DEARTMENT OF PUBLIC HEALTH

COMMUNICABLE DISEASE CONTROL DIVISION

NATIONAL TUBERCULOSIS AND LEPROSY CONTROL PROGRAM

NATIONAL TUBERCULOSIS AND LEPROSY STRATEGIC PLAN 2021-2026

Contents

0. FOREWORD

The Sixth Eritrea National Strategic Plan for TB 2021-2026 is one of the initiatives taken by of the Ministry of Health in aligning all strategic plans with the Health Sector Strategic Development Plan that was developed post MDGs with the aim achieve the global targets of the sustainable development goals. The development and finalization has taken many months in preparation, consultation with various individuals and organizations in order to lead the country in achieving the national vision of making Eritrea free from tuberculosis. It is my belief that the participation of all the stake holders, communities in general and people affected by the diseases in particular will ensure the implementation of the TB strategic plan and it will be the beginning of ending the TB epidemic.

With this Strategic Plan, Eritrea aims to identify the missed TB cases, prevent and identify early MDR TB and further strengthen the TB/HIV collaboration and provide patient centred treatment in order to cut the transmission of TB and reducing the morbidity and mortality related with TB. It will further strengthen the involvement of the community and address the key affected populations by providing universal access to health care services. This Strategic Plan will also enable Eritrea to be in line with ambitious targets of ending the TB epidemic.

With the development of the ENTSP, I assure that the commitment and determination of the Government of the State of Eritrea, as usual, is in place to end epidemic and achieve the long term vision of tuberculosis free Eritrea.

Amina Nurhussein
Minister of Health

0. ACKNOWLEDGEMENTS

This strategic plan would not have been achieved without the efforts of various individuals, and organizations. First and foremost a harmonized determination of all staff of the communicable diseases in general and that of the National TB Control Programme has resulted in a fruitful outcome in designing and finalizing the third National Strategic Plan towards control of TB.

The CDCD is thankful to all zonal TB/HIV coordinators and stakeholders such as Ministry of Education, National Union of Eritrean Women, Prisons and Rehabilitations Services of Eritrea and WHO that participated in the development of the first draft and in endorsing this strategic plan.

Our deepest gratitude goes to the WHO-AFRO consultant, for his tremendous effort in leading the development of the NSP.

Dr. Andeberhan Tesfazion
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0. LIST OF ABBREVIATIONS

ACSM	Advocacy communication and social mobilization
aDSM	Active Drug Safety Monitoring
AIDS	Acquired Immune Deficiency Syndrome
ART	Anti-Retroviral Therapy
ARV	Anti-Retro Viral
BCC	Behavioral Change Communication

BHCP	Basic Health Care Package
CD	Communicable Diseases
CDC	Communicable Diseases Control
CHA	Community Health Agent
C4D	Communication for Development
CPT	Cotrimoxazole Preventive Therapy
DHIS2	District Health Information Software 2
DM	Diabetes Mellitus
DOT	Directly Observed Treatment
DRS	Drug resistance Survey
DST	Drug Susceptibility Testing
ECG	Electrocardiogram
EHCP	Essential Health Care Package
ENLM	Eritrean National List of Medicines
EP	Extra Pulmonary
GDF	Global Drug Facility
GDP	Gross Domestic Product
GFATM	Global Fund on AIDS, Tuberculosis and Malaria
GLC	Greenlight committee
GNI	Gross National Income
GXP	GeneXpert
HCW	Health Care Worker
HIV	Human Immunodeficiency Virus
HMIS	Health Information Management System
HRH	Human Resources for Health
HSSDP	Health Sector Strategic Development Plan
ICF	Intensified Case Finding
IEC	Information, Education & Communication
IMCI	Integrated Maternal and Child Illnesses

IMF	International Monetary Fund
IPC	Infection Prevention and Control
IPT	Isoniazid Preventive Therapy
KAP	Knowledge, Attitudes and Practices (survey)
LAM	Lipoarabinomannan test
LED	Light Emitting Diode
LMIS	Logistics Management Information System
LPA	Line Probe Assay
LQAS	Lot Quality Assurance Survey
LQMS	Laboratory Quality Management System
MB	Multi Bacillary
MCH	Maternal Child Health
MDR	Multi Drug Resistant
MGIT	Mycobacteria Growth Indicator Tube
MoA	Ministry of Agriculture
MoE	Ministry of Education
MoH	Ministry of Health
MOI	Ministry of Information
MRI	Magnetic Resonance Imaging
MTR	Midterm review
NACP	National AIDS Control Programme
NCD	Non-Communicable Disease
NFA	Nakfa
NHL	National Health Laboratory
NHP	National Health Policy
NMFA	National Medicines and Food Administration
NQCL	National Quality Control Laboratory
NRS	Northern Red Sea Zoba
NSP	National Strategic Plan

NTD	Neglected Tropical Disease
NTLCP	National Tuberculosis Control Programme
NTRL	National TB Reference Laboratory
NUEYS	National Union of Eritrean Youth and Students
NUEW	National Union of Eritrean Women
OOP	Out of Pocket
OPH	Orotta Pediatric Hospital
PFDJ	People's Front for Democracy and Justice
PHC	Primary Health Care
PLHIV	People living with HIV/AIDS
PMU	Project Management Unit
PV	Pharmacovigilance
RR	Rifampicin Resistance
SDR	Single Dose Rifampicin
SLMTA	Strengthening Laboratory Management Toward Accreditation
SOP	Standard operating procedure
SPRS	Septic, prevention, reconstructive surgery
SRS	Southern Red Sea zoba
TB	Tuberculosis
TB-LAMP	TB Loop-mediated isothermal amplification test
TOT	Training of Trainers
TPT	TB Preventive Therapy
UHC	Universal Health Coverage
UNHLM	United Nations High Level Meeting on TB
UPS	Uninterrupted Power supply
VR	Vital Registration
WHO	World Health Organization
XDR	Extensively Drug Resistant

1. CHAPTER 1: BACKGROUND

1.1 INTRODUCTION

The Ministry of health conducted a comprehensive mid-term review (MTR) of the current National Strategic Plan (NSP) 2017-2021 for Tuberculosis (TB) and Leprosy. This showed that the National TB and Leprosy Control Program (NTLCP) has made great strides in achieving its mandate. The review identified gaps that are critical in accelerating the country towards ending TB in Eritrea. The summary of the review findings is captured in section 2.3 below.

This NSP will serve as a roadmap that consolidates the government's policies and strategies for the elimination and eradication of TB and Leprosy respectively and gives a broader guide for implementation of activities at all levels from the community to the national level.

1.2 THE CONTEXT

1.2.1 Geography and Demographics

Eritrea is in the Horn of Africa bordered by the Sudan to the North and West, the Red Sea to the East, Ethiopia to the South and the Republic of Djibouti to the Southeast. The country has a surface area of above 124,000 square kilometers. The country is divided into six administrative regions known as zobas. The zobas are further divided into 58 sub-zobas (districts), 715 administrative areas (Memhdar Kebabi) and 2666 adis (villages).

No proper population census has ever been carried out in Eritrea. However, the Ministry of National Development and the UNDESA (United Nations Department of Economic and Social Affairs) estimate the population of Eritrea at 3,497,117, as of 1 July 2019. According to the 2010 Eritrea population and health survey, the population of Eritrea is essentially rural with about 65 percent of the people living in the countryside. The population of Eritrea is not uniformly distributed throughout the country. About 50 to 60 percent of the population lives in the Highlands. The age distribution is that a large proportion (41 percent) of the total population is under the age of 15 years of which, an estimated 14.2 percent is under the age of 5 years. The elderly population (over 65 years) is estimated at around 5 percent. The average household size is estimated at 4.8 persons. Life expectance at birth estimated to be 66 years. The population is composed of almost equal number of males and females. Eritrea is a multi-ethnic society with nine different ethnic groups speaking nine different languages and professing two major religions; namely, Christianity and Islam.

1.2.2 Socioeconomics and Development Agenda

Eritrea's economy is agriculture based but with broad potential in sectors such as mining, tourism, fisheries, port services and industries.

The National Charter of the People's Front for Democracy and Justice (PFDJ) provides the national development agenda into which all other programs contribute[1]. The national health policy 2020-2030 (NHP-2020)[2] draws its vision from the PFDJ. It defines the long-term country's vision, policy directions and strategies for ensuring the health and wellbeing of the Eritrean people by 2030.

1.2.3 Health System

1.2.3.1 Governance

The overall stewardship of the health sector is provided by the ministry of health (MoH) led by the minister. At the regional level, there are 6 zonal/zoba offices led by a medical officer. The sub-zoba or District Medical Offices are in the process of being established.

1.2.3.2 National Health Policy[3]

The country has developed a new health policy covering the period 2020-2030. The overall goal is to "Maximize the Health and Wellbeing for All Eritrean at All Ages". The NHP aligns itself to global/regional commitments mainly UN-SDG3, Agenda 2063 of the African Union and a commitment to primary health care (PHC) as a way of attaining Universal Health Coverage (UHC).

Out of the four policy objectives, objectives 1, 2 and 4 have a direct bearing on TB and Leprosy. These are:

1. Reduce the burden of diseases and improve health status of all Eritreans
    a. Reducing the incidence, prevalence, morbidity and mortality related to:
        i. Common Communicable Diseases (CDs) including malaria, HIV/AIDs, TB, vaccine preventable diseases etc.;
        ii. Neglected Tropical Diseases (NTDs) among others
2. Minimize the burden of health risk factors for all citizens
3. Increase length and quality of healthy life

TB will contribute to the High Level Policy Targets of the NHP 2020 of achieving reduction of disease prevalence/incidence by achieving "global triple 90 target for HIV/AIDS by 2023 and achieving and maintaining a cure rate of >85% in new sputum positive patients for TB and reduce incidence of new cases, to reach elimination status by 2030". The NHP 2020's focus on UHC, increasing immunization, increasing Government total Health Expenditure and reducing malnutrition & non-communicable diseases (NCDs) will impact TB control positively.

1.2.3.3 Health Care Financing

The health sector has largely relied on government financing, programmatic donor support and out-of-pocket (OOP) expenditure. The government supports infrastructure, salaries and recurrent costs, and partners e.g. Global Fund grant support operational and programmatic

[1] The National Charter of the People's Front for Democracy and Justice (PFDJ), February 1994
[2] National Health Policy, 2020
[3] National Health Policy, 2020

activities such as procurement of medicines, supportive supervision, incentives for direct observed treatment (DOT) promoters and enablers for drug resistant TB cases on treatment. Since 2012, the health expenditure has been about 3% of Gross Domestic Product (GDP), with 59% of all health expenditure being OOP in 2016. Government Health Expenditure increased from 1% of general government expenditure between 2012 and 2015 to 3% in 2016[4]. In the NHP 2020 there are plans to deliberately minimize out-of-pocket (OOP) payments.

1.2.3.4 Universal Health Coverage

The national health policy envisions the health sector to work towards the progressive attainment of UHC in the country. It has set health systems performance targets one of which is to achieve UHC for all citizens by 2030. It further sets out how this will be met laying emphasis on more than 90% of Eritrea's population utilizing the identified essential health care package (EHCP) and related services provided through PHC. There is a policy of providing free tuberculosis diagnostic and treatment services.

1.2.3.5 Health Workforce and Training

The MOH document on "Definitions and Functions of Various Levels of Health Care Service Delivery in Eritrea", which was developed in 2017, defines the staffing norms at different levels of health care service delivery. The health workforce has been increasing by 3-4% annually reaching a total of 10,208 by the end of 2018 of which 68% were skilled health professionals and 32% were administrative and support staff. Attrition rate is declining but is still a cause for concern. The human resources for health (HRH) gaps negatively impact on scaling up programmatic interventions for HIV, TB and Malaria. Community Health Workers, now community health agents (CHAs) in the new community health strategy have been the backbone for delivering several interventions in the areas of TB and Malaria and HIV. Some task shifting/sharing is ongoing whereby some cadres are given tailored trainings to perform functions that were previously done by higher trained staff. In the community health policy and strategy, it is envisioned that all the 16005 CHAs will be merged to offer integrated services.

1.2.3.6 Procurement and Supply Management for Medicines and Health Products

PHARMECOR, a government body, is the sole legal agent for procuring and distribution of medicines and health products for public health use in Eritrea. It receives all procured medicines and quarantines them for inspection and clearance by the regulatory authority within the MOH, the National Medicines & Food Administration (NMFA). With respect to anti-TB medicines, quantification, forecasting and selection is done by the NTLCP, and procured from WHO pre-qualified sources including the Global TB Drug Facility (GDF). Distribution to zobas and user units is predominantly based on a pull system dictated by consumption data. There is an electronic logistics management information system (LMIS) using MySQL software which is web-based but does not function due to internet connectivity challenges.

[4] WHO, Report on Mission to ASMARA, ERITREA on Universal Health Coverage (UHC) (Brazzaville: World Health Organization, Regional Office for Africa, 2018).

1.2.3.7 National Medicines & Food Administration (NMFA)

The NMFA deals with medicines through the Registration, Quality Control Laboratory and the Pharmacovigilance and Drug Information units. This regulatory service collaborates closely with PHARMECOR on drug management issues including registration of all medicines and conducting pharmacovigilance and post-marketing surveillance. It is also responsible for licensing medicine importers, retail pharmacists, registration of pharmacists as well as publication of the Eritrean National List of Medicines (ENLM) and National Formulary.

1.2.3.8 Health Management Information System (HMIS)

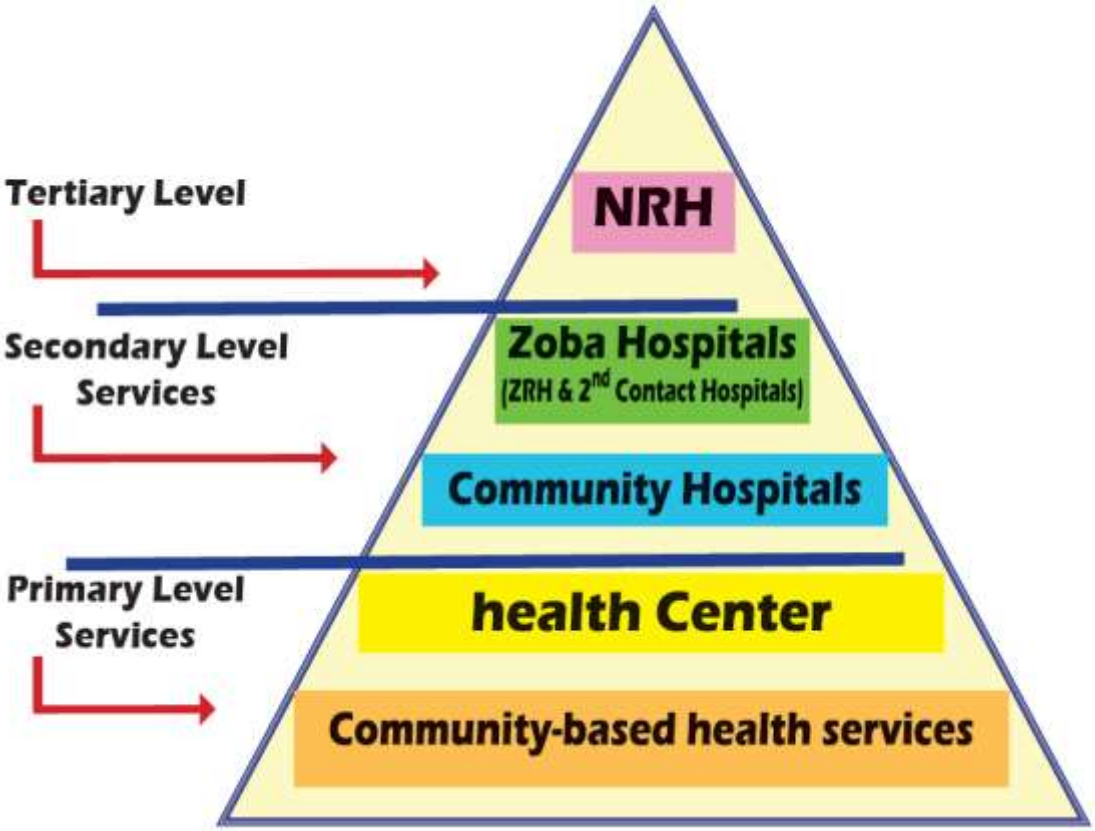
The HMIS collects information on a list of essential national health care indicators using relevant standardized tools used in all health facilities. Zoba reports are forwarded to the national level via data memory sticks, which is then uploaded into a national database warehoused at the HMIS. The quality of recorded and reported data is checked using data quality monitoring tools at different levels. The HMIS has upgraded its system to District Health Information Software 2 (DHIS2) in collaboration with the University of Oslo. It is also planning to integrate the aggregate cohort-based TB data per facility with the new DHIS2. The country is yet to develop a functional Vital Registration system that will record vital events like births and deaths.

1.2.3.9 Health Care Service Delivery

Health care services are provided free or at a minimum cost through a three-tier system of primary, secondary and tertiary based on PHC principles[5]. To shorten the referral system, the level of some health facilities has changed in the NHP 2020. The 2nd contact hospitals become zoba hospitals and community ones move to second tier (Figure 1). There is a total of 340 health facilities in the country with hospitals constituting 8.2%, health centres 16.5%, health stations 55.3%, and maternal child health (MCH) and other clinics 20%. In addition, there are 311 private medicine retail outlets. Health stations identify presumptive TB cases and facilitate their referral to the TB diagnostic centres. Community Hospitals act as referral facilities for health stations.

Figure 1: The three-tier Health care delivery system in Eritrea (Source NHP 2020)

[5] Eritrea National Health Policy 2020



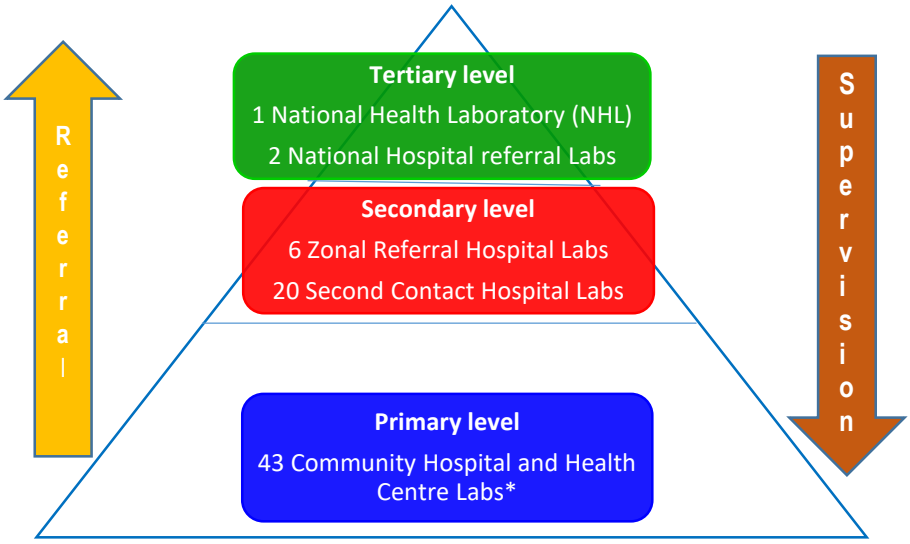
Essential Health Care Package (EHCP)

The Basic Health Care Package (BHCP) is being reviewed to an essential health care package (EHCP) designating services by: (1) age cohort (2) public health function - health promotion, disease prevention, curative and rehabilitative services and palliative care and (3) level of care. TB will be addressed in all the levels.

The National Health Laboratory Services

Medical laboratory services are an integral part of health care provision. Except for the National Health Laboratory (NHL), which is the apex laboratory in the country and where the National TB Reference Laboratory (NTRL) is located, all others are located within health facilities. The health laboratory services are also structured along the three-tiers of the health care delivery system, and hence the capacity and scope of the laboratory services vary according to the needs of the health care level (Figure 2).

