

GOVERNMENT OF SIERRA LEONE



MINISTRY OF HEALTH AND SANITATION



**National Leprosy and  
Tuberculosis- Strategic Plan  
(2016-2020) CORE PLAN**



**National**  
**+** **leprosy**  
**tuberculosis**  
**Control Programme**  
caring still counts - Dr Stanley Brown

**→ END-SIERRA LEONE  
TB**

*Final draft of 14<sup>th</sup> May 2016*

## Table of Contents

ITEM	PAGE
ABBREVIATIONS AND ACRONYMS .....	6
ACKNOWLEDGMENTS .....	9
EXECUTIVE SUMMARY .....	10
CHAPTER 1: PURPOSE AND PROCESS OF NLTP STRATEGIC PLAN DEVELOPMENT .....	13
1.1PURPOSE OF THE NATIONAL STRATEGIC PLAN .....	13
1.1.1 Current draft Strategic plan.....	13
1.1.2 Rationale for developing NLTP SP .....	13
1.2 PROCESS OF DEVELOPING- NLTSP .....	13
CHAPTER TWO -BACKGROUND.....	14
2.1 COUNTRY PROFILE.....	14
2.1.1 Geography, Administration and History.....	14
2.1.2 Population.....	14
2.1.3 Economy .....	14
2.2 HEALTH CONTEXT.....	15
2.2.1 Performance of Millennium Development Goals (MDGs).....	15
2.2.2 Disease burden and cause of deaths.....	15
2.2.3 Non communicable diseases (NCD).....	16
2.2.4 Progress in essential services prior EVD .....	16
2.3 HIV SITUATION IN SIERRA LEONE.....	17
2.4 HEALTH CONTEXT.....	17
2.4.1 Health care levels.....	17
2.4.2 Health care network .....	18
2.5 NATIONAL HEALTH POLICY, SYSTEMS AND STRATEGIES .....	18
2.5.1 Healy policy and strategies .....	18
2.5.2 Health systems analysis .....	18
2.6 DISEASE TRENDS -EPIDEMIOLOGY .....	20
2.6.1 Leprosy disease burden 2001-2013 .....	20
2.6.2 Tuberculosis disease burden and trends.....	22
CHAPTER 3: NLTP STRUCTURE AND PERFORMANCE .....	25
3.1 ORGANIZATION OF NLT PROGRAM .....	25
3.1.1 Policy and history .....	25
3.1.2 Goals, Objectives and strategies .....	25
3.1.3 Functions and roles .....	25

3.1.4	Program funding .....	26
3.1.5	Laboratory and X-ray service organization .....	26
3.1.6	Program coverage .....	27
3.1.7	Private sector involvement.....	27
3.2	PERFORMANCE OF NATIONAL PAST STRATEGIC PLANS .....	27
3.2.1	LEPROSY PERFORMANCE .....	27
3.2.2	TB-HIV Collaborative activities.....	28
3.2.3	Tb Case finding and notification.....	29
3.2.4	Childhood Tuberculosis .....	31
3.2.5	Extra Pulmonary TB .....	32
3.2.6	TB in pregnancy.....	33
3.2.7	Military and Prisons case notification.....	33
3.2.8	Treatment outcome .....	33
3.2.9	Drug Resistant TB performance .....	34
3.2.10	Community TB care.....	35
	CHAPTER FOUR-ISSUES FROM REVIEW AND SWOT ANALYSIS .....	36
4.1	ISSUES COMING OUT OF THE DESK REVIEW .....	36
4.1.1	Country Profile .....	36
4.1.2	Human and financial resources .....	36
4.1.3	Leprosy .....	37
4.1.4	Diagnostiscs .....	37
4.1.5	Private sector participation .....	37
4.1.6	Performance – .....	37
4.1.7	Treatment outcome: .....	37
4.1.8	Community TB care.....	38
4.2	SWOT ANALYSIS .....	38
4.2.1	Internal appraisal (strengths and weaknesses) .....	38
4.2.2	External Appraisal (PEST Analysis) .....	40
	CHAPTER 5- DETAILED GAP ANALYSIS .....	41
	PILLAR ONE .....	41
5.1	TB EARLY CASE DETECTION .....	41
5.2.	LABORATORY CAPACITY AND TB DIAGNOSTICS .....	42
5.3	DRUG SUSCEPTIBILITY TESTING AND DRUG RESISTANT TB .....	43
5.4	CHILHOOD TUBERCULOSIS .....	43
5.5	TB-HIV COLLABORATIVE ACTIVITIES .....	45

