert to the intermediate level laboratories. Upon clinicians' request, some of these sites refer specimens to the central level laboratories for culture and DST.

b) Intermediate/Level II: The county and sub-county laboratories are involved in the diagnosis of new cases/treatment follow-up using either ZN or FM. Some of the facilities are equipped with a GeneXpert instrument. Specimens from

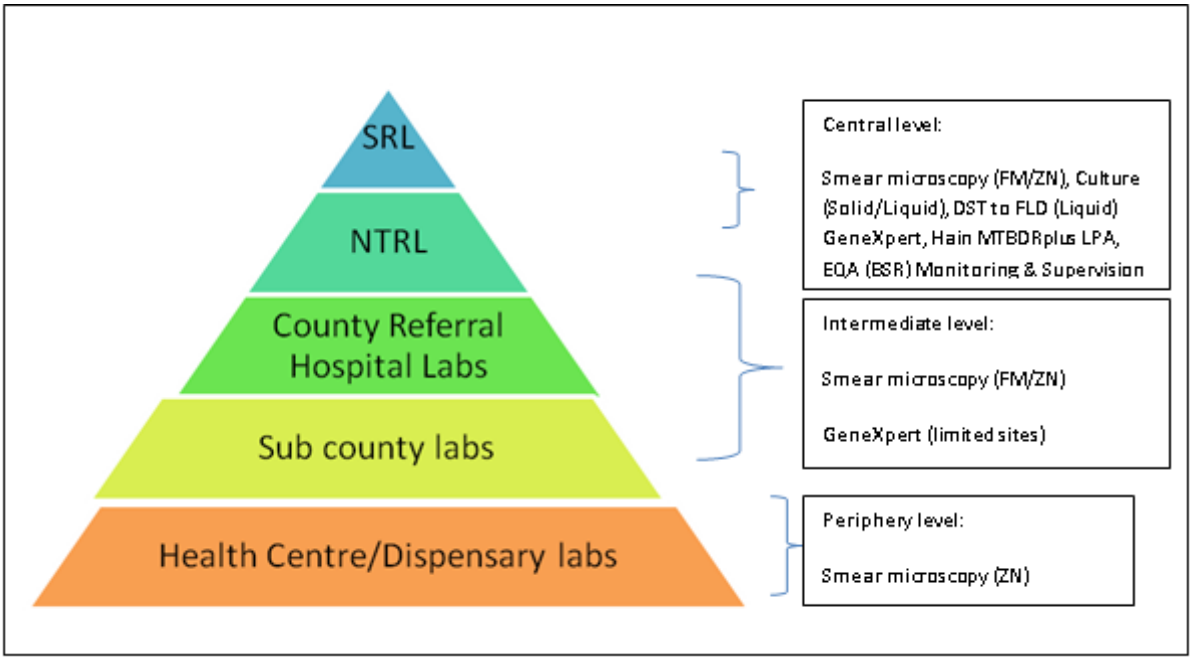


Figure 23: Laboratory Network Levels

all the retreatment cases are referred to the central level labs for further analysis.

c) Central/Level III: The NTRL performs solid culture (LJ), liquid culture (MGIT), drug susceptibility testing (DST) for 1st line drugs on liquid medium, microscopy (ZN & FM), LPA (R/H), GeneXpert and identification of M tuberculosis complex (MPT64). It is also involved in providing External Quality Assurance (EQA) for microscopy and technical assistance to county laboratories. Other facilities with culture and drug susceptibility testing (DST) capacity include KEMRI Kisian in Kisumu, IOM (Dadaab and Nairobi), Aga Khan and Nairobi hospitals, and KEMRI Nairobi. This translates to 0.75 per 5 million population.

A supranational reference laboratory, the Queensland Mycobacterial Reference Laboratory (QMRL) in Brisbane, Australia, provides technical assistance and training. It serves as the reference lab for proficiency testing (PT) for the NTRL.

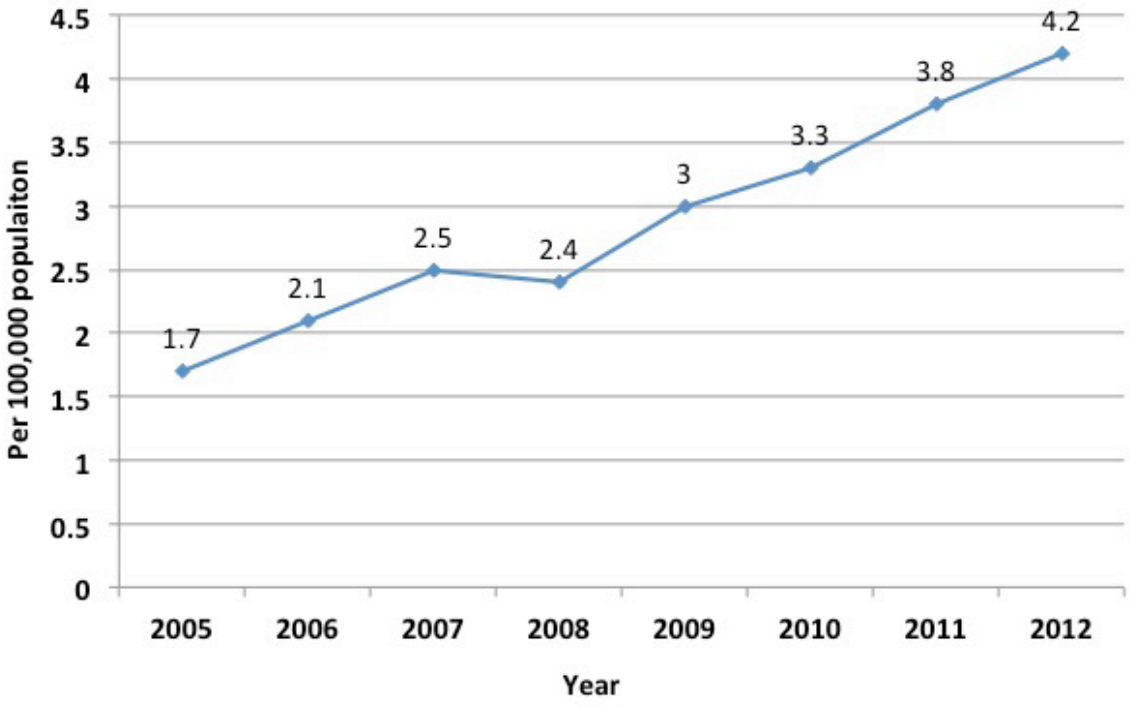


Figure 24: Laboratories Providing Sputum Smear Microscopy

2. Definition of opportunities for improvements, gaps/challenges that need to be addressed

a) Integrated Specimen referral: In 2010, a courier-based specimen referral system was initiated for routine surveillance of TB/MDR. In this system, specimens are delivered to the central level for culture and DST. This needs to be extended and decentralized to enable inter-county specimen referral.

b) Underutilization of Xpert: The Xpert MTB/RIF technology was recently adopted by the NTLD Program and the current utilization of the instruments stands at 20% of their capacity. Health care workers have not been adequately sensitized on the algorithm, availability of the services and the existing referral networks.

c) Delayed turnaround time (TAT): There is a delay in transmission of results from laboratories (mainly the NTRL) to clinicians. This is partly due to the delay in specimen transportation and the current system of result transmission through LIMS. Results are transmitted via email to the county and sub-county TB and Leprosy coordinators of the referring clinic, and do not reach the clinicians in good time.

d) Access to 2nd line DST: The NTRL is currently building capacity to test for 2nd line drug resistance.

e) EQA: About 88% of microscopy laboratories are covered under the national quality assurance scheme. The NTRL is enrolled in a proficiency testing program through the SRL in Brisbane, while the GeneXpert sites are enrolled in a CDC Atlanta-led PT scheme. This needs further expansion to ensure all sites are enrolled in an EQA program, and that feedback to participating laboratories is regular.

f) Integration of LIMS with TIBU: The NTRL has a robust laboratory information management system (LIMS) for data management, while the NTLD Program recently developed a patient management system called TIBU. There is an opportunity to further strengthen patient management by linking these systems.

g) Operational research: There is a need to strengthen the capacity of laboratory personnel for operational research.

h) Weak biosafety and infection prevention measures: Due to lack of equipment, appropriate personal preventive equipment (PPE) and inadequate laboratory infrastructure, biosafety in TB laboratories remains a challenge.

i) Limited geographical access to diagnosis in remote areas: As reflected in the map above, many populations must travel long distances to access diagnostic facilities, potentially delaying diagnosis.

3. Strategic Direction(s) for 2015-2018

Priorities for the next three years include:

a) Adoption, roll-out and scale-up of GeneXpert technology countrywide as a diagnostic tool for all symptomatic HIV-infected individuals, presumptive pediatric and MDR-TB cases, health care workers and symptomatic refugees;
b) Review and adopt policy to include self-referral to the diagnostic lab of presumptive TB cases;
c) Enhance quality and strengthen the existing culture labs;
d) Develop capacity for 2nd line DST at NTRL;
e) Scale-up INH DST for all Xpert/MTB Rif MTB positive cases;
f) Scale-up of fluorescence microscopy from the current 150 to 340 for all facilities performing an average of >2 smears per day;
g) Enhance biosafety and infection prevention control measures in TB laboratories.

Particular emphasis will be given to reducing the distance to diagnostic services for rural populations, as well as the time to receipt of results.

4. Proposed Approaches

Accelerate time to diagnosis, especially among rural populations

Support county-level mapping of distances to diagnostic facilities, with the aim of prioritizing the addition of rural sputum collection points and transport networks to facilitate patient diagnosis.

Roll out and scale up Xpert MTB/RIF

GeneXpert will be the primary diagnostic test for all symptomatic HIV-infected individuals, presumptive pediatric cases, symptomatic health care workers, symptomatic refugees (WHO guidelines, MOH HIV rapid advice June 2014) and smear negative patients with suggestive radiological features. The algorithm in Figure 25 will be printed and distributed to all facilities. Sensitisation of health care workers will be done through Continuous Medical Education (CMEs) and integrated in various trainings for surveillance. All previously treated patients, DR-TB contacts, patients developing TB on IPT and smear positive patients at 2 months shall also be screened using Xpert MTB/RIF. With recommendation from NTRL, the NPHLS will appoint a dedicated national GeneXpert Coordinator to take the lead in the formation and coordination of a TWG.

Scale-up of GeneXpert machines in congregate settings, such as prisons and housing for uniformed services and students, will be prioritized.

GeneXpert sites will be expanded to cover all county hospitals and 60% of sub-county hospitals by 2018. The placement will be based on workload, accessibility as well as mobile communities and congregate settings to ensure equitable distribution.

The number of GeneXpert equipment to be placed in the country by the end of 2018 is projected at 250.

Monitoring and evaluation – The GeneXpert online reporting system will be installed in all the GeneXpert equipment and used to monitor utilization, quality of testing and quantify the commodities and error rates. The TWG will provide oversight and continuous monitoring of implementation through site visits and periodic review meetings. Performance of GeneXpert sites will be evaluated using a set of indicators adopted from WHO for local use.

1. **TB Diagnosis**
   - HIV positive with TB symptoms
   - Children under 15 years with TB symptoms
   - All smear negative TB cases

2. **MDR TB surveillance**
   - All previously treated patients: a. failures; b. relapses; c. treatment after loss to follow up
   - DR TB contacts
   - Healthcare workers with TB symptoms
   - Patients who develop TB on IPT
   - Refugees with symptoms of TB
   - Smear positive at 2 months
   - Prisoners with TB symptoms

In areas where GeneXpert is available, this should be the first test. Patients diagnosed with GeneXpert should be followed up with microscopy

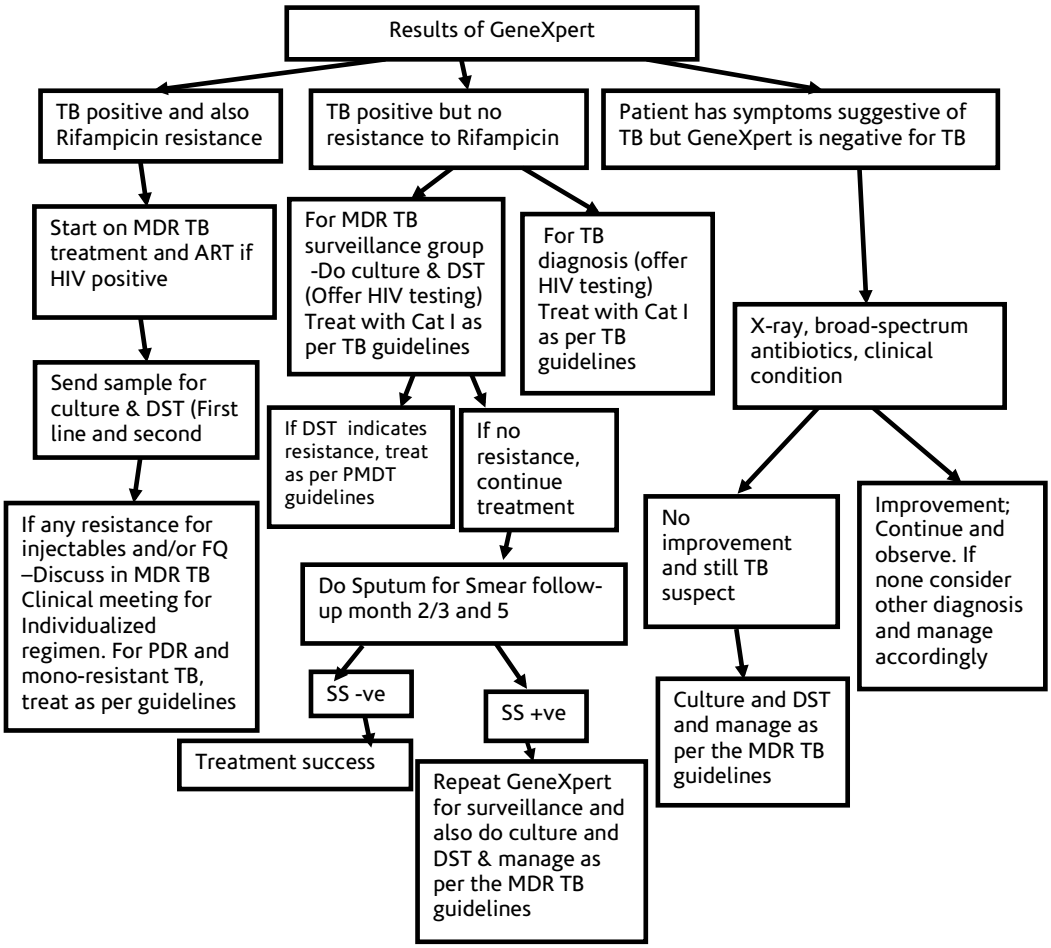


Figure 25: GeneXpert Testing Algorithim

- WHO endorsed Xpert MTB/RIF in 2010 for rapid diagnosis of MTB and Rifampicin resistance as a proxy for MDR diagnosis (http://www.who.int/tb/features_archive/new_rapid_test/en/)
- A further policy update was published in 2013 to include extra pulmonary cases (http://www.who.int/tb/laboratory/policy_statements/en/)
- The national TB program has adopted Xpert MTB/RIF as initial test for HIV-infected individuals
- In Malaysia, case detection among prisoners was improved by use of Xpert. This supports scale-up of Xpert to congregate settings.
- The Diagnostic Performance of a Single GeneXpertMTB/RIF Assay in an Intensified Tuberculosis Case Finding Survey among HIV-Infected Prisoners in Malaysia: Haider Abdulrazzaq Abed Al-Darraji1*et al*

Networking of Xpert MTB/RIF machines

To ensure access for GeneXpert services, all counties should develop networking frameworks integrated with existing HIV CD4 networks and others. This is depicted in figure 26. GeneXpert sites should also develop secondary networks to ensure uninterrupted services in case of equipment breakdown.

TAT and results dissemination: The national TB program will optimize the use of electronic data tools, such as GXAlert on line reporting system and SMS printers to ensure quick TAT of GeneXpert results within 48 hours.

- Quality assurance: All Xpert testing sites shall be enrolled under a national quality assurance program coordinated by the NTRL.
- Logistics: Quantification, procurement and distribution of GeneXpert supplies will be centralized and coordinated by the national program. County governments will be engaged to provide equipment maintenance/service contracts and assured power supply for instruments at the county level.

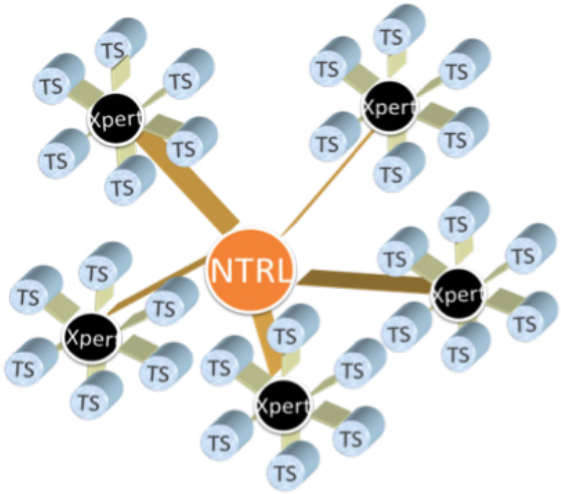


Figure 26: GeneXpert Networking

- Public Private Partnerships: The NTLD Program will continue collaborating with private Xpert testing facilities to ensure all TB cases are reported to the national program and diagnostic algorithms are adhered to.
- Communication package: A standardized communication package for Xpert shall be developed to support the sensitization of HCWs on the use of Xpert. The package will also include information to be disseminated to presumptive TB patients.

There is need to pilot mobile GeneXpert services in learning institutions, marginalized, and migrant communities, with a vision for a wider roll-out and networking.

a) Enhancing quality and strengthening the existing culture capacity

Culture remains the gold standard for MTB diagnosis and drug susceptibility testing. The two existing public labs (NTRL and Kisumu Kisian) will be strengthened and their access and utilization optimized through enrolment in PT programs, better coordination and strengthened specimen referral networks.

Given the cost implications and complexity of establishing and maintaining culture labs and the thrust of Xpert MTB/RIF, which has increased access to accurate TB diagnosis and Rifampicin resistance testing, no scale-up toward more culture labs is planned within the strategic period. The NTRL will review standards for culture labs to guide facilities that are already offering culture services, in terms of research for future decentralization.

All patients with Rifampicin resistance results will be subjected to culture and DST, while patients on MDR-TB treatment will be subjected to culture for monitoring of treatment.

The sample referral mechanisms for culture samples via courier system will be continued to maintain quality.

Turnaround time of results will be monitored via MDR-TB suspect registers. At least 80% of the results feedback should be expected in one month. The LIMS should be linked to the TIBU system to ensure rapid result dissemination and improved patient management. Facilities with internet services will have their chest clinics and referral labs linked in order to have access to the results through LIMS. An evaluation of TAT will be conducted at NTRL and representative health facilities biannually, and the findings presented during the biannual county TB and Leprosy coordinators' meetings.

To ensure quality of the existing culture labs, NTRL staff will receive capacity building and mentorship through regular training programs locally and regionally. The implementation of QMS towards accreditation (ISO 15189) and the strengthening of quality assurance measures will be enhanced at all levels, as well as regular participation in proficiency testing programs. A system to monitor NTRL essential equipment will be installed to alert the staff in case of breakdowns.

The national program shall support the maintenance and repair of NTRL's infrastructure. County governments shall be

Sample flow chart for Culture and DST

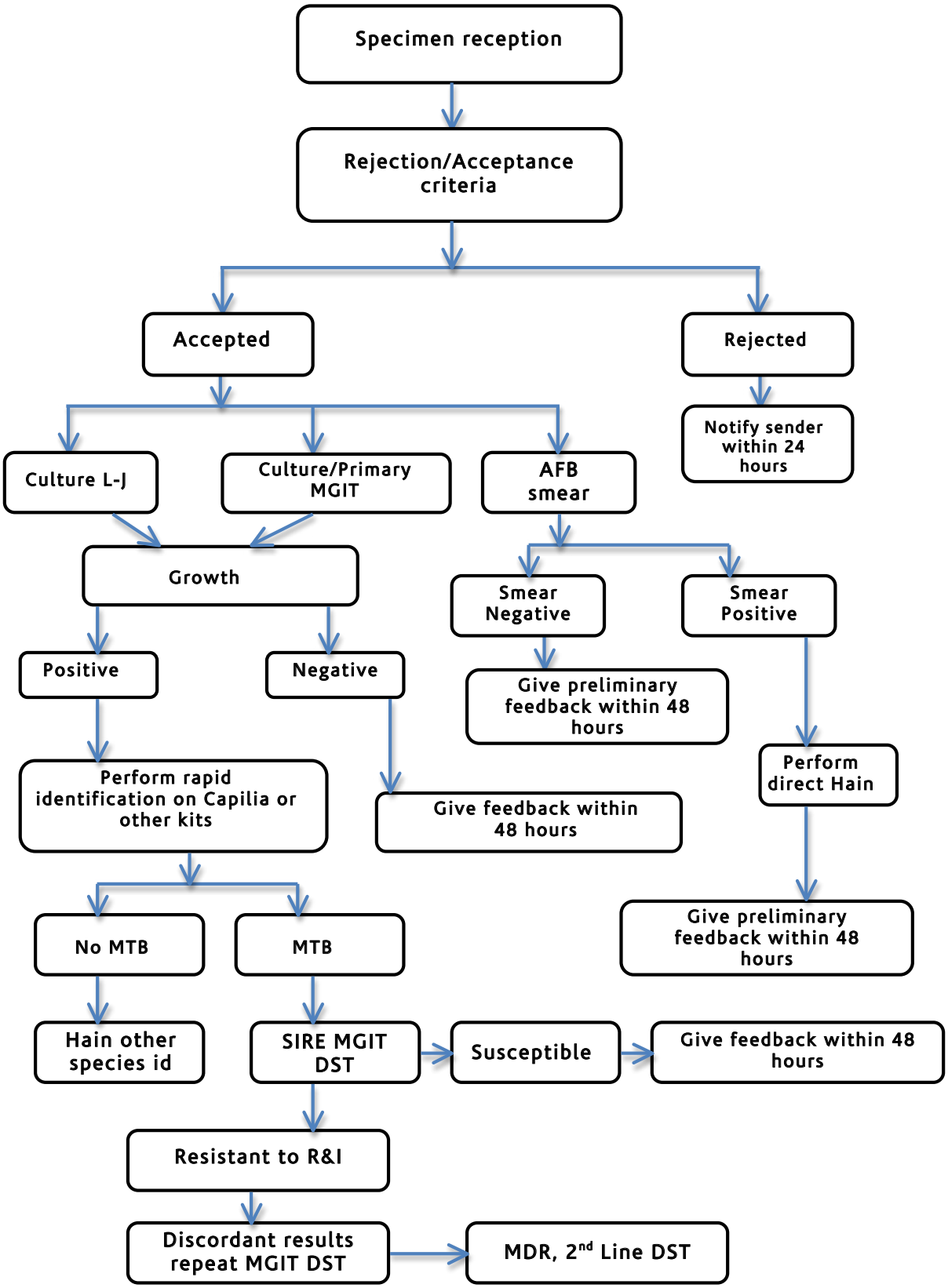


Figure 27: Sample flow chart for Culture and DST

responsible for supporting infrastructural maintenance and repair for culture labs at the county level.

b) Scale up INH DST for all MTB positive retreatment cases

Within 2015-2017, the treatment regimen for retreatment cases will be guided by sensitivity of medications. Streptomycin will not be in the treatment option. Therefore, all MTB positive samples from retreatment patients will be subjected to culture and DST at the culture lab to rule out resistance to other drugs. In order to improve TAT, samples will be subjected to LPA to check INH sensitivity. Unpublished data from culture and DST showed INH mono-resistance of 5.5% (86 samples out of 1,545) via culture during the Jan-Dec 2013 period.

c) Developing capacity for 2nd line DST at NTRL

For all newly diagnosed MDR-TB patients, second line testing will be performed in order to identify early resistance. Currently, both the equipment and reagents for second line testing are available, but training is needed to enable staff to perform the tests routinely.

d) Scale up of LED microscopy

Smear microscopy remains the mainstay for TB diagnosis at the periphery level and for monitoring of treatment for drug-sensitive TB. In line with WHO recommendations, 150 LED microscopes were distributed between 2012 and 2013 to high volume laboratories. This will be expanded from current 150 sites to 340 by 2017. The LED microscopes will be placed in sites with an average of 2 smears per day and more.

All microscopy sites shall be enrolled into the national EQA program to ensure high quality services. The national program shall implement the existing capacity building plan for microscopy, including refresher and biosafety training. County governments will be engaged to build capacity for microscopy sites.

To improve access, all microscopy diagnostic sites will be networked to facilitate communication between health facilities and to enable referral of specimens from sites without microscopy equipment.

The county governments will be engaged to provide annual equipment maintenance for microscopes and conduct infrastructural upgrades on microscopy diagnostic sites to ensure adequate infection control and prevention measures. WHO-approved TB hoods shall be provided to high volume microscopy sites.

Logistics: Quantification, procurement and distribution of light and LED microscopy supplies will be centralized and coordinated by the NTLD Program.

Communication: The NTLD Program shall develop a communication and sensitization strategy for HCWs and for presumptive TB cases to create demand for smear microscopy.