Figure 1: The three-tier structure of laboratory services in Eritrea



*Health stations do not have laboratories but may conduct simple laboratory tests

Radiological and other Imaging Services

Radiological and imaging services are essential for TB diagnosis. CT-scan and MRI services are available exclusively in the national referral hospitals, while X-ray services and ultra-sound are distributed throughout the other zobas. Most of the facilities with imaging capacities use analogue x-rays rather than digital ones.

2. CHAPTER 2: TUBERCULOSIS AND LEPROSY EPIDEMIOLOGY, SITUATION ANALYSIS AND PROGRESS UNDER NSP 2017-2021

2.1 EPIDEMIOLOGY OF TUBERCULOSIS AND SITUATION ANALYSIS

2.1.1 Prevalence, Incidence and Mortality

A TB prevalence survey was done in 2005 but did not meet WHO standards and therefore not used in estimating the TB burden. The WHO therefore uses case notifications adjusted by a standard factor to account for underreporting, overdiagnosis and underdiagnosis to estimate the TB incidence. It is estimated that the incidence rate was 89/100,000 with 3100 TB cases in Eritrea in 2018[6]. Out of these only 1892 were notified the same year giving a treatment coverage of 61% indicating that 39% were missed (see figure 3). A total of 1842 cases were notified in 2019. Children below 15years contributed about 12.6% in 2019 (Figure 4) of the notified cases while men and women contributed 55% and 45%, respectively. A drug resistance survey was conducted between 2017/2018 which showed a prevalence of rifampicin resistance/multi-drug resistant TB (RR/MDR-TB) of 2.0 % (1.0 - 3.6) among new and 7.5 % (2.1 - 18.2) among previously treated TB cases. This is much lower than previous WHO estimates and has led to a downward revision of estimates. In 2018 the incidence of RR/MDR-TB was estimated to be 66 but only 16[7] were diagnosed and treated the same year. The number diagnosed in 2019 was 17. TB-related mortality excluding HIV associated deaths

[6] World Health Organization. (2019). Global Tuberculosis Report. Geneva: World Health Organization.
[7] World Health Organization. (2019). Global Tuberculosis Report. Geneva: World Health Organization.

declined at an average annual rate of 6.9% between 2002 and 2017[8]. The decline in mortality among HIV associated TB was 2.5 times faster. In 2018 WHO estimated the total TB mortality rate to be 17.4/100,000.

Figure 3. Estimated TB incidence and notifications per 100,000 population (2001–2017)

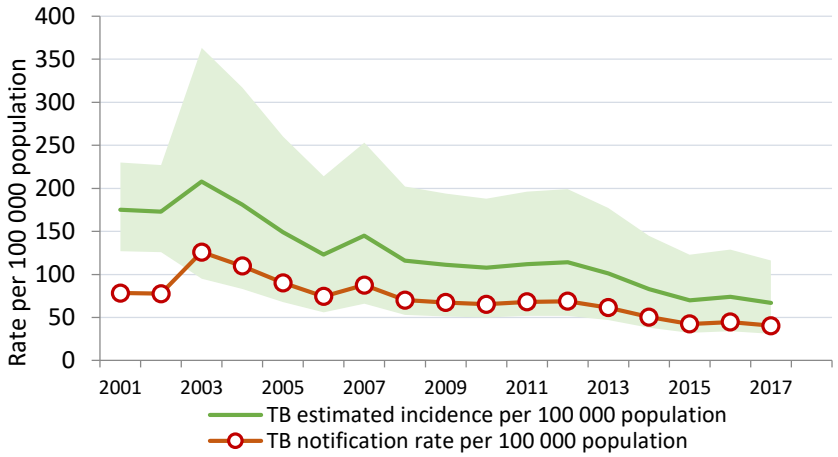
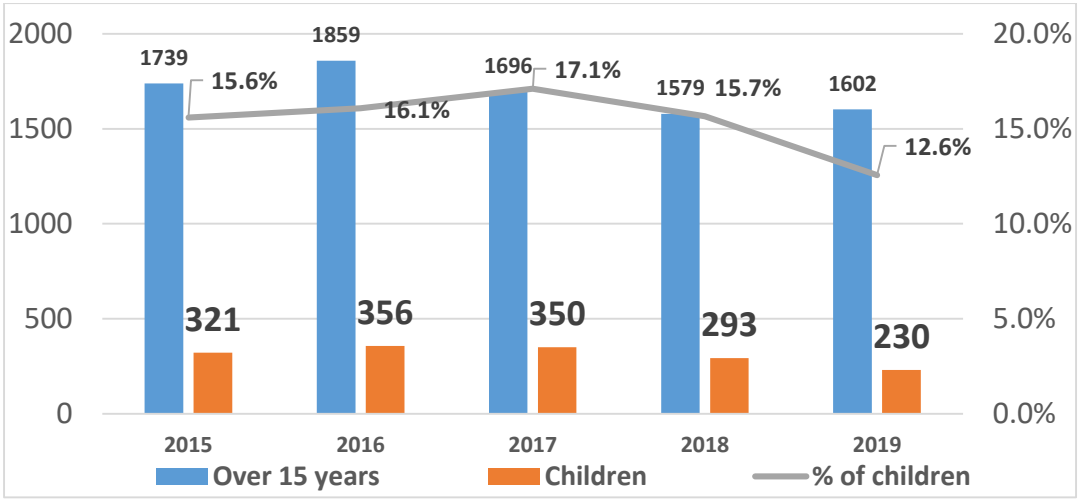


Figure 4. New and relapse TB cases below 15 years and =>15, and proportion of children, 2015–2019



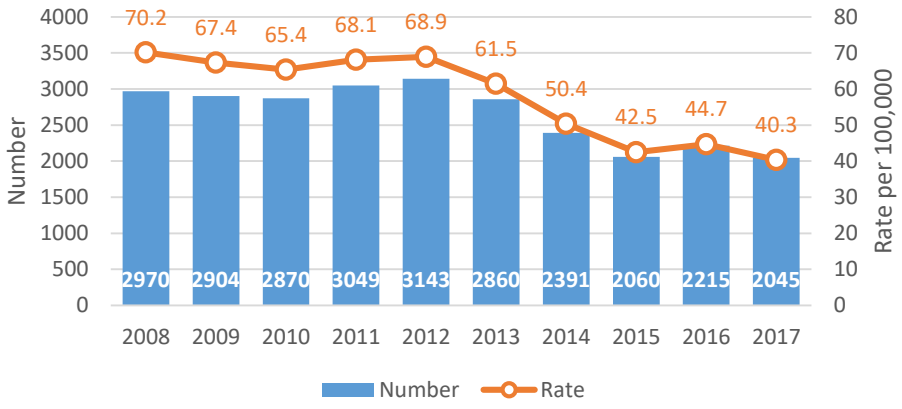
2.1.2 TB Case Notification

The TB notification was 1842 in 2019 and together with the notification rate has been declining in the past 10 years at an average rate of decrease of 6.1% per year as shown in figure 5 below. Disaggregated by site of disease and bacteriological confirmation, the greatest decline is observed in clinically diagnosed pulmonary TB cases with a decline of (−)12.0% per year. TB notification rate in 2018 was highest in Northern Red Sea zoba (58.3/100,000) and lowest in Debub (27.8/100,000). Annual percentage change in notification in the last 5years

[8] Eritrea TB Epidemiological review report (2019)

was highest in Southern Red Sea (-21.4%) and lowest in North red Sea (-6%). The proportion of bacteriologically confirmed TB cases at national level was stable between 2008 to 2013 ranging between 40.6 and 42.6%, even when the absolute numbers of new TB cases decreased. Between 2014 and 2018, there was rapid decrease in clinically diagnosed new PTB cases, which resulted in a relative increase in the proportion of bacteriologically confirmed TB cases from 42.6% in 2013 to 68% in 2019. This is attributable to the roll-out of GeneXpert testing, LED microscopes and a likely change in practice in diagnosis of clinically diagnosed cases. The proportion of extrapulmonary (EP) cases among new cases has been increasing in the last 10 years from about 30% to 39% mainly due to a faster decline in reported pulmonary cases probably due to diagnostic practices. Orotta pediatric hospital (OPH) and Northern Red Sea zoba are the only areas where there is a declining trend in EP. In the last 10 years the proportion of retreatment cases has remained stable at about 7%. Since 2014 there has been a steady decline in age-specific case notification rates except in children below 15 years which has been stable. In the same period, the proportion of children among notified cases has been slightly above 15% except in 2019 where it declined to 12.6%. Males notified are more and their proportion has been stable over the 5year period.

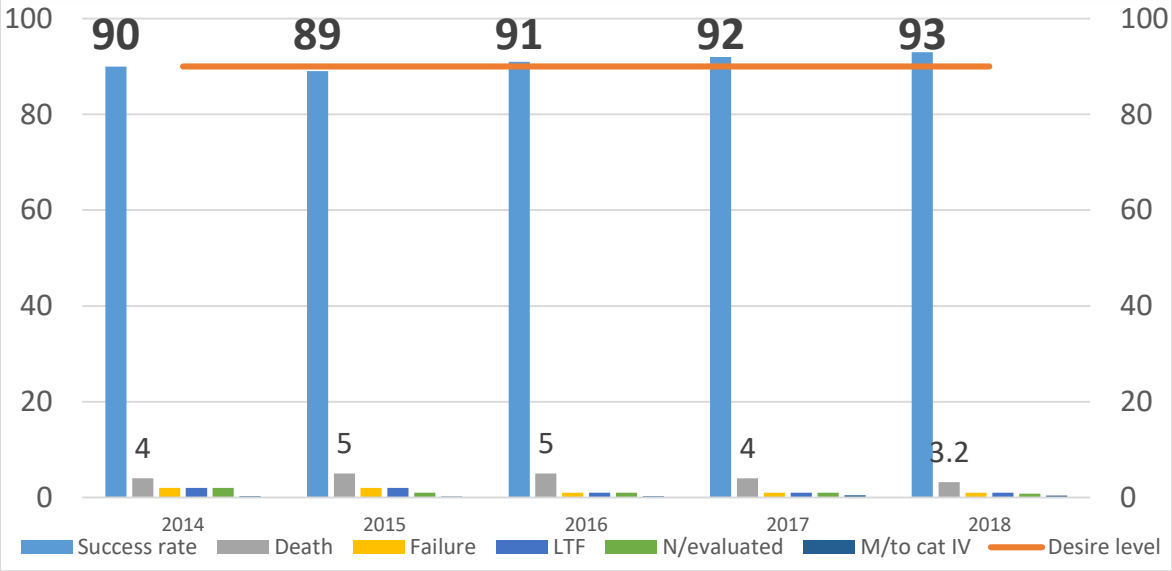
Figure 5. Time-series trend of national TB notification, 2008-2017



2.1.3 Treatment Outcomes Drug Susceptible TB

Treatment success has been maintained above 90% in the last five years. Adverse treatment outcomes reduced with death rates dropping from 5.8% in 2013 to 3.2% in 2018 and the other adverse outcomes being maintained below 1% each in the last 3years (Figure 6). The good outcomes are attributable to increased HIV testing, antiretroviral treatment (ART)/Cotrimoxazole preventive treatment (CPT) uptake among TB patients, a two times (x2) reduction of proportion of TB/HIV cases, increase of Rifampicin resistance (RR) detection and access to second line treatment. The death rate among TB/HIV was 9.5% in 2018 but this was because of the small numbers.

Figure 6. National trend of treatment outcomes 2012-2018 Cohorts

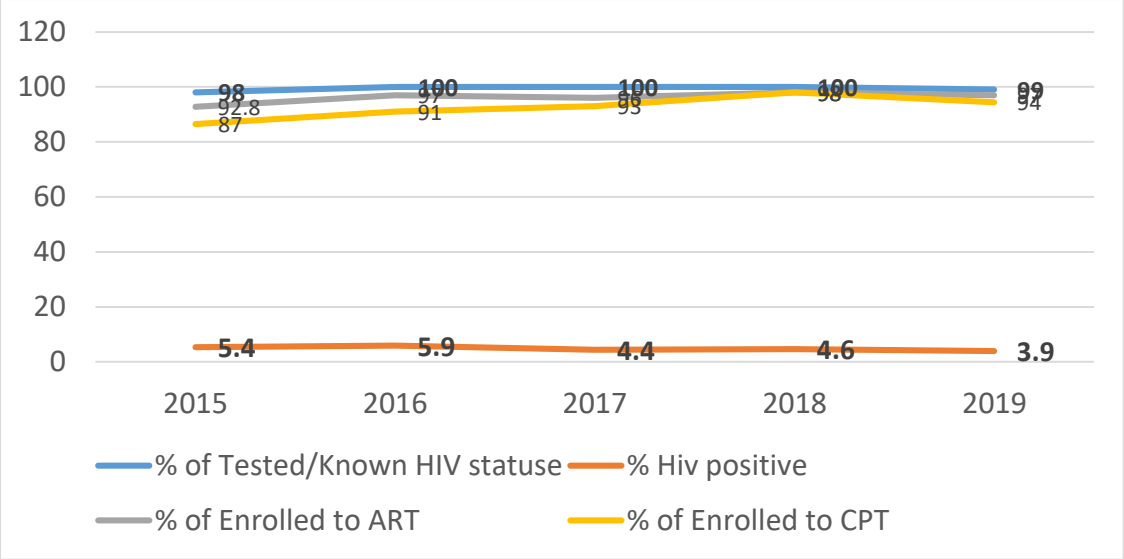


2.1.4 TB/HIV

The HIV prevalence in Eritrea is now below 1%. The level of TB patients with documented HIV status increased from 59% in 2012 to 100% in 2016 and has remained high. The HIV positivity rate among TB patients is low and was 3.9% in 2019. ART and CPT uptake is very high (Figure 7). About 41% of the incident TB/HIV cases were missed in 2018[9]. Six-month Isoniazid is used for TB preventive therapy (TPT). Among newly enrolled PLHIV, 46% in 2018[10] were started on TPT and 44% of household contacts under 5-years in 2019 [11].

Figure 7. National trend in HIV testing, HIV positivity and ART/CPT uptake among TB patients 2015-2019.

[9] World Health Organization. (2019). Global Tuberculosis Report. Geneva: World Health Organization
[10] World Health Organization. (2019). Global Tuberculosis Report. Geneva: World Health Organization
[11] NTLCP 2019 Annual Report

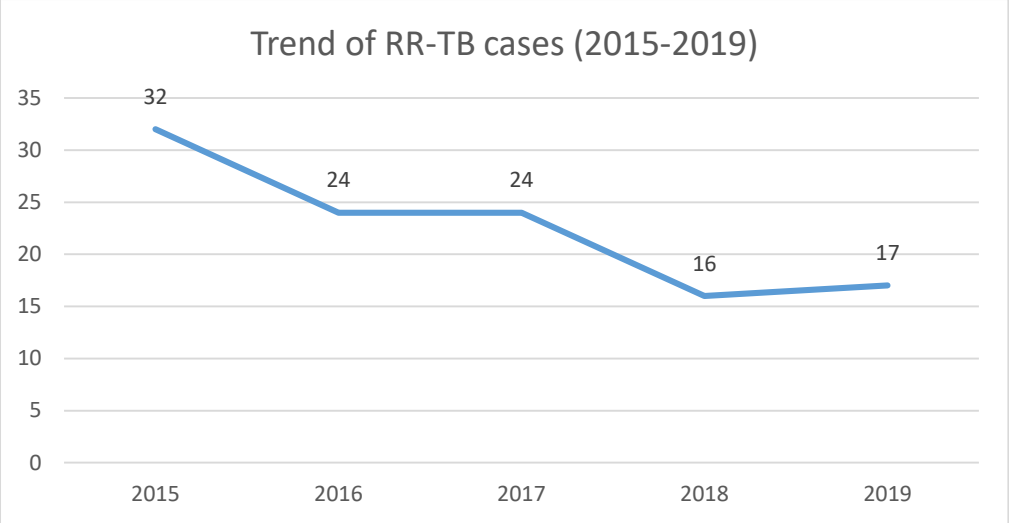


2.1.5 Drug-Resistant TB

Eritrea concluded a drug-resistance survey in May 2018. Results showed a prevalence of multi-drug resistant TB (MDR-TB) among new patients was 1.0% (95% CI: 0.3 - 2.3) and among previously treated TB cases was 3.8% (95% CI: 0.5 - 13.0). The prevalence of Rifampicin resistance was 2.0% [95% CI: 1.0-3.6] among new cases and 7.5% [95% CI: 2.1-18.2]) among previously treated TB cases. Rifampicin resistance was two times higher than multi-drug resistance in both types of TB patients. There was no Pre-XDR and XDR TB detected in all the samples tested. The prevalence was therefore much lower than previous WHO estimates though RR/MDR-TB detection rate remains low in the country. The proportion of bacteriologically confirmed PTB cases with DST results increased from 7% in 2014 to 39% in 2018 and 70% in 2019[12]. The notified RR-TB cases have declined to 17 in 2019 (Figure 8) despite the estimated incidence of 66 in 2018.

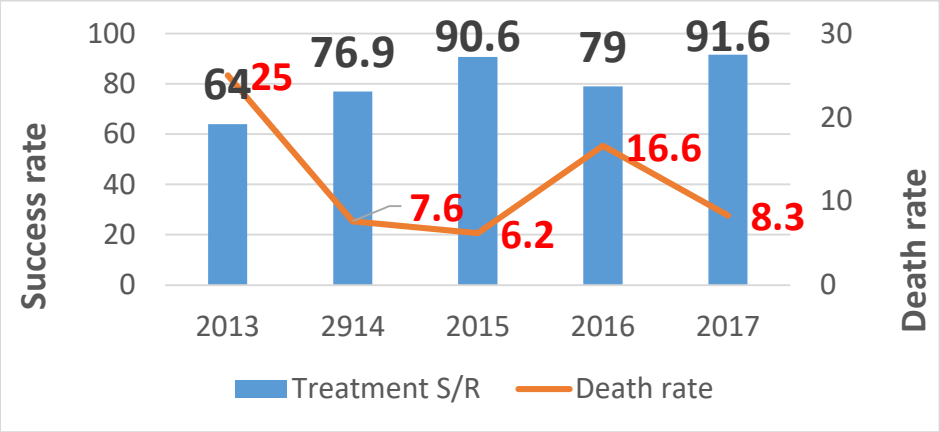
Figure 8: Notifications of RR-TB 2015-2019

[12] NTLCP 2019 Annual Report



The RR/MDR-TB treatment success has continued to improve and reached 90% in the 2015 cohort and 91% for the 2017 cohort (Figure 9). Wide variations are bound to occur because of the small numbers in the cohorts.

Figure 9: Treatment success and death rates of RR-TB cohorts of 2014-2018



2.1.6 Childhood TB

Diagnosis of childhood TB is done mainly at the National Pediatric Hospital (Orotta) and Zonal referral hospitals. The proportion of children among notified patients has been slightly over 15% in the past 5 years except for 2019 when it dropped to 12.6%. Some of the probable reasons for the high proportions are; over-diagnosis and vulnerability due to high malnutrition prevalence[13]. Contact tracing is done around bacteriologically confirmed TB patients. The proportion of under 5 child contacts of people with TB initiated TPT was 44% in 2019.

2.1.7 Key Populations

In the context of Eritrea these include malnourished people especially children. Though no recent data is available, the 2010 Population and Health Survey found overall, 52.5% of

[13] 2010 Population and Health Survey

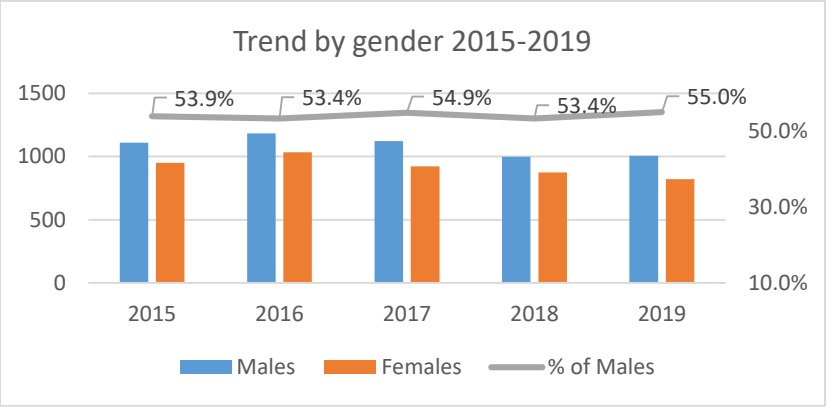
children under the age of 5 years to be stunted, with 25% being severely stunted. Malnutrition gives a population attributable fraction of 52.5%. Although there has been no follow up survey, the nutrition unit indicates that the figure has not changed from their reports for surveillance. Others key populations are diabetic patients, miners, the elderly, prisoners, PLHIV, contacts and the hard-to-reach especially nomads and underserved communities.