5.6.	HIGH RISK GROUPS FACTORS.....	47
5.7	LEPROSY GAP ANALYSIS .....	48
5.8	PATIENT-CENTRED APPROACH TO LEPROSY AND TB CARE .....	49
	PILLAR TWO .....	49
5.9	ENGAGING CIVIL SOCIETY,COMMUNITIES AND THE PRIVATE SECTOR .....	49
5.10	HUMAN RIGHTS AND SOCIAL PROTECTION .....	51
5.11	PROCUREMENT AND SUPPLY MANAGEMENT .....	52
5.12	HUMAN RESOURCE AND PROGRAM MANAGEMENT .....	52
CHAPTER 6.....	VISION, GOALS, TARGETS, OBJECTIVES AND INTERVENTIONS	
	53	
6.1	VISION AND GOALS.....	53
6.2	GOALS.....	53
6.3	TARGETS .....	53
6.4	TB EARLY CASE DETECTION AND TREATMENT.....	53
6.5	LABORATORY CAPACITY AND TB DIAGNOSTICS.....	54
6.6	DRUG SUSCEPTIBILITY TESTING AND RESISTANT TB.....	55
6.7	CHILHOOD TUBERCULOSIS .....	56
6.8	TB-HIV COLLABORATIVE ACTIVITIES .....	57
6.9	HIGH RISK GROUPS AND RISK FACTORS.....	58
6.10	LEPROSY STRATEGIC INTERVENTIONS .....	58
<b>6.11</b>	<b>PATIENT -CENTRED APPROACH (PCA) TO LEPROSY AND TB CARE.....</b>	<b>59</b>
6.12	ENGAGING CIVIL SOCIETY, PRIVATE SECTOR AND COMMUNITIES .....	60
6.13	HUMAN RIGHTS AND SOCIAL PROTECTION .....	61
CHAPTER 7	INSTITUTIONAL CAPACITY AND PROGRAM MANAGEMENT .....	62
7.1	PROCUREMENT AND SUPPLY MANAGEMENT .....	62
7.2	CENTRAL PROGRAM MANAGEMENT UNIT.....	63
7.3	MONITORING AND EVALUATION .....	63
7.4	HUMAN RESOURCE –KEY FUNCTIONS FOR STRATEGIC PLAN .....	64
7.5	ORGANISATIONAL STRUCTURE (Year 2-5).....	66
	.....	66
7.6	ROLES AND RESPONSIBILITIES .....	67
7.6.1	The Directorate of disease prevention and control .....	67
7.6.2	Central Unit roles.....	67
7.6.3	District Level: .....	67
7.6.4	Primary health unit/health facility level.....	67

7.6.5	Community and Community Health Workers .....	67
7.6.6	Development Partners .....	67
7.6.7	Private service providers .....	67
7.7	CRITICAL SUCCESS FACTORS AND ASSUMPTIONS .....	68
	REFERENCE .....	69
	LIST OF ANNEXES FROM I-VII.....	71
	ANNEX I SIERRA LEONE MAP SHOWING THE DISTRICTS .....	71
	ANNEX II -POPULATION PYRAMIDS OF THE GENERAL POPULATION .....	71
	ANNEX III: COUNTRY KEY POPULATION INDICATORS .....	72
	ANNEX IV DISTRIBUTION OF HEALTH FACILITIES IN SIERRA LEONE.....	72
	ANNEX V HEALTH SPECIFIC PERFORMANCE INDICATORS .....	73
	ANNEX VI LABORATORY NETWORK .....	73
	ANNEX VII X-RAY MACHINES DISTRIBUTION .....	74
	ANNEX VIII a GENEXPERT MACHINES DISTRIBUTION .....	75
	.....	0