Scale-up of light microscopes and the opening of new diagnostic facilities will be considered for hard to reach areas, guided by the GIS distribution of labs.

e) Enhancing biosafety and infection prevention in TB laboratories

Infection prevention control (IPC) for TB laboratory workers will be ensured through capacity building, provision of personal protective equipment (PPE), infrastructure upgrades, continuous screening of health care workers, proper waste management and proper documentation of those infected with TB.

The NTLD Program and NTRL shall develop an operational plan and accompanying policies to reinforce biosafety and infection control capacity and activities in health facilities and laboratories. The policies will ensure appropriate health facility and laboratory designs (adequate space, waiting areas and sputum collection booths) for each level, provision of TB hoods and biosafety cabinets, autoclaves and incinerators for waste management, and PPE (N95 masks). Additionally, the policies will outline a biosafety audit plan as well as an annual capacity building plan.

County Level

a) Human resources: The NTLD Program and the NTRL shall lobby county governments to ensure adequate human resources for all laboratories.

b) Capacity development: The NTLD Program and the NTRL will build capacity of the county TB laboratory coordinators on leadership and management, M&E, EQA, infection prevention and control and commodity management.

c) EQA: The NTLD Program and the NTRL shall lobby (and provide advice to) county governments to ensure adequate funds for sputum microscopy EQA activities.

d) Infection control: The NTRL and NTLD Program will provide advice and lobby county governments to strengthen the infection control measures through capacity building, provision of appropriate biosafety equipment and infrastructure development.

Operational Research

a) Conduct research to evaluate the impact and cost effectiveness of Xpert and online reporting system.

b) Undertake longitudinal data analysis of smear microscopy EQA to determine quality improvement trends and recurrent gaps.

c) Peform longitudinal data analysis on culture and DST services to determine trends, efficacy and effectiveness.

Contribution to NSP Impacts	Outcomes (Laboratory)
Impact 1. Reduce the incidence of TB by 5% by 2018, compared to 2014	80% of TB patients (all forms) diagnosed within 2 weeks of initial care seeking
Impact 1.1 Reduce the prevalence of MDR-TB among new patients by 15%, by 2018	At least 30% of estimated INH-resistant cases are identified
	At least 80% of culture and DST sample results received within a turn-around time of 60 days

Table 12: Outcome and Impact Indicators for Appropriate Diagnosis

Accelerate Appropriate Diagnosis Operational Plan

Strategic Priorities	Strategic Approaches	Output Indicator(s)	Activity	Year 1 Activities	Yr 1 Target	Year 2 Activities	Yr 2 Target	Year 3 Activities	Yr 3 Target	Year 4 Activities	Yr 4 Target
1: Enhance existing culture and DST laboratories	**Strengthen the NTRL to provide technical support to the NTLD Program**	Number of NTRL staff trained on culture and DST (cumulative)	Training in culture and DST	Training of NTRL staff on culture and DST	13	Training of NTRL staff on culture and DST	18	Training of NTRL staff on culture and DST	23	Training of NTRL staff on culture and DST	28
		Proportion of equipment in culture labs with maintenance contract	Maintenance contract for equipment	Secure maintenance contracts for equipment	100%	100% of NTRL equipment under a maintenance contract	100%	100% of NTRL equipment under a maintenance contract	100%	100% of NTRL equipment under a maintenance contract	100%
		Proportion of culture labs enrolled in an accredited EQA/PT	Enrollment of culture labs in an accredited EQA/PT program	Enrolment of culture labs in an accredited international EQA/PT program	0	100% of culture and DST tests covered in International EQ	50	100% of culture and DST tests covered in International EQ	100	100% of culture and DST tests covered in International EQ	100
		Proportion of enrolled culture labs with acceptable EQA/PT results		Complete EQA/PT	0	Complete EQA/PT	>80	Complete EQA/PT	>80	Complete EQA/PT	>80
		Number of TB missions by SRL consultants	Hire consultant from supranational laboratory (SRL)	Hire consultant visit from SRL	0	Consultant visits	4	Consultant visits	4	Consultant visits	4
	Reduce TAT for Culture and DST through dissemination of results to clinicians and referring laboratories via LIMS	Percent reduction in TAT compared to 2014	Creation of email addresses for TB clinics and TB referral labs	Creation of email addresses for all clinics and referral labs Conduct annual review of TAT	20%						
			Creation of linkage of LMIS with TIBU	Create linkage of LIMS to TIBU							
			Conduct TAT analysis	Conduct annual review of TAT							
	Provision of oversight, coordination and technical assistance to regional culture laboratories	Proportion of culture labs receiving quarterly technical assistance visits by the NTRL	Provision of technical assistance to culture labs by NTRL	Quarterly visit to 2 culture labs	100%	Semi-annual visits to 2 culture labs	100%	Semi-annual visits to 2 culture labs	100%	Semi-annual visits to 2 culture labs	100%
			Enrolment of culture labs in National PT prorgram for culture and DST	Annual distribution of PT panels to 2 culture labs	100%	Annual distribution of PT panels to 2 culture labs	100%	Annual distribution of PT panels to 2 culture labs	100%	Annual distribution of PT panels to 2 culture labs	100%
	Enhance equipment maintenance for Xpert and microscopy sites	Proportion of equipment under service contracts	Provide annual service and maintenance of 2,064 microscopes and 250 Xpert instruments	Service and provide annual maintenance for 1,830 microscopes and 120 Xpert instruments	100%	Service and provide annual maintenance for 1,950 microscopes and 150 Xpert instruments	100%	Service and provide annual maintenance for 2,012 microscopes and 200 Xpert instruments	100%	Service and provide annual maintenance for 2,064 microscopes and 250 Xpert instruments	100%
	Networking of culture laboratories	Proportion of culture labs linked to LMIS	Linkage of LIMS between culture labs	n/a		Networking of public culture labs through LIMS	100%	Networking of public culture labs through LIMS	100%	Networking of public culture labs through LIMS	100%
		Proportion of planned TWG meetings convened	Form TWG for all culture labs (Public and private)	Form TWG for culture labs		Conduct semi-annual TWG meetings	100%	Conduct semi-annual TWG meetings	100%	Conduct semi-annual TWG meetings	100%

Accelerate Appropriate Diagnosis Operational Plan

Strategic Priorities	Strategic Approaches	Output Indicator(s)	Activity	Year 1 Activities	Yr 1 Target	Year 2 Activities	Yr 2 Target	Year 3 Activities	Yr 3 Target	Year 4 Activities	Yr 4 Target
2: Strengthen existing quality assurance program	Strengthen EQA for sputum microscopy for both light and fluorescence methods	Proportion of microscopy laboratories with at least 1 staff trained on EQA	Training of microscopy labs on EQA	TOT training of 47 CMLTs on EQA	n/a	Build EQA capacity of 55 microscopy sites	25	Build EQA capacity of 55 microscopy sites	50	Build EQA capacity of 55 microscopy sites	100
		Proportion of microscopy labs participating in quarterly EQA	TOT of County medical Labs on EQA	Build EQA capacity of 55 microscopy sites	90	Conduct refresher training for 125 MLTs	>90	Conduct refresher training for 125 MLTs	>90	Conduct refresher training for 125 MLTs	>90
			Conduct refresher training on EQA	Conduct refresher training for 125 MLTs		Conduct EQA for 100% of enrolled sites		Conduct EQA for 100% of enrolled sites		Conduct EQA for 100% of enrolled sites	
			Conduct microscopy EQA	Conduct EQA for 100% of enrolled sites							
			Procurement of 2,500 slide boxes	Procurement of 2,500 slide boxes		Procurement of 2,500 slide boxes		Procurement of 2,500 slide boxes		Procurement of 2,500 slide boxes	
	Implementation of QMS towards accreditation and strengthening quality assurance measures, at all levels.	NTRL attains ISO 15189 accreditation	Training of NTRL staff on QMS	Training of 5 NTRL staff on QMS	n/a	Training of 5 NTRL staff on QMS	n/a	Training of 5 NTRL staff on QMS	n/a	Conduct management review meeting	n/a
			Conduct NTRL audit	Revision of NTRL documents		Conduct management review meeting		Conduct management review meeting			
			Conduct management review meeting	Conduct management review meeting				Conduct audit (KENAS/ SANAS)			
				Conduct (KENAS/SANAS) audit							
3: Sustain commodity management	Ensure timely forecasting and quantification of all commodities are done	Proportion of labs reporting no stock out for commodities	Conduct F&Q meeting	Conduct F&Q meeting	100%	Conduct F&Q meeting	100%	Conduct F&Q meeting	100%	Conduct F&Q meeting	100%
			Procure AFB, GXPERT, LPA and culture	Procure AFB, GXPERT, LPA and culture		Procure AFB, GXPERT, LPA and culture		Procure AFB, GXPERT, LPA and culture		Procure AFB, GXPERT, LPA and culture	
			Distribute, AFB, GXpert, LPA, culture and DST commodities	Distribute, AFB, GXpert, LPA, culture and DST commodities		Distribute, AFB, GXpert, LPA, culture and DST commodities		Distribute, AFB, GXpert, LPA, culture and DST commodities		Distribute, AFB, GXpert, LPA, culture and DST commodities	
			Develop/review consumption data tools	Develop/review consumption data tools							
4: Scale up of rapid molecular TB diagnostics	Use of Xpert as first line diagnosis for HIV-infected persons, presumptive paediatric cases, health care workers, smear-negative cases and suggestive symptomatic refugees	Proportion of targeted cases receiving Xpert results (disaggregated by type of case)	Meeting to Revise of diagnostic algorithm	Meeting to Revise of diagnostic algorithm		Printing of 4,000 diagnostic algorithms	50% for each type	Training of HWCs on use of Xpert	75% for each type	Training of HWCs on use of Xpert	>85% for each type
			Printing of diagnostic algorithm	Printing of 2,000 diagnostic algorithms		Distribution of 4,000 diagnostic algorithms					
			Distribution of diagnostic algorithm	Distribution of 2,000 diagnostic algorithms		Training of HCWs on use of Xpert					

Accelerate Appropriate Diagnosis Operational Plan											
Strategic Priorities	**Strategic Approaches**	**Output Indicator(s)**	**Activity**	**Year 1 Activities**	**Yr 1 Target**	**Year 2 Activities**	**Yr 2 Target**	**Year 3 Activities**	**Yr 3 Target**	**Year 4 Activities**	**Yr 4 Target**
			Training of HCWs on use of Xpert	Training of 150 HCWs on use of Xpert							
	Ensure systematic rollout and utilization of Xpert MTB/RIF test following national policies and guidelines	Increased Xpert sites from current 70 to 250 by 2017	Mapping of Xpert sites	Mapping of Xpert sites	70	Mapping of Xpert sites	140	Mapping of Xpert sites	n/a	Mapping of Xpert sites	250
		Percentage increase in the utilization of Xpert	Procurement and installation of Xpert instruments	Procurement and installation of 50 GXIV instruments	25%	Procurement and installation of 30 GXIV instruments	50%	Procurement and installation of 50 GXIV instruments	80%	Procurement and installation of 50 GXIV instruments	>80%
		100% of Xpert facilities with access to and using online reporting	Procurement of modems for Xpert instruments	Procurement of 50 modems for Xpert instruments		Procurement of 30 modems for Xpert instruments		Procurement of 50 modems for Xpert instruments		Procurement of 50 modems for Xpert instruments	100%
			Training of HCWs on use of online reporting tool	Training of 240 MLTs on online reporting		Training of 60 MLTs on online reporting		Training of 100 MLTs on online reporting		Training of 100 MLTs on online reporting	
	Ensure scale up of INH DST for all Xpert MTB positive cases	Proportion of Xpert MTB positive cases with INH DST results	Perform 27,000 tests	Perform 6,000 tests	25	Perform 6,500 tests	50	Perform 7,000 tests	75	Perform 7,500 tests	100
5: Scale up of microscopy service	Decentralization of fluorescent microscopy centres in sites with >2 smears per day	Number of LED microscopes in use	Procurement of 190 LED microscopes	Procurement of 90 LED microscopes	140	Procurement of 50 LED microscopes	190	Procurement of 50 LED microscopes	240		240
		Proportion of sites with >2 smears per day performing FM	Training of Lab personnel on FM	Training of 50 Lab personnel on FM		Training of 50 Lab personnel on FM	25%	Training of 50 Lab personnel on FM	30%		50%
			Installation of newly procured LED mocroscopes	Installation of 90 procured LED mocroscopes		installation of 50 procured LED mocroscopes		installation of 50 procured LED mocroscopes			
	Decentralization of light microscopy services in hard to reach areas and Counties with <1 microscopy site per 50,000 population	Proportion of counties with <1 microscopy site per 50,000 population	Establish at least 3 smear microscopy labs in 12 priority counties (Turkana, Marsabit, Garissa, Wajir, Baringo, Tana River, Kitui, Mandera, Mombasa, Kwale, Kilifi and Lamu)	Establish at least 1 smear microscopy labs in 12 priority counties (Turkana, Marsabit, Garissa, Wajir, Baringo, Tana River, Kitui, Mandera, Mombasa, Kwale, Kilifi and Lamu)		Establish at least 1 smear microscopy labs in 12 priority counties (Turkana, Marsabit, Garissa, Wajir, Baringo, Tana River, Kitui, Mandera, Mombasa, Kwale, Kilifi and Lamu)	25	Establish at least 1 smear microscopy labs in 12 priority counties (Turkana, Marsabit, Garissa, Wajir, Baringo, Tana River, Kitui, Mandera, Mombasa, Kwale, Kilifi and Lamu)	50	Establish at least 1 smear microscopy labs in 12 priority counties (Turkana, Marsabit, Garissa, Wajir, Baringo, Tana River, Kitui, Mandera, Mombasa, Kwale, Kilifi and Lamu)	100
			Procure and install light microscopes	Procure and install 48 light microscopes							
			Train lab personnel on FM	Train lab personnel on FM							

Accelerate Appropriate Diagnosis Operational Plan

Strategic Priorities	Strategic Approaches	Output Indicator(s)	Activity	Year 1 Activities	Yr 1 Target	Year 2 Activities	Yr 2 Target	Year 3 Activities	Yr 3 Target	Year 4 Activities	Yr 4 Target
6: Improving access to quality TB diagnostics	Strengthen specimen referral networks	Proportion of presumptive MDR-TB patients with culture and DST results documented	Conduct specimen referral networking meeting	Conduct 10 specimen referral networking meeting	100%	Conduct 10 specimen referral networking meeting	100%	Conduct 10 specimen referral networking meeting	100%	Conduct 10 specimen referral networking meeting	100%
			Procure standard specimen collection, packaging and transportation commodities	Procure 20,000 zip lock bags and 4,000 cool boxes		Procure 20,000 zip lock bags		Procure 20,000 zip lock bags		Procure 20,000 zip lock bags	
			Conduct training of HCWs on specimen collection, packaging and transportation	Conduct TOT on specimen transportation for 94 HCWs		Conduct speciment transportation		Conduct TOT on specimen transportation for 94 HCWs		Conduct speciment transportation training of 1500 HCWs	
			Conduct training of courier personnel on specimen transportation	Conduct speciment transportation training of 1500 HCWs		Training of 1500 HCWs		Conduct speciment transportation training of 1500 HCWs		Facilitate transportation of 200,000 specimens to Xpert sites	
			Facilitate transportation of specimens to culture and GeneXpert facilities	Conduct 55 TOT for courier personnel at national level		Facilitate transportation of 200,000 specimens to Xpert sites		Conduct 55 TOT for courier personnel at national level		Facilitate transportation of 10,000 specimens to culture labs	
			Facilitate transportation of specimens to culture labs	Facilitate transportation of 200,000 specimens to Xpert sites		Facilitate transportation of 10,000 specimens to culture labs		Facilitate transportation of 200,000 specimens to Xpert sites			
			Facilitate transportation of isolates from NTRL to SRL	Facilitate transportation of 10,000 specimens to culture labs				Facilitate transportation of 10,000 specimens to culture labs			
Challenges to address: Improve biosafety and infection prevention and control measures in TB laboratories	Enhance biosafety and IPC in TB laboratories	Proportion of diagnostic labs meeting minimum biosafety an IPC standards	Review standards for establishment of TB laboratories	Conduct 1 meeting to review standards for establishment of TB labs	25	Conduct training for 1,000 HCWs on biosafety and IPC	50	Conduct training for 1,500 HCWs on biosafety and IPC	>75	Conduct training for 1,500 HCWs on biosafety and IPC	>80
		Proportion of HCWs working in labs who develop active TB	Develop curriculum on biosafety and infection control in TB laboratories	Conduct 1 meeting to develop curriculum on biosafety and IPC in TB laboratories	<5	Procure 50 BSCs and 50 autoclaves	<5	Procure 50 BSCs and 50 autoclaves	<5	Procure 50 BSCs and 50 autoclaves	<5
			Conduct TOT for County lab coordinators on biosafety and IPC in TB labs	Conduct TOT for 60 County TB lab coordinators		Procure PPE for culture labs		Procure PPE for culture labs		Procure PPE for culture labs	
			Train County lab personnel on biosafety and IPC	Print and distribute 60 biosafety and IPC guidelines and training curricula		Conduct training for 1,000 HCWs on biosafety and IPC		Conduct training for 1,500 HCWs on biosafety and IPC		Conduct training for 1,500 HCWs on biosafety and IPC	
			Procure biosafety equipment for TB labs					Procure service contracts for 50 BSCs and 50 autoclaves		Procure service contracts for 50 BSCs and 50 autoclaves	
			Renovate TB labs to conform to international standards								

Accelerate Appropriate Diagnosis Operational Plan											
Strategic Priorities	**Strategic Approaches**	**Output Indicator(s)**	**Activity**	**Year 1 Activities**	**Yr 1 Target**	**Year 2 Activities**	**Yr 2 Target**	**Year 3 Activities**	**Yr 3 Target**	**Year 4 Activities**	**Yr 4 Target**
7: Develop in-country capacity for 2nd line DST	Implementation of 2nd line DST at NTRL	Proportion of MDR-TB patients receiving 2nd line DST test and results documented	Conduct training for 20 NTRL personnel on 2nd line DST	Conduct 2nd line DST training for 5 NTRL staff		Conduct 2nd line DST training for 5 NTRL staff	25%	Conduct 2nd line DST training for 5 NTRL staff	>50%	Conduct 2nd line DST training for 5 NTRL staff	>80%
			Perform 2nd line DST for all MDR-TB cases	Perform 2nd line DST for 600 MDR-TB cases		Perform 2nd line DST for 250 MDR-TB cases		Perform 2nd line DST for 250 MDR-TB cases		Perform 2nd line DST for 250 MDR-TB cases	
8: New Initiatives											
Ensure access to advanced molecular technologies	Develop in-country capacity for genetic sequencing	Number of gene sequencing studies done	Procurement of genetic sequencing equipment					Procurement of genetic sequencing equipment	1	Perform genetic sequencing on 50 MDR-TB cases	
			Conduct training on genetic sequencing					Conduct genetic sequencing training			
								Perform genetic sequencing on 50 MDR-TB cases			
Ensure access to proficiency testing panels for LED microscopy and Xpert	Develop in-country capacity for proficiency panel production	Percentage of Xpert and LED labs enrolled in country PT program	Conduct training for 20 NTRL staff on PT production	Conduct training for 20 NTRL staff on PT production		Produce PT panels for 240 LED sites	30	Produce PT panels for 290 LED sites	60	Produce PT panels for 340 LED sites	>80
			Production of PT panels	Produce and distribute PT panels to 25 pilot LED sites		Produce PT panels for 120 Xpert sites		Produce PT panels for 150 Xpert sites		Produce PT panels for 250 Xpert sites	
			Distribution of PT panels for Xpert and LED microscopy	Produce and distribute PT panels for 10 pilot Xpert sites							
Ensure access to rapid molecular diagnosis for mobile populations	Pilot mobile Xpert units for mobile communities and learning institutions	Number of mobile Xpert units operational	Procurement of 2 mobile Xpert units					Procurement of 2 mobile Xpert units	1	Training and utilization of mobile Xpert units	2
			Recruitment of personnel					Recruitment of personnel			
								Training and dispatching of units			
Ensure analysis and utilization of laboratory data	Strengthen capacity of TB laboratory personnel on operational research	Number of lab personnel trained in OR	Conduct training on operational research	Conduct training on operational research		Develop and submit manuscripts for publication		Develop operational research protocols		Develop operational research protocols	
		Number of OR papers accepted for publication	Develop operational research protocols			Presentation of publications in local and international conferences		Develop and submit manuscripts for publication		Develop and submit manuscripts for publication	
			Develop and submit manuscripts for publication					Presentation of publications in local and international conferences		Presentation of publications in local and international conferences	
			Presentation of publications in local and international conferences								

4.3.7 Ensure a stable and quality supply of medicines, diagnostics and other commodities

1. Situational Analysis

Since 2008, the Government of Kenya has been allocating funds for the procurement of TB medicines and diagnostics, complemented by donor support. Prior to devolution, forecasting and quantification was done nationally by the NTLD Program in collaboration with technical partners. A procurement plan was developed and reviewed bi-annually. A centralized and competitive procurement mechanism was implemented through Kenya Medical Supplies Agency (KEMSA) for first-line drugs. Second-line drugs for PMDT were supplied through the Global Drug Facility (GDF), with direct procurement. The whole process from quantification, advertising for tender, submission of bids, evaluation, contract negotiation and signing to the time the TB medicines arrived in the country took about nine months.

KEMSA handled the clearing and warehousing of medicines and diagnostics in collaboration with NTLD Program. The medicines were distributed to 210 district stores countrywide on a quarterly basis. From the district stores, the commodities were supplied on a monthly basis to the treatment sites using a collection system, facilitated by the SCTLC. An electronic LMIS system was used to collect consumption data, which was then aggregated on a monthly basis at the national level for planning purposes. There was a quality assurance mechanism at each level of the supply chain, including pharmacovigilance for TB medicines at service delivery points. A post-market surveillance was last conducted in 2009 to check on the quality of medicines used by TB patients at the service delivery points.

To ensure that adequate quantities of TB medicines are maintained, the NTLD Program has set minimum- maximum stocks to be kept at each level. For instance, a sub-county level maximum stock level is six months and minimum stock level is three months. Meanwhile, health facilities are required to maintain a maximum of three months of stocks and a minimum of one month of stock. A 12-month buffer for all medicines and diagnostics is to be maintained at the national warehouse for both first- and second-line medicines.

There is a TB logistic management system (LMIS), which provides integrated commodity recording and reporting tools, including electronic and paper based monthly reporting forms for use at sub-county and health facility level respectively. There is also a facility dispensing register and stock cards. A functional TB commodity security sub-committee is in place at the national level. The committee provides an oversight role in the implementation of TB commodity management activities, including monthly stock status monitoring, forecasting, and procurement planning. A pharmacovigilance system hosted by the Pharmacy and Poisons Board of Kenya exists, and adverse events reporting tools are in place.

In 2013, as part of devolution, the national government funds for procurement of TB medicines and diagnostics were devolved to county governments. County governments now have a mandate to procure TB medicines and diagnostics. However, no counties procured TB medicines and diagnostics in the 2013/14 fiscal year. Procurement of second line TB medicines remains primarily donor-supported, and has not been affected by the devolution of funds. The counties are in the process of streamlining their systems. However, the NTLD Program will continue to ensure a steady supply by liasing with government and other partners.

Other challenges identified by the mid-term review included weaknesses in commodity management practices, delayed deliveries, no order requisitions made, lack of capacity to enable the pull system, and receipts of medicines by non-pharmaceutical personnel. The distribution challenges may be a direct result of the low LMIS reporting rates, inaccurate consumption reports from SDP points, and lack of pharmaceutical personnel involvement at peripheral levels. In addition, there is inadequate capacity of storage facilities at the sub-county level and poor inventory management practices. Weak pharmacovigilance systems means that adverse drug reactions (ADRs) are rarely reported.

2. Strategic Direction(s) for 2015-2018

The priority is to ensure that no drug shortages occur at any level of the health system during the period of the NSP. The strategic direction for this period will aim to ensure a stable and quality-assured supply of drugs and diagnostics nationwide. Specifically, the strategic directions are to:

a) Build political commitment at central and in all 47 counties for funding of TB medicines and diagnostics.
b) Strengthen the capacity of counties to appropriately plan for, procure, store, distribute and manage inventories of commodities.
c) Improve the distribution system, including the integration of laboratory diagnostics.
d) Strengthen and link the existing DHIS, TIBU and LMIS systems for better management of supplies.
e) Ensure quality of TB medicines and diagnostics in the country and in each county.
f) Establish commodity security committees at county level.