2.1.8 Gender

The proportion of notified cases by gender has remained constant with slightly more male notified. Analysis of treatment outcome by gender in the 2018 cohort showed no difference in treatment success.

Figure 10. Number of notified new and relapse TB cases by sex and the proportion of males, 2014–2018

Figure 10: Trend of notified patients by gender 2015-2019



2.2 EPIDEMIOLOGY OF LEPROSY AND SITUATION ANALYSIS

Eritrea has achieved a prevalence below 1/100,000 population at national and sub-national level and therefore in the post elimination era. This attributed to the era of multi drug therapy (MDT) hence patients not being kept on register for life. The current burden of leprosy in Eritrea is however not known. Annually the country notifies between 3-6 cases. Notably is that all the cases are diagnosed with disability grade 2 pointing to late diagnosis. Majority are multibacillary (MB) with the risk of continued transmission in the community. Though there are no children diagnosed, there has not been any active case finding around the index cases. At the same time the old burnt out cases need care and management of disabilities. Although the number of leprosy cases is low, without continued surveillance and management of the prevalent cases the gains made may be reversed as has been reported in other countries.

Table 1: Trend of notified leprosy patients 2015-2019

Year	Total Notified Leprosy cases	MB	PB	2nd degree disability	M	F	<15	>15
2015	5	4	1	5	5	0	0	5

2016	2	2	0	2	1	1	0	2
2017	3	3	0	3	3	0	0	3
2018	6	3	3	6	4	2	0	6
2019	3	1	2	3	2	1	0	3
Total	19	12	7	19	16	3	0	19
%		**63**	**36.6**	**100**	**84.6**	**15.4**	**0**	**100**

2.3 FINDINGS OF THE NSP 2017 – 2021 MID-TERM PROGRAM REVIEW

The NSP 2017-2021 was to contribute to the vision of an Eritrea free of TB; zero deaths, disease and suffering due to TB for patients and families by reducing by 50% the incidence of TB by 2021 compared to the 2015. The mid-term review was conducted in mid-2019 to review the progress that had been made in implementing the TB NSP 2017-2021 and provide recommendations for accelerating implementation and to inform the development of a new strategic plan. The implementation to date has largely been successful and it achieved several set targets/outcomes as summarized in the table below:

Table 2: Status of NSP 2017-2020 implementation

	NSP Target	**Achievement/Status in 2019**
Goal	The Goal of the NSP is to reduce by 50% (30/100,000 population) the incidence of TB by 2021 compared to the 2015.	• 89/100000 incidence rate WHO (2018) • 16/100000 death rate. WHO (2018) • This has not been achieved.
Objective 1	To increase case notification of all forms of TB (new and relapse) from 67% to 82% and to maintain treatment success rate among all new TB cases at 90% or above by 2019.	• Treatment coverage has not increased (61%) • Treatment success rate is 93%.
Sub-objective 1.1	Strengthening existing TB diagnostic capacities and expand the TB laboratory network.	• Procured and installed digital X-ray machine. TOT conducted but not to zobas • The capacity of the laboratory network and efficiency has been markedly improved (79microscopy {24LED} sites and 29 GeneXpert) • LED microscopes and LPA functional. • Three microscopic labs opened (2 in SRS and 1 in Anseba)
Sub-objective 1.2	Reach key affected populations with TB care and prevention services.	• All high-risk group addressed in line with NTCP guidance. • Tools have been developed but not disseminated and used.

	NSP Target	Achievement/Status in 2019
Sub-objective 1.3	Ensure uninterrupted supply and effective management of quality TB medicines.	• There have not been any stockout and procurement of items submitted earlier
Objective 2	To reduce mortality among HIV infected TB patients from 9.8% in 2016 to 5% by 2021.	• Progress is slow, 9.5% achieved in 2018 cohort
Sub-Objective 2.1	Strengthen TB/HIV collaborative mechanisms	• At zoba/facility level the functionality varies • No national level committee
Sub-Objective 2.2	Strengthening TB services among PLHIV, families, and communities.	• Routine screening of TB in HIV patients (100%) • IPT 46% (2019) • Implementation of TB IPC activities varies across facilities. SOPs & IEC materials not available Annual screening of HWs not done
Sub-Objective 2.3	Strengthening HIV service provision among TB patients, families and communities	• Routine HIV counselling and testing service for all TB patients registered. • % of TB patients tested for HIV increased from 98% in 2015 to 99% in 2019 • % HIV+ TB patients on ART increased from 93% in 2015 to 97 % in 2019; • % HIV+ TB patients on CPT increased from 86% in 2015 to 94% in 2019
Objective 3	To increase MDR TB cases detected and enrolled for treatment from 32% of the estimated total cases in 2016 to 70% in 2021 and improve treatment success of MDR-TB patients from 67% in 2016 to 75% by 2021.	• RR/MDR-TB treatment coverage in 2018 decreased to 24% as compared to 32% in 2016. • Treatment success rate in 2017 cohort reached 91.6 % as compared to 67% in 2016.
Sub-Objective 3.1	Improve National capacity for early detection and diagnosis of DR-TB	• Presumptive TB cases are undergoing Gene-X-pert as initial diagnosis, 70% in 2019. • Number of Gene-Xperts increased from 14 in 2015 to 29 in 2019. • Functional FL&SL LPA • PT test and EQA in place • Training given to build the capacity of laboratory staff on the use of new technologies and test algorithm.
Sub-Objective 3.2	Strengthen specimen referral and feedback system between diagnostic centres and TB culture laboratories	• Specimen referral and feedback system strengthened. • Transportation means remains a challenge.
Sub-Objective 3.3	Enrol and provide appropriate second line treatment to all detected DR-TB cases including complications	• The notification of MDR-TB is low, but the enrolment is 100% including complications management • Continuous patient support • MDR-TB staff capacity built. • Short Treatment Regimen not initiated yet.

	NSP Target	Achievement/Status in 2019
Sub objective 3.4	Decentralize MDR- TB management services for follow up of MDR-TB patients on treatment	• Decentralization was suspended. The number of MDR-TB patients is low that can be managed in one hospital during intensive phase. • In continuation phase patients are decentralized to their respective zones and for regular monitoring, they visit to the hospital.
Objective 4	To support implementation of quality, accessible and equitable TB services through community systems strengthening and good programme management by 2021.	• The capacity at national level improved though numbers are few • Community DOT promotors in place,
Sub objective 4.1	Strengthen National TB programme coordination and operations.	• Staffing level still the same • Most of the TB guidelines/SOPs/algorithms at the facilities were outdated • Patient information and education (IEC) materials on TB were inadequate
Sub objective 4.2	Strengthening Community Systems for effective involvement in TB, TB/HIV and MDR-TB services.	• DOT promotors in place but number is limited for adequate coverage
Sub objective 4.3	Strengthening use of ACSM approaches in promoting the utilization of TB and TB/HIV control services in the communities.	• This has not been fully utilized
Objective 5	Strengthen evidence-based program monitoring and evaluation; and intensify operational research by 2021.	• One survey conducted.
Sub objective 5.1	Strengthening Monitoring and Evaluation of TB services.	• Limited facilitation for TB support supervision • Weak capacity in data analysis and interpretation at all levels
Sub objective 5.2	Promote impact assessment and prioritize research, including operational research, which will address programme challenges.	• A drug resistance survey was conducted. • No other operational research done
Objective 6	To eliminate Leprosy disease by achieving Zero (0) cases per year by 2021 through enhancing active case finding and treatment of leprosy patients.	• Cases still being notified 3-6/year • Active case finding has not been used
Sub objective 6.1	Enhance early case finding and treatment of leprosy patients.	• Patients are diagnosed late with Grade 2 disability • There is good management with uninterrupted drug supply in Hansenina hospital • No trainings have been conducted

The main key progress and achievements have also been captured under section 2.1 and 2.2 above. Here below are highlights of the key gaps from the midterm review.

2.3.1 Laboratory/Diagnosis

There is no national TB laboratory policy and strategic plan. The number of microscopy laboratories have remained 79 since 2017. The number of GXP machines doubled to 29 in 2019. The utilization rate has however been very low about 10% in 2018 resulting in a DST coverage of 39% which increased to 70% in 2019. LPA was introduced in 2019 but Urinary LAM or TB-LAMP and other WHO Recommended Diagnostics (WRDs) had not been taken up in Eritrea, although, plans were underway. There is a sample referral system to designated GXP and microscopy hubs, but it is inefficient and sample handling suboptimal.

2.3.2 Case Finding

The TB case notification rate of all forms of TB improved over the years from 65.5% in 2012 to 72.2% in 2018 despite the drop in overall cases reported. The WHO however puts this at 61% for 2018. This performance is however short of the 85% NSP target indicating an overall notification gap of almost 39%. This is attributed to low TB presumption at health facilities shown by the low presumptive TB cases reported due to a weak triage process, inappropriate TB screening, and poor documentation. In the notified TB cases, 42% were clinically diagnosed and 58% were bacteriologically confirmed TB cases. The low proportion of clinically diagnosed TB cases is an indication of over reliance on GXP.

2.3.3 Case-Management and Treatment of TB Patients

Treatment success has been maintained above the 90% for the last four years. Furthermore, the adverse treatment outcomes for TB patients reduced, with death rates dropping from 5.8% in 2013 to 4.2% in 2017 and lost to follow-up from 2.6% to 1.1% over the same period. DOT promotors play a pivotal role. There is swift initiation of treatment.

2.3.4 DR-TB

GXP has been adopted as the first line of diagnosis for drug resistant TB in the country. Conventional and MGIT Culture and DST are also used as supplement to final diagnosis. All diagnosed RR/ MDR-TB cases are admitted for 6-8 months at Merhano National MDR-TB Hospital until culture conversion. MDR-TB detection rate remains very low in the country. Infection control is in place at the MDR-TB hospital. There is adequate patient follow up and support with good outcomes.

2.3.5 TB/HIV

The program has made significant progress in the implementation of TB/HIV collaborative activities over the years with high uptake of TB/HIV services especially in TB clinics. Best practices include; Routine and systematic provision of HIV Testing for all TB patients, all HIV positive TB patients are routinely offered CPT and ART, provision of One-stop TB/HIV services in some TB clinics and routine screening of PLHIV for TB. TBHIV committee functioning is suboptimal and implementation of the 3Is (IPT, ICF, Infection control) in HIV settings is weak.

2.3.6 TB Contact Investigation and Childhood TB

Contact tracing was not systematically done as there were no guidelines and tools available. Eligible contacts for investigation was limited to bacteriologically confirmed TB cases which excludes other pulmonary index TB cases. Inadequate capacity in diagnosing childhood TB except in the zoba and national referral hospitals. Treatment regimen used for children was not aligned with the recommended WHO guidelines as Ethambutol was not part of the regimen.

2.3.7 Approach to Specific Vulnerable Groups

There were on-going activities to raise awareness and involve the leadership in prisons and schools about TB. TB screening activities in diabetic clinics and vice versa are done and performance indicators on screening activities routinely reported.

2.3.8 Recording and Reporting (R&R)

The NTLCP recording and reporting system and documents in general follow WHO recommended definitions. There is need for appropriate TB R&R tools and laboratory management information system for appropriate registration and feedback mechanism of sputum samples results and an electronic medical records system for MDR-TB patients.

2.3.9 Procurement and Supply Chain Management

A commodity logistics management information system (LMIS) exists both paper-based and electronic running on MySQL software. The LMIS is not linked to the central procurement agency Pharmecor, which uses its own stock management and invoicing systems.

2.3.10 Supervision and Monitoring and Evaluation

The limited facilitation for TB support supervision particularly to the lower level health facilities affects quality of TB care services. There were evident knowledge gaps in the recent WHO guidelines for TB care. Weak capacity in data analysis and interpretation at sub-zoba and health facility level was also noted.

2.3.11 Programme Management, Human Resources, Financing and Resource Mobilization

Annual operational plans at central and zoba levels are used to operationalize the NSP into programme activities. Review meetings are held. Global Fund grant supports operational and programmatic activities and the government salaries, infrastructure and recurrent costs. There is no other source of funding and no resource mobilization activities. There are 3 staff at the NTLCP, and services are integrated into the health care system.

2.3.12 Leprosy

There is no national surveillance system in place and no surveys have taken place to measure the burden. Almost all patients come to the hospital voluntarily and tend to come late with extensive disabilities. There is no workshop for protective wear, and no such supplies in hospital and in the country. There is no organized prevention of disability programme, and no evident contact tracing effort.

2.4 STUDIES AND FINDINGS

A few studies have been carried out either through the NTLCP or academic institutions over the period of this NSP to try and build more evidence around the subject. In this period the first national TB drug resistance survey was conducted. Below are some of the surveys/ studies that were carried out and the areas they addressed in building evidence ranging from prioritizing the problem, root cause analysis or optimizing the solutions.

Table 3. Surveys/Studies conducted 2017-2020

Resource type	Year	Problem prioritization	Root cause analysis	Solution Optimization
Surveillance, Surveys and Studies				
Drug Resistant Survey (DRS) 2017/2018	2018	X	-	-
Routine Surveillance data	Over time	X	X	-
TB-diabetes comorbidity and associated factors in Maekel Zone 2015-2018	2019	X	X	-
LQAS Preliminary Survey report 2019	2019	X	X	-
Factors influencing adherence to TB treatment in Asmara, Eritrea: a qualitative study	2018		X	-
Determinants of Tuberculosis in Central region of Eritrea	2019	X	X	-

The DRS survey established the true prevalence of DR-TB in the country and provided insights into the other resistances beyond Rifampicin and Isoniazid.

The TB/Diabetes study found overall prevalence of diabetes among pulmonary bacteriologically positive TB cases was 4.3%. Further analysis showed that participants with an older age (45-90) were more likely to have TB-diabetes comorbidity than those aged 10-44 years old and those whose weight was 65kg and above were more likely to have TB-diabetes comorbidity than those with lower body weight.

The Lot Quality Assurance Sampling (LQAS) survey of 2019 found that among the survey respondents, awareness about TB was the same for men and women 15-54 years (over 95%). Knowledge about at least two TB symptoms was over 60% in both groups. Knowledge about TB prevention methods and the risk of treatment interruption was low (below 30%). Over 90% of respondents mentioned that TB is curable, and majority knew that people with HIV are at greater risk of developing TB. The study findings were almost like LQAS 2017.

The adherence study found that Lack of knowledge (cause, transmission and duration of treatment), loss of income, stigma and lack of social support, drug side effects and long treatment duration emerged as important barriers for treatment adherence. Short distances to health facilities, good communication and accepting attitude of health care providers emerged as enablers for treatment adherence.

The determinants of TB study found history of hospital admission, past alcohol consumption, exposure to passive smoking and HIV co-infection to be independent risk factors for TB.

The NTLCP does not have a database of TB studies/research done in the country especially those done by academic institutions including theses.

3. CHAPTER 3: THE NATIONAL TB/LEPROSY STRATEGIC PLAN 2021-2026

3.1 RATIONALE FOR THE NSP 2021-2026

The Ministry of health has developed the national health policy 2020-2030 (NHP-2020) that will guide the health sector for the next 10years. The second National Health Sector Strategic Development Plan (HSSDPII) that covered the period 2017-2021 is coming to an end. The TB National Strategic plan 2017-2021 is also coming to an end. This therefore requires a follow-on plan that aligns itself to the NHP-2020. On the TB front, there have been many new developments and strategies in the last four years that need to be brought on board.

The NHP-2020 aims to reach TB elimination status by 2030. This therefore calls for a more ambitious approach to doing the business of controlling TB. Besides aligning with the NHP-2020, this plan also provides an opportunity for the country to align its strategies and interventions with other global commitments besides the END TB strategy especially the UN High-Level Meeting on TB (UNHLM) commitments and high level targets as envisioned in the WHO Multisectoral Accountability Framework to accelerate progress to End TB by 2030. Strategically, the TB NSP 2021-2026 will also cover the new concept note proposal for GFATM grant 2021-2023.

3.2 NATIONAL STRATEGIC PLAN DEVELOPMENT PROCESS

The development of the TB NSP 2020-2026 was an all-inclusive, consultative and systematic exercise. The process started with an epidemiological review of the country in April 2019 to assess the completeness and accuracy of routine TB surveillance and vital registration (VR) and to investigate the plausible drivers of the TB epidemic in the country by a WHO consultant. This was followed by a mid-term review of the 2017-2021 National TB Strategic plan in July 2019 with the support of the WHO. The aim of the review was to advise the Ministry of Health on how well the program has performed; the existing best practices, opportunities, and challenges; recommend further approaches; and address policy, strategic and operational issues for improving performance and impact of the program.

The development of the NSP was participatory. It involved stakeholders from the NTLCP, communicable diseases control (CDC) division, Zonal health staff, WHO, the prisons services,

Ministry of Education and National Union of Eritrean Women. The process used both the SWOT analysis and the *People-Centred Planning Framework (PCF)* from WHO to triangulate the program gaps. The available evidence was summarized into the patient care continuum. This identified gaps based on data and gaps in available data. During a consultative stakeholders meeting, the team then went through the exercise of Problem Prioritization, Root Cause Analysis and proposing interventions.

3.2. 1 THE CONTINUUM OF CARE FOR TB.

From the SWOT analysis and the People-Centred Planning Framework, the gaps in the country were prioritized in five spheres of the continuum of TB care. People with TB infection, high-risk for disease in community; Symptomatic disease, not seeking care; People with TB presenting to health facilities but not diagnosed; Notified but not successfully treated; and Successfully treated but not relapse free.

Figure 11: People-Centred Planning Framework – The continuum of Care for TB

The first draft was then prepared by the NTLCP with the support of a consultant, circulated and input was provided in a stakeholders meeting. The comments were used to finalize the plan. It was then endorsed by the MOH.

3.3 ALIGNMENT OF THE NSP WITH THE END TB STRATEGY

The NTLCP policies and strategies to date have been informed by international standards formulated by the World health Organization. The 2017-2021 NSP was built on the END TB Strategy's Three Pillars (I. INTEGRATED, PATIENT-CENTRED CARE AND PREVENTION; II. BOLD POLICIES AND SUPPORTIVE SYSTEMS; III. INTENSIFIED RESEARCH AND INNOVATION) and the key principles spelt out therein. This 2021-2026 NSP builds on that foundation and is firmly aligned to the END TB Strategy and describes key interventions and activities that will enable the NTLCP achieve the End TB Strategy's Milestones for 2025 and lay a foundation for TB elimination which the country aims to achieve by 2030.

4. CHAPTER 4: NSP VISION AND GOAL AND OBJECTIVES

Vision: TB Free Eritrea

Goal:

1. Reduce TB incidence from 89 per 100,000 population in 2018 to 45 per 100,000 population by 2026.
2. Reduce TB mortality from 17.4 per 100,000 population in 2018 to 10 per 100,000 population by 2026

Objectives, sub-objectives

Below are the objectives and sub-objectives as aligned to the END TB Strategy. The strategic interventions are elaborated on in chapter 5 below.