<b>ITEM</b>	<b>PAGE</b>
<i>Table 1 Millenium development goals.....</i>	<i>15</i>
<i>Table 2 Main National Helath Indicators .....</i>	<i>16</i>
<i>Table 3 Trends in Extra-Pulmonary and relapses .....</i>	<i>24</i>
<i>Table 4 TB funding contribution .....</i>	<i>26</i>
<i>Table 5 Summary of performance of 102 laboratories.....</i>	<i>26</i>
<i>Table 6 TB cases (all forms) tested for HIV, put on ART and CPT.....</i>	<i>28</i>
<i>Table 7 Bact. confirmed +ve tested for HIV .....</i>	<i>28</i>
<i>Table 8 trends in Male to Female TB ratios.....</i>	<i>30</i>
<i>Table 9 Pulmonary TB CNR per 100 K (all forms) from 2012-2014 .....</i>	<i>31</i>
<i>Table 10 Sputum +ve and Extra-pulmonary TB cases 2015 per district .....</i>	<i>31</i>
<i>Table 12 Percentage of Extra Pulmonary TB .....</i>	<i>32</i>
<i>Table 13 Extra -Pulmonary CNR for districts.....</i>	<i>33</i>
<i>Table 14 Treatment outcome of all forms .....</i>	<i>34</i>
<i>Table 15 Estimated No to screen with GeneXpert for RMP resistant and TB.....</i>	<i>34</i>
<i>Table 16 Internal Appraisal factors .....</i>	<i>38</i>
<i>Table 17 External Appraisal (PEST Analysis) .....</i>	<i>40</i>
<i>Table 18 Table Difference between TB cases notified and reported treatment outcomes.....</i>	<i>41</i>
<i>Table 19 Children proportions for TB cases that are 0-14 years old excludes pulmonary smear +ve re-treatment cases .....</i>	<i>44</i>
<i>Table 20 District key data variations reflecting performance.....</i>	<i>46</i>
<i>Table 21 Human resources requirements for the strategic plan .....</i>	<i>64</i>
<i>Table 22 Mitigation measures of risks .....</i>	<i>68</i>

## LIST OF FIGURES

ITEM	PAGE
Figure 1 Top 10 causes of deaths in 2012.....	16
Figure 2 Number of cases notified .....	21
Figure 3 Proportion of children and disability grade 2 .....	21
Figure 4 Trends on treatment outcome of Leprosy .....	21
Figure 5 Trends in TB prevalence (a), Incidence (b) and Mortality(c).....	22
Figure 6 Trends for mortality, case detection rate and treatment .....	23
Figure 7 Trend in TB cases (all forms and bacterially +ve confirmed).....	24
Figure 8 District Leprosy cases and rate 2013-2014.....	27
Figure 9 Tb notification (all forms) and CN rate.....	29
Figure 10 TB notification and CNRs by age and sex in 2014 .....	30
Figure 12 Proportion of TB cases that are 0-14 years old .....	31
Figure 13 Notified cases from Military and Prison system; 2011-2015 .....	33
Figure 14 Contribution of Community referrals from each districts .....	35
Figure 15 Structure to achieve the strategic plan .....	66

## **ABBREVIATIONS AND ACRONYMS**

ACSM	Advocacy, Communication and Social Mobilization
AFB	Acid Fast Bacilli
AIDS	Acquired Immuno-Deficiency Syndrome
ANC	Anti Natal Care
ART	Anti-Retroviral Therapy
BCG	Bacille Calmette-Guérin (vaccine)
CARKAP	Consortium for Advancement of Rights for Key Affected Population
ILMS	Improve Logistics Management Information System
CBR	Community Based Rehabilitation
CDC	Centre for Diseases Prevention and Control
CPT	Cotrimoxazole Preventive Therapy
CTBC	Community Based Tuberculosis Care
CRL	Central Reference Laboratory
CSO	Civil Society Organisation
CHW	Community health workers
DHMT	District Health Management Team
DMO	District Medical Officer
DOT	Directly Observed Treatment
DOTS	Directly Observed Treatment, Short course
DRS	Drug Resistance Survey
DST	Drug Susceptibility Testing
TLC	Tuberculosis and Leprosy Supervisor
EQA	External Quality Assurance of AFB microscopy
FBO	Faith Based Organization
GDP	Gross Domestic Product
GFATM	Global Fund Against AIDS, Tuberculosis and Malaria
GLRA	German Leprosy and Tuberculosis Relief Association
GNI	Gross National Income
HIV	Human Immunodeficiency Virus
ICF/IPC	Intensified Case Finding/ Infection Prevention and Control
ICT	Information, Communication Technology
IEC	Information Education and Communication
IMR	Infant Mortality Rate
IPT	Isoniazid Preventive Therapy
ISTC	International Standard of Tuberculosis Care
MCH	Maternal and Child Health
MDGs	Millennium Development Goals