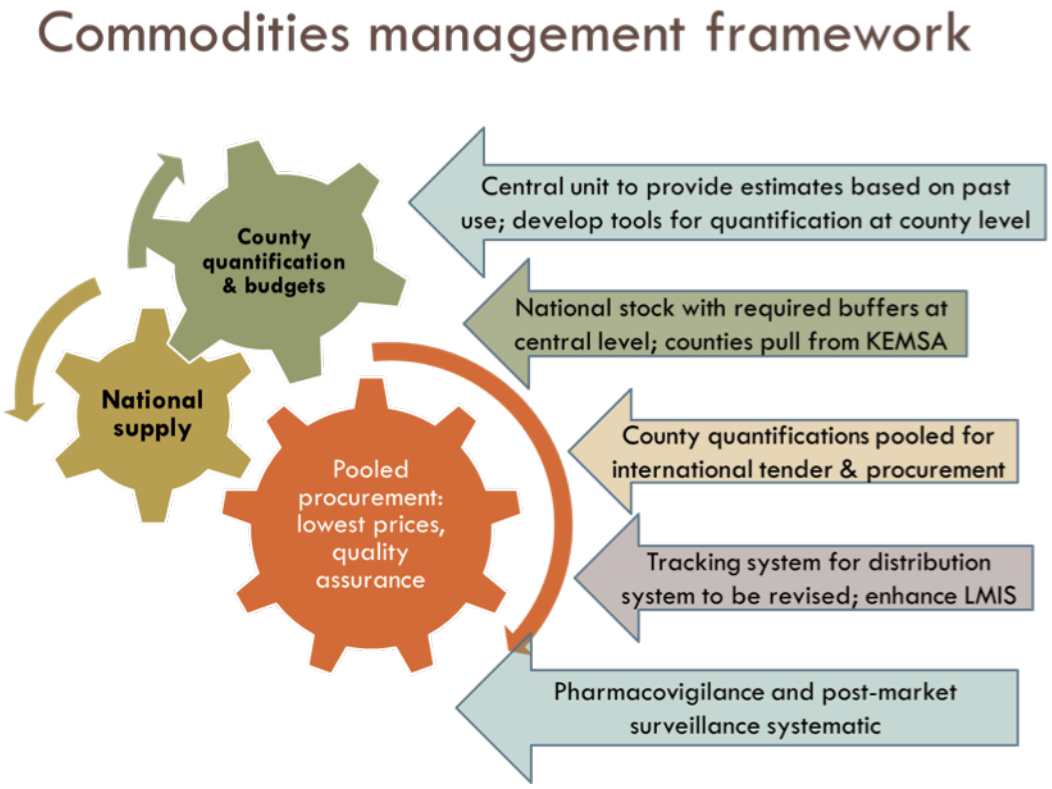


Figure 28: Commodities Management Framework

3. Proposed Approaches

The approaches highlighted below aim to ensure availability of the following: First and second-line drugs to treat TB; INH to support scale-up of IPT; anti-leprosy drugs; PAL-related commodities for lung health; and ancillary medication to manage TB treatment side effects. The approaches include:

Increase political commitment and government funding for TB, leprosy and lung health medicines and diagnostics, from both national and county budgets

The NSP calls for increasing national government allocation to procure TB medicines and diagnostics, including for DR-TB, from 2014/2015 onwards. The government will also allocate more funds for services related to procurement of TB medicines e.g. customs clearance, warehousing, distribution, quality assurance activities and drug management activities. The planning for complementary funding for procurement and supply management (PSM); i.e. to fill funding gaps using Global Fund and other donor resources is prioritized.

Pooled and centralized procurement of TB medicines and diagnostics, involving all counties, to assure quality and benefit from economies of scale

To ensure high-quality and the lowest costs, bulk procurement at central level is the most efficient modality for maintaining a consistent and high-quality national supply. A 12-month buffer stock at national level will be restored and sustained. The NSP recognizes that this transition to county-level PSM will require technical assistance and new tools to build capacity and ensure consistent procurement planning. In addition, technical assistance is required at the central level to improve distribution systems and efficiency with devolved quantification. Mechanisms for emergency procurement of TB and other medicines and diagnostics will be developed.

Increase county capacity to manage the supply chain for TB, leprosy and lung health medicines and diagnostics

Capacity building of county staff, especially pharmacists, will be carried out through training in TB commodity management and regular supervisory visits that deliberately focus on commodities. Pharmacists will take charge of TB, leprosy and lung health medicines and diagnostics management. New tools will be developed to support county-level quantification and management, based on past use. Inventory management tools will be provided in every store or facilities providing commodities.

Rationalize and increase the efficiency of distribution and storage

Activities covered by this approach aim to maintain a steady supply of pharmaceuticals and supplies to facilities where they are needed, while ensuring that resources are being used in the most cost-effective way. This includes designation of demand-driven distribution points for TB medicines and diagnostics in all the 256 sub-counties, with accurate inventory records at all levels of the supply chain. Capacity will be strengthened at county level for distribution to sub-counties. Monitoring and mitigation of medicine loss caused by storage and expiry will be regularized. Targeted and systemic changes, including audits, will be implemented to reduce theft, fraud and leakage in the distribution system. Efforts will be made to accelerate port clearing, receipt and inspection of goods.

Strengthen the existing logistics management and information system (LMIS)

The existing TB Logistics Management Information System (LMIS) will be strengthened to facilitate better information flow and allow data-driven decision-making. Periodic data quality audits of LMIS are planned, including investigation and response to factors causing under-reporting; integration of stock-related data validation into quarterly review meetings; building capacity of counties and promote stock related data aggregation, analysis and use at county level for timely decision making. As noted in the M&E section of the NSP, the integration of DHIS, TIBU and LMIS platforms will be prioritized to facilitate monitoring across the continuum of service delivery. Monthly electronic reporting from all sub-counties will be monitored, enabling a monthly analysis of stock status and reporting rates by counties and nationally. All service delivery points will have requisite inventory & reporting tools.

Implement a comprehensive quality assurance program

- Implement and ensure devolution of procedures to ensure that only medicine products that meet current standards for quality are bought (careful product and supplier selection, certificate of analysis).
- Update procedures to verify that shipped goods meet the specifications (pre and post shipment inspection, analytical pharmaceutical testing).
- Update proper storage and distribution procedures, and provide guidance to and training for counties on these policies.
- Introduce product defect and pharmacovigilance reporting programs at county level.
- Active surveillance for selected TB medicines will be explored. Regular post market surveillance is planned. To support this revitalized focus on PSM, there will be activities to strengthen collaboration with the Pharmacy and Poisons Board of Kenya (PPB) to improve the pharmacovigilance system for TB by encouraging ADR surveillance and reporting.

Contribution to NSP Impacts	Outcomes (Commodities)
Impact 1: Reduce the incidence of TB by 5% by 2018, compared to 2014	100% of patients newly diagnosed with TB start treatment within two days
Impact 1.1: Reduce the prevalence of MDR-TB among new patients by 15% by 2018, compared to 2014	At least 80% of TB patients with Rif resistance are on 2nd line treatment within two weeks of testing.
Impact 1.2: Reduce the incidence of TB among PLHIV by 60% by 2018, compared to 2014	•]Increase to 90% the proportion of HIV+ TB patients accessing ART • Increase to 90% the proportion of children with TB and HIV who are initiated on ART within two months of TB treatment initiation • Increase to 80% the proportion of selected groups eligible for IPT to be enrolled on INH
Impact 2. Reduce mortality due to TB by 3% by 2018, compared to 2014	Ensure treatment success of at least 90% among all DS forms of TB
Impact 5. Reduce morbidity due to chronic lung diseases (e.g. COPD, asthma)	Increase to 80% the proportion of controlled asthma patients in areas with established PAL and asthma clinics
	100% of commodities required to manage chronic lung diseases are available in each county
Enabling Environment: The NTLD Program and all counties have the required resources to implement the NSP	Nationally pooled and quality-assured drug supply is secured, with six-month buffer stock at central level for entire country

Table 13: Impact and Outcome Indicators for Medicines, Diagnostics and Other Commodities

Commodities Operational Plan									
Output Indicator(s)	**Intervention(s)**	**Year 1 Activities**	**Yr 1 Target**	**Year 2 Activities**	**Yr 2 Target**	**Year 3 Activities**	**Yr 3 Target**	**Year 4 Activities**	**Yr 4 Target**
Strategic Approach 1: Build political commitment at central and in all 47 counties for funding of TB, leprosy and lung health medicines and diagnostics									
Number of Meetings with County Executives, County Pharmacist for resource mobilization activities	Political engagement of leaders/ key influencers to allocate funding for TB commodities and logistics in National/ County budgets	Meeting with County Executives, County Pharmacist for resource mobilization activities	1	Meeting with County Executives, County Pharmacist for resource mobilization activities	1	Meeting with County Executives, County Pharmacist for resource mobilization activities	1	Meeting with County Executives, County Pharmacist for resource mobilization activities	1
	Hold consultative meetings to lobby for increased funding for TB medicines and diagnostics, funding for services related to PSM, funding for logistics	Meetings with CTLCs and other planners to budget and resolve any information gaps	2	Meetings with CTLCs and other planners	2	Meetings with CTLCs and other planners	2	Meetings with CTLCs and other planners	2
Percentage of all financing for TB commodities funded by national government	Track funding for TB commodities through TB NHA	Track funding for TB commodities through TB NHA	40	Track funding for TB commodities through TB NHA	45	Track funding for TB commodities through TB NHA	50	Track funding for TB commodities through TB NHA	60
Strategic Approach 2: Strengthen the capacity of counties to appropriate plan for, procure, store, distribute and manage inventories of commodities through a nationally pooled system									
Number of counties receiveing bi-annual technical assistance related to supply chain management	Technical assistance from KEMSA, NTLD Program and partners to counties	Conduct bi annual national level TA focusing on the supply chain system	47	Conduct bi annual national level TA focusing on the supply chain system	47	Conduct bi annual national level TA focusing on the supply chain system	47	Conduct bi annual national level TA focusing on the supply chain system	47
Number of counties using an integrated supply chain for TB, HIV and Malaria at all levels	Intergrated distribution of TB medicines and laboratory commodities	n/a		Intergrated distribution of TB medicines and laboratory commodities to all 47 counties	47	Intergrated distribution of TB medicines and laboratory commodities to all 47 counties	47	Intergrated distribution of TB medicines and laboratory commodities to all 47 counties	47
Number of joint Forecasting and quantification meetings held between National and county governments	Support a Joint National TB Program & County Governments Forecasting & Quantification Meetings for TB Medicines, Laboratory Consummables including GX RIF Cartridges	Revise operational procedures with KEMSA		F & Q meetings	2	F & Q meetings	2	F & Q meetings	2
Number of counties with costed TB commodity procurement plans	Training of County pharmacists,County TB cordinators and County laboratory cordinators on TB commodity management	Conduct training for CTLCs	47	Conduct training for CTLCs	47	Refresher training; on-the-job tools	47	Refresher training; on-the-job tools	47
	Develop templates for estimating budgets and provide TA to counties	Develop templates for estimating budgets; national F and Q meeting to determine commodity needs	1	F and Q meetings at county level to determine the country's TB commodity needs	47	F and Q meetings at county level to determine the country's TB commodity needs	47	F and Q meetings at county level to determine the country's TB commodity needs	47
	Printing and distribution of inventory management tools	Print and distribute booklets for AFB of 100 pages	3,600	Print and distribute booklets for AFB of 100 pages	3,600	Print and distribute booklets for AFB of 100 pages	3,600	Print and distribute booklets for AFB of 100 pages	3600
	Technical assistance to counties on inventory management	Technical assistance provided by NTLD Program, Centers of Excellence (other counties), or partners	47	Technical assistance provided by NTLD Program, Centers of Excellence (other counties), or partners	47	Technical assistance provided by NTLD Program, Centers of Excellence (other counties), or partners	30	Technical assistance provided by NTLD Program, Centers of Excellence (other counties), or partners	30
Number of counties with active commodity security committees	Form commodity security committees at county level	Provide technical assistance and training on commodity security	25	Provide technical assistance and training on commodity security	22	Support commodity security committees	47	Support commodity security committees	47
Number of required commodities procured	Procure first line TB drugs, Second Line anti TB medication for MDR TB-Patients,XDR TB medicines, Ancillary drugs for 325 patients	Procure patient kits	100,000	Procure patient kits	100,000	Procure patient kits	100,000	Procure patient kits	100,000

Commodities Operational Plan

Output Indicator(s)	Intervention(s)	Year 1 Activities	Yr 1 Target	Year 2 Activities	Yr 2 Target	Year 3 Activities	Yr 3 Target	Year 4 Activities	Yr 4 Target
	Procure isoniazid for TB preventive therapy	INH procured (all formulations)	200,000	INH procured (all formulations)	200,000	INH procured (all formulations)	200,000	INH procured (all formulations)	200,000
	Procurement and supply of Tuberculin Tuberculin Skin Test Syringes (single-dose disposable tuberculin syringe that has a one-quarter to one-half inch, 27-gauge needle with a short bevel)	Procurement and supply of Tuberculin Tuberculin Skin Test Syringes (single-dose disposable tuberculin syringe that has a one-quarter to one-half inch, 27-gauge needle with a short bevel)	2,000	Procurement and supply of Tuberculin Tuberculin Skin Test Syringes (single-dose disposable tuberculin syringe that has a one-quarter to one-half inch, 27-gauge needle with a short bevel)	2,000	Procurement and supply of Tuberculin Tuberculin Skin Test Syringes (single-dose disposable tuberculin syringe that has a one-quarter to one-half inch, 27-gauge needle with a short bevel)	2,000	Procurement and supply of Tuberculin Tuberculin Skin Test Syringes (single-dose disposable tuberculin syringe that has a one-quarter to one-half inch, 27-gauge needle with a short bevel)	2000
	Procure and supply rifabutin for TB-HIV co-infected patients on 2nd line ART	Procure and supply rifabutin for TB-HIV co-infected patients on 2nd line ART	600 patients	Procure and supply rifabutin for TB-HIV co-infected patients on 2nd line ART	600 patients	Procure and supply rifabutin for TB-HIV co-infected patients on 2nd line ART	600 patients	Procure and supply rifabutin for TB-HIV co-infected patients on 2nd line ART	600 patients
	Procure leprosy medicine	Procure leprosy medicine	250 patients	Procure leprosy medicine	250 patients	Procure leprosy medicine	250 patients	Procure leprosy medicine	250 patients
	Procure Laboratory consumables suspects for AAFB microscopy, consumables for Gene Xpert	Procure Laboratory consumables suspects for AAFB microscopy, consumables for Gene Xpert		Procure Laboratory consumables suspects for AAFB microscopy, consumables for Gene Xpert		Procure Laboratory consumables suspects for AAFB microscopy, consumables for Gene Xpert		Procure Laboratory consumables suspects for AAFB microscopy, consumables for Gene Xpert	
	Protective gear (assorted)	Protective gear (assorted)		Protective gear (assorted)		Protective gear (assorted)		Protective gear (assorted)	
	Annual Calibration of GeneXpert	Annual Calibration of GeneXpert		Annual Calibration of GeneXpert		Annual Calibration of GeneXpert		Annual Calibration of GeneXpert	
	Procure LED microscope for high volume hospitals, Microscopes CX31 Olymp, Gene Xpert Equipment	Procure LED microscope for high volume hospitals, Microscopes CX31 Olymp, Gene Xpert Equipment	125 Xpert	Procure LED microscope for high volume hospitals, Microscopes CX31 Olymp, Gene Xpert Equipment	340 LED microscopes	Procure LED microscope for high volume hospitals, Microscopes CX31 Olymp, Gene Xpert Equipment	125 Xpert	Procure LED microscope for high volume hospitals, Microscopes CX31 Olymp, Gene Xpert Equipment	
	Cost for freight and insurance for LED and light microscopes	Cost for freight and insurance for LED and light microscopes	11% of procurement costs	Cost for freight and insurance for LED and light microscopes	11% of procurement costs	Cost for freight and insurance for LED and light microscopes	11% of procurement costs	Cost for freight and insurance for LED and light microscopes	11% of procurement costs
	Automatic water distiler, capacity 4-12lts per hr, distiled water 3 µS	Automatic water distiler, capacity 4-12lts per hr, distiled water 3 µS		Automatic water distiler, capacity 4-12lts per hr, distiled water 3 µS		Automatic water distiler, capacity 4-12lts per hr, distiled water 3 µS		Automatic water distiler, capacity 4-12lts per hr, distiled water 3 µS	
	PSM fees (procurement ware housing, insurance, distribution)	PSM fees (procurement ware housing, insurance, distribution at)	8% of procurement cost	PSM fees (procurement ware housing, insurance, distribution at)	8% of procurement cost	PSM fees (procurement ware housing, insurance, distribution at)	8% of procurement cost	PSM fees (procurement ware housing, insurance, distribution at)	8% of procurement cost
Strategic Approach 3: Improve the distribution system, including the integration of laboratory diagnostics									
Proportion of sub counties reporting commodity stock outs of tracer items	Ensure access to TB, Leprosy and Lung health pharmaceuticals and supplies to sub counties		50%		20%		5%		5%
	Map distribution points in all sub-counties	Mapping exercise	1						
	Systematic distribution audits	Systematic distribution audits	1	Systematic distribution audits	1	Systematic distribution audits	1	Systematic distribution audits	1
	Improve port clearing	Improve port clearing		Improve port clearing		Improve port clearing		Improve port clearing	
	Receipt and inspection of goods	Receipt and inspection of goods		Receipt and inspection of goods		Receipt and inspection of goods		Receipt and inspection of goods	
	Distribution to sub-counties based on local quantification using past need	Distribution to sub-counties based on local quantification using past need	50	Distribution to sub-counties based on local quantification using past need	80	Distribution to sub-counties based on local quantification using past need	95	Distribution to sub-counties based on local quantification using past need	95

Commodities Operational Plan									
Output Indicator(s)	**Intervention(s)**	**Year 1 Activities**	**Yr 1 Target**	**Year 2 Activities**	**Yr 2 Target**	**Year 3 Activities**	**Yr 3 Target**	**Year 4 Activities**	**Yr 4 Target**
Strategic Approach 4: Strengthen the existing logistics management and information system (LMIS)									
Strategic Approach 5: Ensure quality of TB medicines and diagnostics in the country and counties									
Proportion of drugs conforming to the minimum standards in commodity management			90%		95		97		97
	Carry out post market surveillance	Post market surveillance	1	Post market surveillance	1	Post market surveillance	1	Post market surveillance	1
	Random drug quality testing	Random drug quality testing		Random drug quality testing		Random drug quality testing		Random drug quality testing	
Proportion of health facilities reporting on ADRs	Ensure ADR reporting, work with PPB on e-reporting, poor quality medicine reporting, PV trainings	Reporting on ADRs	10%	Reporting on ADRs	25%	Reporting on ADRs	35%	Reporting on ADRs	50%
		Pharmacovigilance training	2	Pharmacovigilance training	2	Pharmacovigilance training	2	Pharmacovigilance training	2

4.3.8. Enhance evidence-based program monitoring and evaluation

1. Situational Analysis

A robust and responsive surveillance, monitoring and evaluation (M&E) system is important for ensuring quality TB, leprosy and lung disease control. The NLTD-Program is implementing an electronic patient-based surveillance system it developed, called "TIBU"[1]. The first of its kind in Africa, "TIBU" is the Swahili word for "treat", and is an acronym for Treatment Information from Basic Program. The aim of TIBU is to maintain electronic records of all patients, enabling real-time evaluation of programme performance at any level. TIBU is decentralized to the sub-county level, and data can be aggregated up to the national level. TIBU has yielded a robust database with comprehensive patient parameters. It has various functions for patient management and payment to patients and field officers.

The patient management system does the following:

1. Online data capture of patient-based information
2. Data transfer in real time to central program
3. Ability to generate real time reports at any level
4. Identification of duplicate patient entries.

The payment module does the following:

1. Funds transfer to NTLD Program staff to reimburse them for supportive supervision and routine surveillance activities
2. Funds transfer to MDR-TB patients for financial support, using MPESA
3. Improves governance and accountability through utilization of mobile money transfer.

Information generated from this system is further utilized for operational research at various levels of health care delivery. The NTLD Program has further made efforts to ensure that the quality of the data generated by this system is maintained through regular supportive supervision, data quality assessments (DQAs), data validation meetings and capacity building of health care workers. Primary data capture tools have been in use at the health facility level of care provision.

A national M&E plan was drafted in 2014, containing details for monitoring all core DOTS, TB/HIV and PMDT activities in the Kenyan context. The logical framework for the M&E system is shown below.

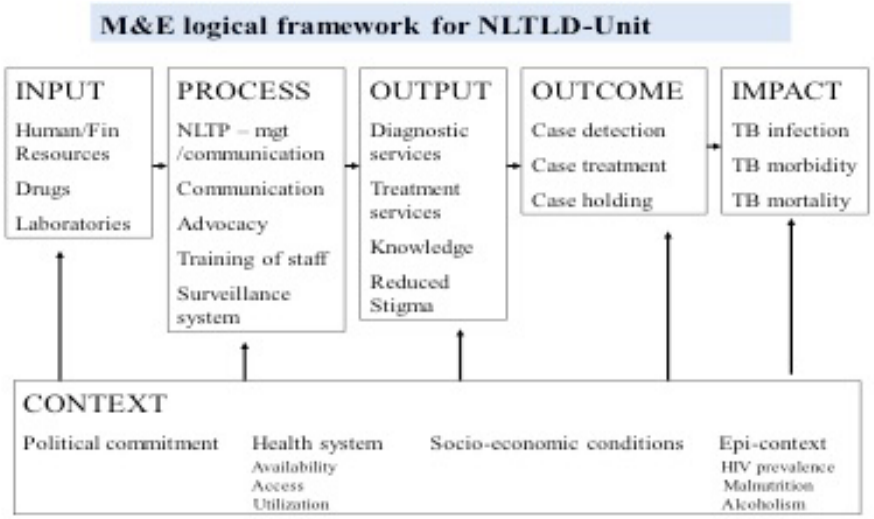


Figure 29: M&E Logical Framework

1 TIBU was developed through a partnership with various organizations. Partners include the Government of Kenya, which provides policy guidance and is the main implementer of the system. Safaricom provides communication and data storage services with cloud hosting. The other two partners are TangazoLetu, which provides payment solutions for the system, and Iridium Interactive, which supports the patient management module. The USG through USAID provided funding for development and operationalization of the system.

2. Strategic Direction(s) for 2015-2018

For the period of this NSP, the NTLD Program will focus on maintaining data quality and further decentralizing data management knowledge and skills to county and sub-county level health care workers to promote ownership and data use.

Based on successful early experience with the current surveillance system, the NLTD-Program can now refine the system to make it more integrated and to better serve all of the needs of the programme and other stakeholders. The platform can be extended to host data of other communicable diseases. Capacity building will be prioritized to enable the use of programmatic data and operational research for decision-making.

3. Proposed Approaches

Continuously improve monitoring and evaluation tools and capacities at all levels

1. Develop an M&E training curriculum that reflects the use of TIBU; operationalize a cascade of training on M&E, data management and data use for decision-making
2. Enhance supervision and on-the-job mentorship at county and facility levels to improve the quality of recording and reporting. Revise and promote the use of the supervision checklist to provide immediate feedback.
3. Ensure availability and usage of all standardized and up-to-date revised recording and reporting tools at all levels.
4. Revise M&E policies and components in the National Guidelines
5. Support the roll-out of ICD 10.

Strengthen TIBU and its integration with other surveillance platforms

1. Expand TIBU to:
   a. Link with the Laboratory Management Information System (LIMS), the Community-based Health Information System (CBHIS) through DHIS-2, and the overall Health Management Information System (HMIS).

   b. Introduce new TIBU modules recommended by the mid-term review to support the capture of activities related to: PMDT, prevention and intensified case finding, collaborative TB/HIV, presumptive TB, contact tracing, community TB, supervision and others areas.

   c. Create and implement a financial reporting tool within TIBU to monitor sub-sector (TB) finance expenditure.

   d. Explore TIBU as an M&E platform for other communicable disease control programs.

2. Enhance the automated analytic functions of TIBU to aid in the utilization of the data. The NTLD Program plans to create a dashboard of key performance indicators at the various levels of TB control services (county, sub-county and service delivery points). The dashboard will also have warning signs when immediate action needs to be taken.

3. Improve the vital registration system to better capture TB deaths.

4. Support the mainstreaming of SHA-2011.

Improve TB financial reporting and quantification

Develop and pilot a financial reporting tool linked to the TB sub-sector health accounts monitoring.

Improve mortality statistics

Build capacity for ICD-10 classification and reporting.

Improve the quality and systematic use of strategic information

1. Conduct routine and systematic data quality assessments (DQAs) at county and national level to improve data completeness, consistency and accuracy
2. Conduct data validation meetings and monthly data review meetings at sub-county level
3. Guide counties to develop their M&E plan as part of defining their health strategy, setting county specific targets for TB, leprosy and lung health
4. Maintain a functional M&E technical working group (TWG) at national level and support the formation of an M&E TWG in each county.
5. Strengthen the infrastructure across the NTLD Program network for data use

6. Evaluate and communicate data use successes

Ensure availability of a supporting infrastructure

1. Establish a functional Data Management Program at central level to oversee all aspects of data management
2. Provide tablets and computers, where needed, for data capture and management
3. Improve the current email hosting to Google Cloud from group wise, to facilitate easy internet access and minimize the occurrence of disconnections.

Promote impact assessment and prioritize research, including operational research, which will address programme challenges

To continue to build the evidence-base for TB, leprosy and lung disease control, capacity to conduct studies, including operational research (OR) will continue to be built among all TB stakeholders.

There will be a renewed focus on the application of evidence generated from studies to improve outcomes and show the impact of new approaches and ongoing activities. Staff will be encouraged to contribute to the regional and global evidence-base by presenting their findings at national and international conferences, and publish manuscripts in peer reviewed journals. To ensure research is focused and addresses the key challenges, a collaborative OR agenda will be developed with all key stakeholders. A preliminary list of operational research priorities is highlighted below (See Table 14).

Enhancing operational research will require the NTLD Program to:

1. Revamp the research task force at the national level and establish similar forums at county level. The research task force will be supported to mentor counties
2. Identify OR trainees who are well positioned to conduct and apply research; build for impact assessments and operational research; and enable them to serve as future trainers and mentors
3. Convene biannual forums to share research findings at the county level, including national lung health conference(s)
4. Develop and implement a prioritized operational research agenda within the next three-year plan and continue building operational research capacity (learning while doing/mentorship) throughout the health system.