PILLAR ONE. INTEGRATED, PATIENT-CENTRED CARE AND PREVENTION	
	Strategic Interventions
Objective 1. To increase TB treatment coverage (case detection ratio) from 61% (2018) to 85% and successfully treat at least 95% of DS-TB by 2026	
S.O 1.1 To Increase Awareness from 67.8% to 90% in 2026, Prevention and Promote Care Seeking Behavior	1. *Patient-centred communication* 2. *Empower Opinion leaders and TB Champions* 3. *Strengthen identification of presumptive TB patients and TPT* 4. *Involve all care providers in TB care and prevention*
S.O 1.2 To strengthen the capacity of health facilities to provide appropriate diagnosis for their level in at least 95% of the facilities by 2026	1. *E*nsure a*dequate human resource* 2. Expand radiological services 3. *Strengthen the use of GeneXpert MTB/RIF as initial TB diagnostic test* 4. *Strengthen sample transport system* 5. *Prompt use and adaption of new WHO–recommended diagnostic tools and approaches* 6. *Strengthen universal access to 1st and 2nd line DST* 7. *Strengthen the quality of laboratory services*
S.O 1.3 To improve quality of care to further reduce adverse outcomes and successfully treat at least 95% of both DS-TB and DR-TB by 2026	1. *Organize of TB services around the needs of patients* 2. *Prevent relapsing*
Objective 2. To improve the treatment coverage and management of Drug resistant TB, Childhood TB, TB/HIV and other key populations.	
S.O 2.1 To increase the treatment coverage of RR/MDR-TB from 24% in 2018 to 85% in 2026.	1. *Improve capacity for early detection and diagnosis of DR-TB* 2. *Improve quality of care* 3. *Maintain operations of the MDR-TB centre*
S.O 2.2 To increase the proportion of eligible children aged less than 5 years contacts of	1. *Strengthen contact tracing, screening, investigation and TPT* 2. *Capacity building*

all TB cases put on TPT from 44% in 2019 to 100% in 2026	3. *Integration with other child programs* 4. *Introduce new diagnostics*
S.O 2.3 To reduce death rate among notified HIV infected TB patients from 9.2% to <5% by 2026	*1. Strengthen TB detection among PLHIV/Diabetics* *2. Increase proportion of PLHIV on TPT* *3. Reduce mortality among HIV positive TB patients* *4. Establish/ Strengthen TB/HIV committees and incorporate diabetes*
S.O 2.4 To increase the proportion of TB cases notified among key populations from 7.6% in 2019 to 15% in 2026	*1. Initiate outreach services to underserved areas* *2. Increase demand for TB services among key population*
Objective 3. To eliminate Leprosy by tracing all contacts and reducing disability of diagnosed patients to Zero by 2026	
	1. Initiate active case finding *2. Provide prevention of disability and care services* *3. Resource mobilization for leprosy*
Objective 4. To strengthen supportive systems and policies for TB/Leprosy management by 2026	
PILLAR TWO. BOLD POLICIES AND SUPPORTIVE SYSTEMS	
S.O 4.1 To engage and network 100% of health care providers and stakeholders for TB control by 2026	1. *Engage All government* 2. *Engage workplaces* 3. *Engage the private sector*
S.O 4.2 To reduce the proportion of TB patients and affected families facing catastrophic costs to zero by 2026.	*1. Maintain DR-TB patient support* *2. Link eligible TB patients to the fee exemption* *3. Conduct a patient cost survey*
S.O 4.3 To provide and maintain nutritional support to all eligible TB patients by 2022.	*1. Strengthen collaborations with other departments* *2. Introduce therapeutic feeding for eligible patients* *3. Strengthen TB screening in nutritional centres*
S.O 4.4 To ensure an uninterrupted supply of quality and safe anti-TB medicines (Maintain 0% stockout)	*1. Strengthen forecasting and quantification* *2. Strengthen PV/aDSM* *3. Advocate for domestic funding for medicines*
S.O 4.5 To strengthen the NTLCP capacity by increasing staff by 2 by 2023 and domestic funding from 5% to 20% by 2026.	*1. Advocate for increase in government contribution* *2. Strengthen NTLCP capacity* *3. Maintaining NTLCP routine operation*
PILLAR THREE. INTENSIFIED RESEARCH AND INNOVATION	

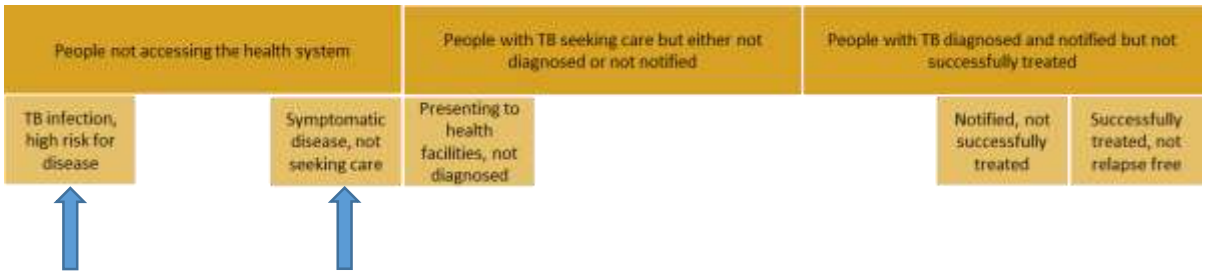
Objective 5. To strengthen evidence-based program monitoring and evaluation; and intensify operational research by 2026.	
	1. *Strengthen capacity in data analysis, interpretation and operational research* 2. *Maintain the routine M&E system* 3. *Promote impact assessment and evidence generation*

5. CHAPTER 5: KEY GAPS AND STRATEGIC INTERVENTIONS FOR THE OBJECTIVES

Objective 1. To increase TB treatment coverage (case detection ratio) from 61% (2018) to 85% and successfully treat at least 95% of DS-TB by 2026

5.1 ALONG THE CONTINUUM OF CARE FOR TB

Sub Objective 1.1 DEMAND CREATION: To Increase Awareness from 67.8% to 90% in 2026, prevention and Promote Care Seeking Behavior



In the continuum of care for TB the main gap area identified in Eritrea is preventing TB and having patients seek care early for early diagnosis and treatment. Increased awareness about TB in the general population and risk perception is the first step to care seeking and prevention. It also helps in mobilizing the support of communities, stakeholders and patients for coordinated action against TB.

The NSP 2017-2021 envisioned activities for advocacy, communication and social mobilization (ACSM) to address the knowledge gaps, address the cross cutting challenges of improving case detection and treatment adherence for TB and DR-TB; prevention of TB, combating stigma and discrimination; empowering people affected by TB and; mobilizing political commitment and resources. Though these have been implemented gaps still exist.

Key Gaps

Limited TB awareness in communities: The country has an efficient notification and patient management system and very good treatment outcomes. However, there is a gap between the notified patients and the estimated incidence. In the continuum of care these are either not seeking care or seek care but are not diagnosed. Though there aren't many studies that have been done locally to apportion the share of each, the LQAS survey of 2019 found that

among the survey respondents, awareness about TB was the same for men and women of 15-49 years. Significantly, knowledge about at least two TB symptoms which is what can trigger health seeking was about 60% in both groups. Knowledge about TB prevention methods and the risk of treatment interruption was below 30%. The study findings were like those of the LQAS 2017 meaning little change has been achieved and point to a lack of knowledge that can lead to health prevention and care seeking.

Lack of audience specific advocacy and communication: Clear communication is essential for awareness creation and advocacy. It is therefore necessary to package messages to specific audiences and tailor the medium of delivery for the desired effect. This is lacking in the current dispensation. For example, many people are using mobile telephones and therefore can be reached by SMS messages, however, this has never been used and can be the contribution of the mobile phone provider Eritel to the fight against TB.

Low interpersonal communication (IPC) skills in HCWs: The interaction between HCWs and patients is an opportunity to pass key messages to patients. This requires good IPC skills to connect with and establish relationships for effective communication and stigma reduction.

Stigma: Stigma and discrimination are among the prominently recognized human rights-related barriers to ending the TB epidemic. They limit access to TB services and negatively impact on the quality of life. Stigma is found from the community to the health care institutions and affects care seeking and treatment adherence. In one of the studies done in Asmara stigma was mentioned as a factor that affects management of TB.

Lack of integration of community health workers: The country has 16005 community health workers in 9 different health areas working in the local communities who are critical in linking health facilities to the communities. Among these are DOT promoters for the TB program. They are involved both in the referral of presumptive TB patients for diagnosis and provision of DOT in the community and contribute about 4% of the case notification and 30% of the treatment monitoring. The lack of integration means that the reach of those available is limited geographically and in scope. The National Community Health Strategy envisions that the available community health agents be integrated.

Suboptimal access to TB infection control and prevention: The country has been providing TB preventive treatment using Isoniazid to under 5 children who are contacts of bacteriologically confirmed patients and PLHIV. However, the coverage of TPT in the under 5 contacts traced was 44% in 2019 and 46% in PLHIV in 2018. Additionally, there is no TB contact register to ensure all contacts are identified and screened.

Strategic Interventions

Patient-centred communication: To promote care seeking behavior, a patient-centred communication approach will be adopted. This will borrow from the communication for development (C4D) used by the health promotion team. Appropriate communication interventions will be used to target different segments of the population e.g. Behavioral change communication (BCC). The medium of communication will also be tailored specifically to the context e.g. (hard-to-reach, rural and urban) and population segment e.g. (elderly,

youth, men) considering the epidemiology. HCWs will be trained on IPC, stigma reduction and health education will be strengthened. Community mobilization and sensitization activities will be held in collaboration with different ministries and unions (e.g. MOI, MOE, NUEW, NUEYS, etc.). A stigma assessment will be done to understand the levels and dimensions of TB stigma and develop strategies to mitigate them. TV and radio spots will be developed and aired at different channels.

Empower Opinion leaders and TB Champions: The different opinion shapers/influential in the community including religious, community leaders and elders will be empowered to inform and educate. This will require advocacy, building their capacity with regular training and adequate mentoring and monitoring. Key champions will also be identified from among the former patients, youth and women association leaders, journalists etc. and create experience sharing groups for patients on TB treatment.

Strengthen identification of presumptive TB patients and TPT: To turn around the TB epidemic in Eritrea, TPT will be a mainstay intervention. Contact tracing and screening will be used to identify those who will be put on TPT. A contact register will be introduced to identify all contacts linked to an index case and have them screened. The contacts found not to have TB will be put on TPT. The program will choose from the TPT alternative regimens now available.

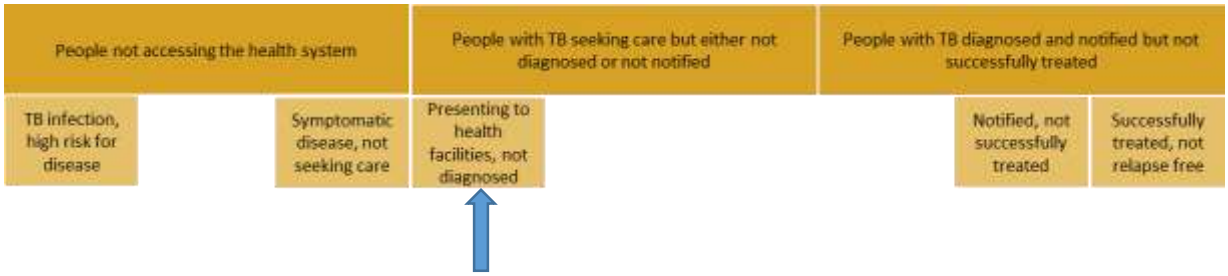
The NTLCP will engage community-based programs working in health and non-health sectors e.g. agriculture and education, to be involved in identification and referral of presumptive TB patients. *CHAs* will be empowered through integrated capacity building to support patients and link their communities to the health facilities for services. Standardized simplified materials for recording and reporting and ACSM will be developed for this purpose. Standardized incentives will be provided in line with the community strategy.

Involve all care providers in TB care and prevention: All providers who are in contact with presumptive TB patients specifically pharmacists, drug shops, rural drugs vendors and traditional healers will be engaged in TB services. They will be sensitized on TB control and equipped to identify and refer all presumptive TB cases to TB diagnostic centres. The sensitization will include Infection prevention and control.

Indicators

Indicator	**Baseline**	**Target**
Percentage of people with knowledge of at least two TB symptoms	**67.8%**	**90%**
Proportion of people with symptoms of TB referred by CHAs from the community	**4%**	**15%**
Proportion of presumptive TB referred by Informal service Providers e.g. traditional healers, rural drug vendors (RDV), drug shops, pharmacies	**0**	**15%**
Proportion of eligible contacts of all TB patients put on TPT	Not known	100%

Sub Objective 1.2 SUPPLY OF SERVICES: To strengthen the capacity of health facilities to provide appropriate diagnosis for their level in at least 95% of the facilities



The country has a network consisting of 76 microscopy sites, 29 GeneXpert (GXP) machines in 24 sites, one NTRL doing testing for first- and second-line DST on LPA, culture and DST on MGIT and solid media. GXP is now the first line test for testing any presumptive TB. In addition, due to the relatively high resistance to Isoniazid found in the DRS the country is piloting the testing of all bacteriologically confirmed patients for resistance to first and second drugs using LPA in Maekel zone with a view to rolling this out to the rest of the country. The GXP platform is also used for HIV viral load, Early Infant diagnosis and Hepatitis testing.

Health workers in health stations identify presumptive TB patients and refer either the patients or samples to diagnostic sites. Those that are not bacteriologically confirmed are referred to hospitals for further investigations. Clinical diagnosis is still an important tool for diagnosis of bacteriologically negative patients.

Key Gaps

Inadequate human resource capacity/knowledge (clinical/laboratory): There is continuous attrition of both laboratory and clinical staff. The index of TB suspicion among frontline health care workers is low. There are new recommendations coming from WHO impacting on the management of TB patients e.g. management of latent TB infection and Shorter-all-oral-Bedaquiline-containing regimen for eligible MDR/RR-TB patients. As the country adopts these into its guidelines there remains an information gap in the staff on the current approaches to diagnosis.

Rapid decline in clinical diagnosis: After the introduction of GXP there was an unusually fast annual decline in clinically diagnosed TB cases between 2012 and 2015 and it has remained at about 39% from 58% with four of the zobas having bacteriologically confirmed being above 60% and up to 78.2% in Gash Barka. This has led to the overall decline in diagnosed patients notified.

Low access to rapid tests at time of diagnosis: Though the country has adopted universal DST using GXP as the first line diagnostic test, 70% of bacteriologically confirmed patients were diagnosed with it in 2019. This however varied between 39% in NRS and 100% in Maekel zobas in 2019. Though the current GXP capacity appears adequate, accessibility is still a problem due to the vast distances and an inefficient sputum transport system. Rural hard-to-reach areas are worst hit by accessibility. There is limited use of other diagnostic tools like TB-

LAM. The program needs to be ready to uptake any new tools that get recommended by WHO for use

Suboptimal use of existing GeneXpert MTB/RIF equipment and smear microscopy sites: The 29 GXPs have a combined capacity of 110 modules capable of 82500 tests annually at 3 tests per module per day for 5 days a week for 50 weeks. At the time of writing this NSP only 90 modules were working. Even so, the total tests done in 2019 were less than 25% of the capacity. An analysis of use of the existing microscopy centers in 2017/2018 shows that in each zone there are only 4 (about 30%) doing about 80% of the microscopy. Currently the sputum specimens move from community to diagnostic site for microscopy and then a sample is sent to the GXP site. Those that are MTB positive are then referred to the NTRL for LPA. This process is hampered by inadequate availability of a reliable transport system as currently it relies on either the health worker, ambulance, motorcycle or public transport. Furthermore, payment system for this is inefficient.

Strategic Interventions

Ensure adequate human resource: This NSP will ensure that all front-line health care workers (especially newly assigned clinical and laboratory staff) who have the first contact with presumptive TB patients are trained to increase their index of suspicion. Clinical diagnosis as a tool for diagnosis of TB will also be emphasized. They will be trained and mentored to carry out their mandate. Active and intensified case finding within the health facilities will be encouraged through cough monitoring at the registration desk.

Expand radiological services: Chest x-ray remains the primary diagnostic tool for the diagnosis of bacteriologically negative pulmonary TB. Radiological services especially for Chest X-ray will be strengthened by procuring 2 digital x-ray machines and ensuring availability of consumables. This will be augmented by provision of mobile digital X-ray services to places in need and during outreach. This coupled with the training of health workers including X-ray technicians will ensure continued diagnosis of TB among bacteriologically negative TB patients.

Strengthen the use of GeneXpert MTB/RIF as initial TB diagnostic test: The country has already adopted the use of GXP as the first test for all presumptive TB patients since April 2019. For equity, other low capacity GXP (Omni/Edge and 2 modular) will be deployed to areas where access is a problem even as the transport system is optimized. Demand creation will be done through community sensitization, training of clinical and laboratory staff and active case finding strategies. Maintenance, repair and warranty, supplies and electricity supply alternatives (battery, UPS) will be provided to ensure optimization. Outreaches will be carried out to hard-to-reach areas that will include use of GXP.

Strengthen sample transport system: A system of payment for the services will be developed with the zobas spelling out the levels of fee at each level of transport. The payment will be performance based. Costs for transporting samples will be supported from the central level. A courier for transport will be considered within the NSP period. Standard operating procedures (SOPs) for packaging and sample transportation will be developed and

sensitization of staff at all levels will be done. Equipment for sample storage and transportation will be procured.

Strengthen universal access to 1st and 2nd line DST: This is being piloted in Maekel and will be rolled out to the whole country. This NSP will support the logistics involved including the supplies, sample transportation of specimen and capacity strengthening. Testing to other second line drugs beyond fluoroquinolones and injectables will be introduced. Electrical power supply at the NTRL will be backed up with a UPS and battery to ensure continuity of work during blackouts.

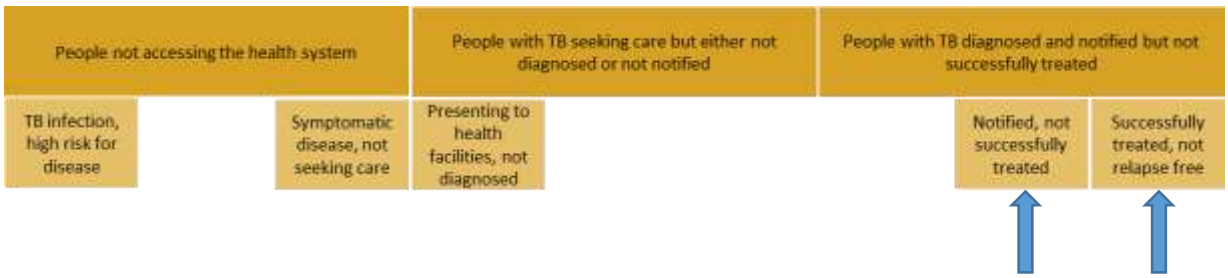
Strengthen the quality of laboratory services: Quality assurance for all diagnostic tests is in place. The external quality assurance (EQA) and panel testing (PT) for microscopy, GeneXpert, culture and DST will be enhanced. The staff involved will be compensated for the extra work. Continuous quality improvement (CQI) will be supported by developing a CQI plan, tools, standard operating procedures, supportive supervision and technical assistance. NTRL Clinicians handbook, laboratory tests guideline and other lab manuals will be reviewed or developed, printed and disseminated to all health facilities. The NTRL is currently a two-star laboratory. It will be registered for Strengthening Laboratory Management Toward Accreditation (**SLMTA)** and requirements for ISO 15189 e.g. provision of appropriate trainings to the NTRL staff including international and implementation of Laboratory Quality Management System (LQMS) will be supported**.** Maintenance of the equipment will also be supported through service contracts.

Prompt use and adaption of new WHO–recommended diagnostic tools and approaches: New diagnostic tools have been approved and are in the market. Others are in the development pipeline e.g. GeneXpert Omni. This NSP supports their rapid adoption once approved by WHO. Those recently approved include TB-LAM, GXP ultra-cartridge and use of stool for TB diagnosis among children using GXP.

Indicators

Indicator	Baseline	Target
Proportion of health care workers trained on TB/Leprosy in 6 years	Not known	50%
Proportion of notified TB cases that receive a rapid diagnostic test (GeneXpert MTB/RIF) at the time of diagnosis	70%	100%
Proportion of notified patients with Rifampicin resistance who receive Second Line DST results	Not available	100%
Proportion of diagnostic sites enrolled in EQA system and their performance for all methods	98% 95%	100% Enrolled >98% Performance

Sub Objective 1.3 QUALITY: To improve quality of care to further reduce adverse outcomes and successfully treat at least 95% of both DS-TB and DR-TB by 2026.