MDR	Multi- Drug Resistance
M&E	Monitoring and Evaluation
MDT	Multi Drug Therapy
MOHS	Ministry of Health and Sanitation
MSM	Men who have Sex with Men
NACP	National AIDS Control Programme
NGO	Non-Governmental Organization
NLTP	National Tuberculosis and Leprosy Programme
PAL	People Affected by Leprosy
PCCA	Patient-centred care -approach
PHU	Peripheral Health Unit
PLHIV	People Living with HIV
PMTCT	Prevention of Mother to Child Transmission
PPM(P)	Public Private Mix (partnership)
PSM	Procurement and Supply management
POD	Prevention of Disability
RH	Reproductive Health
SOP	Standard Operating Procedure
SDG	Sustainable Development Goals
TB	Tuberculosis
USAID	United States Agency for international Development
WHO	World Health Organization
X-DR	Extremely Drug resistance

## FOREWORD

Although there has been significant achievements in reducing TB morbidity and mortality in Sierra Leone yet Tuberculosis disease was the second killer among the top 10 causes of deaths after Lower respiratory infections in 2012; killing close to 8.1 thousands people in our country<sup>1</sup>. HIV prevalence stands at 1.5%, while TB-HIV coinfection is much higher at about 12% for the past three consecutive years, with limited TB-HIV integration, the country still has a challenge ahead.

Even with Sierra Leone attaining Leprosy elimination target many years ago; yet disability grade-2 and children cases are still seen in our health facilities and communities. Therefore both diseases are still a burden, and a public health concern calling for concerted efforts to detect, treat and prevent them. The development of a comprehensive and ambitious strategic plan for 2016-2020, is guided by Country strategies and global strategy of ending TB by 2035, together with ‘Leprosy enhanced global strategy’. NLTP SP (2016-2020) which was developed in a participatory manner, positions us for future challenging and changing environment. It serves as a resource mobilization tool, a platform for implementing partners to deliver Leprosy and TB services in a coordinated and harmonized manner, and is a step towards harnessing efforts of key actors in the fight against the three diseases.

Main objectives and strategic interventions in the plan focus on putting a system for drug susceptibility testing, diagnosis and treatment of drug resistant TB. This will be the first plan addressing in detail the MDR-TB challenges. Other key areas include; child hood TB, TB-HIV collaborative activities, early TB diagnosis and treatment of all patients identified. Identifying, managing preventing disabilities and rehabilitation are key areas for Leprosy disease, all building on the principals and components of the three pillars of end TB strategy. Promoting partnership with service providers and engaging Civil Society Organizations (CSOs) while empowering the communities and supporting Community Health Workers (CHW) as per country CHW policy are well addressed. In all areas the emphasis is to ensure relevant policies and guidelines are put in place so as to maintain national as well as international standards, social protection and human rights for Leprosy and TB clients and their families. Strengthening Institutional capacity by recruiting and retaining dedicated and competent staff has been given a priority. Finally roles for various players are provided in this strategic plan.

The government is committed to play its role as a custodian of the plan in ensuring human resource is available, strengthen health systems and increase her domestic contribution in order to achieve goals and objectives of the NLTP –SP (2016-2020). At this juncture let me appreciate the financial and technical support and contribution extended to our country by many players in particular our Development Partners and Implementing partners mentioning only few such as; Global Fund, WHO, GRLA and Solthis.

.....

.....

Minister for Health and Sanitation

---

<sup>1</sup> Country statistics and global health estimates by WHO and UN partners-2012

## **ACKNOWLEDGMENTS**

For some time now the National Leprosy and TB program operated with the draft NLTB strategic plan (2013-2017). Although it has served certain functions, yet it has fallen short in its design as new global developments have come up especially in areas of laboratory diagnostics, MDR-TB management, and more so with New Development Goals, ending Millenium Development Goals, and “end TB strategy” i.e. with a paradigm shift of Global plan to end TB. As a result a need to develop and update a new plan has come up.