Operational Research Priorities
National, Ongoing
1. Prevalence Survey (2015-2016) 2. DRS (2015) 3. Mortality Study 4. Pediatric TB HIV study 5. Delay in diagnosis study (to be completed, ongoing) 6. Inventory Studies
National
1. KAP (to be comprehensive – legislators, patients, HCWs, media, community) 2. The impact of Xpert MTB on diagnosis of TB (as per the national protocol) 3. Outcomes of ICF and IPT implementation in routine clinical settings in Kenya 4. Prevalence of pulmonary aspergilosis in PTB patients 5. Burden of Lung Disease (BOLD) study nationally
Counties
1. In counties with treatment success <80%, assess factors 2. Assess barriers to treatment adherence 3. Assess models for improving case holding by community and family-based DOTS 4. In counties where decline in case notification is >5%/year, assess if true decline and assess factors 5. Routinely do exit interviews among the patients to capture information source of patient prior to treatment as a quality of care assessment
Desktop Reviews
1. Ascertain the coverage of TB, Leprosy and LD in the mass media 2. Longitudinal data analysis of smear microscopy EQA to determine quality improvement trends and recurrent gaps 3. Longitudinal data analysis on Culture and DST services to determine trends 4. Outcome of MDR-TB in children and child MDR-TB contacts 5. Documentation of best practices and timely application of best Social Protection Practices 6. Impact of food support on TB treatment outcomes 7. Determination of various factors associated with the different treatment outcomes 8. Analysis of mortality statistics
Enhance research literacy among CHWs to enable them understand the results and the importance of research

Table 14: Operational Research Priorities

Monitoring and Evaluation Operational Plan

Output Indicator(s)	Intervention(s)	Year 1 Activities	Yr 1 Target	Year 2 Activities	Yr 2 Target	Year 3 Actitivies	Yr 3 Target	Year 4 Activities	Yr 4 Target
Strategic Approach 1: Continuously improve surveillance, monitoring and evaluation systems, tools and capacities for TB, leprosy and lung disease control									
Proportion of targeted HCW trained	Build M&E capacity of both national, county and sub county TB HCW	Hold 2, 5 day workshops to develop an M&E capacity building plan for the NTLD Program covering both the County and National levels of Government		Conduct 5 day training for 100 national, county and subcounty TB HCW	100%	Conduct 5 day training for 100 national, county and subcounty TB HCW	100%	Conduct 5 day training for 100 national, county and subcounty TB HCW	100%
Number of data demand and use guideline and training materials developed	Development of data demand and user guideline and training materials	n/a		Hold a 5 day workshop to develop data demand and use guidelines and training materials	2	n/a		Hold a 5 day workshop to review the data demand and use guidelines and training materials	2
Proportion of targeted HCW trained on data demand and use	Train 2,400 HCW on data demand and use	n/a		Train 600 health care workers on data demand and use. (The health care workers are drawn from CTLC's, SCTLC's, hospitals, health centres and hospitals)	100%	Train 600 health care workers on data demand and use. (The health care workers are drawn from CTLC's, SCTLCs, hospitals, health centres and hospitals)	100%	Train 600 health care workers on data demand and use. (The health care workers are drawn from CTLC's, SCTLC's, hospitals, health centres and hospitals)	100%
Number of guidelines and policies developed with M&E components incorporated	Review M&E components in policies and guidelines			Participate in guidelines review meetings and ensure that the M&E componets are incorporated	5	Participate in guidelines review meetings and ensure that the M&E componets are incorporated	5	Participate in guidelines review meetings and ensure that the M&E componets are incorporated	5
Proportion of sub-counties reporting presumptive TB cases	Develop presumptive TB registers	Hold 1, 5 day meeting to develop the presumtive TB register	0	n/a	25%	Hold 1, 5 day meeting to revise the presumptive TB register	50%	n/a	>85%
	Print presumptive TB registers	n/a		Print 6,000 presumptive TB Registers		Print 6,000 presumptive TB Registers		n/a	
	Disseminate presumptive TB registers	n/a		Hold a meeting to disseminate TB presumptive register to 47 counties		n/a		Hold a meeting to disseminate revised TB presumptive register to 47 counties	
	Distribute presumptive TB registers	n/a		Use courier services to distribute 6,000 presumptive TB register to all 47 counties		n/a		Distribute 6,000 presumptive TB registers	
Proportion of sub-counties reporting 100% of their facilities using contact registers	Develop/ Integrate/Review contact register	1. Hold I meeting to develop/ integrate the contact register	0	n/a	25%	Hold 1 meeting to review contact register	50%	n/a	>85%
	Print contact register	Print 4,000 copies of contact register		n/a		Print 4000 copies of the contact, register		n/a	
	Disseminate contact registers	n/a		Hold a meeting to disseminate contact registers to 47 counties		n/a		Hold a meeting to disseminate revised contact registers to 47 counties	
	Distribute contact registers	n/a		Distribute 4,000 copies of contact registers upto to county level		n/a		Distribute 4,000 copies of contact registers upto to county level	
Proportion of facilities using the integrated tool to report through DHIS	Intergrate casefinding and cohort reporting tool into MOH 711 facility reporting tool	Hold a 2 day retreat to intergrate the tools	0	n/a	2%	Hold a 2 day meeting to review the integrated tool	80%	n/a	100%
	Pretesting of the intergrated tools	n/a		Pretest the tool in the 5 model counties targetting all the county and sub county hospitals		n/a		n/a	
	Printing of the tool	Print 50 copies for pretest		Print 4,000 copies for dissemination		n/a		Print 4,000 copies for dissemination	
	Disseminate intergrated tools	n/a		n/a		Hold a 1 day meeting to disseminate integrated tool in 47 counties		n/a	
	Distribute intergrated tools	n/a		n/a		Use courier to distribute 4,000 copies of integrated tool up to county level		n/a	

Monitoring and Evaluation Operational Plan

Output Indicator(s)	Intervention(s)	Year 1 Activities	Yr 1 Target	Year 2 Activities	Yr 2 Target	Year 3 Actitivies	Yr 3 Target	Year 4 Activities	Yr 4 Target
Proportion of TB diagnostic labs provided with all the relevant tools	Revise laboratory data collection and reporting tools	Hold a 5 day meeting to revise each of the 12 types of lab recording and reporting tools	100%	n/a	100%	Revise, print and disseminate each of the 12 types of lab data collection tools	100%	n/a	100%
Proportion of TB diagnostic labs provided with all the relevant tools	Print AFB microscopy, Xpert, culture/DST request forms . Lab registers (AFB, Culture, Xpert), EQA forms	3,600 booklets for AFB of 100 pages, 4,000 booklets of 50 duplicate leafs for culture, 2,500 AFB registers, 200 Xpert registers of 100 pages, 20,000 booklets of GXpert request forms of 50 pages, 1,800 booklets of EQA Sampling forms of 50 leafs, 1,800 booklets of EQA analysis forms of 50 leafs, 500 booklets of EQA workload summary of 50 leafs in triplicate, 250 booklets of EQA discordant forms of 50 leafs, 1,800 bookletsof EQA checklist 50 leafs in triplicate, 1,800 AFB Job aids		3,600 booklets for AFB of 100 pages, 4,000 booklets of 50 duplicate leafs for culture, 2,500 AFB registers, 200 Xpert registers of 100 pages, 20,000 booklets of GXpert request forms of 50 pages, 1,800 booklets of EQA Sampling forms of 50 leafs, 1,800 booklets of EQA analysis forms of 50 leafs, 500 booklets of EQA workload summary of 50 leafs in triplicate, 250 booklets of EQA discordant forms of 50 leafs, 1,800 bookletsof EQA checklist 50 leafs in triplicate, 1,800 AFB Job aids		3,600 booklets for AFB of 100 pages, 4,000 booklets of 50 duplicate leafs for culture, 2,500 AFB registers, 200 Xpert registers of 100 pages, 20,000 booklets of GXpert request forms of 50 pages, 1,800 booklets of EQA Sampling forms of 50 leafs, 1,800 booklets of EQA analysis forms of 50 leafs, 500 booklets of EQA workload summary of 50 leafs in triplicate, 250 booklets of EQA discordant forms of 50 leafs, 1,800 bookletsof EQA checklist 50 leafs in triplicate, 1,800 AFB Job aids		3,600 booklets for AFB of 100 pages, 4,000 booklets of 50 duplicate leafs for culture, 2,500 AFB registers, 200 Xpert registers of 100 pages, 20,000 booklets of GXpert request forms of 50 pages, 1,800 booklets of EQA Sampling forms of 50 leafs, 1,800 booklets of EQA analysis forms of 50 leafs, 500 booklets of EQA workload summary of 50 leafs in triplicate, 250 booklets of EQA discordant forms of 50 leafs, 1,800 bookletsof EQA checklist 50 leafs in triplicate, 1,800 AFB Job aids	
	Disseminate lab recording and reporting tool	n/a		Hold 1 meeting to disseminate lab recording and reporting tools		n/a		Hold 1 meeting to disseminate lab recording and reporting tools	
	Distribute lab recording and reporting tools	n/a		Use courier to distribute various lab recording and reporting tools upto county level		n/a		Use courier to distribute various lab recording and reporting tools upto county level	
Proportion of sub-counties reporting 100% of their facilities using patient cards	Revise TB patient record card	Hold a TWG to review the patient record card an incoporate new definitions	100%	n/a	100%	n/a	100%	n/a	100%
	Print patient TB record card	Print 100,000 patient record cards		-		Print 100,000 patient record cards		n/a	
	Distribute patient TB record card	n/a		Use courier to distribute cards up county level		n/a		Use courier to distribute cards up county level	
Proportion of sub-counties reporting 100% of their facilities using lung diseases recording tools	Revise lung disease recording and reporting tools	n/a	0%	Hold 5 day meeting to revise lung disease recodring and reporting tools	50%	n/a	100%	n/a	100%
	Print 4,000 copies of lung disease recording and reporting tools	n/a		Print 4,000 copies of lung disease recording and reporting tools		n/a		n/a	
	Disseminate lung disease recording and reporting tools	n/a		Hold 1 meeting targeting 47 counties to disseminate lung disease recording and reporting tools		n/a		n/a	
	Distribute lung disease recording and reporting tools	n/a		Use courier to distribute 4,000 copies of lung disease tools upto county level		n/a		n/a	

Monitoring and Evaluation Operational Plan

Output Indicator(s)	Intervention(s)	Year 1 Activities	Yr 1 Target	Year 2 Activities	Yr 2 Target	Year 3 Actitivies	Yr 3 Target	Year 4 Activities	Yr 4 Target
Proportion of registered CU's reporting community TB activities through DHIS/TIBU	Develop/revise community recording and reporting tools	Hold 5 day meting to revise/develop community recording and reporting tools	0%	n/a	50%	n/a	100%	n/a	100%
	Print community recording and reporting tools	Print 10,000 copies of community tools		n/a		n/a		n/a	
	Disseminate community tools	Hold 1 day dissemination meeting targeting CTLC and community program coordinators to disseminate community tools		n/a		n/a		n/a	
	Distribute community tools	n/a		Use courier to disseminate tools upto county level		n/a		n/a	
Proportion of printed tools with SOPs integrated	Develop SOPs on use of data collection and recording tools developed/revised	Develop SOPs on use of data collection and recording tools developed/revised	50%	Print and disseminate data collection and recording tools with SOPs incorporated	100%	Print and disseminate data collection and recording tools with SOPs incorporated	100%	Print and disseminate data collection and recording tools with SOPs incorporated	100%
Strategic Approach 2: Strengthen TIBU and its integration with other surveillance platforms									
TIBU Phase III completed and signed off	Improve TIBU to accommodate new functions and linkage with other systems	Engage TIBU Phase III developers to rescope and start expansion of the system to include community, TB/HIV, linkage with DHIS, GeneXpert Alert system and LMIS and other felt needs		n/a	1	n/a		n/a	
		Hold 3 day retreat for rescoping TIBU Phase III		n/a		n/a		n/a	
	Build consensus on integration of TIBU with other systems	Conduct 3 days stakeholders meeting to build consensus on integration of TIBU with other information management systems		n/a		n/a		n/a	
	Hold weekly operations TWG meetings (15 pax)	Support operations TWG to hold weekly meetings to oversee development of TIBU Phase III		n/a		n/a		n/a	
	Hold monthly policy TWG meetings	Support policy team to hold monthly meetings to give direction on TIBU Phase III development		n/a		n/a		n/a	
	Pilot TIBU Phase III	Support 5 counties to pilot TIBU Phase III and give feedback		n/a		n/a		n/a	
	Roll out TIBU Phase III	Train TIBU end users for 3 days to start using TIBU Phase III		n/a		n/a		n/a	
	hold a 2 day stakeholders meeting to review use and impact of TIBU	n/a		n/a		Support a 3 day stakeholders meeting to discuss impact of TIBU to include MOH officials, NGO, donors and developers		n/a	
	Conduct TIBU refresher training	n/a		n/a		Support a 2 day refresher training for TIBU end users to address emerging issues		n/a	
	Provide continuous technical support on TIBU	Develop tools for use at TIBU help desk to capture field issues reported and response provided		Support 2 IT staff to man TIBU help desk		n/a		n/a	

Monitoring and Evaluation Operational Plan									
Output Indicator(s)	**Intervention(s)**	**Year 1 Activities**	**Yr 1 Target**	**Year 2 Activities**	**Yr 2 Target**	**Year 3 Actitivies**	**Yr 3 Target**	**Year 4 Activities**	**Yr 4 Target**
Strategic Approach 3: Improve TB financial reporting and quantification of needs									
Proportion of counties reporting TB financial data annually	Develop a financial reporting tool	Conduct desk review and development of the NTLD Program financial reporting tool	0%	Disseminate the financial reporting tool, including training	50%	Disseminate the financial reporting tool, including training	80%	Disseminate the financial reporting tool, including training	100%
	Monitoring of sub-sector (TB) finance expenditure	Analysis of TB sub sector financial expenditures		Analysis of TB sub sector financial expenditures		Analysis of TB sub sector financial expenditures		Analysis of TB sub sector financial expenditures	
	Support the mainstreaming of SHA-2011	Support the participation of Key M&E staff in the program to participate in the SHA-process for Kenya		Support the participation of Key M&E staff in the program to participate in the SHA-process for Kenya		Support the participation of Key M&E staff in the program to participate in the SHA-process for Kenya		Support the participation of Key M&E staff in the program to participate in the SHA-process for Kenya	
Strategic Approach 4: Improve TB, leprosy and lung disease mortality statistics									
Proportion of facilities reporting mortality statistics using ICD-10	Train 2,400 HCW and registration agents on the use of verbal autopsy	Conduct training 600 Health care workers and registration agents on Verbal autopsy	20%	Training of 600 health care workers and registration agents on verbal autopsy	50%	Training of 600 Health care workers and registration agents on Verbal autopsy	85%	Training of 600 Health care workers and registration agents on Verbal autopsy	>85%
	Train 4,800 health care workers on coding/ certification	Training of 1,200 Health care workers on ICD-10 training		Training of 1,200 health care workers on ICD-10 training		Training of 1,200 Health care workers on ICD-10 training		Training of 1,200 Health care workers on ICD-10 training	
	Carry out analysis of mortality statistics together with CRD and KNBS	Hold 2 workshops to analyze mortality statistics and produce a report		Hold 2 workshops to analyze mortality statistics and produce a report		Hold 2 workshops to analyze mortality statistics and produce a report		Hold 2 workshops to analyze mortality statistics and produce a report	
Strategic Approach 5: Improve the quality and systematic use of strategic information									
Proportion of facilities achieving set data quality standards	Conduct annual routine and systematic data quality assessments (DQAs) at county level								
	Conduct 5 day DQA to sub counties by county teams	88%	Conduct 5 day DQA to sub counties by county teams	>88%	Conduct 5 day DQA to sub counties by county teams	>90%	Conduct 5 day DQA to sub counties by county teams	>90%	
Proportion of planned annual DQA activities conducted at all levels	Conduct annual routine and systematic data quality assessment at national level to improve data completeness, consistency and accuracy	Conduct 14 days DQA to counties by the national team	90%	Conduct 14 days DQA to counties by the national team	90%	Conduct 14 days DQA to counties by the national team	90%	Conduct 14 days DQA to counties by the national team	90%
Proportion of sub-counties conducting monthly data review meetings	Carry out monthly data review meetings at sub county level			Support subcounties to conduct monthly review meetings	30%	Support subcounties to conduct monthly review meetings	66%	Support subcounties to conduct monthly review meetings	90
	Develop/ Review M/E training curriculum	n/a		Review the M/E component in the intergrated curriculum		n/a		n/a	
	Train TOTS in M/E and data management	n/a		Conduct intergrated TOT training for county staff		n/a		n/a	
Proportion of facilities with monthly reports on TB/MDR-TB	Conduct CMEs to HCWs on data management	n/a		Support 100 sessions of CMEs in sub counties	25%	Support 100 CME sessions of in sub counties	50%	Support 100 sessions of CMEs in sub counties	>80%

Monitoring and Evaluation Operational Plan

Output Indicator(s)	Intervention(s)	Year 1 Activities	Yr 1 Target	Year 2 Activities	Yr 2 Target	Year 3 Actitivies	Yr 3 Target	Year 4 Activities	Yr 4 Target
Proportion of counties with updated M&E plans	Guide counties to develop their M&E plan as part of defining their health strategy	n/a	n/a	Conduct TA missions to counties on development of M/E plans	25%	Conduct TA missions to counties on development of M/E plans	50%	Conduct TA missions to counties on development of M/E plans	100%
	Support use of real time TIBU data to guide program activities at all levels	Hold meeting by the TWG to develop a tool for guiding on data use		Conduct 5 TA missions to each of the model counties		Conduct 5 TA mission to each of the model counties		Conduct 5 TA missions to each of the model counties	
Proportion of counties with functional TWGs on M&E and OR	Maintain a functional M&E technical working group (TWG) at National level and enhance the formation of M&E TWG in each county.		n/a	Hold quarterly TWG meetings both at county and national level	100%	Hold quarterly TWG meetings both at county and national level	100%	Hold quarterly TWG meetings both at county and national level	100%
Number and type of data products produced at national level and disseminated	Establish and support data management program (DMU) at the national level	Hold a meeting for the members of data management program to develop TORs		Hold a 2 day retreat to complete the data management manual and SOPs	5	n/a	5	Hold a 2 day retreat to review the data management manual and SOPs	5
		n/a		Print 3,500 copies data management manual and SOPs		n/a		Print 3,500 copies of reviewed data management manual and SOPs	
		n/a		Hold a 1 day meeting to disseminate data management manuals and SOPs to counties		n/a		Hold a 1 day meeting to disseminate reviewed data management manuals and SOPs to counties	
		n/a		Use courier to distribute data management manual and SOPs		n/a		Use courier to distribute reviewed data management manual and SOPs	
Proportion of counties developing and disseminating data products at least once every 6 months	Procure data analysis software	Procure a data analysis and mapping software		n/a	25%		50%		75%
	Train members of data management program on data analysis and management	Hold a 5 day training for members of data management program on data analysis and management		n/a		Hold a refresher course for members of DMU		n/a	
Proportion of sub-counties with timely reports and monthly returns	Provide tablets for use in the surveillance system	Procure 100 tablets for central program staff and newly recruited field TB managers	100%	Procure 100 tablets for replacement of old stock and newly recruited field TB managers	100%	Procure 100 tablets for replacement of old stock and newly recruited field TB managers	100%	Procure 100 tablets for replacement of old stock and newly recruited field TB managers	100%
	Insure of tablets	Insure 100 new tablets		Insure 100 new tablets		Insure 100 new tablets		Insure 100 new tablets	
	Provide support for continuous running of TIBU system	Provide monthly internet bundles for 400 tablets for running of TIBU		Provide monthly internet bundles for 400 tablets for running of TIBU		Provide monthly internet bundles for 400 tablets for running of TIBU		Provide monthly internet bundles for 400 tablets for running of TIBU	
	Provide cloud hosting of TIBU data	Provide cloud hosting for continuous hosting of TIBU data		Provide cloud hosting for continuous hosting of TIBU data		Provide cloud hosting for continuous hosting of TIBU data		Provide cloud hosting for continuous hosting of TIBU data	
	Provide internet connectivity for TIBU data	Pay monthly/annual internet fee to safaricom for connectivity to TIBU data hosted in the cloud		Pay monthly/annual internet fee to safaricom for connectivity to TIBU data hosted in the cloud		Pay monthly/annual internet fee to safaricom for connectivity to TIBU data hosted in the cloud		Pay monthly/annual internet fee to safaricom for connectivity to TIBU data hosted in the cloud	
	Ensure internet connectivity for NTLD- Program	Provide both fixed and wireless internet connectivity to NTLD Program		Provide both fixed and wireless internet connectivity to the NTLD Program		Provide both fixed and wireless internet connectivity to NTLD Program		Provide both fixed and wireless internet connectivity to NTLD Program	
Number of downtime episodes per month for the NTLD Program internet	Secure TIBU data by having backup at NTLD Program	n/a	6	Procure 2 servers with relevant software for data backup and install them at the NTLD Program	6	Continuous update of back data in the server	5	Continuous update of back data in the server	4

Monitoring and Evaluation Operational Plan									
Output Indicator(s)	**Intervention(s)**	**Year 1 Activities**	**Yr 1 Target**	**Year 2 Activities**	**Yr 2 Target**	**Year 3 Actitivies**	**Yr 3 Target**	**Year 4 Activities**	**Yr 4 Target**
	Improve the current email hosting to Google Cloud from group wise	Move current email hosting to Google Cloud from group wise and open email accounts for all NTLD Program staff		Provide continuous maintanance of email accounts for all NTLD Program staff		Provide continuous maintanance of email accounts for all NTLD Program staff		Provide continuous maintanance of email accounts for all NTLD Program staff	
	Procure computers for 5 model counties for implementation of TIBU at county and sub county facilities	n/a		n/a		Procure and provide computers to the county and sub-county facilities in 5 model counties		n/a	
Number of cumulative ORs conducted and documented	Revamp the research task force at the national level and advocate for similar forums at county level; promote impact assessment and prioritize research, including OR that will address programme challenges	Hold one meeting to draw TORs for the taskforce and nominate the members	5	Hold quarterly research taskforce meetings	5	Hold quarterly research taskforce meetings	5	Hold quarterly research taskforce meetings	5
	Build the capacity of members of the research taskforce	Conduct a 3 day training for the taskforce		n/a		Conduct a 3 day refresher training for the taskforce		n/a	
	Develop a tracking system for number of people trained on OR and number of studies conducted	Engage database developer		Continous use of the system		Continous use of the system		Continous use of the system	
	Develop a criteria for identification of OR trainees	hold 1 day taskforce meeting to develop the criteria for OR trainees		n/a		Hold 1 day taskforce meeting to develop the criteria for OR trainees		n/a	
	Support the research taskforce in undertaking county level mentorship sessions	n/a		Hold,1, 3 day joint taskforce, mentor/ mentee mentorship workshop		Hold 1, 3 day joint taskforce , mentor/mentee mentorship workshop		Hold 1 ,3 day joint taskforce, mentor/ mentee mentorship workshop	
Proportion of trained mentees with completed and documented OR	Build capacity of field TB managers on impact assessment and OR	hold a 5 day training for 25 field TB managers on OR	30%	Hold a 5 day training for 100 field TB managers on OR	80%	Hold a 5 day training for 100 field TB managers on OR	>80%	Hold a 5 day training for 50 field TB managers on OR	>80%
Proportion of trained mentees attending and presenting in dissemination meetings	Conduct biannual forums to share research findings at the county level	n/a		Hold 2 meetings for targeting OR mentee and mentors to share progress, good practices and challenges.	>90%	Hold 2 meetings for targeting OR mentee and mentors to share progress, good practices and challenges	>90%	Hold 2, 2 days meetings for targeting OR mentee and mentors to share progress,good practices and challenges.	>90%
Number of conferences held and documented	Conduct biennial lung health conferences	n/a		Hold monthly secretariat meetings in preparation for the biennial lung conference	1	n/a		Hold monthly secretariat meetings in preparation for the biennial lung conference	1
				Hold scientific review committee monthly meetings for 3 six months				Hold scientific review committee monthly meetings for 3 six months	
				Hold 3 days biennial lung health conference for 800 pax				Hold 3 days biennial lung health conference for 800 pax	
Final drug resistance suvey reports developed and shared through website	Conduct Drug Resistant Survey	Data collection, analysis and report writting		Hold a one day meeting to disseminate findings of drug resistance survey to stakeholders	1	n/a		n/a	
Final prevalence suvey reports developed and shared through website	Conduct Prevalence survey	Complete development of survey SOP		Conduct a 3 day training of the research personnel		Hold a one day meeting to disseminate findings of prevalence survey to stakeholders	1	n/a	
		Mapping of all the eligible participants		Conduct data data collection, analysis and report writting		n/a		n/a	

Monitoring and Evaluation Operational Plan

Output Indicator(s)	Intervention(s)	Year 1 Activities	Yr 1 Target	Year 2 Activities	Yr 2 Target	Year 3 Actitivies	Yr 3 Target	Year 4 Activities	Yr 4 Target
		Procuring of survey equipment		Hold a one day meeting to disseminate findings of prevalence survey to 100 stakeholders					
		Recruitment of research personnel		n/a					
Final survey on delay in diagnosis developed and shared through website	Conduct a survey on Delay in Diagnosis	Complete field data collection		Hold a one day meeting to disseminate findings of delay diagnosis survey to 100 stakeholders	1	n/a		n/a	
		Conduct data analysis and report writing		n/a					
Final mortality survey reports developed and shared through website	Conduct a Mortality Survey	n/a		Develop survey protocol and data collection tools		Conduct data analysis for the mortality survey and report writing	1	n/a	
				Prestest the tools		Hold a one day meeting to disseminate findings of mortality survey to 100 stakeholders			
				Conduct field data collection		n/a			
Final Knowledge, Attitude and Practice (KAP) survey reports developed and shared through website	Conduct Knowledge Attitude and Practice (KAP) Survey onTB, Leprosy and lung disease (to be comprehensive – legislators, patients, HCWs, media, community)	n/a		n/a		Develop survey protocol and data collection tools		Conduct data analysis for the KAP survey and report writing	1
						Prestest the tools		Hold a one day meeting to disseminate findings of KAP survey to 100 stakeholders	
						Conduct field data collection		n/a	
Final Paediatric TB/HIV survey reports developed and shared through website	Conduct a Pediatric TB HIV study	n/a		Data collection and analysis		Dissemination of Findings	1	n/a	
Final Inventory Study developed and shared through website	Conduct an Inventory Study: To determine Initial default and under-reporting of diagnosed smear positive TB	Data collection, analysis and report writting		Dissemination of findings	1				
Report on impact of Xpert MTB on diagnosis of TB shared through website	Evaluate the impact of Xpert MTB on diagnosis of TB (as per the national protocol)	n/a		Data collection and analysis		Dissemination of findings	1		
Report on imact of ICF and IPT implementation shared through website	Assess the Outcomes of ICF and IPT implementation in routine clinical settings in Kenya	n/a		n/a		Data collection, analysis and report writing		Dissemination of findings	1
Report of Pulmonary Aspergilosis in PTB patients shared through website	Conduct a survey on Pulmonary Aspergilosis in PTB patients	n/a		Data collection and analysis		Dissemination of findings	1	n/a	
Final burden of lung disease study developed and shared through website	Conduct the Burden of Lung Disease (BOLD) study nationally	n/a		Data collection		Data collection, analysis and report writing		Dissemination of findings	1

4.3.9. Enabling environment

4.3.9.1. Policy

1. Situational Analysis

The rapidly evolving health system, including devolution and a move toward universal health coverage, will require adaptations in how the NTLD Program operates. Tuberculosis, leprosy and lung health will need to become part of essential health package that is formed on the basis of emerging/expanding demand-side, performance-based and social support financing schemes. For example, the direct facility cash transfer program called the Health Sector Services Fund (HSSF) or the health insurance for poor families called the Health Insurance Subsidy Programme (HISP), does not currently include TB prevention and control services.