The NTLCP surpassed the targets of treatment success for DS-TB and DR-TB. Treatment success has been maintained above the 90% for the last five years for DS-TB and was above 90% for the 2015 and 2017 DR-TB cohorts. Adverse treatment outcomes reduced but death rate was 3.2% in 2018 for DS-TB and 8.3% for the DR-TB 2017 cohort. Pharmacovigilance and aDSM is in place.

Key Gaps

Delayed diagnosis of patients: Though the treatment outcomes are above target, the deaths could be due to late diagnosis. The delay could be in the community but also within the health system. Inadequate TB Knowledge among presumptive TB patients to trigger health seeking behavior is also a contributing factor. TB screening is not done in all the areas where high risk groups like malnourished children clinics. The delays in the community will be addressed by the awareness creation above.

High proportion of relapses: Nationally the proportion of patients that were relapses in 2019 was 6.2%. This could be due to ineffective treatment or re-infection in the community.

Strategic Interventions

Organize of TB services around the needs of patients: This intervention will focus on putting the patient at the centre of our activities. DOT will be organized as per the needs of a patient taking into consideration assessment e.g. use of community &facility DOT. All TB patients will have access to first- and second-line DST before starting treatment. The period of admission of DR-TB patients will be shortened progressively after the introduction of the all-oral regimen to the extent that only very sick patients will be admitted. DR-TB patient follow up will be done in the nearby health facilities while monthly follow up will continue at Merhano Hospital. TB services especially screening will be integrated into all the clinics where high risk groups are cared for. Building HCW competency to provide holistic TB care (counseling, screening, diagnosis and treatment). Quality of care studies e.g. QUOTE-TB, will be carried out in the life of this NSP to get in-depth understanding of the patients' perspective and use the findings to improve services. Patient cost survey will be done and will contribute to policy change. Outreaches will be used to provide services closer to patients.

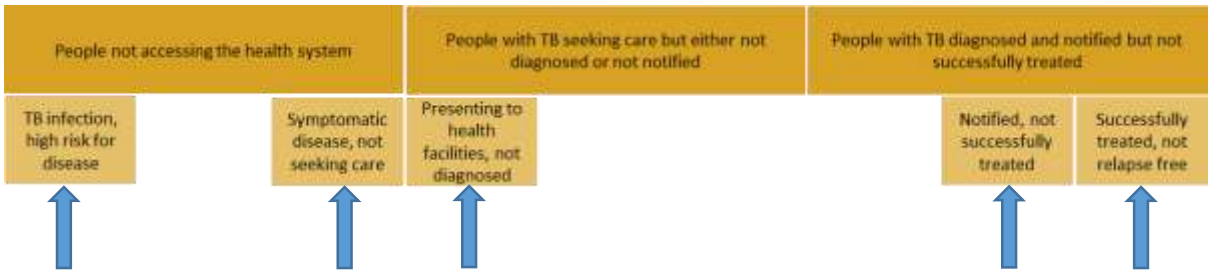
Prevent relapsing: To prevent relapses, the NTLCP will work closely with PHARMECOR to ensure the quality of drugs is maintained through the supply chain. The importance of regular weight assessment for TB patients to prevent under dosing will be stressed and weighing

machines will be provided where not available. We will strengthen DOT by supporting the community health strategy to have integrated CHAs who will be closer to the patients to ensure high adherence. To prevent re-infection, we will ensure contact screening around the patients is done at the time of diagnosis, before finishing treatment and at one year after. Infection control measures will be strengthened at the homes of the patients. The NTLCP will work with other programs like HIV, DM, and Nutrition to ensure the underlying comorbidities are addressed.

Indicators	Baseline	Target
Treatment success rate (TSR) for all DS-TB cases	93%	95%
Cure rate among bacteriologically confirmed TB patients	88%	95%
Treatment Success Rate among RR/MDR-TB patients	91.6%	95%
Proportion of relapses notified	6.2	<5%

5.2 DRUG RESISTANT TB, CHILDHOOD TB, TB/HIV AND OTHER KEY POPULATIONS

Objective 2. To improve the treatment coverage and management of Drug resistant TB, Childhood TB, TB/HIV and other key populations.



5.2.1 Programmatic Management of Drug – Resistant Tuberculosis

Sub Objective 2.1. To increase the treatment coverage of RR/MDR-TB from 24% in 2018 to 85% in 2026.

The program has made progress in the management of DR-TB. All diagnosed patients are put on treatment, surveillance among notified TB cases has significantly improved, and the treatment success rate has drastically improved to 91.6% for the 2017 cohort. A drug resistance survey was conducted which provided the true burden of DR-TB in the country. There are plans to do DST for the first- and second-line drugs using LPA from 2020.

Key Gaps

Low DR-TB Case Detection: Despite the progress made, the case detection for DR-TB remains low. In 2019 the NTLCP reported 17 patients out of the expected about 66. Specimen referral to GXP, C/DST and LPA sites remains a challenge.

Low quality of care: The death rate in the 2017 cohort was 8.3%. This impacts negatively on the program performance. Though this may be attributed to delayed diagnosis, the effect of adverse reactions cannot be ruled out. The long treatment in use and lack of new, more effect regimens may also be a contributing factor.

Strategic Interventions

Improve capacity for early detection and diagnosis of DR-TB: The program will support the strategic expansion GXP especially to underserved and hard to reach areas, maintain culture and DST including first-and second line LPA services at the NTRL. The program will continue building capacity of clinical and laboratory staff to diagnose. NTLCP will also strengthen specimen referral and feedback system between the different levels and will introduce GX-ALERT for the GXP sites.

Improve quality of care: The program will ensure early diagnosis and treatment. At the same time, we shall continue to provide support for auxiliary tests like audiometry, digital x-ray service, ECG and electrolytes. Ancillary medicines will be provided to manage any adverse effects. NTLCP will introduce the short all-oral treatment regimen for those eligible to shorten the period of treatment and new drugs containing regimens. Patient support will also be maintained and GLC missions will be supported.

Maintain operations of the MDR-TB centre: The Merhano treatment centre operations will be supported and capacity building activities at the central and zone level will be carried out. Minor renovations of the centre for infection control purposes will be supported. Personal protective equipment (PPEs) for infection control will be provided.

Indicators

	Baseline	Target
Proportion of notified TB patients who receive DST	70%	100%
Proportion of DR-TB cases detected	24%	85%
Proportion of confirmed RR/MDR-TB cases tested for resistance to second-line drugs		100%
Proportion of eligible DR-TB patients on STR	0%	80%
Percentage of cases with RR/MDR-TB successfully treated	91.6%	95%

5.2.2 Childhood Tuberculosis

Sub Objective 2.2. To increase the proportion of eligible children aged less than 5 years contacts of all TB cases put on TPT from 44% in 2019 to 100% in 2026.

The true burden of childhood TB is not known in Eritrea. The proportion of children notified with TB in Eritrea is however relatively high. It has been slightly over 15% in the past 5years except for 2019 when it dropped to 12.6%. Increased vulnerability due to high malnutrition

prevalence may be a major driver. Analysis of age specific notification rates in the last 5 years shows a declining rate among adults whereas that of children is rising indicating ongoing transmission. The proportion of eligible under 5 child contacts of people with TB initiated on Isoniazid based TPT was 44% in 2019. The children are mainly diagnosed in hospitals.

Key Gaps

Low contact investigation and preventive therapy: Children get TB from close contacts often household contacts or caretakers. Though the country has adopted a policy of screening all under 5-year contacts and putting those found not to have active disease on TPT, contact screening has been low and of those eligible for TPT, only 44% were put on it in 2019.

Inadequate capacity in diagnosing childhood TB: Most of the children notified are from major hospitals which are mainly urban based and high up the health system pyramid. Most health facilities have low capacity in terms of knowledge and skills to be able to diagnose and manage TB in children. This leads to a missed opportunity in finding the missing cases.

Lack of integration of TB screening into other child program: The TB screening tool has been developed but has not been disseminated to areas where children at risk will be found. It has been placed at nutrition but not IMCI areas and pediatric wards/clinics.

Strategic Interventions

Strengthen contact tracing, screening, investigation and TPT: The program will expand index cases for contacts screening to all TB patients both bacteriologically confirmed and those pulmonary clinically diagnosed. The program will introduce a contact register to ensure all contacts per case are documented and screened. Those contacts found not to have TB will be put on TPT. Currently the country is using Isoniazid for TPT. The country will adopt child friendly formulations for treatment and prevention as they get approved.

Capacity building: This NSP will decentralize childhood TB diagnosis and management to Health Centres. This will be done through training, mentorship and supervision of the health workers at these levels. Supplies like NG-Tubes for nasopharyngeal/ gastric aspirate will be provided. PPD testing for children with presumptive TB has been decentralized to zobas. Health workers will be trained to interpret and manage.

Integration with other programs: Integration of TB screening, diagnosis and treatment into Primary Health Care and other child health services such as HIV, nutrition, MCH, IMCI and adolescent health programs will be deliberately done to find the missing cases. This will be done through training and provision of tools.

Introduce new diagnostics: Stool specimen for GXP has been approved by WHO. This will be introduced into the algorithm for diagnosis. HCWs will be trained to get nasopharyngeal and gastric specimens for diagnosis. The NSP provides for introduction of new diagnostics for children as they get approved.

Indicators

Indicator	Baseline	Target
Proportion of eligible children aged less than 5 years contacts of all TB cases put on TPT	44%	100%
Number of children diagnosed and enrolled on treatment	230	482

5.2.3 TB / HIV and other Co-Morbidities

Sub Objective 2.3. To reduce death rate among notified HIV infected TB patients from 9.2% to <5% by 2026

The HIV prevalence in the country is below 1% and the TB/HIV burden in the country is low with a positivity rate of 3.9% among TB patients in 2019. The HIV testing rate and proportions enrolled on ART and CPT are very high. There is an emerging epidemic of diabetes mellitus (DM) which also increases the risk of TB. The International Diabetes Federation (IDF) estimates there are 96900 adults with diabetes mellitus, an adult prevalence of 3.8%[14]. About 76% of the diabetics were estimated to be undiagnosed. Given that a large proportion of diabetes patients are not diagnosed in Eritrea and their blood sugar remains unmanaged, the risk of the increasing diabetes prevalence is a threat to the gains in TB.

Key Gaps

Low TB case detection among PLHIV/DM: Although the systematic screening of TB among PLHIV/DM is going on routinely the yield is low at 0.2% and 0.1% respectively. This is probably due to the suboptimal *quality of TB screening among PLHIV.* Many facilities still use cough of 2 weeks instead of current cough when screening. According to the WHO TB report 2019, only 59% of the estimated HIV/TB cases were detected.

Suboptimal uptake of TPT among PLHIV: According the report of the NTLCP-2019, the TPT coverage among PLHIV is 46% with significant differences among zones. HIV care facilities do not have TPT registers for documentation.

Higher mortality in TB/HIV: Despite the programs plan to reduce the TB/HIV death to 5% by 2021, there seems to be no change in mortality of TB/HIV cases. Currently, the death rate among TB/HIV cases is 9.2%. This may be attributed to late diagnosis of TB in PLHIV leading to late treatment.

Presumptive TB patients are not routinely offered HIV testing: HIV testing and counselling is supposed to be offered to all presumptive TB through an official memo. This is however not done in all facilities. The program has prepared an algorithm to reinforce this.

Absence of a functional TB/HIV committee at the National/zoba level and in some facilities: TB/HIV committees at national/ zonal levels have been established. Many of them are not functional including the national one leading to missed opportunities for collaboration. There

[14] https://idf.org/our-network/regions-members/africa/members/8-eritrea.html accessed on 27 February 2020

is no diabetes collaborative mechanism in place though some of the collaborative activities are being implemented.

Strategic Interventions

Strengthen TB detection among PLHIV/Diabetics: Routine and systematic TB screening among PLHIV/Diabetics will be done in all the HIV/Diabetes clinics for patients on treatment and the newly diagnosed ones. The use of updated standard screening algorithms will be adopted by all HIV and diabetes clinics.

Increase TPT uptake among PLHIV: NTLCP will collaborate with the national AIDS control program (NACP) to ensure TPT is provided to those screened and are without TB. NACP will adopt the TPT register and roll out in HIV care sites. The country has had deaths associated with IPT among PLHIV hence the slow uptake. We will adopt one of the newly recommended TPT regimens 1HP, 3HP, 4R, 3RH favourable for PLHIV and closely monitor the patients while on TPT.

Reduce mortality among HIV positive TB patients: In addition to strengthening screening for TB among PLHIV, all coinfected patients will be offered the necessary services such as ART and CPT in addition to appropriate anti TB treatment. The test and treat policy in place for HIV will be emphasized.

Establish/ Strengthen TB/HIV committees and incorporate NCD (diabetes): TB/HIV committees will be established/strengthened and made functional at all levels. The NCD directorate will be incorporated into the committees. Capacity building, development/revision of tools and dissemination will be done to ensure smooth implementation of services. Implementation of the 3 Is will be a standing item on the agenda.

Indicators

Indicators	Baseline	Target	Responsible
Proportion of TB cases notified among PLHIV	59%	90%	NACP
Treatment success rate among HIV positive TB patients	87%	95%	NTLCP
Proportion of newly identified PLHIV eligible for TPT initiated on TPT	46%	100%	NACP
Proportion of TB/HIV cases on ART	98%	100%	NTLCP
Proportion of TB/HIV cases on CPT	94%	100%	NTLCP
Death rate among TB/HIV cases	9.2%	<5%	NTLCP
Proportion of diabetics screened for TB	Not Known	100%	NCD

5.2.4 Key Affected Populations

Sub Objective 2.4. To increase the proportion of TB cases notified among key populations from 7.6% in 2019 to 15% in 2026.

Key affected populations and risk groups in this context are those with suboptimal treatment uptake or treatment success. These will need to be given priority attention in order to accelerate the decline in case fatality required. In Eritrea these include people in hard-to-reach areas, malnourished individuals, PLHIV, contacts of TB patients, prisoners, the elderly, nomads, diabetics and miners.

Key Gaps

Low TB awareness among key populations: This affects their health seeking behaviour.

Lack of targeted programs: Due to the inaccessibility of these group to physical health services they can be reached by alternatives like outreach programs.

Inaccessibility to fixed facilities: A significant proportion of the rural population practice different forms of nomadism (pastoralism, nomadism-pastoralism, transhumance and agropastoralism). Their movement largely depends on weather changes which affects the availability of water and pasture for their animals. In summer they move to the highlands and move back in winter. Because of these movements, access to health services is difficult since they cannot move with the health providers and in most cases would not know the location of a health facility. Awareness about TB is also low.

Strategic Interventions

Whereas some of the approaches to cover some of these groups have been discussed elsewhere in this NSP, the following will be used in the rest of the groups.

Increase demand for TB services among key population: Like discussed under section 1.1, C4D approaches will be used in targeting these groups to increase their health seeking behavior.

Initiate outreach services to underserved areas: The key affected populations will be mapped for purposes of linking them to services. Mobile outreach programs with a truck that is equipped with diagnostic equipment (GXP and Mobile digital X-ray) will be supported to cover hard-to-reach areas, nomads and miners. In addition, TB service integration into other existing health program will be encouraged including school health, diabetes clinics, nutrition and child health clinics. Systematic screening will be done in all the key populations.

Indicator

	Baseline	Target
Proportion of TB patients diagnosed through outreaches	0	10%
Proportion of TB cases notified among key populations (Malnourished, PLHIV, contacts, prisoners, diabetics)	7.6%	15%

5.2.5 Leprosy

Objective 3. To eliminate Leprosy by tracing all contacts and reducing disability of diagnosed patients to Zero by 2026

Eritrea has achieved the prevalence of leprosy below 1/100,000 population at national and sub-national level and therefore we are in the post elimination era[15]. We notify 3-5 new patients with leprosy every year. The true burden of the disease is however not known. The old burnt out cases that need continued care are managed at the Hansenian Hospital. Although the number of leprosy cases is low without continued surveillance and management of the prevalent cases the gains made may be reversed as has been reported in other countries. Therefore, there is need to focus on achieving Triple Zero: Zero Transmission, Zero Disabilities and Zero Discrimination.

Key Gaps

Delayed diagnosis/Late presentation for diagnosis: All the cases being reported come late with disabilities when it is obvious, they have leprosy. *Lack of knowledge among HCWs* is a major contributing factor and low community awareness about the signs of Leprosy. The number of frontline health workers with the knowledge and skills to diagnose leprosy has continued to decline. Those who were good in diagnosis have had their skills blunted due to the limited exposure to cases and refresher trainings.

Lack of contact tracing around index cases and prophylaxis: The NTLCP program is supported by global fund and focuses only in TB with zero budget for leprosy activities. This has hindered contact tracing and investigation around index cases.

Lack of a prevention of disability programme: The lack of a budget for leprosy has also hindered rehabilitation support for new and burnt out cases.

Strategic Interventions

Initiate contact tracing/investigation and active case finding and prophylaxis: The NTLCP will support contact tracing and investigation and active case finding around notified index and burnt out cases by screening the close contacts twice a year. Contacts of new index patients without leprosy will also be screened for TB and if asymptomatic will be provided with Single Dose Rifampicin (SDR) for prophylaxis. The program will train front line HCW from the s/zobas where patients are either reported from or areas known to have had leprosy. Dermatology clinics will be trained to identify leprosy. Staff at the Leprosy hospital will also be capacity built to support field staff. Surveillance will be strengthened to include a geographical information system. Intensified awareness creation will be done through CHAs and IEC materials. Early diagnosis and treatment will help prevent disabilities.

Provide prevention of disability and care services: Both new and burnt out leprosy patients will be provided with protective footwear for prevention of disability. Materials for footwear making, prosthesis and other physical rehabilitation appliances will be procured. Care and treatment will be provided through the health system including Septic, Preventive,

[15] http://apps.who.int/neglected_diseases/ntddata/leprosy/leprosy.html accessed 08/03/2020

Reconstructive Surgery (SPRS). Physiotherapy services will also be provided to the patients through the health system who will be sensitized to provide the service closer to the patient. Reintegration into the community will be done though vocational training for self-reliance.

Resource mobilization for leprosy: Since the prevalence and incidence of leprosy is low it is difficult to get partners to support. Therefore, the NTLCP will advocate for resource from the ministry to support leprosy activities.

Indicators

Indicator	Baseline	Target
Proportion of leprosy contacts traced and screened	0	100%
Proportion of newly diagnosed leprosy patients with disability grade 2	100%	0%
Number of new leprosy cases notified	3	20

Objective 4. To strengthen supportive systems and policies for TB/Leprosy management by 2026

Sub Objective 4.1. To engage and network 100% of health care providers and stakeholders for TB control by 2026

The fight against TB in Eritrea requires a concerted effort beyond the NTLCP and the MOH. It needs other ministries and departments as part of the broader social and economic development agenda. This is because the drivers/social determinants of TB are beyond the health sector. Therefore, sectors responsible for poverty reduction, ensuring food security, and improving living and working conditions as well as interventions to address direct risk factors such as tobacco control, reduction of harmful alcohol use, and diabetes care and prevention will be brought on board.

In Eritrea all the health providers are public providing a good opportunity for easy coordination. Other government departments that provide health services are the prison and rehabilitation service, the military health services and some parastatals. The NTLCP has engaged the ministry of education which has included TB in its curriculum and school screening for TB. The Prison and rehabilitation service is a sub recipient of the NTLCP and does screening of prisoners on entry. Private pharmacists, drug shops and medicine vendors exist. There is no active civil society in the country.

Key Gaps

Inadequate engagement of other government ministries: Though the NTLCP has worked with other government ministries/departments, some especially those that can deal with the determinants of TB have not been engaged. Secondly the scope of those engaged in terms of activities is narrow.

Limited engagement of workplaces: Workplaces like industries, factories have not been engaged. The military through its national service gets many service people in facilities that would be regarded as congregate settings, but these have not been engaged beyond their health facilities.

Lack of engagement of private pharmacies & Traditional healers: The only private health providers in the country are pharmacies, drug shops and medicine vendors. Though the proportion who seek care from them is not known they form a first contact for the health sector. In the rural areas traditional healers also treat sick people some of whom would be having TB. Despite this they have not been engaged.