Country dialogue and participation of various stakeholders took place during the process of developing the plan. This would not have been possible without an enabling environment provided by the Government, financial support from Global Fund (GF), Centers for Disease Control (CDC) and technical support from World Health Organization (WHO). I therefore extend my sincere thanks to CDC/WHO/GF. Together with my team we acknowledge the facilitation guidance from Dr. Binagwa, F.A; a consultant presented to us by World Health Organisation. Let me appreciate the commitment, and hard work by all participants who attended the stakeholders’ workshops organized by the National TB and Leprosy Program Central Unit on behalf of the Ministry Of Health and Sanitation. I thank my colleagues and implementing partners for committing their precious time despite their busy schedules. The Chief Medical Officer (CMO) and Director of Disease Prevention and Control in the MOHS deserve a note of thanks, for they provided approvals of various requests and guidance to make the process achievable. ***We need ALL to control ONE because it takes ONE to infect ALL*** ***M.A. Lamin***

Dr. Lynda Foray  
Programme Manager  
National Leprosy and Tuberculosis Program  
Ministry of Health and Sanitation

## EXECUTIVE SUMMARY

The process of developing the National Leprosy and Tuberculosis Strategic Plan (NLTP-SP) 2016-2020 was a participatory one; it took into consideration the previous Country dialogue during the development of Short Application process (SAP) for Country Coordinating Mechanism (CCM) submission to Global Fund (GF). In addition two stakeholders' strategic planning workshops, two Program and Monitoring and Evaluation review meetings contributed towards the development process.

The current NLTP-SP (2013-2017 has been in a draft form and the one for 2007-2011 was not evaluated, as a result data analysis information for the new NTLTP-SP (2016-2020) utilized the Epidemiological and Impact Analysis (EPI) results (October 2015), together with NLTP data, reviews and reports. Planning was guided by the toolkit to develop a national Strategic plan for TB; 'End TB strategy'- 'Global Plan to stop TB' with '90% (90%) 90%' targets by 2035<sup>2</sup>. The National documents were consulted to ensure that the plan was in alignment with country strategies especially the Health Sector Recovery Plan, Agenda for change and Basic Package of Essential Health Services.

A country situation analysis, health profile and systems were reviewed to reveal their impact on the delivery of Leprosy and TB services. Issues arising from the desk review are presented in NLTP-SP (2016-2020) and contributed in formulation of a detailed gap analysis. Epidemiology of Leprosy/TB disease is presented as part of past performance which indicates that; Sierra Leone was not going to meet the Global Partnership and Millennium Development Goals (MDG) in halving prevalence and incidence levels from those of 1990 by 2015. Mortality and Treatment outcome targets have been met. Although treatment targets have been met yet a number of districts performed below national targets. Lost to follow-up rates are high, this was attributed to; limited access to services, stigma and discrimination and limited resource for follow up. District variations were noted in; TB case notification rates and community referrals, which may indicate missed TB cases. Child under diagnosis due to lack of integration of TB services with those of maternal and child services is a challenge. TB-HIV coinfection remained at 12% since 2013. Only 68% of TB-HIV clients were put on ART and 61.5% received Cotrimoxazole Preventive therapy (CPT) partly because of limited TB-HIV collaborative activities (2015 NLTP draft data).

A number of policies to engage private service providers and Civil Society Organizations (CSOs) to integrate TB into community based TB services are not yet in place, although Private service providers' contribution to TB case (all forms) notification increased from 5% in 2013 to 10% by 2015, yet more could be done. As for drug resistance TB, the country has not started diagnosing and treating MDR-TB patients because of; weak laboratory capacity, lack of a national system for Drug Susceptibility Tests (DST) and modern laboratory diagnostics. Although the process to establish the system to start diagnosis and treatment have started. Program management has gone through tough times with limited staff and capacity.

Strengths, Weaknesses, Opportunities and Threats (SWOT) and detailed gap analyses were conducted to form a basis for new solutions in improving weaknesses, building on strengths, taking advantage of the opportunities and guarding against the threat and serious challenges. A summary of vision, goals, targets, objectives and strategic interventions appear below. Together with Activities they have been framed based on the analysis and took into consideration of the 'paradigm shift of Global Plan to end TB! A chapter on strengthening Institutional Capacity is included with roles and responsibilities and institution arrangement for key actors.