Over the next three (3) years, it is estimated that the NTLD Program will face a financing gap totaling 50% of its required funding. Data from the National Health Accounts (NHA) suggested that while TB accounts for over 6% of deaths and nearly 5% of DALYs in the country, it receives only 1% of total health expenditures for priority areas. This is in contrast to malaria's contribution to nearly 6% of deaths and 7% of DALYs, but in receipt of 25% of total health expenditures for priority areas.

TB particularly harms the poor in Kenya. Over half of patients are malnourished, to some degree, at the onset of treatment, with 17% being severely malnourished and a further 22% being moderately malnourished. Poor nutritional status is known to negatively impact treatment adherence and outcomes[1]. A review of case notifications by county poverty rate demonstrated that case finding is lagging in the poorest counties. It is not known if this is a reflection of the actual epidemiology or barriers to care, but it is cause for concern and should be further investigated. The majority of nutrition support programs that can benefit TB patients target women and children, leaving male TB patients without equitable access.

2. Strategic Direction(s) for 2015-2017

The priority is to position the activities of the NTLD Program within the priorities of the health sector, social protection agenda, and other relevant sectors. Ensuring the full integration of TB within county priorities and national financing of universal health care is similarly important.

3. Proposed Approaches

Actively participate in national policy and planning process in the move towards universal health coverage, ensuring that TB and leprosy control are appropriately positioned.

i. Articulate the investment case for TB control in Kenya, with targeted policy briefers to inform county and national level policy-development. It may be necessary to change perceptions that TB and leprosy are sufficiently funded or can operate sustainably on supply-side financing.

ii. Define the reimbursement package that would be required to fully reimburse service delivery providers for the care of a TB or MDR-TB case. Ensure that these are made available to the NHIF, for the purposes of consideration under the HISP and other future insurance schemes.

iii. Ensure the inclusion of TB and leprosy where appropriate, in broad sector strategies and initiatives. Actively collaborate across the MoH, including with NHA, NACC, NASCOP, and Policy and Planning; with other sectors such as labor, education, and social protection; and with external partners working on devolution, such as the World Bank.

Some of the immediate needs include:

1 http://digitalcommons.calpoly.edu/cgi/viewcontent.cgi?article=1009&context=fsn_fac

1. Social protection: Develop a strategy to enhance linkages to social protection schemes by TB patients: e.g. nutritional, transportation and cash support.
2. Monitor the impact (positive and negative) of devolution and emerging financing modalities on TB case notifications and treatment outcomes, with a view to learning lessons for scale-up of what works.

NTLD Program to actively seek to expand its partner base; to facilitate the mainstreaming of programme priorities into the devolution and Universal Health Care (UHC) processes.

i. Systematic collaboration with other government actors should include National Health Accounts (NHA), Treasury, MoH Policy and Planning division, Social Protection, Ministry of Labor (workplace-based DOTS and labor policy to protect TB and leprosy patients), Ministry of Education (potential information raising and TB screening in schools) and NACC (TB/HIV).

ii. Engaging non-governmental partners and donors who are key partners in the health sector such as the World Bank and DANIDA, to ensure that TB and leprosy are well integrated in emerging pro-poor, insurance and social protection strategies.

iii. Seek to harmonize efforts with other disease programs within the communicable diseases division, e.g.
   1. Integrate other communicable diseases within TIBU, or a TIBU-like system
   2. Single planning/financing tool (e.g. WHO TB financing tool, simplified)
   3. Shared capacity building activities
   4. Shared advocacy to counties for appropriate priority-setting and planning for communicable diseases
   5. Hire an economist and statistician at division level to support analytical work required to monitor impacts of new technical approaches and devolved implementation.

Address the social determinants of TB through policy change and social protection schemes

i. Evaluate the financial barriers for TB patients as part of the prevalence survey, or conduct participatory poverty assessments (PPAs) to prioritize social health protection measures that would best support TB patients.

ii. Identify and explicitly remove the financial barriers contributing to diagnostic delay and at the point of care; e.g. promote free diagnostic services for children

iii. Evaluate the impact of current nutritional support programs on TB case finding and treatment outcomes. Explore the expansion of programs to include male TB patients

iv. Pilot test the inclusion of TB in a demand-side financing model as part of the roll-out of HISP, which includes a transport subsidy.

Update national policies

i. Make x-rays and Xpert testing free for children. The financial barriers to diagnosis may delay notification of childhood TB cases. Consideration should be given to removing the financial cost of diagnostic tests to all presumptive TB patients, particularly for the poor and among those living with HIV.

ii. Establish enforcement modalities for mandatory notification of TB, leprosy and lung diseases by private providers

iii. Establish legal framework to protect TB and leprosy patients from workplace-based discrimination

iv. Make mandatory the inclusion of TB and leprosy benefits within insurance packages (public and private)

v. Establish TB and leprosy as qualifying events for access to social protection benefits

vi. Introduce Xpert as the 1st diagnostic tool for PLHIV, children, retreatment cases, refugees and health care workers

vii. Add PAL medications; e.g. inhalers, to the essential drugs list.

4.3.9.2. Advocacy and communications

1. Situational Analysis

Given current resource availability, the NTLD Program estimates that there will be a budget shortfall of more than 50% of the total required to fully implement this NSP.

Increasing government investments in TB, leprosy and lung health will require political commitment and resource prioritization by not only the central government but also by the county governments. It will require that the programme realize efficiency gains through the integration of TB and leprosy control activities into other service delivery platforms (e.g. MCH), financing modalities (e.g. insurance schemes), and policies (e.g. workplace). Complementary and increased funding from donors and partners will be needed to sustain core activities and enable the roll-out of new innovations. In all cases, targeted communication and advocacy to the respective constituencies will need to be developed and delivered.

According to Kenya Demographic and Health Survey (KDHS, 2009), 98% of men and women in Kenya have heard about TB, with 89% of women and 92% of men recognizing that it can be cured. The KDHS suggested that stigma persists, with 25% of women and 10% of men noting that if a family member had TB, they would want to keep it a secret. In rural areas, knowledge about TB is significantly less common and stigma is higher than in urban settings[1]. The only TB-specific Knowledge, Attitudes and Practice (KAP) surveys done recently were among school children, and do not adequately guide planning.

Despite widespread general knowledge, care seeking is commonly delayed. Studies from various regions within Kenya have shown care seeking and diagnostic delays ranging from weeks to months. Furthermore, almost 5% of patients default from treatment.

There is anecdotal evidence suggesting that provider perceptions about the effectiveness and impact of some interventions, such as the provision of IPT, limit their willingness to deliver these services. Among health care workers who develop TB, treatment success rate is lower (75%) than in the general population (>85%), suggesting stigma or other constraints to treatment adherence.

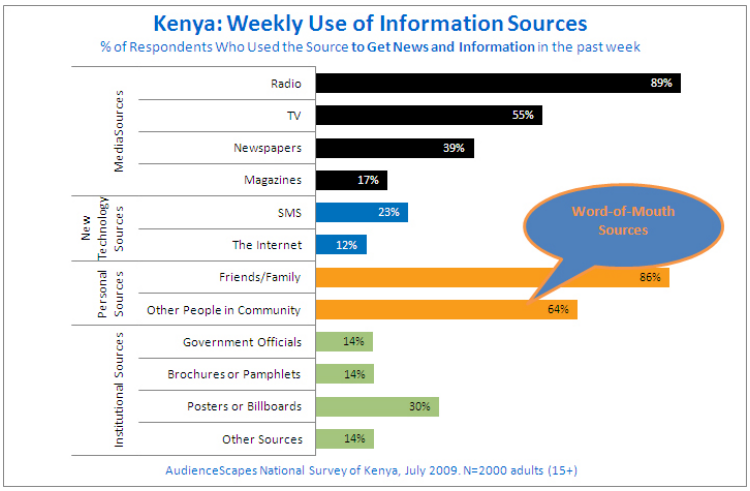


Figure 30: Weekly Use of Information Sources

A communication and advocacy strategy was developed by the NTLD Program in 2012, but has not been implemented.

2. Strategic Direction(s)

Communications and advocacy efforts will contribute to the acceleration of case detection and increase of treatment success rate by ensuring that relevant information and targeted messages reach those who can influence individual, community, provider, government or donor behavior. Mobilization of political will and resources, financial and human, is a priority for advocacy-related activities.

3. Proposed Approaches

The proposed approaches outlined below respond to the recognition that different programmatic needs are best addressed by advocacy and communication activities that target different audiences. (See Figure 31)

A foundational economic and social investment case for TB, leprosy and lung health will be developed, from which messaging for many of the constituencies highlighted below can be derived; i.e. framing the case for "why invest in TB, leprosy and lung health" at all levels of the government, and among partners, communities and households.

1 Demographic and Health Survey, Kenya; 2008-9

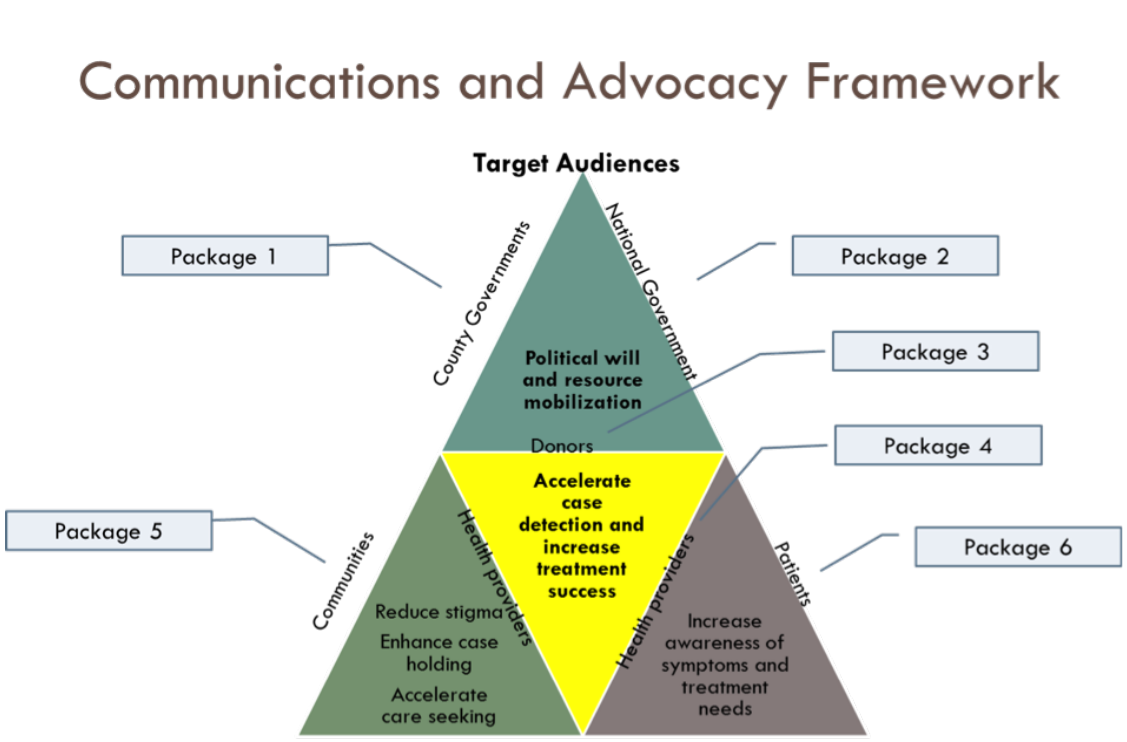


Figure 31: Communications and Advocacy Framework

Package 1: Build political will and mobilize resources at county government level

Building political will and mobilizing resources for TB, TB/HIV, leprosy and lung health at the county level will require that the burden of these diseases in each county be contextualized. Situational analyses that build on this NSP are planned for each county that should yield baseline information and propose county-specific targets to be monitored, including programme performance, financial commitments and disbursement, and funding gaps per county. These county-specific advocacy and communications plans will take into account the local challenges and opportunities described in the section on Core DOTS. Opportunities for resource mobilization in support of counties with limited local resources will be prioritized.

Issues related to the control of TB, leprosy and lung health can be incorporated into county health fora. The NSP supports the establishment of a STOP TB Partnership office to coordinate communication and advocacy efforts in every county with CNR >175/100,000 as these are areas with multiple partners and high needs. Furthermore, medical parliamentarians (i.e. members of parliament on the health committee) will be engaged to promote local political will in their home areas.

Some illustrative activities under this package include: a) hosting a breakfast meeting during the Governors' council just before the annual work planning process; b) convening of county stakeholder meetings to review health budgets against yardsticks for funding allocations; c) identify TB champions for each county; d) develop TB portals within each county's website.

Package 2: Build political will and mobilize resources at national government level

The existing communications and advocacy plan does not sufficiently respond to the redefinition of central level roles and responsibilities. The NTLD Program must enhance communications and advocacy *across the central government*, broadening ownership of the programme and integrating TB, leprosy and lung health issues into social protection schemes and other health and non-health sector development plans.

The engagement of the Parliamentary Health Committee and the Senate will be sought, with regular briefs provided by the NTLD Program. The NTLD Program must concurrently facilitate access to information about the diseases and its programs among the *citizenry and stakeholders*. Finally, the central NTLD Program must operationalize its increased communication and advocacy role vis-à-vis the *counties*. The national communications and advocacy strategy will therefore be updated. KAP evidence will emerge as part of the national prevalence survey and can enhance the update.

Package 3: Build political will and mobilize resources at donor level

The NSP has dual objectives of sustaining close collaboration with existing donors and nurturing new donor partnerships. National and county-level Stop TB Partnerships will be supported to engage new donors from the private and other non-state sectors, including businesses. The NTLD Program and its partners will proactively and creatively mobilize new funds through events, such as races, rhino charge; and innovative financing, e.g. tax breaks, charity pledges. A database of existing and potential donors will be established to better target resource mobilization where large gaps remain.

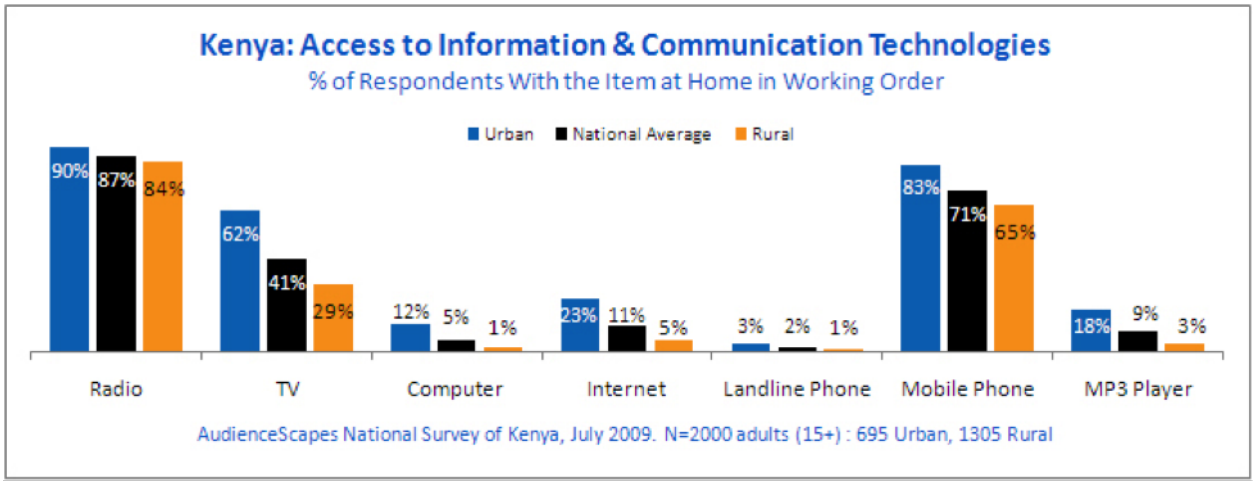


Figure 32: Access to Information and Communication Technologies

Package 4: Accelerate case detection and increase treatment success through health providers

To ensure health providers have all the relevant technical information as well as the motivation to provide quality services, activities are planned to: a) disseminate existing tools; b) develop new communication and advocacy materials targeting the specific needs of HCWs, such as tools for adherence counseling and health education, fact sheets on IPT and contact tracing. Motivating HCWs through professional development opportunities and performance-based recognition will form part of the advocacy strategy.

The NTLD Program will update pre-service and in-service medical training for all cadres of personnel to ensure that training is consistent with the norms and policies of the NTLD Program. Key faculty will be engaged to design and deliver potentially online, short courses or modules that communicate the components of NTLD Program guidelines. These modules and courses will be promoted as integral components of pre-service training.

Package 5: Reduce stigma, accelerate care seeking, and enhance case holding through communities

New communication materials and messages, including print, radio and mobile-phone based (depending on the local context), will be developed and translated for use at community level. Tools will be developed and activities supported to empower CHEWs, CSOs, religious leaders and other community leaders to inform, educate and support their patients, patient families and communities. TB, leprosy and lung health activities will be integrated into the training curriculum and terms of reference for CHEWs.

Similarly, tools to facilitate the referral of presumptive and confirmed patients between health facilities and the community will be developed. Tools to engage informal providers such as drug sellers, and to engage workplaces in the referral of presumptive cases, will also be developed. The NTLD Program will incorporate TB, leprosy and lung health messages into community health days and other health-related platforms at community level.

A specific focus on gender-based differences in knowledge, care seeking and treatment adherence will render gender-specific activities. For example, male-specific clubs led by male, former TB patients/champions will focus on overcoming the higher rate of default among men.

Package 6: Increase awareness of symptoms among patients and their expectations during treatment

Communication efforts targeting patients aim to provide information and resources to successfully complete treatment. Former and current TB patients, especially amonth the youth, will be engaged in crafting the messages and determining the best delivery platforms, e.g. web-based, social media, SMS, health workers.

The NTLD Program will consider how to best deliver information, based on known access to different forms of communication (See Figure 32). Existing tools, such as the patient charter (International Standards of Tuberculosis Care 2014), will be updated and made available to all DOT supporters. An interactive website and TB hotline will be hosted to facilitate confidential communication channels for patients.

Patient-centered communication will be developed in collaboration with the relevant partners, to refer TB, leprosy and lung health patients to social protection schemes, social support systems, and income generation activities. This messaging will evolve as the NTLD Program mobilizes support for the inclusion of TB and leprosy patients in social protection. Advocacy to partners to establish incentives for patients to complete treatment; e.g. Bata Shoe Co. voucher, will be pilot tested in selected areas with low treatment success.

Advocacy and Communications Operational Plan

Output Indicator(s)	Intervention(s)	Year 1 Activities	Yr 1 Target	Year 2 Activities	Yr 2 Target	Year 3 Activities	Yr 3 Target	Year 4 Activities	Yr 4 Target
Strategic Approach 1: Build political will and mobilize resources at county government level									
Proportion of counties with situational analysis for TB, leprosy and lung diseases reports	Support meeting to contextualize the burden of TB, leprosy and lung diseases for each county.	47 situational analyses and epi reports for all the counties	100%	n/a		n/a		n/a	
Number of meetings held to set county-specific targets to be monitored.	Support meeting to set county-specific targets to be monitored, including programme performance, financial commitments and disbursement, and funding gaps per county	1	1	1	1	n/a		n/a	
Number of counties with a CNR of >175/100,000 with established STOP TB Partnership offices	Support for the establishment of a STOP TB Partnership office to coordinate communication and advocacy efforts in every county with CNR >175/100,000	n/a		STOP TB Offices established in 10 counties	10	STOP TB Offices established in 10 counties	10	STOP TB Offices established in 10 counties	10
Number of county breakfast meetings held for the MCA health team	Support hosting biannual breakfast meeting with members of county assembly on the health committee	n/a		94 meetings across 47 counties	94	94 meetings across 47 counties	94	94 meetings across 47 counties	94
Number of Council of Governors' (CoG) breakfast meetings supported	Support hosting a breakfast meeting during the governors' council just before the county annual work planning process	n/a		1 CoG breakfast meeting	1	1 CoG breakfast meeting	1	1 CoG breakfast meeting	1
Number of county TB & leprosy coordinators supported to participate in their county stakeholder meetings	Support participation of county TB & leprosy coordinators in county stakeholder meetings to review health budgets against yardsticks for funding allocations	n/a		50 county TB & leprosy coordinators supported	50	50 county TB & leprosy coordinators supported	50	50 county TB & leprosy coordinators supported	50
Number of county websites that have portals for tuberculosis, leprosy and lung disease	Support the development of tuberculosis, leprosy and lung disease portals within each county's website	n/a		23 counties with websites having portals for tuberculosis, leprosy and lung diseases	23	24 counties with websites having portals for tuberculosis, leprosy and lung diseases	24	n/a	
Meeting held to develop an Information Pack for the Good will ambassadors.	Support meeting to develop an Information Pack for the Good will ambassadors with fact sheets, talking points, success stories, key messages, case studies on Leprosy, TB and Lung Disease	n/a		1 meeting	1	n/a		n/a	
Number of information packs designed and printed	Support the design and printing of 1,500 copies	n/a		1,500 information packs designed and printed	1,500	n/a		n/a	
Number of information packs distributed	Support the distribution of the information packages	n/a		500 information packs distributed	500	500 information packs distributed	500	500 information packs distributed	500
Number of goodwill ambassadors sensitized	Support sensitization workshops for the identified good will ambassadors	n/a		47 goodwill ambassadors sensitized	47	n/a		n/a	
Proportion of identified Stakeholders who participated in the Workshop to develop the media and communications plan.	Hold stakeholders Workshop to develop the media and communications plan.	n/a		1 stakeholders' workshop held	100%	n/a		n/a	
Number of media sensitization workshops on TB Leprosy and Lung Diseases held	Hold bi-annual Media Sensitisation Workshop on TB Leprosy and Lung Diseases	n/a		2 media sensitization workshop conducted	2	2 media sensitization workshop conducted	2	2 media sensitization workshop conducted	2

Advocacy and Communications Operational Plan

Output Indicator(s)	Intervention(s)	Year 1 Activities	Yr 1 Target	Year 2 Activities	Yr 2 Target	Year 3 Activities	Yr 3 Target	Year 4 Activities	Yr 4 Target
Strategic Approach 2: Build political will and mobilize resources at national government level									
Number of sensitization meetings held with both the parliamentary health committee	Hold an annual sensitization meeting for the parliamentary health committee	n/a		1 sensitization meeting	1	1 sensitization meeting	1	1 sensitization meeting	1
Revised national communications and advocacy strategy	Support the revision of the national communications and advocacy strategy.	n/a		n/a		Revised communications and advocacy strategy		n/a	
Strategic Approach 3: Build political will and mobilize resources at donor level									
Number of public-private meeting forum held	Hold annual forums for Public – Private sector engagement	n/a		1 Public-Private meeting forum held	1	1 Public-Private meeting forum held	1	1 Public-Private meeting forum held	1
Developed database for donors and partners	Support the development of a database of existing and potential donors	n/a		Developed database for donors		n/a		n/a	
Strategic Approach 4: Accelerate case detection and increase treatment success through health providers									
Number of meetings held to develop new communication and advocacy materials targeting the specific needs of HCWs	Support the development of new communication and advocacy materials targeting the specific needs of HCWs; e.g. tools for adherence counseling and health education, fact sheets on IPT and contact tracing.	n/a		3 meetings	3	2 meetings	2	n/a	
Number of meetings held to develop IEC materials promoting new diagnostic technologies	Support meetings to develop IEC materials promoting new diagnostic technologies	n/a		3 meetings	3	n/a		n/a	
Number of service delivery points with IEC materials promoting new diagnostic technologies	Support the dissemination and distribution of IEC materials for TB, leprosy and lung disease	n/a		n/a		900 service delivery points	900	900 service delivery points	900
Strategic Approach 5: Conduct Community health literacy including patients', Health Provider and community human rights and responsibilities									
Number of meetings held to develop a user friendly popular verions patient charter	Support the development of a user friendly popular version patient charter that includes human rights, responsi-bilities of the health care providers, caregivers and community.	n/a		4 meetings supported	4	n/a		n/a	
Number of the user friendly popular version patient charters printed	Support the printing of the developed user friendly popular version patient charters	n/a		100000 user friendly popular version patient charters printed	100,000	100000 user friendly popular version patient charters printed	100,000	100000 user friendly popular version patient charters printed	100,000
Number of the user friendly popular version patient charters distributed	Support the distribution of the developed user friendly popular version patient charters	n/a		100,000 patient charters distributed	100,000	100,000 patient charters distributed	100,000	100,000 patient charters distributed	100,000
Strategic Approach 6: Increase awareness of symptoms and expectations during treatment by patients									
TB Helpline established	Support the establishment of a TB Helpline	n/a		TB Helpline established		n/a		n/a	
TB Helpline Maintained	Support the maintanance of the TB Helpline	n/a		TB Helpline Maintained		TB Helpline Maintained		TB Helpline Maintained	
Number of meetings held to develop messages that promote self referral for TB	Support the development of messages that promote self referral for TB screening	n/a		2 meeting held to develop messages for self referral for TB screening	2	n/a		n/a	

4.3.9.3. Human rights and gender

1. Introduction

Human rights are universal legal guarantees protecting individuals and groups against actions that interfere with fundamental freedoms and human dignity. Gender refers to the social attributes and opportunities associated with being male or female and the relationships between women and men and girls and boys, as well as the relations between women and those among men. Gender determines what is expected, allowed and valued in a woman or a man in a given context. Gender equity is the absence of discrimination on the basis of a person's sex, especially in connection with opportunities, allocation of resources or benefits and access to services. Gender equality entails the provision of fairness and justice in the creation of opportunities, distribution of benefits and responsibilities between women and men/girls and boys[1]. Gender mainstreaming is the strategy used to achieve equality in both women and men. For the case of TB, leprosy and lung diseases, this would mean integrating gender concerns into all laws, policies, regulations and programs concerning TB, leprosy and lung diseases care prevention and management.