Strategic Intervention

Engage All government: At the ministerial level, the ministries that touch on the social determinants for TB will be formed into a TB multisectoral ministerial committee. This includes those that (i) provide TB-specific inputs in their areas (e.g. prison and rehabilitation services, Defense) and (ii) provide health system strengthening inputs that affect the TB program (e.g. agriculture, national development, education, industry, information & communication, and public works etc.). This will drive the agenda of ending TB in Eritrea. Military service will be sensitized to provide screening for TB to those joining the military or national service on entry & every 6 months. Local administration will be engaged and sensitized to link TB affected households to fee exemption certificates and public works to ensure housing plans consider infection control.

Engage workplaces: Different workplaces will be mapped in each zoba and will be engaged in raising awareness about TB through their peer educators and having cough monitors. Presumptive TB registers will be provided for monitoring.

Engage the private sector: The Private pharmacies, drug shops, medicine vendors and traditional healers will be purposely engaged and trained to identify presumptive TB and refer for diagnosis and management. They will be provided with referral slips.

Indicators

	Baseline	Target
A multisectoral TB committee formed and functional	None	In place
Proportion of workplaces engaged in TB prevention and care	0	100%
Number and proportion of private pharmacies and traditional providers engaged	0	100%

Sub Objective 4.2. To reduce the proportion of TB patients and affected families facing catastrophic costs to zero by 2026.

The national health policy envisions the health sector to work towards the progressive attainment of Universal Health Coverage (UHC) in the country. It has set Health Systems

Performance Targets one of which is to achieve UHC for all citizens by 2030. There is a policy of providing free tuberculosis diagnostic and treatment services but only kicks in when one is diagnosed with TB. MDR-TB patients are given a stipend for support during treatment. Patients may also incur indirect costs that may be a barrier to care. Employment laws in Eritrea protect patients against being fired on account of disease.

The Government of the state of Eritrea is a signatory to several international agreements including Convention on the Rights of the Child (CRC), the Convention on the Elimination of all forms of discrimination against women (CEDAW), Health for All, Global Education for All (GEFA) and human rights convention. The national health policy recognizes health as a human right and the country also participates in the universal periodic review on human rights in which health features prominently. The country has adopted the SDGs and universal health coverage goals. TB services are provided free of charge but only after diagnosis.

A national infection control unit exists, which has the responsibility of planning, implementation and monitoring of general infection control activities throughout the country. TB infection control is incorporated within the national infection prevention and control guideline. In addition, the programme has a guideline for the implementation of TB infection control in health care facilities, congregate and household settings. Each health facility has an infection control committee formed to implement infection control measures. However, budgetary constraints and out-of-pocket payments at an individual level may be a barrier to access TB services. Generally, there is no gender disparity in utilizing the available services with no significant difference in the knowledge of symptoms of TB among males and females in the LQAS of 2019. This is also supported by NTLCP notification data which consistently show only a slight preponderance of males compared to females. There are no documented studies done on stigma and discrimination as barrier to access services.

Key Gaps

Lack of linkage of poor TB patients to a social protection scheme: The process of diagnosis may lead one to incur significant out of pocket expenditure, buying the card, laboratory investigations except for TB, X-ray etc. This therefore makes TB treatment not free ab initio. The government has a system that provides a fee exemption certificate by local administrators to those who cannot afford services. This affords the person services for free. However, there is no formal link to this for TB patients. However, the patient and caretakers still must get accommodation in many instances and incur opportunity costs when they don't do their daily income generating activities.

TB Patient costs and TB community rights, gender (CRG) and stigma are not known: A TB patient cost survey has never been conducted in Eritrea. It is therefore not clear what the costs associated with TB are, how they affect TB patients and how they could be mitigated. No study has been done TB community rights, gender (CRG) and stigma and how these affect people with TB.

Suboptimal implementation of TB infection control activities: Despite the existence of the guidelines, the implementation measures are inadequate and vary across facilities. SOPs & IEC materials not available, annual screening of HCWs is not routinely done, administrative

controls are inadequate, and some facilities have infrastructural inadequacies for infection control.

Strategic Interventions

Maintain DR-TB patient support: The program currently provides support for DR-TB patients during the period of treatment of $100 monthly. This has gone a long way in ensuring the patients continue treatment. This support will be continued during this NSP period and is covered under the DR-TB section above.

Link eligible TB patients to the fee exemption: The program will work closely with the CHAs to identify those presumptive TB patients in the community who cannot afford health facility services and link them to the area administrators for a fee exemption certificate.

Conduct a patient cost survey and CRG assessment: A patient cost survey will be done early in the period of this NSP to identify the costs associated with TB management to the patient. A CRG assessment will also be conducted in the life of this NSP to document how TB communities are affected by rights, gender and stigma. Additional interventions will be put in place to mitigate against catastrophic expenditures and CRG findings. The findings will also be used as an advocacy tool.

Strengthen implementation of TB infection control measures in health facilities: A training of trainers will be conducted. Infection control assessments will be conducted in all heath facilities and facility specific TB IC plans will be developed. Health care workers will be trained on TB IC. Facilities will be provided with PPEs. HCWs will be screened annually for TB.

Indicators

	Baseline	Target
Proportion of TB patients facing catastrophic total costs	Unknown	0%

Sub Objective 4.3. To provide and maintain nutritional support to all (100%) eligible TB patients by 2022.

Malnutrition almost triples the risk of TB. It is estimated that the level of malnutrition is over 50% for children under age 5 making it the biggest risk factor in Eritrea[16]. Although the data is old, surveillance reports from the nutrition unit indicate that the situation has not changed. TB also drives patients into malnutrition especially if they don't get the right diet. The NTLCP provides nutritional support to MDR-TB patients who are admitted.

Key Gaps

Suboptimal collaboration with nutritional unit: The nutritional unit coordinates management of those who are malnourished. Though they screen for TB at the therapeutic centres, the collaboration at all levels has been weak.

[16] 2010 Population and Health Survey

Suboptimal TB screening among children with malnutrition: TB screening among children with malnutrition has been recently introduced in therapeutic centers. A TB screening tool has been developed and is under printing. There is no report on the number screened and number of children with malnutrition diagnosed as TB. The screening is also not in full coverage to include all the therapeutic centers nor does it cover all the malnourished children in all health facilities.

Lack of nutritional support for malnourished TB patients: There is no nutritional support for TB patients. However, MDR-TB patients are supplied with food during their stay at the hospital. In addition, children who were found to have TB while under therapeutic feeding continue to be supported with therapeutic feeding. Currently, unavailability of height records for TB patients hinders the program from calculating BMI and consequently, there is no data on the burden of malnutrition among TB patients. Nevertheless, the Epi- review found that under nutrition had 52.5% population attributable fraction.

Strategic Interventions

Strengthen collaborations with nutrition unit: Collaborative mechanism between the NTLCP and the nutrition unit will be created to provide integrated service for TB patients. Screening for malnutrition will be done in TB clinics and TB screening in nutritional centres will be strengthened. Staff in nutrition centres will be sensitized to conduct systematic TB screening regularly for all children under their care. TB screening tools will be disseminated to the nutritional centres.

Introduce therapeutic feeding for eligible patients: TB clinics without weighing machines/height measure will be provided. Nutritional assessment will be done for all TB patients by calculating their BMI. TB patients will be categorized as malnourished and well nourished. TB patients classified as malnourished above 5yrs will be provided nutritional support. Malnourished children under 5 and pregnant and lactating mothers will access therapeutic feeding from nutritional units.

Indicators

	Baseline	Target
Proportion of TB patients assessed for malnutrition	0	100%
Proportion of eligible TB patients on nutritional support	0	100%
Proportion of children under therapeutic feeding screened for TB	0	100%

Sub Objective 4.4. To ensure an uninterrupted supply and safety of anti-TB medicines (Maintain 0% stockout)

NTLCP in collaboration with PSM coordinator and pharmacy division coordinates the estimation of TB medicines needs, planning and monitoring delivery schedules and oversee

implementation of related activities. PHARMECOR does the procurement, warehousing and distribution of TB commodities. The Pharmacovigilance unit in the NFMA does PV and aDSM activities and has met the WHO criteria for level 3. It reports regularly to the WHO centre in Upsalla. The unit is planning to digitize the ADR reporting system.

Key Gaps

Lack of robust estimation/forecasting and early warning system: The system uses excel-based tools for forecasting TB medicines and commodities that are not very suitable in giving proper estimation/forecast as all the relevant data elements may not be captured and the lack provisions for early warning system and supply planning.

Inadequate TB capacity in PSM personnel: The staff at warehouse & stores are generally not given orientation/training on Programmatic (HIV, TB, Malaria) changes in diagnostic algorithms. This hinders their ability to proactively advice the NTLCP on quantification.

Lack of adequate support for PV/aDSM activities: Active Drug Safety Monitoring (aDSM) roadmap recommended by WHO for introduction of new agents/regimens especially for MDR-TB is yet to be developed. The PV unit also lacks adequate support to carry out optimal PV/aDSM, conduct training on detection and reporting of ADRs and operational research.

The National Drug Quality Control Lab (NQCL) is not accredited: Currently, the NQCL is unable to test fixed dose combinations. All anti-TB, HIV and anti-malarial medicines are sent to an external laboratory in Canada for quality testing.

Lack of domestic PSM budget: There no domestic funding for the procurement of medicines for TB as it is mainly funded through the GFATM grant.

Strategic Interventions

Strengthen quantification and forecasting: PSM staff will be trained on quantification and forecasting for TB. The free QUANTB tool for forecasting and quantification of TB medicines will be introduced.

Develop and implement aDSM and strengthen the PV system: A team will be established to develop and implement aDSM for TB. Smart safety surveillance guideline and digital reporting system will be put in place. This will document all possible ADRs and identify new safety signals and support operational research. The PV unit will be supported to provide trainings and conduct supportive supervision.

Support accreditation of the NQCL: Together with other programs the NQCL will be supported for accreditation to be able to do testing of medicines locally. In the meantime, it will be supported to send samples for testing and procurement of reference substances for fixed dose combinations.

Procuring and managing supply of medicines and related commodities: The uninterrupted supply of quality assured medicines is a key for treatment success. We will continue to ensure efficient supply chain management by supporting procurement, storage and distribution costs of TB/Leprosy medicines and related commodities.

Advocate for domestic funding for medicines: To secure domestic fund for procurement of medicine advocacy will be conducted.

Indicator

	Baseline	Target
Proportion of TB medicines out of stock	0%	0%
Proportion of the medicines budget supported by domestic funds	0%	20%
Availability of digital aDSM reporting system	No	1

Sub Objective 4.5. To strengthen the NTLCP capacity by increasing staff by 2 by 2023 and domestic funding from 5% to 20% by 2026.

The NTLCP has led the fight against TB and Leprosy in the country effectively. It is responsible for resource mobilization, planning, development of polices and guidelines, managerial, coordination and monitoring and evaluation of the programme. The programme at national level effectively has three staff including the program manager. At national level the staff work closely with other departments like the NTRL and PHARMECOR.

At the zoba and sub-zoba level, TB coordinators coordinate the TB control program activities. TB services are integrated in the general health services. In each health facility, a TB focal person is responsible for TB control activities in addition to other general medical duties. The TB focal person is administratively responsible to the health facility- in-charge; and technically to the TB coordinator.

The government supports infrastructure, salaries and recurrent costs while partners e.g. Global Fund grant support operational and programmatic activities such as procurement of medicines, supportive supervision, incentives for DOT promoters and enablers for drug resistant TB cases on treatment.

Key Gaps

Limited human resource capacity for TB: At central level, zobas and sub-zobas there is insufficient human resource in terms of numbers and skills coupled with high turnover at all levels of the health system including in laboratories.

Limited domestic funding: Funding for implementation of high-quality TB/Leprosy interventions will result in detection of people with TB/Leprosy and curative treatment. This will have a direct impact on TB mortality. The program is however funded up to 95% through donor funding. This is a threat to self-reliance and does not match the political will available to control TB.

Strategic Interventions

Strengthen NTLCP capacity: There are growing areas of TB control that require national level staff to specialize in and focus on to be more effective in guiding policy. The NTLCP will advocate for increase in staff positions at the central level for effective management and in other levels in line with the staffing norms. Capacity building will be provided for national, laboratory and zoba staff both local and international. Attendance in conferences will be provided for capacity building and experience sharing. Technical assistance will be sought to support the program as it builds internal capacity.

Advocate for increase in government contribution: The NTLCP through the CDC will prepare detailed budget gaps and use them to advocate for additional funding from the MOH. More urgently, is to secure support for leprosy and gradually increase funding for core program supplies like laboratory diagnostics and medicines. Appropriate communication and advocacy will be employed to increase program visibility and its achievements and translate the available political will into increased domestic funding.

Maintaining NTLCP routine operation: This will support the ongoing operations at the program that includes development of guidelines, printing of tools, update trainings, supportive supervision, technical assistance for routine program monitoring, quarterly reviews and external program reviews.

Indicator

	Baseline	Target
NTLCP staff	3	5
Proportion of NTLCP budget funded domestically	5%	20%

Objective 5. To strengthen evidence-based program monitoring and evaluation; and intensify operational research by 2026.

A functional Monitoring and Evaluation (M&E) system is important for ensuring quality TB and leprosy control. The NTLCP is implementing paper-based recording and reporting system. TB/Leprosy data is recorded in the DOT site register. This is then sent to the sub-zoba and zoba by facility as aggregated data. At the zoba it is further aggregated and sent to the NTLCP. The HMIS has initiated the process of integrating the surveillance system for TB under the platform of DHIS2. Recording and reporting tools have been updated and are available. In order to build the evidence-base for TB and leprosy control, the NTLCP need to build capacity to conduct research, including operational research (OR) to address programme challenges and inform implementation.

Key Gaps

Lack of a TB case-based surveillance system: Currently all data is aggregated at the zoba level and therefore further analysis at the national level is not possible. This limits generation of targeted interventions based on data.

Weak capacity in routine data analysis, interpretation and utilization for planning at all levels: The NTLCP at the different levels has a lot of data collected through the routine recording and reporting system that can be analyzed to inform program interventions. This is however not the case as the staff especially at national level are few and focus more on implementation. For example, the quality and completeness of the available data through the system has never been assessed from the source documents.

Lack of operational research on TB: It is only limited research that has been done by the ministry of health and College of health sciences in relation to TB and Leprosy care and prevention. Consequently, there is lack of local information in basic like community perceptions to TB/Leprosy, challenges in accessing services, and facilitators and barriers of TB care that can be used for planning purpose to further strengthen the activities in TB and Leprosy care and prevention.

Limited supportive supervision: even though the program has planned to conduct regular supportive supervision to TB diagnostic and treatment sites, this plan was not completely implemented. The major handicap in having supervision done is availability of a mode of transportation (vehicle or motorcycle). All transport is in a pool and therefore not available when supervision is due.
Lack of a vital registration system: The country is yet to develop a functional vital registration (VR) system that will record vital events like births and deaths. The community health strategy envisions using the CHAs for this function when it finally gets implemented.

Strategic Interventions

Develop a case-based surveillance system: The NTLCP will work with HMIS to progressively move to a case-based surveillance system. HMIS will be supported to have in place a server with adequate capacity and computers with enough capacity to run the DHIS2 system at all the sub-zobas. It will also be supported to develop an operational manual. The HMIS and NTLCP will jointly train the TB focal persons who will enter data into the DHIS2 system.

Strengthen capacity in data analysis, interpretation and operational research: The program will build the capacity of the staff at National, zoba and sub-zone levels to analyze, interpret and use data for action. The national level will be capacity built through training, publication and opportunities to present at international conferences. The NTLCP will also work closely with the college of health sciences in providing the research priority areas for the program and facilitating access to routine data and supporting in the carrying out of research. A research sharing forum will be held annually.

Maintain the routine M&E system: NTLCP will advocate to MOH to solve the transportation problems in conducting support supervision especially by the national level to TB diagnostic sites. The NTLCP will maintain the routine M&E system like revising and printing recording and reporting tools, conducting quarterly data review meetings. In addition, we will do a data inventory/quality assessment in the life of this NSP.

Indicators

	baseline	Target

Proportion of TB diagnostic and treatment sites supervised		100%
Number of operational researches conducted	4	12

Research

Key Gaps

In reviewing the evidence for making this NSP it was realized that we lack critical data to support evidence-based planning. There is minimal implementation research done in the program and the program has no repository for research that has been done in the country relating to TB/Leprosy. This NSP therefore has identified and prioritized the following research areas based on the gaps identified from the continuum of care for TB framework:

TB Prevalence survey	To provide the burden of TB in the country, health seeking behavior,
TB knowledge attitude and practices study	To provide insights into the patients KAP
Patient pathway analysis	To provide information on where patients seek care and the capacity of the facilities to diagnose, treat and report
Quality of TB Care (QUOTE) study	To assess the quality of TB services from the patient's perspective
Assessment of barriers and facilitators to access of TB services	Provide information for mitigating the barriers to access of services
TPT treatment outcomes assessment	To provide information on the quality of the TPT program
Patient cost survey	To provide information on catastrophic costs incurred by patients
TB inventory study	To document gaps in the data flow system
TB patient nutritional assessment study	To document the nutritional status of TB patients

Strategic Interventions

Promote impact assessment and evidence generation: The above prioritized research will be conducted during the life of this NSP. The NTLCP will work with other departments and academic institutions to conduct the researches. Technical assistance will also be sought to support this process. A repository for all research done in the country will be developed.

6. CHAPTER 6: IMPLEMENTING THE NATIONAL STRATEGIC PLAN 2021 – 2026

6.1 INSTITUTIONAL FRAMEWORK AND COORDINATION OF IMPLEMENTATION

The overall coordination for the the implementation of this NSP lies with the Ministry of Health. The MOH will coordinate with all the government ministries necessary for the successful implementation of this NSP.

6.1.1 Delegated roles

The ministry of health has delegated the role of coordination and monitoring the implementation of this Strategic Plan to the NTLCP under direct supervision of the CDC division. The NTLCP Central Unit will execute most of the management, while the zoba level will oversee the service delivery aspects. The NTLCP is responsible for mobilization of resources from government and non-government sources as well as coordinate stakeholders' participation.

6.1.2 Roles of NTLCP central unit

- Formulation of policy and development of policy guidelines
- Planning, coordinating, monitoring and evaluation,
- Development of standard operating procedures
- Training and supervision of personnel
- Budgeting and procuring supplies, and
- Operational research,

6.1.3 Role of Zoba TB coordinators

- Implement and coordinate TB control activities in the respective zobas,
- Establish functional linkages with the zoba TB laboratory focal persons and services for DOTS microscopic services.
- Supervise and train sub-zoba TB focal point person and other peripheral health workers.
- Keep up to date health facility TB registers
- Compile quarterly reports of notified patients and treatment outcomes
- Analyse the TB report for the zoba
- In collaboration with the Zonal pharmacy, order, collect, distribute and monitor anti-TB drugs and supplies; including all TB drugs, sputum containers, stationeries
- Support health workers in patient education and community activities, etc.

6.1.4 Role of sub-zoba

- Ensuring identification of TB suspects among cases reporting to the facilities
- Ensuring access to laboratory microscopic diagnosis facilities.
- Ensure that sputum samples are collected from TB suspects; the samples are fixed on slides and taken to laboratory for examination
- Transport sputum samples to microscopy/GXP centres.
- Carry our TB treatment including DOT
- Follow up patient treatment with sputum microscopic examinations at 2nd, 5th and end of treatment.

- Trace defaulters
- Keep patients records, laboratory results and treatment card
- Carry out HIV counselling and testing.
- Participate in patient education and Community TB care.
- Obtain sputum from TB suspects and patients and transport to microscopic centre.