**Vision:** Sierra Leone is free of tuberculosis i.e. zero deaths, disease and suffering due to tuberculosis

**Goals**

---

<sup>2</sup> Global Plan to End TB- Stop TB Partnership, UNOPS 2015

**Tuberculosis:** To reduce the incidence of Tuberculosis in Sierra Leone by 20% (62 cases per 100000) population) by 2020

**Leprosy:** To reduce the incidence of grade -2 disabilities among new cases less than one per million population by 2020

### Targets

- I. Reach 85% of all people with TB and place all of them on appropriate therapy first line, second line and preventive therapy by 2020
- II. By 2020, reach 75% of the Key Population, the most vulnerable, underserved and at risk populations with access quality TB treatment and care
- III. Reach 90% treatment success rate for all people diagnosed with TB through affordable treatment services, adherence to complete and correct treatment and social support by 2020
- IV. Reach 75% of TB-affected families facing catastrophic costs due to TB by 2020
- V. Leprosy eliminated in high endemic districts by 2020
- VI. Achieve disability grade 2 among newly diagnosed Leprosy patients to 5% by 2020
- VII. The rate of plantar ulcers is reduced by reviving the OTC intor operations

### Objectives

- i. **Tb Early case detection and Treatment - Objective 1:** To increase TB case detection rate by 25% through strengthening routine case notifications and addressing vulnerable groups of the elderly, prisoners, miners and diabetics and treat 95% successfully by 2020
- ii. **Laboratory capacity- Objective 2:** To increase the laboratory capacity for bacteriological diagnosis of TB and drug resistance assessment
- iii. **Drug resistant Tuberculosis- Objective 3:** To enroll and treat all diagnosed DR-TB patients on appropriate treatment by 2020
- iv. **Childhood Tuberculosis- Objective 4:** To increase proportion of children cases aged under 15 years old, from 1.8% in 2014 to 8% among new bacteriologically confirmed +ve cases by 2020
- v. **TB-HIV collaborative activities- Objective 5:** To test all TB diagnosed clients for HIV and increase the percentage of co-infected patients enrolled for ART/CPT from 68% in 2014 to 100% and provide them with Cotrimoxazole preventive therapy by 2020
- vi. **High risk groups and risk factors- Objective 6:** To establish the magnitude of TB burden, infection risk drivers and set up TB, TB-HIV services in workplaces and the mining sector by 2019
- vii. **Leprosy- Objective 7:** To reduce the incidence of disability grade 2 among newly diagnosed leprosy cases to less than 5% by 2020 through enhancing early case finding and treatment of Leprosy patients
- viii. **Patient -Centred Care approach to Leprosy and TB care- Objective 8:** To promote and respect patient's rights while providing the best quality Leprosy and TB care based on individual needs
- ix. **Engaging Civil society Organizations, private service providers and communities- Objective 9:** To increase the number and proportion of new patients with TB (all forms) diagnosed and notified – (referred) by non-public service providers- (CHWs referral) and private health facilities from 24.1% in 2014 to 40 % by 2020
- x. **Human rights and social protection- Objective 10:** To establish the magnitude of Leprosy and TB impact and effects on the TB-affected families and reduce the effects by 75% by 2020
- xi. **Procurement supply system- Objective 11:** To develop and implement an efficient Procurement Supply Management system that ensures timely available and proper management of pharmaceutical and Health equipment and products
- xii. **Institutional Capacity and Program Management- Objective 12:** To strengthen quantitatively and qualitatively the managerial capacities of the Central Unit of the NLTP by 2020
- xiii. **Monitoring and Evaluation- Objective 13:** To establish and strengthen an integrated ME system that supports accurately and efficiently the tracking of all identified indicators for measuring TB incidence and mortality

## **Strategic (Priority) interventions**

Strategic interventions to achieve each of the 13 objectives are summarized below. Interventions under objective one are focused on; scaling up intensified case finding, improving access to care for prisoners, increasing treatment outcome and reducing lost to follow up. All the districts with low case notification rates, low treatment success rate and low community referrals are prioritized. Objective 2 which is on laboratory capacity deals with improving laboratory network in the country, laboratory performance and quality and diagnostics. Both objectives have a purpose of early diagnosis and treatment of Tb cases. Interventions for the third objective are linked to the first two objectives and they address early diagnosis and treatment of resistant Tb. Capacity for Drug Susceptibility test (DST), establishing a system for specimen transport, capacity building of staff in MDR management, improving Central Reference Laboratory equipment and infrastructure together with installing modern diagnostics (GeneXpert) are the main areas to achieve the 3<sup>rd</sup> objective of enrolling and treating MDR patients. Childhood TB has a special attention in the plan under objective 4. The focus being on integrating childhood TB services with Reproductive Maternal Newborn and Child Health, improving coordination countrywide while increasing capacity and suspicion index of service providers to screen, diagnose and increase treatment outcome with child formulation Tb medicines as per policy and guidelines. Maternal Tb is also addressed under objective four of childhood TB. HIV testing for TB patients and increased ART coverage to all TB-HIV co-infected patients and services for Key Populations is the purpose of objective five. Integration of TB and HIV services as ‘one stop shop’ while addressing co-morbidities of malnutrition and diabetes are other interventions for the same objective. There has not been a survey to understand the TB burden in the mines and work places so strategic interventions for objective 6 focus on establishing TB, TB-HIV services in the mining sector and workplaces.