The human rights based approach to programming is a process that infuses key human rights principles into programming with a view to ensuring that programs effectively address what they set out to, and produce an outcome that is desirable, sustainable, entrenched, and fully owned by the community. The human rights based approach aims at achieving a desirable outcome by focusing on the rights of the people the program intends to benefit. The key human rights principles that form part of the rights based approach are equality and non-discrimination, participation, accountability and people centered approaches. Human rights based approach in the case of TB, leprosy and lung diseases would involve integrating human rights principles in the design, implementation, monitoring and evaluation of TB, leprosy and lung diseases programs.

2. How human rights and gender impact on TB, leprosy and lung diseases

When human rights principles are not respected, and when gender inequalities are not taken into account, people are likely to be more vulnerable to TB, leprosy and lung disease infections. This is because they are less likely to access available services due to the barriers created by failing to address the human rights and gender barriers[2]. Key vulnerable groups in the context of TB, leprosy and lung diseases are more likely to be exposed to conditions that are conducive to TB, leprosy and lung diseases development, and less likely to have the information, power and resources necessary to ensure their access to health services. The stigma and discrimination associated with TB, leprosy and lung diseases, the and overlapping discrimination based on gender, poverty, or HIV status, can affect people's employment, housing and access to social services[3]. Gender inequalities can impact health risks, health seeking behavior and responses from health systems, leading to poorer outcomes for everyone. It is thus important to address the different needs of women and men, girls and boys taking into account their diversity. This may involve undertaking gender responsive programming where one takes into account the prevailing gender norms or undertaking gender transformative programming, where one seeks to change harmful gender norms that act as a barrier to accessing health services[4].

3. Country context on human rights and gender

The Constitution of Kenya 2010 provides the main legal framework to ensure a comprehensive rights-based to health services delivery. All laws and policies must be in line with the provisions of the Constitution of Kenya 2010. The Constitution makes provision for the right to the highest attainable standard of health, which includes reproductive health rights. It makes provision for people not to be denied emergency medical treatment, and obligates the State to provide appropriate social security to persons who are unable to support themselves and their dependents[5].

The Constitution obligates the State and every state organ to observe, respect, protect, promote and fulfill the rights in the constitution and to take "legislative, policy and other measures, including setting of standards, to achieve the progressive realization of the rights guaranteed in Article 43." State organs and public officers have a constitutional obligation to address the needs of the vulnerable groups[6] in society and to domesticate the provisions of any relevant international treaty that Kenya has ratified[7].

Article 46 of the Constitution makes provision for the protection of consumer rights, including the protection of health safety and economic interests. Article 27 of the Constitution outlaws discrimination on the basis of one's health status. It provides for equality between men and women, and takes into account the use of affirmative action programs and policies to redress any disadvantage suffered by people because of past discrimination. The Constitution has provided

1 Available at http://www.un.org/womenwatch/osagi/conceptsandefinitions.htm accessed on 1st August 2014.
2 UNDP (2013). Discussion Paper: The Role of Human Rights in Responses to HIV, Tuberculosis and Malaria. http://www.undp.org/content/dam/undp/library/hivaids/English/TheRoleofHRinResponsestoHIVTB, leprosy and lung diseases Malaria-UNDP-DP-web.pdf
3 Global Fund Information Note: Human Rights for HIV, TB, leprosy and lung diseases, Malaria and HSS Grants (February 2014) Available at http://www.theglobalfund.org/en/fundingmodel/support/infonotes/
4 Global Fund (April 2014) Information Note Addressing Gender Inequalities and Strengthening Responses for Women and Girls Available at http://www.theglobalfund.org/en/fundingmodel/support/infonotes/
5 Article 43 of the Constitution of Kenya 2010 Available at http://kenyalaw.org/kl/index.php?id=398
6 These include women, older members of society, persons with disabilities, children, and youth, members of minority or marginalized communities and members of particular ethnic and religious or cultural communities.
7 Article 2(6) of the Constitution recognizes ratified international treaties as part of the laws of Kenya.

values and principles, which all state organs and officers are expected to employ in the delivery of services. The principles are captured in Articles 10 and 232, Chapter 6 and 12 of the Constitution. The relevant articles of the Constitution that touch on the right to health are Articles 2, 10, 20, 26, 27, 43, 53-57 and 174.

The Public Health Act Chapter 242 of the Law of Kenya[8] has provisions under Section 27 which allows for the isolation of persons who have been exposed to infection[9]. Section 28 of the Act makes it an offence to willfully expose others to an infectious disease. These sections of the law, in the case of TB, leprosy and lung diseases management, have been the subject of a number of court decisions that have challenged the manner in which the Sections have been enforced[10]. The courts have also sought clarification on the contemplated place of isolation[11]. The country is in the process of developing a health law and policy that are equally likely to impact TB, leprosy and lung diseases management.

Gender factors influence epidemiological differences in exposure, risk of infection and progression from infection to disease. In Kenya, men between 24-40 years have higher TB, leprosy or lung disease burden and are more likely to default from treatment. In 2013, among smear positive pulmonary TB, leprosy and lung diseases patients, aged 15-54 years, men were twice as affected by TB, leprosy and lung diseases than females. Male gender norms in many contexts mean that men have delayed health-seeking behavior. Women are more susceptible to HIV[12] and HIV is a risk factor for TB, leprosy and lung diseases. The lower numbers could be caused by structural barriers, limited access to resources, information and time. This raises the question about the possibility that women are not coming out for treatment, for example[13]. Focused efforts are needed to diagnose, treat and prevent TB, leprosy and lung diseases among women. Societal structures see a majority of women not enjoying the same rights, opportunities and access to health services as men, placing them at greater risk and at a disadvantage with respect to treatment and care. Their access to information and finances, in many contexts, is determined or controlled by men as heads of households, who often have greater economic power[14]. These differences should be taken into account when developing strategies for interventions in the tuberculosis, lung diseases and leprosy programs.

4. Gaps and challenges on human rights and gender in the context of TB, leprosy and lung diseases

Some of the identified gaps and challenges on issues relating to gender and human rights in the context of TB, leprosy and lung diseases include:

- Inaccessibility to quality health care e.g. barriers of gender, age, type of disease, social setting, geographical barriers, distances and inability to pay.
- Prevalent and increasing levels of poverty amongst the vulnerable groups.
- Legal and policy barriers that hinder optimal provision of services to the key and vulnerable populations.
- Inadequate interventions to address management and infection control for TB, leprosy and lung diseases cases and mainstream gender and human rights needs and concerns.
- Inadequate knowledge on gender and human rights among the general public and key stakeholders.
- Inadequate national baseline data revealing the relationship of gender and human rights, including social, cultural and economic factors in interventions for TB, leprosy and lung diseases.
- Reluctance to embrace rights based approach to programming and service delivery for TB, leprosy and lung diseases care, which takes into account gender concerns.

5. Strategic Priorities for 2015-2018

Monitoring and reforming laws, regulations and policies relating to TB, leprosy lung diseases

This can be achieved by the successful implementation of programs that address:

- Review of laws, policies and law enforcement practices to see whether they impact the response to TB, leprosy and lung diseases positively or negatively, taking into account the human rights and gender gaps.
- Assessment of access to justice for people infected with TB, leprosy and lung diseases or vulnerable to TB, leprosy and lung diseases infection.
- Advocacy and lobbying for law and policy reform with the relevant stakeholders on matters relating to TB, leprosy and lung diseases.
- Promotion of the enactment and implementation of laws, regulations and policies that prohibit discrimination and support access to TB, leprosy and lung diseases prevention, treatment, care and support.
- Develop tools to monitor incidents of rights violations, including discrimination, gender based violence and denial of health care services for TB, leprosy and lung diseases patients.
- Training community groups on how to use the tools and report incidents of human rights and gender based violations.

8 Chapter 242 of the Laws of Kenya available at http://www.kenyalaw.org:8181/exist/kenyalex/actview.xql?actid=CAP.%20242
9 Available at kelinkenya.org/wp-content/uploads/2010/10/Advisory-Note-on-Arrest-of-TB, leprosy and lung diseases -Patients-in-Kapsabet.pdf
10 Available at kelinkenya.org/wp-content/uploads/2010/10/Misc-Criminal-App-No.-24-of-20111.pdf
11 Available at kelinkenya.org/wp-content/uploads/2010/10/Ruling-on-Petition-No.-3-of-2010.pdf
12 Kenya AIDS Indicator Survey 2012 Available at http://www.google.co.ke/url?sa=t&rct=j&q=&esrc=s&source=web&cd=1&ved=0CCcQFjAA&url=http%3A%2F%2Fnascop.or.ke%2Flibrary%2F3d%2FPreliminary%2520Report%2520for%2520Kenya%2520AIDS%2520indicator%2520survey%25202012.pdf&ei=K1nbU4-hF4bD7Aa774DwCQ&usg=AFQjCNEVSaGbVsyBVlgroBAlEUWSTlV2ZA&bvm=bv.72197243,d.ZGU
13 National Tuberculosis, Leprosy and Lung Disease Program 2014 Annual report http://www.nltp.co.ke/index.php?option=com_content&view=section&layout=blog&id=5&Itemid=38
14 Sexual Inequality in Tuberculosis; Oliver Neyrolles & Luis Quintana Available at http://www.oalib.com/paper/85316#.U9tiIGOcxco

Removal of the legal, human rights and gender barriers to access to TB, leprosy and lung diseases services

This can be achieved by the successful implementation of programs that address:

- Stigma and discrimination reduction programs that include community-based interventions (including media) that provides accurate information about TB, leprosy and lung diseases transmission.
- Conducting legal literacy (know your rights) campaigns to improve legal and human rights literacy of people infected and affected by TB, leprosy and lung diseases in relation to the identified human rights and gender gaps based on the legal assessment.
- Provision of TB, leprosy and lung diseases-related legal services to those who face human right violations.
- Active case finding in communities affected by TB, reaching out to women and other economically disadvantaged who do not have means to access services without paying for transportation. Integrate TB services into Reproductive Maternal and Child Health (RMNCH)-related health services to facilitate access by women and girls.

Training of lawmakers, law enforcement agents and health care workers

This can be achieved by the successful implementation of programs that pursue the following:

- Sensitization of law makers, law enforcement agents regarding TB, leprosy and lung diseases, modes of transmission and the negative consequences of illegal police activity on justice and on the TB, leprosy and lung diseases response.
- Facilitated discussions and negotiations among TB, leprosy and lung diseases service providers, those who access services, and the police, to address law enforcement practices that impede prevention of TB, leprosy and lung diseases, treatment, care and support efforts.
- Information and sensitization sessions for parliamentarians, member of county assemblies, governors, judicial officers, prosecutors, lawyers, staff members of human rights and gender commissions, on the legal, health and human rights aspects of TB, leprosy and lung diseases and on relevant national laws and the implications for enforcement, investigations and court proceedings.
- Training for prison personnel regarding the prevention, health care needs and human rights of detainees infected with or at risk of TB, leprosy and lung diseases.
- Training to ensure that health care providers know about their rights to health (TB, leprosy and lung diseases prevention and treatment, universal precautions, compensation for work-related infection) and to non-discrimination in the context of TB, leprosy and lung diseases.
- Training to reduce stigmatizing attitudes in health care settings and to provide health care providers with the skills and tools necessary to ensure patients' rights to informed consent, confidentiality, treatment and non-discrimination.

Formation of inter-sectoral partnerships between the Ministry of Health (NTLD Program) and other parts of government to embed TB, leprosy and lung diseases concerns

This can be achieved by the successful implementation of programs that:

- Sensitize relevant government staff to ensure equal access for TB, leprosy and lung diseases patients to agricultural subsidies, housing allocation and other social benefits.
- Sensitize government actors to mainstream, TB, leprosy and lung diseases considerations in national policies and programs relating to labor, nutrition/food security, housing/urban planning, corrections, social protection and other development initiatives.
- Sensitize National Human Rights Institutions, Gender Commission and Office of the Ombudsman, on human rights dimensions of TB, leprosy and lung diseases.

Research, knowledge management and M & E

This can be achieved by the successful implementation of programs that:

- Conduct a baseline survey to document the magnitude and nature of human rights violations and gender disparities in TB, leprosy and lung diseases, Leprosy and lung diseases.
- Conduct a baseline survey on social and economic impact of TB, leprosy and lung diseases.
- Develop a TB, leprosy and lung diseases stigma index to measure TB, leprosy and lung diseases-related stigma in communities and health care settings.

Gender and Human Rights Operational Plan

Output Indicator(s)	Intervention(s)	Year 1 Activities	Yr 1 Target	Year 2 Activities	Yr 2 Target	Year 3 Activities	Yr 3 Target	Year 4 Activities	Yr 4 Target
Strategic Approach 1: Monitoring and reform laws, regulations and policies relating to TB									
Assessment report of laws, policies and law enforcement practices that impact positively or negatively on TB	Audit of laws, policies and law enforcement practices	Audit the laws and policies and develop a report on the practices and laws on TB HR and gender	1			Implementation of the findings of the audit and dissemination of the report	n/a	Implementation of the findings of the audit and dissemination of the report	n/a
Draft TB, leprosy and lung health diseases bill	Develop a draft TB, leprosy and lung bill	1. Hold consultative forums with key stakeholders and members of the public at both national and county levels 2. Draft TB Leprosy and Lung Bill	1	Present the bill to parliament through the relevant committee for debate	n/a	Advocacy and lobby meetings for law and policy reform with the relevant stakeholders on matters relating to TB	n/a	Promotion of the enactment and implementation of laws, regulations and policies that prohibit discrimination and support access to TB prevention, treatment, care and support through various meetings and consultations	n/a
Number of monitoring tools disseminated	Develop tool to monitor incidences of rights violations including discrimination, gender based violence and denial of health care services for TB patients	1. Develop a monitoring tool 2. Test the tool in one county. 3. Workshop to incorporate changes on tool based on test. 4. Finalise tool and roll out tool	0	Disseminate the tool for use	1,000	Analysis of data collected and utilisation of the findings to inform programming	1,000	Analysis of data collected and utilisation of the findings to inform programming	1,000
Number of TOTs trained on human rights issues and the use of the rights violations' monitoring tool	Training community groups on how to use the tools and report incidences of human rights and gender based violations	Train 30 trainers of trainers (TOT) per county in 10 pilot counties	300	Implement use of the tool, collection of information and analyses of data collected and utilisation of the findings to inform programming		Implement use of the tool, collection of information and analyses of data collected and utilisation of the findings to inform programming		Implement use of the tool, collection of information and analyses of data collected and utilisation of the findings to inform programming	
Strategic Approach 2: Removal of the legal, human rights and gender barriers									
Value of the stigma index in health care settings and communities	Stigma and discrimination reduction programmes including radio/TB and print adverts, stigma reduction IEC	Develop IEC materials with non-stigmatising messages.	75%	Community interactions and discussions targeting women, men, youth, persons with disabilities, elderly, religious leaders, health care providers, learning institutions and involving TB patients in 10 counties.	50%	Use media including skits, plays, advertisements designed to educate as well as to amuse and integration of non-stigmatising messages on TB and behaviour change into TV and Radio shows	25%	1. Community forums and use of the media shows involving community recognized leaders, to pass non stigmatizing messages. 2 Engagement with religious and community leaders and celebrities to promote non-stigmatising messages on TB, Leprosy and behaviour change in 10 counties	15%
Number of people trained, using new human rights and gender training module	Conducting legal literacy (know your rights) campaigns to improve legal and human rights literacy of people infected and affected by TB in relation to the identify human rights and gender gaps based on the legal assessment	Develop human rights and gender training modules and intergrate into Tuberculosis, Leprosy and Lung Diseases training program		Conduct the trainings of targettting 100 people from 5 counties	100	Conduct the trainings of targettting 200 people from 10 counties	200	Conduct the trainings of targettting 100 people from 5 counties	100
Percentage of TB-related human rights violations for which legal services are provided	Provision of TB related legal services to those who face human right violations	Training lawyers, representatives of human rights commissions on TB and human rights in the 10 counties		1. Conduct one legal aid clinic in each of the 10 counties every year. 2. Identify human rights organisations and institutions that can provide legal services and advice on a daily basis for walk in clients	40%	1. Conduct one legal aid clinic in each of the 10 counties every year. 2. Identify human rights organisations and institutions that can provide legal services and advice on a daily basis for walk in clients	60%	1. Conduct one legal aid clinic in each of the 10 counties every year. 2. Identify human rights organisations and institutions that can provide legal services and advice on a daily basis for walk in clients	100%

Gender and Human Rights Operational Plan

Output Indicator(s)	Intervention(s)	Year 1 Activities	Yr 1 Target	Year 2 Activities	Yr 2 Target	Year 3 Activities	Yr 3 Target	Year 4 Activities	Yr 4 Target
Strategic Approach 3: Training of law makers, law enforcement agents and health care workers									
Number of personnel trained	Sensitization of health care workers, law makers, law enforcement agents including police officers, and prisons officials, judicial officers, lawyers, prosecution officers, on gender and human rights in Tuberculosis, Leprosy and lung diseases			Four day workshops trainings on gender and human rights issues related to TB, leprosy and lung diseases one in each of the 47 counties, 30 participants per county	1,410	Four day workshops trainings on gender and human rights issues related to TB, leprosy and lung diseases one in each of the 47 counties, 30 participants per county	1,410	Meetings to collect feed back from the trained personell and evaluate the impact of the training	
Number of dialogue fora held with stakeholders	Facilitate dialogues discussions and negotiations among TB service providers, those who access services and police to address law enforcement practices that impede TB prevention, treatment, care and support efforts			Conduct one county dialogue forum in each of the 47 county with the different stakeholder representative of those who were trained	47	Conduct one county dialogue forum in each of the 10 county with the different stakeholder representative of those who were trained	47	Conduct one county dialogue forum in each of the 10 county with the different stakeholder representative of those who were trained	47
Strategic Approach 4: Formation of Intersectoral partnerships between the Ministry of Health and other parts of government to embed TB concerns									
Number of stakeholders and partners trained to address the disparities in gender and human rights	Sensitize relevant government institutions on partnerships with NTLD Program to realize human rights and bridge gender disparity in TB, Leprosy and lung diseases and mainstream TB policies in national considerations	Identify all partners and stakeholders both government and CSO's and create a data base indicating their responsibilities in mainstreaming gender and human rights in TB lep and lung disease.		Three day training on TB, Lep and LD, gender and human rights citing the gender and human rights issues of concern and the possible areas of integration	30	Three day forum to address the disparities in gender and human rights and how best to mainstream both into the available programs	30	Two day sensitization forum to establish what partners are doing in an effort to mainstream gender and human rights into their programmes	

4.3.9.4 Social protection

1. Situational Analysis

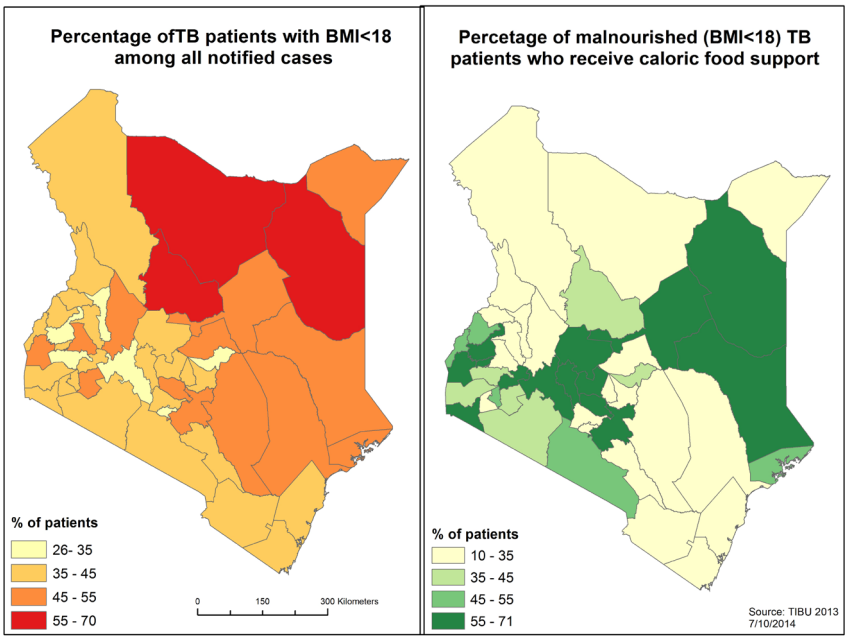
In 2011, Kenya published a National Social Protection Policy to build on the government's commitment to poverty reduction as articulated in Vision 2030.

The National Social Protection Policy acknowledges that 46.7% of Kenyans (16.3 million people) live in poverty, unable to meet the cost of basic food. It also recognizes that "health risks that require a household to pay for medical treatment are of special concern to poor households."

The National Social Protection Policy includes the following objectives[1]:

1. Protect individuals and households from the impact of adverse shocks to their consumption that is capable of pushing them into poverty or into deeper poverty
2. Support individuals and households to manage these shocks in ways that do not trap them in poverty by reducing their exclusion and strengthening their ability to graduate from social assistance and to become financially self-sufficient
3. Cushion workers and their dependents from the consequences of income-threatening risks, such as sickness, poor health, and injuries at work, as well as from the threat of poverty in their post-employment life
4. Promote key investments in human capital and physical assets by poor and non-poor households and individuals that will ensure their resilience in the medium-term, and that will break the intergenerational cycle of poverty. Promoting synergies and integration among social protection providers as well as positive interactions among stakeholders.

TB is more widespread among low income groups. The 2008/2009 Kenyan Demographic and Health Survey indicated that financial barriers to care were a primary cause of delayed care seeking. In particular, costs related to transportation and fee-based diagnostic tests, as well as lack of nutritional and financial support during the intensive phase of treatment was highlighted[2]. A study was undertaken in 2008 to estimate TB patients' costs among 208 Nomadic Populations in Kitui North and Mutomo districts. It suggested that TB patients had a substantial burden of



Map 11: % of TB patients with BMI<18 among all notified cases

Map 12: % of malnourished (BMI<18) TB patients who receive caloric food support

1 ibid, KNSPP
2 Kenya NTLD Program Midterm Report 2014

direct (out of pocket: USD 55.8) and indirect (opportunity: USD 294.2) costs due to TB. It also showed that inability to work was a major cause of increased poverty, confirming an existence of a 'medical poverty trap' in the two districts. Other costing studies have shown similar barriers to care seeking and treatment compliance.