6.1.5 National Coordination Committees

A TB multisectoral ministerial committee will serve as a platform for All Government engagement in the war against TB. This includes sectors and departments as captured in subobjective 4.1 above. This will drive the agenda of ending TB in Eritrea.
The National Coordination Committee for TB/HIV/Diabetes will serve as a platform for the stakeholders involved in the implementation of TB/HIV/Diabetes collaborative activities in the country. The committee will have scheduled meetings (quarterly) to continuously appraise the progress of TB/HIV/Diabetes collaborative activities in terms of achievement of targets, as well as issues relating to compliance to national guidelines, advocacy, communication and social mobilization for TB/HIV/Diabetes, monitoring and evaluation of TB/HIV/Diabetes activities. The committee will also provide relevant recommendations for review of guidelines and tools as well as necessary scale up plans.

6.1.6 Technical working groups

Where necessary, technical working groups will be constituted as a task team that will focus on specific programme components e.g. MDR-TB and Childhood tuberculosis.

6.2 Financial management arrangements

The financial management responsibility of this NSP lies with the Ministry of Health, which has fully functional systems and structures put in place with the support of the Global Fund. The MOH is6 also in a unique position being the Principal Recipient (PR) of Global Fund support to the country, which is expected to contribute 95% of the projected NSP 2021-2026 funding. The MOH has a project management unit (PMU) equipped with program management, M&E/IT, financial management, procurement supply chain management as well as risk management skills.
The MOH will therefore manage the government, global fund and other resources earmarked for the implementation of this NSP utilizing the checks and balances established under the government financial accounting and management systems, which are subject to high standards of regular auditing and oversight.
The NTLCP will be responsible for initiating the implementation of the NSP interventions and activities as per schedule and obtaining the required MOH approval and funding disbursement in a timely manner.

6.3 Implementation Oversight and Reprogramming

The NTLCP Central Unit shall provide necessary support to the zoba and sub-zoba levels to accomplish their respective responsibilities as outlined in the NSP. Through quality oversight and monitoring, the NTLCP will work towards ensuring that planned activities are implemented in a timely manner in compliance with all applicable requirements; instances and trends that indicate deficient performance or challenges are timely identified; and

remedial actions are implemented to reinforce, improve, correct, or supplement performance at all levels. Relevant and appropriate technical assistance needs will be identified to provide support proactively.

6.3.1 Supervision and review of performance

Supervision, monitoring and mentoring will be emphasized as an integral part of the implementation plan for this strategy. This will enable continuous appraisal of the quality of service delivery and the efficiency at the diagnostic, treatment and care sites as well as provision of technical support and facilitation of remedial measures where required. During the plan period, NTLCP will ensure systematic scheduled and purposeful supportive supervision at all levels of the programme including national, zoba and sub-zoba levels with the sole aim of improving the quality of tuberculosis care in the country.

This will include:

- Supervision and monitoring by NTLCP Central unit to zobas coordinators.
- Supervision and monitoring of health facilities by zoba and sub-zoba coordinators

NTLCP shall monitor and review the implementation of planned programme activities on a quarterly basis to ascertain they have been carried out in a timely manner as well as the existing capacity for effective implementation. This will be done through on-site review and off-site (or remote) review of records, reports, and data audits.

6.3.2 On-job training and mentoring

NTLCP shall work towards continuous knowledge and skills development and improvement through on-the-job training and mentoring to ensure quality TB care services delivery. The approach shall include a combination of One-On-One mentoring, training of trainers, as well as resource-based mentoring through production and dissemination of essential programme guides and job-aids.

6.4 TECHNICAL ASSISTANCE AND CAPACITY DEVELOPMENT

To ensure delivery of quality services and enhanced capacity to implement the NSP planned activities, technical assistance will be an integral part of the overall NSP implementation strategy. The World Health Organization provides technical support to the MOH and NTLCP in programme planning, implementation, monitoring and evaluation. NTLCP will continue to solicit support in specific technical areas where required. The main anticipated TA needs foreseen in the implementation of this NSP relate to the following areas:

Table 4: Technical assistance needs

Objective	Intervention Area	TA Need	Timeframe
1	1.2	General laboratory support and NTRL accreditation process	Annually
2	2.1	MRD-TB management – GLC Missions	Annually
4	4.2	Planning & implementation of patient cost survey, data analysis and documentation	Year 2

4	4.2	TB IPC risk assessment and TOT training in the country	Year 1
	4.2	Planning and conducting the CRG assessment	Year 2
	4.5	Programmatic management	Annually
	4.5	Program review	Year 2&5
5	5.1	Training on data analysis	Year 2
	5.1	Prevalence survey	Year 2

6.5 BUDGET

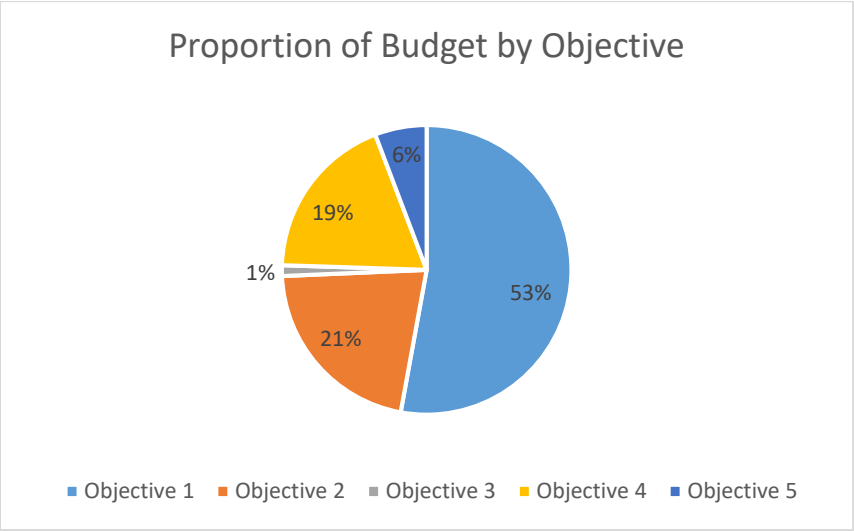
This NSP has been developed with an ambition to push back and make progress in the fight against TB. It lays emphasis in finding the missing cases through massive awareness creation and TPT. To achieve and sustain this, investment in financial resources is needed over a period. Currently, the program is funded from two sources; the government and the global fund. The later funds close to 95% of the program budget. This puts TB/Leprosy control activities in a very vulnerable position. Therefore, there is need to increase resource mobilization both domestic and external but also to diversify partner support. The NTLCP will develop a resource mobilization plan for this purpose. This will target the ministry of health to support leprosy activities which currently are not funded and budget for core program supplies for laboratory and medicines in the journey to self-reliance.

The budgetary process for this NSP employed the standard costing procedures including proper determination, quantification and valuation of program inputs for the various proposed interventions and activities. The costing covered mainly the tangible inputs for demand creation and from the supply side of the plan relating to the production and delivery of quality TB control services to the population.

Table 5: Budget summary by objective

	2021	**2022**	**2023**	**2024**	**2025**	**2026**	**Total**
Objective 1	3.539.081,70	1.601.621,47	1.816.933,55	2.551.786,46	1.926.073,53	1.822.200,28	**$13.257.696,98**
Objective 2	837.105,89	920.579,15	727.601,07	832.153,51	809.771,22	858.221,11	**$4.985.431,95**
Objective 3	59.081,00	49.081,00	59.081,00	49.081,00	59.081,00	49.081,00	**$324.486,00**
Objective 4	629.960,67	1.067.886,67	596.173,67	642.865,67	1.135.266,67	656.837,67	**$4.728.991,00**
Objective 5	265.942,86	125.942,86	122.142,86	125.942,86	122.142,86	125.942,86	**$888.057,14**
Grand Total	**$5.331.172,11**	**$ 3.765.111,14**	**$3.321.932,14**	**$4.201.829,50**	**$ 4.052.335,27**	**$3.512.282,91**	**$24.184.663,07**

Figure 11: Proportion of budget by objective



Funding Gap

The total budget for this NSP is **$27.115.223,60**. The commitment from GFATM is about $5.2 million for the next 3 years and assuming the government will maintain its contribution of 5% that will give a total of $5.6 million. This constitutes about 20% of the total NSP budget, leaving a gap of 80%.

7. CHAPTER 7. MONITORING AND EVALUATION

The MOH through the NTLCP will have direct responsibility of tracking the progress of implementation of the NSP 2021-2026. The NTLCP Central unit has a monitoring and evaluation focal person who oversees the TB data management. The program will continue getting data from health facilities through the sub-zobas and zobas. The recording and reporting system interfaces with the overall National Health Management Information System (HMIS) on key indicators. The main indicators to be tracked will include the Impact and outcome indicators related to the strategic objectives of the plan as well other performance indicators within the END TB strategy and the Global Fund grant agreement. See annex 4 for the detailed M&E plan.

8. ANNEXES

ANNEX 1. LIST OF FIGURES

ANNEX 2. LIST OF TABLES

ANNEX 3. DETAILED ACTIVITIES

1. **PILLAR ONE. PATIENT-CENTRED CARE**

1.1. Promoting Prevention and Care Seeking in the Community

Module	SN	Strategic Interventions	Activities
TB care and prevention Community TB care delivery	**1.1.1**	Patient-centred communication	i. Conduct training of trainers (TOT) for health workers on behavioural change communication (BCC) for integrated prevention methods of TB ii. Train TB focal persons in all health facilities on communication for development (C4D) for general measures of controlling TB iii. Train CHAs on BCC and social behavioural change communication (SBCC) for integrated prevention and control methods of TB iv. Develop poster, leaflets, billboards, IEC materials v. School health program activities + IEC material printing vi. Nominate students as TB focal person vii. Support community organizations to sensitize community on TB MDR-TB and TB-HIV control. (community outreaches) viii. Develop and print BCC manuals ix. TV/Radio spots & talk shows-NTP manager, CDC Director, Director-general and minister x.
TB care and prevention Community TB care delivery	**1.1.2**	Empower Opinion leaders and TB Champions:	i. Conduct advocacy to administrative leaders, influential, national organizations, civil society (youth and women association) institutions, journalists etc. on TB at national and zoba level ii. Procure bags and T-shirts as appropriate for advocacy and communication iii. Offer preferential treatment to all CHAs when seeking health care iv. One-day session for journalists for in-depth discussions on TB, MDR and XDR
TB care and prevention Community TB care delivery	**1.1.3**	Strengthen identification of presumptive TB patients and TPT	i. Conduct advocacy to ministry of Agriculture, Education... on prevention ii. Sensitizes students and Agriculture workers on TB iii. Train CHAs on TB iv. Develop and distribute Job aids to CHAs. v. Conduct supervision and mentorship to CHAs vi. Provide recording and reporting tools for CHAs vii. Provide standard performance-based incentives for CHAs
TB care and prevention	**1.1.4**	Involve all care providers in TB care and prevention	i. Sensitize pharmacists on Active TB case finding and referrals ii. Provide pharmacists with TB related IEC materials

Engaging all care providers			iii. Sensitize traditional healers on Active TB case finding and referrals. iv. Develop, print & distribute referral slips & IEC materials Activities covered in 4.1.3

1.2 To strengthen the capacity of health facilities to provide appropriate diagnosis

	SN	Strategic Interventions	Activities
TB care and prevention Case detection and diagnosis	**1.2.1**	Ensure adequate human resource	i. Train front line HCW to identify presumptive TB ii. Train lab staff iii. Train physicians on clinical diagnosis (local and international)
TB care and prevention Case detection and diagnosis	**1.2.2**	Expand radiological services	i. Procure digital X-ray machine ii. Procure alternative power supply for the machine (Generator) iii. Support maintenance of the machines iv. Procure license and software upgrades
TB care and prevention Case detection and diagnosis	**1.2.3**	Strengthen the use of Gene-Xpert MTB/RIF as initial TB diagnostic test	i. Procure and install additional Gene-Xpert machines (2 modules/omni/Edge) ii. Procure GeneXpert ultra-cartridges to cover the needs covered by the NSP iii. Procure calibrators for all GeneXpert machines available iv. Conduct GeneXpert maintenance trainings for laboratory personnel v. Procure GeneXpert replacement modules. vi. Introduce GXP-ALERT for the GXP sites
TB care and prevention Case detection and diagnosis	**1.2.4**	Strengthen sample transport system	i. Conduct training HCW on sputum collection, packaging and transportation ii. Provide payment for sample transport
MDR	**1.2.5**	Strengthen universal access to 1st and 2nd line DST	i. Conduct international training for TB-lab staff in relation to culture, DST and LPA

Case detection and diagnosis			ii. Ensure regular supply of reagents and consumables for 1st and 2nd line LPA iii. Procure supplies for MGIT, culture and solid media DST iv. Procure Falcon tube v. Conduct maintenance trainings for laboratory personnel vi. Strengthen existing sputum collection centres to collect and transport sputum samples for culture and DST. vii. Conduct annual HEPA filter maintenance.
TB care and prevention Case detection and diagnosis	**1.2.6**	Strengthen of quality of laboratory services	i. Develop guidelines for Continuous quality improvement (CQI), EQA, SOPs, TSRS, and LQMS etc. ii. Conduct EQA and PT activities in all microscopic-lab sites iii. Conduct EQA and PT for Culture and DST for 1st and 2nd line testing iv. Conduct meetings to review EQA performance for all facilities enrolled in EQA v. Conduct TB Lab technical Working Group meetings vi. Develop and print revised quality assurance protocol vii. Conduct EQA trainings for laboratory supervisors and EQA implementers viii. Provide incentive for EQA activity ix. Conduct supportive supervision in TB-lab x. Support NTRL accreditation xi. Conduct equipment maintenance xii. Provide TA
TB care and prevention Case detection and diagnosis	**1.2.7**	Use of and adapting new WHO – recommended diagnostic tools and approaches	i. Introduce TB-LAM ii. Introduce stool in TB diagnosis using GXP iii. Procure consumables for TB-LAM and stool examination using GXP iv. Provide annual calibration maintenance and warranty services, to all the new diagnostic tools v. Procure associated supplies
TB care and prevention Case detection and diagnosis	**1.2.8**	Maintain routine lab operations	i. Procure supplies for AFB microscopy ii. Procure sputum cups iii. Procure LED consumables iv. Maintain LED & Binocular microscopes

1.3 To improve quality of care to further reduce adverse outcomes and successfully treat at least 95% of both DS-TB and DR-TB by 2026

	SN	Strategic Interventions	Activities

TB care and prevention Treatment	**1.3.1**	Organization of TB services around the needs of patients	i. Provide one stop shop services to patients with comorbidities ii. Patient cantered adherence strategies iii. Consumables for comorbidities (glucometers and strips) iv. Minimize period of admission for DR-TB v. Train HCW on holistic TB care
TB care and prevention Prevention	**1.3.2**	Prevent relapsing	i. Conduct training for CHAs to conduct contact tracing. ii. Train CHAs on household TB-IC assessment iii. Conduct household TB infection control assessment iv. Train health staff in charge of anti-TB drug management and adverse drug reactions at Zoba, sub-zoba and facility levels v. Conduct Active TB drug Safety Monitoring and Management (aDSM or pharmacovigilance) activities regarding TB medicines (both FLDs and SLDs). vi. Conduct pre/post marketing Anti-TB surveillance

DRUG RESISTANT TB, CHILDHOOD TB, TB/HIV AND OTHER KEY POPULATIONS

2.1 To increase the treatment coverage of RR/MDR-TB from 24% in 2018 to 85% in 2026.

	SN	**Strategic Interventions**	**Activities**
MDR-TB Case detection and diagnosis	**2.1.1**	Improve capacity for early detection and diagnosis of DR-TB:	i. Train laboratory staff on the use of new technologies and test algorithm. ii. Train clinicians on the use of new technologies, test algorithm and interpretation. iii. Support culture and DST functions at NRL iv. Procure other laboratory tests necessary for initial and follow-up evaluation of DR-TB patients v. Train of laboratory staff in Supra National Reference Laboratory (SNRL) vi. Strengthen collaborative linkages with SNRL-Uganda for TA vii. Introduce GXP-ALERT for the GXP sites
MDR-TB Treatment	**2.1.2**	Improve Quality of Care	i. Procure RR/MDR-TB treatment ii. Procure ancillary drug iii. Train HCW on PMDT iv. Strengthen follow-up by procuring additional 5 ECG and Electrolyte analyser v. Procure consumables for ECG and Electrolyte analyser vi. Provide food for admitted MDR-TB patients vii. Provide monthly financial support for admitted MDR-TB patients

			viii. Provide psychosocial and recreational support to MDR-TB patients on treatment and family support to increase adherence to treatment. ix. Support GLC missions
MDR-TB Treatment	**2.1.3**	Maintain operations of the MDR-TB centre	i. Train HCW about the new STR for DR-TB ii. Minor renovation of DR-TB centre

2.2 To increase the proportion of eligible children aged less than 5 years contacts of all TB cases put on TPT from 44% in 2019 to 100% in 2026

	SN	Strategic Interventions	Activities
TB care and prevention Key populations - Children	**2.2.1**	Strengthen contact tracing, screening, investigation and TPT	i. Conduct training of health workers and CHAs on contact tracing. ii. Conduct contact tracing for all household and other close contacts of TB patients- transport/lunch iii. Procure INH/3RH for all contacts iv. Print TPT registers v. Print referral slips vi. Print contact registers vii. Disseminate contact register. viii. Develop and print patient educational material ix. Provide transport vouchers for patients
TB care and prevention Key populations - Children	**2.2.2**	Capacity building	i. Train clinicians including nurses and laboratory staff on gastric aspiration/lavage and PPD, and score chart for childhood TB diagnosis (Activities in 1.2.1)
TB care and prevention Key populations - Children	**2.2.3**	Integration with other programs	i. Conducting sensitization to HIV, nutrition, MCH, IMCI and adolescent health programs to integrate with TB control program ii. Introduce the column in their register iii. Conduct biannual review meeting
TB care and prevention Key populations - Children	**2.2.4**	Introduce new diagnostics	i. Disseminate newly developed algorithm for diagnosis child TB ii. Training HCW on nasogastric aspirate collection

2.3. To reduce mortality among HIV infected TB patients from 9.2% to <5% by 2026

	SN	Strategic Interventions	Activities
TB/HIV Screening, testing and diagnosis	**2.3.1**	Strengthen TB detection among PLHIV/Diabetics	i. Conduct regular screening among HIV and DM patients ii. Develop DM/TB guidelines. iii. Develop and disseminate DM/TB diagnostic algorithm iv. Develop and Disseminate TB/HIV algorithm
TB/HIV Prevention	**2.3.2**	Increase TPT uptake among PLHIV	i. Sensitize HCW working in HIV care and prevention how to screen for TB ii. Ensure availability of TPT iii. Advocate NACP to develop TPT register
TB/HIV Screening, testing and diagnosis	**2.3.3**	Reduce mortality among HIV positive TB patients	i. Ensure availability of HIV test kits ii. Support ARV/CPT provision in TB clinics
TB/HIV TB/HIV collaborative interventions	**2.3.4**	Establish/ Strengthen TB/HIV committees and incorporate NCD (diabetes)	i. Establish collaborative committee among three programs at all levels ii. Conduct regular quarterly meeting among three programs at all levels iii. Conduct sensitization of TB coordinators at all level on the updated TB/HIV and DM/TB policy guidelines.

2.4 Key Affected Populations

	SN	Strategic Interventions	Activities
TB care and prevention Key populations - Others	2.4.1	Increase demand for TB services among key population	I. Conducting focal group discussions (FGDs) and key informants (KIs) for assessing the knowledge, attitude and practice of the community on TB (other activities covered in 1.1.1)
TB care and prevention Key populations - Mobile populations: refugees, migrants and	**2.4.2**	Initiate outreach services to underserved areas	i. Conduct Sensitization among people living in hard to reach areas ii. Train community health workers for people in hard to reach areas iii. Conduct TB screening among people living in hard to reach with outreach programs iv. Procure and maintain digital X-Ray machines. v. Procure and maintain Vans for digital X-Ray machines vi. Develop, print and disseminate guidelines for use of X-ray for TB diagnosis.

internally displaced people			vii. Develop, print and disseminate training package for use of X-ray for TB diagnosis. viii. Conduct training of health workers on radiology techniques, interpretation, quality control of chest radiographs, radiation protection. ix. Recruit long term radiologist x. Train MCH/Nutrition focal person on TB screening for children under nutritional support(feeding) and pregnant mother attending antenatal care

3. To eliminate Leprosy by tracing all contacts and reducing disability of diagnosed patients to Zero by 2026

	SN	Strategic Interventions	Activities
	3.1.1	Initiate active case finding and prophylaxis	i. Conduct contact tracing/investigation ii. Conduct active case finding/outreach iii. Procure Single Dose Rifampicin (SDR) for prophylaxis iv. Train front line HCW from the s/zobas v. Train Leprosy hospital staff (international) vi. Develop a GIS mapping vii. Print & disseminate IEC
	3.1.2	Provide prevention of disability and care services	i. Procure protective footwear ii. Procure prosthesis for patients iii. Vocational training
	3.1.3	Resource mobilization for leprosy	i. Prepare detailed budget for advocacy

PILLAR TWO BOLD POLICIES AND SUPPORTIVE SYSTEMS

4.1. To engage and network all health care providers and stakeholders for TB control by 2026

	SN	Strategic Interventions	Activities
TB care and prevention Collaborative activities with other programs and sectors	**4.1.1**	Engage All government	• Establishment of TB multisectoral ministerial committee • Conduct regular meetings to monitor and evaluation the collaboration • Sensitize military service to conduct TB screening for members joining the Military or national service on entry and every 6 months. • Sensitize local administrators to link TB affected households to fee exemption.
TB care and prevention	**4.1.2**	Engage of workplaces	• Map different workplaces in each Zoba • Sensitize peer educators on TB

Engaging all care providers			• Raise awareness about TB through their peer educators + IEC distribution • Provide presumptive registers
TB care and prevention Engaging all care providers	**4.1.3**	Engage the private sector	• Map private pharmacies, drug shops, medicine vendors and traditional healers in each zone • Sensitize private providers on TB to identify presumptive TB and refer for diagnosis and management • Sensitize traditional healers on Active TB case finding and referrals. • Print & distribute referral slips
	4.2. To reduce the proportion of TB patients and affected families facing catastrophic costs to zero by 2026		
TB care and prevention Collaborative activities with other programs and sectors	**4.2.1**	Linkage of eligible TB patients to the fee exemption certificate	• Sensitize CHAs to identify needy presumptive TB patients and link them to the area administrators • Sensitize local administrators to provide fee exemption certificate for TB presumptive
Removing human rights and gender related Stigma and discrimination reduction	**4.2.2**	Conduct a patient cost survey and CRG assessment	• Conduct patient cost survey • TA for planning and conducting the survey • Conduct CGR assessment • TA for planning and conducting the CRG assessment
TB care and prevention Prevention	**4.2.3**	Strengthen Implementation TB infection control measures in health facilities	• Conduct Infection control risk assessments • TOT for TB IC • Train Health care workers on TB Infection Control • Procure personal protective equipment (PPE) • Support development and implementation of facility specific IC plans • Conduct annual TB screening among HCW • TA for TB IC assessment • Print and distribute TB IC guidelines
	4.3. To provide and maintain nutritional support to all eligible TB patients by 2022.		
TB care and prevention Collaborative activities with	**4.3.1**	Strengthen collaborations with nutrition unit	• Create collaborative mechanism between the NTLCP and the nutrition unit • Provide integrated service for malnourished TB patients

other programs and sectors			• Disseminate TB screening tools in all nutritional centres • Conduct systematic TB screening in nutritional centres
TB care and prevention Collaborative activities with other programs and sectors	**4.3.2**	Introduce therapeutic feeding for eligible patients	• Procure adult weighing machines with height measure • Conduct nutritional assessment for all TB patients (BMI) • Procure therapeutic food
	4.4. To ensure an uninterrupted supply and safety of anti-TB medicines		
RSSH: Health products management systems Storage and distribution capacity	**4.4.1**	Strengthen quantification and forecasting	• Train PSM staff on use of QUANTB for forecasting and quantification purpose. • Use QUANTB tool for forecasting and quantification
RSSH: Health products management systems Regulatory/quality assurance support	**4.4.2**	Develop and implement aDSM and strengthen the PV system	• Train health staff in charge of anti-TB drug management and adverse drug reactions at Zoba, sub-zoba and facility levels • Develop Smart safety surveillance guideline • Develop a digital reporting system • Carry out supportive supervision • Conduct operational research on anti TB medicines • Conduct Active TB drug Safety Monitoring and Management (aDSM or pharmacovigilance) activities regarding TB medicines • Conduct pre/post marketing Anti-TB surveillance
RSSH: Health products management systems Regulatory/quality assurance support	**4.4.3**	Support accreditation of the NQCL	• Register NQCL for accreditation • Support sample testing • Procure reference substances for quality testing

TB care and prevention Treatment	**4.4.4**	Procuring and managing supply of medicines and related commodities	• Procure first-line anti-TB drugs, including paediatric formulations. • Procure INH/3RH for all contacts • Procure ancillary drug • Procure PPD • Procure NG tubes (nasogastric tube) • Support handling, storage, distribution, insurance of anti-TB medicines (+30% of purchase cost). • Train health staff in charge and CHAs on anti-TB drug management and adverse drug reactions at Zoba, sub-zoba and facility levels.
Program management Coordination and management of national disease control programs	**4.4.5**	Advocate for domestic funding for medicines	• Develop a detailed costed anti TB medicines plan • Advocate for domestic funding for the procurement of anti-Leprosy and TB medicines
	4.5. To strengthen the NTLCP capacity.		
Program management Coordination and management of national disease control programs	**4.5.1**	Strengthen NTLCP capacity	• Advocate for additional national and Zonal level staff • Support TB program officers at National and zoba level to attend UNION conference annually • Programmatic management TA
Program management Coordination and management of national disease control programs	**4.5.2**	Advocate for increase in government contribution	• Prepare detailed costed budget and gaps • Advocate for funding from the government
Program management Coordination and management of national disease control programs	**4.5.3**	Maintaining NTLCP routine operations	• Support the office supplies and equipment • Development & printing of guidelines and other tools • Supportive supervision • Quarterly reviews • External program reviews • Technical assistance for routine program monitoring

PILLAR THREE. RESEARCH AND INNOVATION

5. To strengthen evidence-based program monitoring and evaluation; and intensify operational research by 2026.

	S.N	Intervention	Activities
RSSH: Health Management Information Systems and M&E Routine reporting	5.1.1	Develop a case-based surveillance system	• Procure a high capacity server. • Procure computers for sub-zobas for DHIS2 • Develop an operational manual • Sensitize TB focal persons on data entry
RSSH: Health Management Information Systems and M&E Analysis, evaluations, reviews and transparency/ Survey	**5.1.2**	Strengthen capacity in data analysis, interpretation and operational research	• Train coordinators on data analysis at all levels • Conduct and publish two priority research annually. • Conduct TB prevalence survey • Convene annual forums to share research findings at the country level • Support 4 staff to attend UNION conference annually
Program management Coordination and management of national disease control programs	**5.1.3**	Maintain the routine M&E system	• Revise and disseminate recording and reporting tools for TB and MDR-TB to accommodate new recommendations and interventions. • Conduct external program review • Develop and disseminate annual TB report • Revise and disseminate supervision checklist to include emerging TB interventions • Conduct support supervision and mentoring missions • Conduct quarterly review meeting at National, Zonal levels • Provide transport for supervision • Conduct data quality assessments (DQAs) to improve data completeness, consistency and accuracy.

ANNEX 4. M&E PLAN

Table 6: M&E Plan

Indicator	Numerator	Denominator	Data Source	Frequency	Responsible	Baseline (Year)	Target					
IMPACT INDICATORS							2021	2022	2023	2024	2025	2026
TB incidence rate per 100,000 population	Number of new TB cases per year X 100 000	Total population	WHO TB reports	Annual	NTLCP	89 (2018)	72,5	67	61,5	56	50,5	45
TB mortality rate per 100,000 population	Number of TB deaths per year X 100 000	Total population	WHO TB reports	Annual	NTLCP	16 (2018)	11,5	10	8,5	7	5,5	4
Proportion of new TB patients with RR and/or MDR-TB	Number of new TB cases with RR-TB and/or MDR-TB	Number of new TB cases tested for RR-TB and/or MDR-TB	NTLCP report	Annual	NTLCP	2% (2018)	1.9%	1,8%	1,7%	1,6%	1,5%	1.4%
OUTCOME INDICATORS												
Case notification rate of all forms of TB per 100,000 population - bacteriologically confirmed plus clinically diagnosed, new and relapse cases	Number of all forms of TB (bacteriologically confirmed + Clinically diagnosed) notified in the year X100,000	Total population	NTLCP report	Annual	NTLCP	53 (2019)	59	63	66	69	72	75

Treatment success rate of all forms of TB - bacteriologically confirmed plus clinically diagnosed, new and relapse cases	Number of all forms of TB - bacteriologically confirmed plus clinically diagnosed, new and relapse cases successfully treated (Cured +Completed)	Number of all forms of TB - bacteriologically confirmed plus clinically diagnosed, new and relapse cases notified	NTLCP report	Annual	NTLCP	93% (2018)	93.6 %	93.9 %	94.2 %	94.5 %	95.8 %	96.1%
Notification of RR-TB and/or MDR-TB cases – Percentage of notified cases of bacteriologically confirmed, drug resistant RR-TB and/or MDR-TB as a proportion of all estimated RR-TB and/or MDR-TB cases	Number of notified cases of bacteriologically confirmed, drug resistant RR-TB and/or MDR-TB X100	All estimated RR-TB and/or MDR-TB cases	NTLCP and WHO TB Reports	Annual	NTLCP	24% (2018)	42%	51%	60%	69%	78%	87%
Treatment success rate of RR TB and/or MDR-TB: Percentage of cases with RR and/or MDR-TB successfully treated	Number of RR-TB and MDR-TB successfully treated (Cured & completed treatment) X100	Number of RR-TB and MDR-TB started on treatment	NTLCP report	Annual	NTLCP	91,6% (2017)	92%	93%	93%	94%	95%	95%
TB treatment coverage: Percentage of new and relapse cases that were notified and treated among the estimated number of incident TB cases in the same year (all form of TB - bacteriologically confirmed plus clinically diagnosed)	Number of new and relapse notified and treated in the year X100	Estimated number of incident cases in the year all forms	NTLCP and WHO TB reports	Annual	NTLCP	61% (2018)	67%	70%	74%	78%	81%	85%

COVERAGE INDICATORS												
Number of notified cases of all forms of TB (i.e. bacteriologically confirmed + clinically diagnosed), includes new and relapse cases	NA	NA	NTLCP report	Annual	NTLCP	1842(2019)	2190	2376	2572	2776	2989	3213
Treatment success rate- all forms: Percentage of TB cases, all forms, bacteriologically confirmed plus clinically diagnosed, successfully treated (cured plus treatment completed) among all TB registered for treatment in the year New and Relapse	Number of TB cases, all forms, bacteriologically confirmed plus clinically diagnosed, successfully treated (cured plus treatment completed) among all TB	Number of TB cases, all forms, bacteriologically confirmed plus clinically diagnosed	NTLCP report	Annual	NTLCP	93% (2018)	93.6 %	93.9 %	94.2 %	94.5 %	94.8 %	95.1%
Percentage of laboratories showing adequate performance in external quality assurance for smear microscopy among the total number of laboratories that undertake smear microscopy during the year	Number of laboratories showing adequate performance in external quality assurance for smear microscopy X100	Total number of laboratories that undertake smear microscopy during the year	Laboratory Report	Annual	NTRL	95% (2019)	100%	100%	100%	100%	100%	100%
Number of TB cases (all forms) notified among prisoners	NA	NA	NTLCP report	Annual	NTLCP	? (2019)	1%	1%	1%	1%	1%	1%

Number and proportion of TB cases (all forms) notified among key affected populations/ high risk groups (Malnourished, PLHIV, contacts, diabetics) other than prisoners	Number of TB cases (all forms) notified among key affected populations/ high risk groups (Malnourished, PLHIV, contacts, diabetics) in the year X100	Number of TB cases (all forms) notified in the year	NTLCP report	Annual	NTLCP	7,6% (2019)	8%	10,00 %	12,00 %	13,00 %	14%	14%
Number and Proportion of eligible contacts of TB patients put on TB Preventive Therapy	Number of contacts put on TPT	Number of eligible contacts of Bacteriologically confirmed TB patients put on TPT	NTLCP report	Annual	NTLCP	Not available	95%	95%	95%	100%	100%	100%
Percentage of reporting units reporting no stock-outs of anti-TB drugs on the last day of the quarter	Number of DOT centres with no stock on last day of the quarter X100	Number of DOT centres	NTLCP report	Quarterly	NTLCP	100% (Q 2019)	100%	100%	100%	100%	100%	100%
Percentage of registered new and relapse TB patients with documented HIV status	Number of new and relapse TB patients with documented HIV status X100	Number of new and relapse TB patients notified	NTLCP report	Annual	NTLCP	99% (2019)	100%	100%	100%	100%	100%	100%
Percentage of HIV-positive new and relapse TB patients on ART during TB treatment	Number of HIV-positive new and relapse TB patients	Number of HIV-positive new and relapse TB	NTLCP report	Annual	NTLCP	97% (2019)	100%	100%	100%	100%	100%	100%

	on ART during TB treatment X100	patients on TB treatment										
Number of TB cases with RR-TB and/or MDR-TB notified	Number of TB cases with RR-TB and/or MDR-TB notified		NTLCP report	Annual	NTLCP	17(2019)	35	43	52	62	72	82
Percentage of TB patients with DST result for at least Rifampicin among the total number of notified (new and retreatment) cases in the same year	Number of TB patients with DST result for at least Rifampicin among the total number of notified (new and retreatment) cases in the same yearX100	Total number of TB patients notified (new and retreatment) cases in the same year	NTLCP report	Annual	NTLCP	70% (2019)	100%	100%	100%	100%	100%	100%
Number of cases with drug resistant TB (RR and or MDR-TB) that began second line treatment	Number of cases with drug resistant TB (RR and or MDR-TB) that began second line treatment		NTLCP report	Annual	NTLCP	(17)2019	35	43	52	62	72	82
Percentage of DST laboratories showing adequate performance on External Quality Assurance	Number of DST laboratories showing adequate performance in the year X100	Total number of laboratories doing DST	NTRL	Annual	NTRL	Not available	98	98	98	98	98	98
Proportion of confirmed RR-TB/MDR-TB tested for resistance to second Line drugs	Number of confirmed RR-TB/MDR-TB with SL DST results X100	Number of notified RR/MDR-TB patients	NTLCP report	Annual	NTLCP	Not available	100%	100%	100%	100%	100%	100%

PROCESS INDICATORS												
Percentage of people with knowledge of at least two TB symptoms	Number of people with knowledge of at least two TB symptoms X100	Number of people with interviewed	LQAS	Biennial	CDC	60% (2017)	70%	75%	80%	85%	90%	95%
Proportion of people with symptoms of TB referred by CHAs from the community	Number of presumptive TB patients referred by CHAs X100	Total number of TB presumptive in the year	NTLCP report	Annual	NTLCP	4% (2019)	7%	9%	11%	13%	14%	15%
Proportion of presumptive TB referred by Informal service Providers e.g. traditional healers, rural drug vendors (RDV), drug shops, pharmacies	Number of presumptive TB patients referred by informal service providers X100	Total number of TB presumptive in the year	NTLCP report	Annual	NTLCP	0% (2019)	5%	10%	11%	13%	14%	15%
Proportion of eligible DR-TB patients on STR	Number of DR-TB patients on STR	Number of all DR-TB patients enrolled on treatment	NTLCP report	Annual	NTLCP	0%	80%	80%	80%	80%	80%	80%
Proportion of eligible children aged less than 5 years contacts of all TB cases put on TPT	Number of children aged less than 5 years contacts of bacteriologically confirmed TB patients put on TPT	Total number of children aged less than 5 years contacts of bacteriologically confirmed TB patients	NTCLP report	Annual	NTLCP	44% (2019)	100%	100%	100%	100%	100%	100%
Number of children diagnosed and enrolled on treatment	Number		NTCLP report	Annual	NTLCP	230 (2019)	328	356	386	416	448	482

Percentage of previously treated TB patients receiving DST (bacteriologically positive cases only)	Number of previously treated TB patients with DST (bacteriologically positive cases only)	Total number of previously treated TB patients notified (bacteriologically positive cases only)	NTCLP report	Annual	NTLCP	Not available (2019)	100%	100%	100%	100%	100%	100%
Percentage of HIV-positive new and relapse TB patients on CPT during TB treatment	Number of HIV-positive new and relapse TB patients on CPT during TB treatment X100	Number of HIV-positive new and relapse TB patients on TB treatment	NTLCP report	Annual	NTLCP	94% (2019)	100%	100%	100%	100%	100%	100%
Proportion of diabetics in care screened for TB	Number of diabetics screened for TB	Total number of diabetics in care	NCD	Annual	NCD	Not available	100%	100%	100%	100%	100%	100%
Proportion of TB patients diagnosed through outreaches	Total number of TB patients diagnosed through outreach in the year	Total number of patients notified in the year	NTLCP report	Annual	NTLCP	Not available	5%	10%	10%	10%	10%	10%
Proportion of newly diagnosed leprosy patients with disability grade 2	Total number of Leprosy patients with grade 2 disability	Total number of leprosy patients notified in the year	NTLCP report	Annual	NTLCP	100% (2019)	50%	25%	0%	0%	0%	0%
Proportion of leprosy contacts traced and screened	Total number of leprosy contacts screened in the year	Total number of leprosy contacts	NTLCP report	Annual	NTLCP	0% (2019)	100%	100%	100%	100%	100%	100%

		recorded in the year										
Number of new leprosy cases notified	Number notified		NTLCP report	Annual	NTLCP	3(2019)	10	20	20	20	20	20
A multisectoral TB committee formed and functional			MOH Minutes	Annual	MOH	0(2019	1	1	1	1	1	1
Proportion of workplaces engaged in TB prevention and care	Number of workplaces engaged X100	Total number of workplaces	NTLCP report	Annual	NTLCP	0(2019)	50%	100%	100%	100%	100%	100%
Number and proportion of private pharmacies and traditional providers engaged	Number of pharmacies and traditional healers engaged X100	Total number of pharmacies and traditional healers	NTLCP report	Annual	NTLCP	0(2019)	50%	100%	100%	100%	100%	100%
Proportion of TB patients facing catastrophic total costs	Number of TB patients with catastrophic costs	Total number of TB patients notified in the year	NTLCP report	Annual	NTLCP	Unknown (2019)	0%	0%	0%	0%	0%	0%
Proportion of TB patients assessed for malnutrition	Number of TB patients assessed for malnutrition	Total number of TB patients notified in the year	NTLCP report	Annual	NTLCP	0(2019)	100%	100%	100%	100%	100%	100%
Proportion of eligible TB patients on nutritional support	Number of eligible TB patients on nutritional support X100	Total number of eligible TB patients for nutritional support	NTLCP report	Annual	NTLCP	0(2019)	100%	100%	100%	100%	100%	100%

Proportion of children under therapeutic feeding screened for TB	Number of children under therapeutic feeding screened for TB X100	Total number of children under therapeutic feeding program	NTLCP report	Annual	NTLCP	0(2019)	100%	100%	100%	100%	100%	100%
Availability of digital aDSM reporting system			NMFA	Annual	NMFA	0 (2019)	1	1	1	1	1	1
Proportion of the medicines budget supported by domestic funds	Domestic medicines budget	Total TB/Leprosy Medicines budget	NTLCP report	Annual	NTLCP	0(2019)	5%	10%	10%	20%	20%	20%
Proportion of NTLCP budget funded domestically	NTLCP budget funded by the Government in the year	Total NTLCP budget for the year	NTLCP report	Annual	NTLCP	5% (2019)	10%	15%	15%	20%	20%	20%
Proportion of TB diagnostic and treatment sites supervised	Number of TB diagnostic and treatment sites supervised in the year	Total number of TB diagnostic and treatment sites	NTLCP report	Annual	NTLCP	Not availabl e (2019)	5%	10%	10%	20%	20%	20%
Number of operational researches conducted	Number		NTLCP report	Annual	NTLCP	4(2019)	2	2	2	2	2	2