The NTLD Program estimates that over half of TB patients are malnourished at the onset of treatment, with 17% of those with TB being severely malnourished and a further 21% being moderately malnourished[3]. As illustrated in the maps, more than 50% of TB patients in some districts have BMI<18. Poor nutritional status is known to negatively impact treatment adherence and outcomes. Malnutrition weakens the immune system, and this increases the likelihood of latent TB turning into active TB. However, the majority of nutritional support programs active in Kenya do not prioritize food for TB patients. Furthermore, the majority of nutrition support programs target women and children, leaving out the male TB patients.

2. Strategic Directions

In May 2014, the World Health Assembly endorsed targets for TB control post-2015. This NSP will be one of the first to adopt the new global target of "no affected families facing catastrophic costs due to TB."

To achieve this, a multi-pronged approach to extend social protections for TB patients will be sought. They will aim to reduce the direct and indirect costs of care seeking and treatment, while also addressing geographic, sociocultural and gender-related barriers to care.

3. Proposed Approaches

1. **Promote policies and plans** to ensure the inclusion of TB, leprosy and lung health patients in the current and emerging social protection schemes: Social protection schemes that address the indirect costs of illness and enable care seeking will be targeted for expansion to include TB and leprosy as qualifiers for benefits, such as: a) conditional cash transfers for care seeking, especially for women and children; b) transport voucher programs; and c) income generating activities.

   a) Generate new, policy-relevant knowledge about the impact of social protection interventions on TB and leprosy control in settings characterized by different resources and epidemiological profiles; generate evidence for scale up in County Strategic Plans and other stakeholder plans

   b) Develop a sub-plan and NTLD Program policy related to social protection, in collaboration with relevant stakeholders

   c) Establish collaborative partnerships among those advancing the social protection agenda nationally and at county level; establish a mechanism (e.g. technical working group) for collaboration among social protection stakeholders

   d) Advocate for County Governments to set aside resources for Social Protection for TB and leprosy patients.

2. **Roll out nutritional support** for TB and leprosy patients through existing platforms for food support
   a) Targeted therapeutic feeding for **all** severely malnourished adults and children; both in and outpatients, as per WHO IMAM recommendations

   b) Targeted supplementary feeding for **all** moderately malnourished adults and children meeting the criteria of BMI less than 18.5, as outpatients

   c) Alternative feeding options to infants born of MDR-TB/PLHIV if and when mothers are unable to breastfeed exclusively on demand for the first six months

   d) Multiple Micronutrient supplementation for all TB and leprosy cases during the intensive phase of treatment. It is important to note that the micro-nutrient survey conducted in 2003 showed that 76% of the Kenyan population were Vitamin A deficient. In arid areas, micro-nutrient supplementation is highly recommend as part of the nutrition policy

   e) Promote TB and leprosy as automatic eligibility criteria for inclusion in food safety nets

   f) Scale-up the use of nutrition education and screening as an integral component of community-based care and household visits

3 ibid, Midterm Report

g) Build capacity of health workers to improve on quality of nutrition assessment, counseling, care and support of all patients

h) Increase availability and access to nutrition assessment, counseling, and support (NACS) at community and facility levels.

3. **Promote policies to reduce the direct costs of TB diagnosis and treatment**.

a) **Ensure the mandatory inclusion of TB benefits within health insurance packages**, both public and private, to help mitigate the direct expenses associated with TB diagnosis and care[5]
b) Eliminate diagnostic fees for children

4. **Promote a legal framework to protect TB patients in the workplace** from discrimination and the fear/reality of lost income.

5 National Strategic Plan for Tuberculosis, Leprosy and Lung Health 2015-2018

Social Protection Operational Plan

Output Indicator(s)	Interventions	Year 1 Activities	Yr 1 Target	Year 2 Activities	Yr 2 Target	Year 3 Activities	Yr 3 Target	Year 4 Activities	Yr 4 Target
Strategic Approach 1: Policy development for social protection: ensuring the inclusion of TB and leprosy patients among the beneficiaries of social protection schemes									
Number of national policy documents and annual plans (national) developed and disseminated on social protection of TB patients	Integrate and coordinate social protection programmes and programming for TB & leprosy in the country	Hold steering committee and TWG meetings	1	Hold quaterly TWG meetings Conduct 2 stakeholders/ dialogue/ sensitization meetings, TA	2	Hold quaterly TWG meetings Conduct 2 stakeholders/ dialogue/ sensitization meetings	2	Hold quaterly TWG meetings. Conduct 2 stakeholders/dialogue/ sensitization meetings	n/a
Proportion of targeted stakeholders that have been briefed on need to include TB in social protection platforms; and plans drafted		Hold national TB social protection stakeholder meetings	25	Hold biannual social protection stakeholder meetings	50	Hold biannual social protection stakeholder meetings	75	Hold biannual social protection stakeholder meetings	100
Proportion of counties briefed on need to include TB in social protection platforms			5	Hold biannual TB social protection stakeholder meeting in 15 counties	33	Hold biannual TB social protection stakeholder meeting in 15 counties	66	Hold biannual TB social protection stakeholder meeting in 15 counties	100
Proportion of counties having inventories of social protection resources, and county plans developed for support to TB patients		Print TB 3,600 social protection policy documents		Hold 4 TB social protection policy development workshops.	10	Distribute TB social protection policy documents to 47 counties	25	Hold 47 County dissemination meeetings for the TB social prrotection policy document	25
Number of counties with TB social protection policy documents available		Technical assistance to 15 counties for social protection planning	15	Technical assistance to 15 counties for social protection planning	30	Hold a national dissemination meeting for the TB social protection policy document, lessons learned	47	Technical assistance to 15 counties for social protection planning	47
Reimbursement levels for TB diagnosis and care in health insurance quantified		Develop cost reimbursement schedule for TB diagnosis and care within health insurance schemes (technical assistance)	1						
Proportion of health insurance policies (public and private) that have mandatory coverage of TB patients				Hold advocacy meetings for TB social protection with relevevant agencies e.g National Hospital Insurance Fund	5	Hold 10 advocacy meetings for TB social protection with relevevant agencies e.g National Hospital Insurance Fund	20	Hold 10 advocacy meetings for TB social protection with relevevant agencies e.g National Hospital Insurance Fund	50
Proportion of TB patients covered by health insurance					5		20		50
Strategic Approach 2: Roll out nutritional support for TB and leprosy patients through existing platforms for food support									
Proportion of eligible TB patients receiving nutrition support	Capacity building among health care workers for nutrition needs among TB patients	Train 180 health care workers on TB nutrition from counties with highest rates of malnutrition among TB patients	30	Train 180 health care workers on TB nutrition from counties with highest rates of malnutrition among TB patients	50	Train 180 health care workers on TB nutrition from counties with highest rates of malnutrition among TB patients	80	Train 180 health care workers on TB nutrition from counties with highest rates of malnutrition among TB patients	80
	Tools development for health workers and CHEWs on nutritional assessment and nutritional support	Develop on-the-job tools for health facilities and CHEWs		Dissemination to all counties				Dissemination to all counties	
	Conduct national technical assistance (TA) on TB nutrition, targeting counties with worst malnutrition among TB patients on treatment.	Conduct national technical assistance (TA) on TB nutrition tartegtting counties with worst malnutrition among TB patients on treatment.		Conduct technical assistance (TA) on TB nutrition tartegtting counties with worst malnutrition among TB patients on treatment.		Conduct technical assistance (TA) on TB nutrition tartegtting counties with worst malnutrition among TB patients on treatment.		Conduct technical assistance (TA) on TB nutrition tartegtting counties with worst malnutrition among TB patients on treatment.	
	Develop position paper and conduct advocacy for inclusion of TB patients by other food support providers	Develop position paper on relevance of food support for eligible TB patients (and families)		Targeted advocacy for inclusion of TB patients in food programmes		National policy drafting: TB patients automatically eligible for food		Targeted advocacy for inclusion of TB patients in food programmes	

Social Protection Operational Plan									
Output Indicator(s)	**Interventions**	**Year 1 Activities**	**Yr 1 Target**	**Year 2 Activities**	**Yr 2 Target**	**Year 3 Activities**	**Yr 3 Target**	**Year 4 Activities**	**Yr 4 Target**
	Procure therapeutic and supplementary feeds for eligible TB patients not covered by other food support programs	Procure therapeutic and supplementary feeds for 50,000 TB aptients		Procure therapeutic and supplementary feeds for 50,000 TB aptients		Procure Nutritional supplements for 30,000 Moderatetly Malnourished TB Patients		Procure Nutritional supplements for 30,000 Moderatetly Malnourished TB Patients	
						Procure therapeutic feeds for 20,000 Severely Malnourished TB Patients		Procure therapeutic feeds for 20,000 Severely Malnourished TB Patients	
Proportion of eligible breastfeeding mothers with MDR-TB given the option of alternative feeding for infants	Provide alternative feeding options to infants born of MDR-TB if and when mothers are unable to breastfeed exclusively on demand for the first six months	Provide alternative feeding 7 MDR-TB breastfeeding mothers	20	Provide alternative feeding 7 MDR-TB breastfeeding mothers	50	Provide alternative feeding 7 MDR-TB breastfeeding mothers	75	Provide alternative feeding 7 MDR-TB breastfeeding mothers	100
Strategic Approach 3: Establish collaborative partnerships among those advancing the social protection agenda at national and county levels									
Proportion of eligible TB patients participating in IGAs	Support the incorporation of TB patients into existing/emerging income generating activities (IGAs)	Inventory IGAs in country and document access by TB patients		Include TB patients in IGAs in 15 counties most affected by malnutrition among TB patients	15	Include TB patients in IGAs in 15 counties most affected by malnutrition among TB patients	25	Include TB patients in IGAs in 17 counties most affected by malnutrition among TB patients	30
Proportion of eligible TB patients receiving support through monthly cash transfer	Support the inclusion of TB patients in conditional cash transfer schemes	Inventory conditional cash transfer programs and access by TB patients		Promote inclusion of TB patients in conditional cash transfer programs (stakeholder meetings and targeted advocacy in 10 counties)	10	Promote inclusion of TB patients in conditional cash transfer programs (stakeholder meetings and targeted advocacy in 15 counties)	25	Promote inclusion of TB patients in conditional cash transfer programs (stakeholder meetings and targeted advocacy in 20 counties)	50
Proportion of eligible TB and presumptive TB cases receiving transport vouchers for diagnostic and care services	Support the inclusion of TB patients in transport schemes	Inventory transport reimbursement/voucher programs and access by TB patients		Promote inclusion of TB patients in transport voucher programs (stakeholder meetings and targeted advocacy in 10 counties)	10	Promote inclusion of TB patients in transport voucher programs (stakeholder meetings and targeted advocacy in 10 counties)	25	Promote inclusion of TB patients in transport voucher programs (stakeholder meetings and targeted advocacy in 10 counties)	50
Establish costs incurred by patients in accessing TB diagnosis and treatment	Resarch on costs incurred in accessing Tb management					Research on costs incurred in accessing TB management		Resarch on costs incurred in accessing Tb management	

4.4. Halt/Reverse Non–Communicable Diseases

4.4.1. Expand utilization of practical approach to lung health

1. Situational Analysis

In Kenya, respiratory disease conditions form 25% of outpatient morbidity[1]. Pneumonia accounts for 9% of hospital admissions, while tuberculosis contributes 2%. Summary data from public health facilities categorize respiratory tract conditions into pneumonia and tuberculosis, and 'others.' Among the causes of mortality in the Kenya population, pneumonia contributes 12% and tuberculosis 5.5%.

There are no population-based studies in Kenya that have examined the prevalence of asthma among all age groups or chronic obstructive pulmonary disease (COPD). These would be important to provide a baseline to measure the effects of implementing the Practical Approach to Lung Health (PAL) strategy. Kenya has participated in the International Studies of Asthma and Allergic Disease in Childhood (ISAAC) Phase 1 and 3 at two sites: Nairobi and Eldoret. The prevalence of wheeze in the past 12 months among 13-14 year old children in the ISAAC Phase 1 study carried out in 1995 was 17.1% and 10.4 % in Nairobi and Eldoret respectively[2]. In the ISAAC Phase 3 study of 2000, this prevalence had increased to 18% and 13.8 % in Nairobi and Eldoret respectively[3]. Based on the results of the ISAAC studies, it is estimated that about 10% of the Kenyan population, or nearly 4 million people, have asthma.

PAL aims at improving the quality of care for patients with respiratory conditions. The focus is patients treated in primary health settings with cough and are not diagnosed with tuberculosis.

The NTLD Program and partners have adopted the PAL strategy to address lung health issues comprehensively and to improve the case management of TB, especially at the primary health care level. The PAL strategy is also expected to contribute to health system strengthening for TB and lung health. The Kenyan PAL strategy focuses on the following diseases: TB, asthma, COPD, acute respiratory illness, and TB/HIV.

PAL was initiated in 2011 with the formation of a national task force comprising of members from the TB program, KAPTLD, KEMRI, WHO and community representatives. A step-wise approach to PAL implementation was adopted as outlined below:

a) Obtaining political commitment

b) Preliminary assessment aimed at determining
   i. Potential challenges for PAL implementation in Kenya
   ii. Opportunities for PAL implementation
   iii. The country's capacity to implement PAL.

c) Development and adoption of guidelines and M&E tools

d) Adoption/review of existing training material and development of a core group of trainers and researchers at the national and county level

e) Piloting PAL implementation in one county

f) Evaluation of the pilot at 6 months, followed by phased scale-up to other counties.

Several challenges hindered this process and much of what was planned was not done. The main challenge was limited funds. To date, the following has been achieved:

a) A national focal person for PAL implementation was identified and two trainers were trained by the South African PALSA program, the pioneer in Africa on PAL implementation

b) PAL guidelines, training materials and educational materials were adapted from the PALSA program

c) Asthma registers and patient management cards were developed and printed

The following gaps currently exist in PAL implementation:

a) An evaluation of the first phase of PAL implementation has not been conducted and it is difficult to tell if the trained TB distrct managers cascaded the training to primary health care workers

b) The national team has not been sufficiently trained on PAL to support the roll-out of the strategy

c) The PAL TWG has not been consistent in convening to provide strategic direction to implementers

d) There is an inadequate supply of essential equipment and commodities to support diagnosis and treatment at the health facilities

e) There is no defined M&E plan for the PAL strategy.

Most of the existing processes need to be sustained and improved to enhance detection and efficient management of the chronic lung illnesses in all health facilities. In addition, there are opportunities for improvement and scale-up of the PAL strategy. They include:

a) Ensuring political commitment among the county governments and stakeholders

b) Advocating for resource allocation for implementation of PAL from the county and national governments, private sector and the donor community

c) Mapping of partnerships and resources from organisations and institutions with common interests for leveraging

d) Dissemination of PAL policy documents and guidelines

e) Establishing coordination mechanisms for PAL implementation at the county level, while strengthening the exisiting structures at national level

2. Strategic Directions 2015-2018

For PAL implementation to be effective in Kenya, three main areas need to be prioritized, namely,

a) Strengthen coordination mechanisms at the national level and establish coordination structures at the county levels
b) Establish the burden of respiratory diseases in Kenya and develop a robust respiratory disease surveillance system
c) Assess the impact of the first phase of PAL
d) Scale-up PAL implementation, including procurement of necessary equipment and medicines, capacity building of health care workers and strengthening referral systems for lung health.

3. Proposed Approaches

Strengthen coordination mechanisms at the national level and establish coordination structures at the County levels for the implementation of PAL. The following is proposed:

a) Revamp the national PAL technical working group (TWG) and ensure regular quarterly meetings
b) Promote county forums with county management teams and stakeholders to establish political commitment for the management of respiratory conditions through the PAL strategy in the counties
c) Advocate for the formation of county TWGs on PAL
d) Mapping of partnerships and resources from organisations and institutions with common interests for leveraging
e) Provide technical assistance through identified Centers of Excellence - either public or private.

Establish the burden of respiratory diseases in Kenya and develop a robust respiratory disease surveillance system

a) Conduct baseline population based survey on the burden of lung diseases defined in the Kenya PAL strategy
b) Complete assessment of the impact of the first phase of PAL implementation

[1] Ministry of Health report, 2009, Kenya
[2] The International Study of Asthma and Allergies in Childhood (ISAAC) Steering Committee. Worldwide variations in the prevalence of asthma symptoms: the International Study of Asthma and Allergies in Childhood (ISAAC). Eur Respir J 1998; 12: 315 – 335.
[3] Ait-Khaled N, Odhiambo J, Pearce N, Prevalence of symptoms of asthma, rhinitis and eczema in 13- to 14-year-old children in Africa: the International Study of Asthma and Allergies in Childhood Phase III. Allergy. 2007 Mar; 62(3): 247-58.

c) Introduce cough registers at the out-patient departments (OPDs) to enable tracking of all patients/clients with respiratory illnesses
d) Establish a surveillance system on PAL
   i. Develop an M&E plan for PAL
   ii. Disseminate recording and reporting tools
   iii. Include PAL indicators in the TIBU system and streamline the reporting system with the other disease areas.

Scale-up PAL implementation, including ensuring availability of necessary equipment and medicines, capacity building of health care workers and strengthening referral systems for lung health.

a) Capacity building of health care workers through:
   i. Training TOTs at the National and county level
   ii. Facilitating the TOTs to conduct regular health facility based on-the-job training
   iii. Recruiting a team of respiratory resource persons to conduct ongoing mentorship to the trained health care providers
   iv. Evaluation, retaining, mentoring and offering continuous technical assistance and CMEs in already established model units
   v. Developing, printing and disseminating job aids, diagnostic algorithms and IEC materials for targeting community, workplaces, health care providers informing them of triggers including biomass fuels and tobacco smoking
   vi. Developing an e-learning package for respiratory diseases with certification of health care providers
   vii. Sensitize county pharmacists on PAL commodities

b) Ensure availability of commodities required for PAL implementation in all the Counties by advocating for the inclusion of the following medicines in the essential drug package of all PHC facilities: antibiotics for community acquired pneumonia (CAP) and acute respiratory infections (ARIs), inhaled corticosteroids, inhaled bronchodilators, analgesics, antitussives and anticholinergics.

c) Ensure availability (or access) to diagnostic facilities and essential equipment for management of common lung conditions. These include:
   i. Radiological services: X-Ray equipment and training in radiology techniques, interpretation, quality control of chest radiographs, radiation protection etc.
   ii. Essential medical equipment: Oxygen sources, pulse oximeters, nebulizers, peak flow meters with disposable mouth pieces, spirometers and spacers

d) Develop model lung health units in the 47 counties to be used for mentorship and engage previoulsy trained TOTs. The health units will have a minimum package as outlined below:

   - Trained personnel on PAL diseases
   - Equipment e.g. at least a peak flow meters with or without a spirometer, nebulizers, mouth pieces, spacers
   - Commodities: PAL drugs (Relievers and controllers)
   - M&E tools - Registers, Patient management cards, Appointment cards, Supervision tools, IEC materials

The following counties will be targeted for establishing these lung units in Year 1: Nairobi (Mbagathi and Mama Lucy Kibaki hospitals), Machakos county hospital, Nyeri county hospital, Kericho County Hospital, Coast County Referral Hospital, Kakamega County Hospital, Kisumu County Hospital, Kisii County Hospital, Garissa County Hospital, Isiolo County Hospital and Kitale County Hospital. These are former provincial and level 5 hospitals that have medical outpatient clinics (MOPC) running.

The lung health clinics will be integrated within the MOPCs on selected specific days. Lessons learnt from the established model clinics of year 1, will support the creation of other model lung health units in other counties on phased out implementation manner to cover all counties. We anticipate that on a yearly basis, additional 12 lung units will be established to increase county coverage.

e) Communication and advocacy strategy for PAL
   i. Develop a communication strategy for lung health targeting the community, the patients and the health care workers
   ii. Develop educational messages for respiratory patients and their families
   iii. Advocate for resource allocation for implementation of PAL from the government, private sector and the donor community
   iv. Advocate for **multisectoral involvement** in lung health in Kenya.

Ministry of Education

1. Include PAL guideline in the training curricula for medical schools, public health schools
2. Introduction of PAL messages in primary and secondary schools

Ministries of Labor and Industry

1. Regulations for prevention of occupational related lung diseases e.g. cement factories, mining etc.
2. Care of respiratory (communicable diseases) in congregate settings e.g. orphanages, prisons, street families etc.

Disaster Preparedness and Management Units

1. Anticipation and planning for respiratory disease outbreaks in camps following disasters or population displacements
2. Planning for management of those with chronic illnesses in camps of displaced people.

Research Institutions

Non-Communicable Disease Department

Contribution to NSP Impacts	Outcomes
Impact 1: Reduce the incidence of TB by 5% by 2018, compared to 2014	• Increase case notification of new TB cases to 85% of estimated prevalence
Impact 5: Reduce morbidity due to chronic lung diseases	• Reduce the average number of annual acute episodes for children with asthma by 15% in areas with established asthma clinics • Increase to 80% the proportion of controlled asthma patients

Table 15: Impact and Outcome Indicators for PAL

Lung Health Operational Plan

Output Indicator(s)	Intervention(s)	Year 1 Activities	Yr 1 Target	Year 2 Activities	Yr 2 Target	Year 3 Activities	Yr 3 Target	Year 4 Activities	Yr 4 Target
Strategic Approach 1: Strengthen coordination mechanisms at the national level and establish coordination structures at the County levels for implementation of PAL									
Number of PAL TWG meetings held	Revamp the National PAL technical working group (TWG)	Hold quarterly TWG meetings	2	Hold quarterly TWG meetings	4	Hold quarterly TWG meetings	4	Hold quarterly TWG meetings	4
Number of multisectoral consultative breakfast meetings held	Advocate for multisectoral involvement in lung health in Kenya	Hold multisectoral consultative meetings	2	Hold multisectoral consultative breakfast meeting	1	Hold multisectoral consultative breakfast meeting	1	Hold multisectoral consultative breakfast meeting	1
Proportion of Counties allocating funds for PAL implementation.	County forums to mobilize political commitment and resource mobilisation	Hold meeting with county health management teams (12)	25%	Hold meeting with county health management teams (47)	50%	Hold meeting with county health management teams (47)	60%	Hold meeting with county health management teams (47)	75%
		Consultative forums with county stakeholders	1	Consultative forums with county stakeholders	1	Consultative forums with county stakeholders	1	Consultative forums with county stakeholders	1
Proportion of Counties with functional TWGs	Provide technical assistance to county TWGs.	Provide technical assistance to county TWGs (12)	25%	Provide technical assistance to county TWGs (47)	50%	Provide technical assistance to county TWGs (47)	75%	Provide technical assistance to county TWGs (47)	75%
proportion of partners mapped participating in lung health	Mapping of partnerships for PAL	Hold a sensitisation meeting (national breakfast meeting) for mapping partners	20%	Hold a sensitisation meeting (national breakfast meeting) for mapping partners	40%	Hold a sensitisation meeting (national breakfast meeting) for mapping partners	60%	Hold a sensitisation meeting (national breakfast meeting) for mapping partners	75%
Strategic Approach 2: Establish the burden of respiratory diseases in Kenya and develop a robust respiratory disease surveillance system									
National baseline data of burden of lung diseases available	Conduct baseline population based survey on the burden of lung diseases	Conduct baseline study		Conduct Baseline study	1				
National plan developed to address burden of lung diseases	Based on results of baseline survey, convene TWG and develop multi-sectoral plan					Stakeholder meetings to disseminate results of baseline survey; draft national plan with County involvement	2	National plan for addressing lung diseases incorporated into County health plans	1
National M&E plans and tools for PAL surveillance available	Develop an M&E plan and tools for PAL	Finalize development of the PAL M& E tools and plan	1						
Number of of M & E tools and plans for PAL printed	Print PAL M& E tools			Print M&E tools (facility registers, management cards and appointment cards)	3,000 20,000 20,000	Print M&E tools (facility registers, management cards and appointment cards)	3,000 20,000 20,000	Print M&E tools (facility registers, management cards and appointment cards)	3,000 20,000 20,000
Proportion of Counties with M&E workplans and tools	Distribute PAL recording and reporting tools		25%	Distribute PAL recording and reporting tools	50%	Distribute PAL recording and reporting tools	75%	Distribute PAL recording and reporting tools	75%
Proportion of Counties reporting on PAL through TIBU	Include PAL indicators in the TIBU system and stream line the reporting system	PAL reporting through TIBU system	25%	PAL reporting through TIBU system	50%	PAL reporting through TIBU system	75%	PAL reporting through TIBU system	75%
Strategic Approach 3: Scale-up PAL implementation, including ensuring availability of necessary equipment and medicines, capacity building of HCWs and strengthening referral systems for lung health									
Number of National TOTs trained	Train 25 TOTs on PAL at the National level	Train national ToTs on PAL	25						
Number of county TOTs trained on PAL	Train 150 TOTs at county level (3 per county) on PAL	Train County ToTs on PAL	150	0		0		0	
Number of County HCWs trained on PAL	Conduct PAL trainings in the counties	25 HCWs/county trained in 12 counties	300	25 HCWs/ county trained in 37 counties	875	25 HCWs/county trained in 47 counties	1,175	25 HCWs/county trained in 47 counties	1175
100 % of counties with IEC materials	Develop job aids , diagnostic algorithms and IEC materials for PAL	Develop flyers and diagnostics algorithms for PAL.							
	Print PAL job aids , diagnostic algorithms and IEC materials	Print 5,000 posters, 50,000 flyers, 500 diagnostics algorithms.		Print 10,000 posters, 100,000 flyers, 1,000 diagnostics algorithms.		Print 10,000 posters, 100,000 flyers, 1,000 Diagnostics algorithms.		Print 10,000 posters, 100,000 flyers, 1,000 Diagnostics algorithms.	

Lung Health Operational Plan									
Output Indicator(s)	**Intervention(s)**	**Year 1 Activities**	**Yr 1 Target**	**Year 2 Activities**	**Yr 2 Target**	**Year 3 Activities**	**Yr 3 Target**	**Year 4 Activities**	**Yr 4 Target**
	Distribute PAL job aids, diagnostic algorithms and IEC materials	Distribute 5,000 posters, 50,000 flyers, 500 diagnostics algorithms.		Distribute 10,000 posters, 100,000 flyers, 1,000 diagnostics algorithms.		Distribute 10,000 posters, 100,000 flyers, 1,000 Diagnostics algorithms.		Distribute 10,000 posters, 100,000 flyers, 1,000 Diagnostics algorithms.	
E-learning package for lung health developed	Develop an e-learning package for respiratory diseases with certification of health care workers			Meetings to develop e-learning content	4	Review meetings	2	Review meetings	2
Number of HCWs completing e-learning and receiving certification	Train HCW on PAL using the e-module					Train 300 HCW on PAL using the e-module	300	Train 300 HCW on PAL using the e-module	300
Proportion of County phamacists sensitized on PAL	Forums for county pharmacist to sensitize them on PAL program commodities	National sensitisation meetings	50%	Review meetings	75%	Review meetings	100%	Review meetings	100%
PAL medicines in the essential drug list	Advocating the inclusion of the lung health medicines in the essential drug package	Advocacy meetings with policy makers	2	Advocacy meetings with policy makers	2				
Number of County hospitals equiped with PAL equipments.	Ensure availability of essential medical equipment : nebulizers, peak flow meters with disposable mouth pieces, spirometers and spacers	Equip county hospitals with spirometers, nebulisers, peakflow meters	12	Equip county hospitals with spirometers, nebulisers, peakflow meters	21	Equip county hospitals with spirometers, nebulisers, peakflow meters	14		
Number of Counties with model lung health units	Set up model lung health units in the 47 Counties			Set up 12 model lung health units(Adult and Peadiatric)	12	Set up 35 model lung health units	47	Sustain all County units	47
Proportion of children with chronic lung conditions screened for asthma and COPD (In PAL pilot sites)		Screen children with chronic lung conditions for asthma and COPD (In PAL pilot sites)	20%	Screen children with chronic lung conditions for asthma and COPD (In PAL pilot sites)	50%	Screen children with chronic lung conditions for asthma and COPD (In PAL pilot sites)	80%	Screen children with chronic lung conditions for asthma and COPD (In PAL pilot sites)	80%

4.5. Minimize Risk Factor Exposure

4.5.1. Prevent transmission and disease: infection prevention and control, contact tracing and Isoniazid preventive therapy

1. Situational Analysis

a) Infection Prevention and Control

Transmission of TB in congregate and health care settings remains a major problem in Kenya. Most of the health facilities in the country were designed to serve smaller populations than they currently handle, and without much attention to TB prevention. It is estimated that one untreated infectious TB patient will infect 10 people each year. Thus, the high volume of infectious TB patients visiting the facilities makes them a fertile transmission setting.

Kenya developed TB infection prevention and control guidelines in 2009, followed by sensitization and training of high volume facilities. However, the country still lacks data on the extent of spread of TB in health care and other congregate settings. Moreover, TB surveillance is not specifically done for these settings, save for prisons. Health care workers suffer more than three times the national TB burden. Studies conducted in Eastern and Nairobi regions in 2012 and 2013 revealed a TB case notification rate of greater than 800/100,000 population[1].There is thus an urgent need to redefine and address national IPC priorities.

Structured TB Infection prevention and control (IPC) implementation commenced in 2009 with the establishment of national coordination at NTLD Program and identification of a focal person. The national TB infection control policy materials and a training curriculum including a health facility TB infection control assessment tool were developed. Training on TB infection control of selected members of hospital staff from 254 health facilities drawn from across the county was done with national leadership, followed by development of IPC plans. The extent and result of the implementation of these plans are however unknown. Additionally, implementing partners have trained staff and supported some sporadic implementation of IPC activities, though MOH ownership has generally been lacking. IPC practices in the country have generally been disjointed, inconsistent, and poorly implemented or non-existent in most health facilities.

Majority of the health facilities in Kenya have not sustained the implementation of TB IPC activities. This sub-optimal IPC implementation has allowed nosocomial transmission of TB to continue. Owing to the nature of most health facilities, significant amount of resources are needed for infrastructural modification to attain the required standards. There is therefore need to engage partners in TB control to ensure that prevention of TB transmission in health facilities is made a priority and adequate resources are allocated. Further opportunities lie in integrating the TB IPC activities into existing general infection control practices to leverage on available resources as well as engagement of county governments and other stakeholders in development of a standard for construction of TB IPC compliant facilities.

Opportunities to leverage on in expanding contact investigation and management include availability of WHO guidelines that can be adapted locally, and availability of successful pilots locally that can inform expansion plans. These pilots have tools and registers that can also be adapted nationally. Gaps include lack of policy, guidelines and tools for contact investigation and management, as well as limited financial resources for scale-up. These gaps need to be addressed.

b) Contact Tracing

Active TB case finding among contact TB patients has been demonstrated to yield a high number of active and Latent TB cases. In 2013, Kenya notified a large number of infectious TB cases, including 34,643 smear positive PTB and 285 MDR-TB. Some 7,403 childhood TB cases were also notified. National guidelines recommend investigation and management of household contacts of all smear positive PTB and DR TB cases. While the guidelines are silent on screening household contacts of children index TB cases, new evidence recommends this. There is no national data on contact tracing, including the number of eligible contacts for screening, as well as number or proportions screened and their outcomes. Kenyan studies suggest that each adult TB index patient has 0.41 household contacts aged less than 5 years, in addition to older children and adults who would benefit from screening.

Implementation of TB contact tracing in Kenya is largely unstructured and lacks official tools and registers. The services are

1 D. Guwatudde, M. N., E. C. Jones-Lopez, A. Maganda, A. Chiunda, R. D. and J. J. E. Mugerwa, G. Bukenya, and C. C. Whalen (2003). "Tuberculosis in Household Contacts of Infectious Cases in Kampala, Uganda." American Journal of Epidemiology 158(9).

carried out in an ad hoc manner, with great variation across the country. While guidelines provide for contact tracing for children under 5 years of age exposed to smear positive TB, this is poorly done in some cases, with only 1% being screened. National guidelines are silent on tracing of contacts of index pediatric TB cases. The midterm review found that contact investigation and management is not routinely practiced at most health facilities, with most staff not convinced of the benefits of contact management. There was particular concern that IPT might result in development of resistant strains of TB.

While WHO has issued guidance on contact investigation, national guidelines recommend screening of contacts of infectious TB, including MDR-TB, but do not describe how this should be done. Also, tools to support this, including registers, are not available. Kenya pediatric TB guidelines, while describing what should be done for children less than five years old (IPT for those without TB), do not describe what method of screening should be carried out, and are silent on recommendations for older children. This lack of clear guidance has resulted in very little contact investigation as established during the MTR. It was not routinely carried out at most health facilities. This therefore constrains efforts to identify new TB cases early and to issue Isoniazid Preventive Therapy (IPT) to minimize TB incidence among asymptomatic contacts.

Opportunities to leverage on in expanding contact investigation and management include availability of WHO guidelines that can be adapted locally and availability of successful pilots locally that can inform expansion plans. These pilots have tools and registers that can also be adapted or adopted nationally. Gaps include lack of policy, guidelines and tools for contact investigation and management, as well as limited financial resources for scale-up. These gaps need to be addressed.

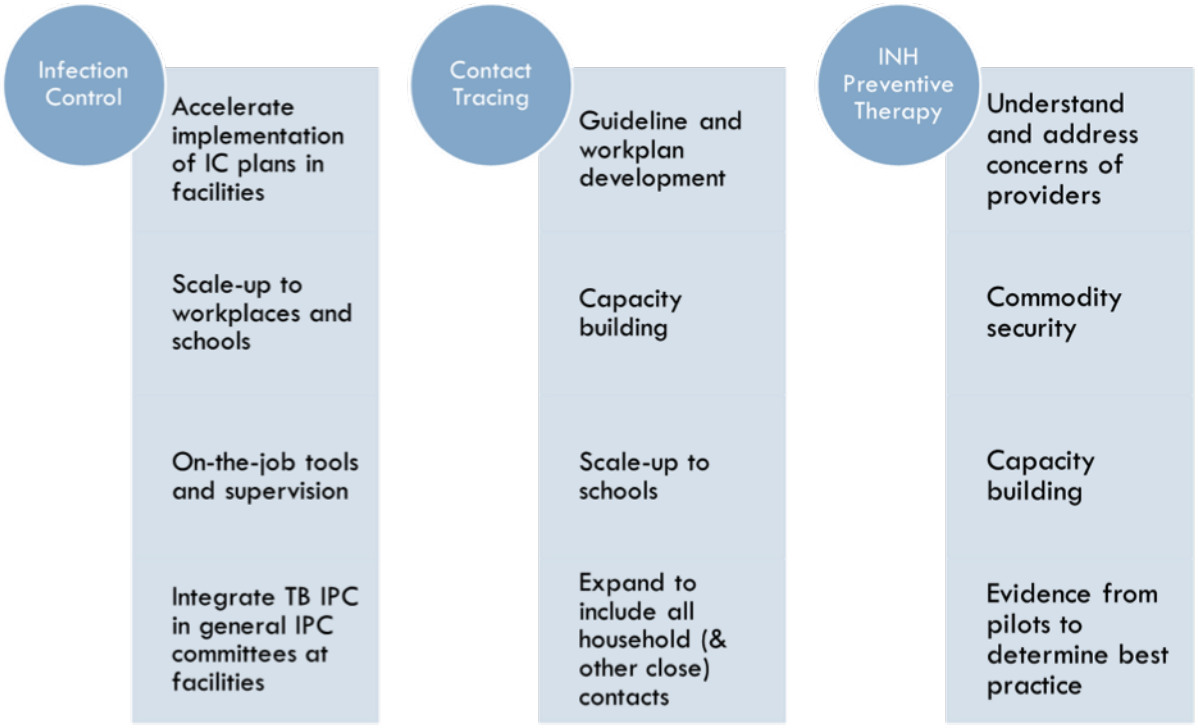
c) Isoniazid Preventive Therapy (IPT)

By end of April 2014, 615,621 PLHIV and 61,588 CLHIV were on ART in Kenya. Guidelines recommend routine screening for TB among PLHIV and placement on IPT for those who are asymptomatic. Of PLHIV screened for TB, 80% will screen negative, hence are eligible for IPT. Among children less than five years who are household contacts of patients with smear positive PTB, 10% are likely to have secondary TB, hence 90% will be eligible for IPT. Despite these figures of persons eligible for IPT, only 600 children aged less than five years exposed to smear positive PTB and approximately 5,600 PLHIV, including CLHIV were initiated on IPT in 2013, according to the TB health information system TIBU.

While the current policy provide for IPT for children less than 5 years exposed to PTB+ and PLHIV, the uptake is low. Implementation is scanty, particularly for PLHIV. It varies greatly, depending on implementing partners' support. The MTR found the uptake of IPT to be very low everywhere, with almost universal unavailability of IPT registers and tools. A skills gap was identified among HCWs in use of IPT, and many still had misconceptions that IPT would result in development of DR TB strains. Guidelines on IPT use, while existent, were not available at facilities, and job aids were missing. The MTR further found that while ICF for PLHIV uptake was good (82% of PLHIV screened), uptake of IPT was quite low with only 2% of those eligible on it.

Opportunities to support IPT use include the current TB and HIV policies and guidelines that provide for IPT, creating an enabling policy environment for implementation and scale-up. Further, there have been successful pilots of IPT implementation, from which best practices and lessons can be shared and which can host exchange programs. Many of these pilots have also embedded continuous quality improvement plans in their implementation, which can be adapted during scale-up. The recent increase in interest and willingness to support IPT from development and implementing partners also serves as an opportunity to scale-up. Gaps include less than optimal TB/HIV coordination at national and county levels; inconsistent IPT commodity availability; and knowledge, skill and attitude gaps, both among service providers and managers.

Strategic Direction(s) for 2015-2018



a) Intensifying early case finding through structured contact tracing.
b) Scale-up of IPT with a focus to reach all eligible PLHIV and children exposed to PTB+.
c) Accelerate the operationalization of infection control plans, starting in high-volume facilities

3. Proposed Approaches

a) Mainstream IPT, IPC and CT into the core functions, guidelines and tools of the NTLD Program
   i. Revise and disseminate guidelines on CT, IPT and IPC
   ii. Incorporate aspects of IPC, CT and IPT into all other capacity building and supportive supervision activities of the NTLD Program. Update TIBU to capture activities related to CT, IPT and IPC.

b) Scale up successful models of IPT for PLHIV and for children in contact with active TB cases
   i. Ensure INH commodity security, including pediatric formulations
   ii. Assess provider beliefs and willingness to provide IPT; revise communications and training materials to directly address misconceptions
   iii. Identify and engage centers of excellence for IPT to conduct on-site mentorship and training for new sites. Prioritize IPT delivery among high-risk populations, such as counties with >5% HIV prevalence in the general population and low ART coverage.

c) Scale-up successful models of contact investigation and management.
   i. Sustain ICF and CT efforts in HIV care and treatment settings; and pilot the extension to ICF and CT activities to schools and congregate settings
   ii. Expand and intensify contact tracing to cover all household and other close contacts of patients with PTB+, DR TB, pediatric TB (index patients), and leprosy
   iii. Establish and roll-out structure contact tracing including guidelines detailing which index cases require contact tracing, steps for conducting contact tracing, dissemination of tools.

d) Operationalize the Infection Prevention and Control plans existing and national and sub-national levels, and expand to other settings:
   i. Integrate TB IPC in general IPC committees at facilities
   ii. Develop and implement TB and TB/HIV work place policies to promote infection control
   iii. Leveraging on other ministries e.g. housing, to embed IPC in planning policies
   iv. Allocate resources for health facility infrastructural improvement especially at county level (starting with high volume facilities).

Contribution to NSP Impacts	Outcomes (IPT, IPC and CT)
Impact 1: Reduce the incidence of TB by 5% by 2018, compared to 2014	• 75% of all health facilities providing TB services are implementing an infection control strategy • Increase to 80% the proportion of eligible child contacts who receive IPT • Increase to 80% the proportion of eligible persons who receive INH
Impact 1.1: Reduce the prevalence of MDR-TB among new patients by 15% by 2018	Increase to 100% the child and other close contacts of DR TB patients who are screened for TB
Impact 1.2: Reduce the incidence of TB among PLHIV by 60% by 2018, compared to 2014	Increase to 80% the proportion of eligible PLHIV who receive IPT

Table 16: Impact and Outcome Indicators for IPT, IPC and CT

2 D. Szkwarko, F. O., P. Owiti, E. J. Carter (2013). "Implementing a tuberculosis child contact register to quantify children at risk for tuberculosis and HIV in Eldoret, Kenya." Public Health Action 3(3).

3 WHO (2007). Tuberculosis: fact sheet no. 104. accessed at: http://www.who.int/mediacentre/factsheets/fs104/en/index.html

4 E. Masini and J.Kangwele(2012).Tuberculosis among public health facility satff in Eastern Province,Kenya.Poster presentation at the World Lung Health Conference in Kuala Lumpur Malaysia.PC 275-16 pg 235.

5 E. Wahome,1 L. Makori,1 M. Gikera,1 J. Wafula,1 J. Chakaya,2 M. E. Edginton,3 A. M. V. Kumar(2013). Tuberculosis treatment outcomes among hospital workers at a public teaching and national referral hospital in Kenya. Public Health Journal. Vol 3 no 24 pg 323-327.

CHAPTER 5

RESOURCE IMPLICATIONS FOR THE NTLD PROGRAM STRATEGIC PLAN 2015 – 2018

Introduction

Health financing provides resources and economic incentives for the operation of health systems. It is a key determinant of health system performance in terms of equity, efficiency, and health outcomes. Health financing also involves providing individuals with a basic package of benefits that is designed to improve health outcomes and ensure financial protection. Health system sustainability has been defined as the "capacity of the health system to replace withdrawn donor funds with funds from other, usually domestic, sources". Additionally, sustainability of an individual program is defined as the "capacity of the grantee to mobilize the resources to fund the recurrent costs of a project once it is terminated[1]".

Evidence shows that higher levels of out of-pocket financing in the health system are correlated with greater incidence of catastrophic payments[2]. Kenya has over 45% of its population living below the poverty line, with a large share treating financing health care as out-of-pocket expenditure[3]. Countries with high levels of out-of-pocket spending have limited opportunities for risk pooling, which hinders allocative efficiency and financial protection efforts. Moreover, low overall spending levels result in limited access to essential services and limited financial protection, particularly for the poor. This has resulted in huge inequities in access to health care. Therefore, a reform of the existing health care system by restructuring it to create universal access to health care service is needed.

Preventing individuals from falling into poverty because of catastrophic medical expenses and protecting and improving the health status of individuals and populations by ensuring financial access to essential public and personal health services, provides strong basis for public intervention in financing health systems. Ensuring financial protection means that no household spends so much on health that it falls into and cannot overcome poverty. Achieving adequate levels of financial protection requires maximizing prepayment for insurable health risks; achieving the largest possible pooling of health risks within a population, thereby facilitating redistribution among high and low-risk individuals; ensuring equity through prepayment mechanisms that redistribute costs from low to high-income individuals; and developing purchasing arrangements that promote efficient delivery of good quality services.

This chapter assesses the health financing policy in the fight against Leprosy, Tuberculosis and Lung diseases in Kenya. It analyzes the basic financing challenges facing the NTLD Program as a result of revenue mobilization constraints. The chapter describes in detail, the level of resource requirements for the period of the strategic plan, the available resources and the funding gap. It further sets out likely future costs for some of the key strategies being considered as part of the NSP 2015 to 2018.

Resource Requirements

The Strategic Plan was costed using the Input-Based Costing (IBC) approach. The IBC uses a bottom-up input-based approach, indicating the cost of all inputs required to achieve NSP targets for the financial years of 2014/15 – 2017/18. Over time the rest for all the thematic areas provides important details that will initiate debate and allow the NTLD Program management and development partners to discuss priorities and decide on effective resource allocation. The aim of the costing review is to provide a broad framework on resource requirements as a means of informing donor and government allocations in support of its implementation.

1 Knowles, Leighton, and Stinson (1997, 39)

2 Xu et al. 2003; van Doorslaer et al. 2005

3 Republic of Kenya, Ministry of Health, National Health Accounts (NHA), 2009/10 indicated that households financed 26 percent of the Total Health Expenditure (THE) for Tuberculosis and Lung diseases.

According to the Input-Based Costing, the NTLD Program requires KES 26.9 billion for the plan period in order to achieve its targets. This has further been disaggregated by thematic areas as shown in the table below.

Thematic Area (s)	FY 2014/2015	FY 2015/2016	FY 2016/2017	FY 2017/2018	TOTAL
	Requirement	Requirement	Requirement	Requirement	Requirement
TB HIV	475,551,250	501,374,000	476,950,000	275,470,000	1,729,345,250
Childhood TB	163,852,875	722,582,900	690,015,375	631,675,800	2,208,126,950
Lab	414,898,720	365,053,700	369,283,700	359,451,920	1,508,688,040
Leprosy	74,085,200	111,664,000	96,974,000	96,974,000	379,697,200
M & E	325,625,800	712,809,501	314,879,200	336,293,375	1,689,607,876
PAL	107,760,500	266,689,750	257,750,750	197,750,750	829,951,750
Social Protection	658,795,000	656,823,000	652,940,000	662,326,000	2,630,884,000
Commodity	2,018,546,661	1,543,463,842	2,273,678,230	1,775,131,636	7,610,820,369
PPM	51,630,000	113,369,100	115,630,100	115,630,100	396,259,300
Gender	155,759,250	168,397,000	157,580,000	116,227,000	597,963,250
Community Engagement	764,415,000	904,406,250	821,777,250	772,037,250	3,262,635,750
CORE TB	720,881,462	884,040,152	887,167,462	738,620,652	3,230,709,728
Policy and Planning	41,431,200	46,368,200	46,368,200	81,368,200	215,535,800
Communication and Advocacy	222,239,500	140,406,250	157,419,750	143,836,750	663,902,250
PMDR TB	83,637,500	267,485,500	249,373,250	256,231,000	856,727,250
TOTAL (KES)	**6,275,476,518**	**7,401,299,745**	**7,564,153,867**	**6,555,391,033**	**27,796,321,163**

Table 17: Resource Requirements by Thematic Area(s)

Available Resources (FY 2014/15 – 2017/18)

In the 2001 Abuja Declaration on HIV/AIDS, TB, and other related infectious diseases, African leaders pledged to increase health spending to 15 per cent of their government's budgets.

The national government's total budget and the amount allocated to health is usually public information and can be used to evaluate the government's commitment to health. Information on government health expenditure channeled through the Ministry of Health is usually available through the National Treasury. The global funds have also added a new dynamic to global health policy and a new level of influence over developing countries.

The starting point for estimating available resources is based on budgets and budget projections. These reflect the total amount of available resources. The analysis was done for a four-year period, starting from 2014/15 to 2017/18. Both the Government as well as development partners have planned to commit a total of KES 6.3 Billion to support the NTLD Program for the period of the NSP as shown in the table below.

	FY 2014/2015	FY 2015/2016	FY 2016/2017	FY 2017/2018	TOTAL
Source(s)	Available	Available	Available	Available	Available
Government	1,146,960,426	1,146,960,426	1,146,960,426	1,146,960,426	4,587,841,704
Loans	-	-	-		-
Global Fund	736,143,801	680,408,295	-	-	1,416,552,096
Other Grants	150,576,816	150,576,816	-	-	301,153,632
TOTAL (KES)	**2,033,681,043**	**1,977,945,537**	**1,146,960,426**	**1,146,960,426**	**6,305,547,432**

Table 18: Available Resources by Source(s)

Funding Gap (FY 2014/15 – 2017/18)

This section analyzes financial requirements to achieve the targets outlined in this strategic plan and the available resources. It presents the funding shortfall for the NTLD Program over the NSP period. This involves two steps. First, the use of costing estimates to compute the resource requirements, and secondly, consolidating the available resources and thereafter computing the funding gap for the NTLD Program.

The identification of the funding gap provides an opportunity for potential stakeholders to see when additional resources will be most useful. Overall, the NTLD Program has a funding gap of KES 20.6 Billion over the NSP period of FY 2014/15 to 2017/18 as shown in the table below. The funding gap presents the financing that other stakeholders in the health sector need to come on board and fill.

FY 2014/2015	FY 2015/2016	FY 2016/2017	FY 2017/2018	**TOTAL**
4,241,795,475	5,423,354,208	6,417,193,441	5,408,430,607	**21,490,773,731**

Table 19: Funding Gap

Recommendations

A good financing system raises adequate funds for health in ways that ensure people can use needed services, and are protected from financial catastrophe or impoverishment associated with having to pay for these services. It provides incentives for providers and users to be efficient[4].

The above findings show that funds are likely to be insufficient, thus, there will be need to mobilize more funds from both internal and external sources in order to bridge the funding gap. Actions that need to be taken to mobilize resources include, but are not limited to the following:

- Engage and strengthen the private sector through the Public-Private Partnership (PPP)
- The existing PPP model for creation of health post will be strengthened and other areas of the health sector where PPP can be applied will be explored
- Improve financial management
- Increase capacity of community health workers' cooperatives in financial management and mobilize them to investment in health
- Explore all opportunities for grants
- Build the capacity in proposal writing and grant application
- Sustain and improve performance in grant management
- The need to select priorities for funding such as sustaining the high-impact interventions.

Recommendations from the Mid-Term Review

The policy recommendations emanating from the MTR were broadly classified into five (5) thematic areas:

1. Inadequate fiscal space to finance health
2. Improving efficiency of sector outlays
3. Re-prioritizing spending (within the existing budget)
4. Increasing public investments in health
5. Improving access to health services.

From the review, the following recommendations have been proposed for the NTLD Program in order to mitigate the financing challenges:

i. The Constitution of Kenya 2010 hints on avenues of financing:
   a. Apart from direct budgetary allocations at both national and county levels, additional resources can be secured from the national government's share of revenue

   b. There is need to develop a national and county specific financing strategy to take full advantage of the new public financing opportunities

   ii. Intensify advocacy for increased and dedicated national and county level budget allocations

4 World Health Organization, 2007: Everybody's business: Strengthening health systems to improve health outcomes –WHO's Framework for Action

iii. Continue country dialogue on planning and udget process and bring more players on board (where applicable)

iv. Fill the financing gap through supply and demand-side financing

    a. Increase availability of services by scaling up health financing innovations
    b. Reduced HH out-of-pocket expenditures by expanding the SHI to include more basic and essential services

v. Donor harmonization or alignment among donors in order to reduce fragmentation in financing and service provision (e.g. gains by HS integration, donor pooling)

vi. Work with MOH and Treasury to develop a framework for disbursing conditional grants

vii. Rationalize expected impact outcomes and intervention objectives to match budgets

viii. Annual budget review of NSP to address emerging issues and allow flexibility within budgets for re-allocation

ix. Enhance absorptive capacity through building capacity in the areas of financial management, supply chain management and simplification of the reporting system

x. Promote and monitor programs within county health plans

xi. Leprosy and Lung Disease finance profiling

xii. Establishing linkages between the current social protection strategy and the NTLD Program

xiii. Enhance partnering with the private health sector.

ANNEXES

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