Leprosy as an important component of this plan is dealt by three strategic interventions for objective 7, i.e. addressing increasing staff capacity in disease diagnosis and management, community awareness for involuntary early case detection and treatment, reporting and prevention of disability while caring for people affected by leprosy. Patient centered care approach to Leprosy and TB care with Human rights and social protection are both addressed under objectives 8 and 10 respectively. Strategic interventions for objective nine focus on engaging others i.e. supporting and strengthening community health systems for TB, HIV and Leprosy care. The interventions are on community involvement, increasing CHW’s skills so as to increase community referrals, and engaging CSOs and private service providers. Improving quality of TB and Leprosy care in the private sector as part of promoting partnership is under this objective which.

Efficient and effective delivery of sufficient and quality drugs for Leprosy, TB and TB-HIV services while ensuring they are accessible to all clients who require them is tackled by strategic interventions under objective 11. The priority interventions are on ensuring that the supply management chain is running smoothly. Program management and Institutional capacity strategic interventions fall under objective 12. Resources both human and financial are addressed to increase domestic funding. Coordination of program activities, representation, promoting networks with both Development and Implementing partners are prioritized under this objective. Advocacy and communication to raise the program visibility and Political Will towards ending TB in Sierra Leone are covered under the Central unit component.

Objective 13 is on M&E which is covered by the ME plan document, with details on strengthening M&E system and supportive supervision; TB prevalence and infection drivers’ survey, program evaluation, capacity building in M&E skills and indicators for the targets are presented in M&E plan. Sub-activities for each key activity are detailed in the Operation plan with quantity, time frame and responsibilities. The strategic interventions bridge the core, operation and M&E plans as a result they appear in all three plans and in order to link them, the numbering system has been maintained.

The success of the NLTP-strategic plan depends on the availability of financial resources and capacity to absorb them and competent human resource especially at all levels. Roles and responsibilities of various players in implementation of the strategic plan are indicated in the plan and mitigation measures in case there are unforeseen threats to the strategic plan. The total cost of implementing the strategic plan is.....USD.

# **CHAPTER 1: PURPOSE AND PROCESS OF NLTP STRATEGIC PLAN DEVELOPMENT**

## **1.1 PURPOSE OF THE NATIONAL STRATEGIC PLAN**

### **1.1.1 Current draft Strategic plan**

The new National Leprosy and Tuberculosis Strategic plan Leprosy (NLT-SP2016-2020) replaces the existing National Leprosy and Tuberculosis Strategic Plan (NLTSP- 2013-2017) which has been in a draft form since its development. Although, it informed the Global Fund Transitional Funding Mechanism- (TFM) 2014-2015 and the Simplified Application Process Request- 2016/17(SAP) submitted to the Global fund in 2015. The strategic plan for 2007-2011 was not evaluated, however, Epidemiological Analysis (EPI) analysis was conducted in October 2015. Together with a tool developed during desk review they informed the development of the NSP for Leprosy and TB 2016-2020.

### **1.1.2 Rationale for developing NLTP SP**

The NSPLT is in line the National Health Policy (2009) of free health care services for women and under 5 year children and guided by the following; The Agenda for Prosperity (A4P)<sup>3</sup> after expiration of the Agenda for Change in 2012<sup>4</sup>. The National Health Sector Strategic Plan (NHSSP) 2010-2015, the Basic Package of Essential Health Services (BPEHS-2010), Free Health Care Initiative (FHCI, 2010), Joint Program of Work and Funding (JPWF, 2012-2014), National Health Compact (2011), Results and Accountability Framework 2010-2015 (2011) and Health sector recovery plan (2015-2020). Globally the plan is guided by, ‘the end TB strategy-Global Plan to stop TB, data from WHO country profiles, TB strategic Investment Framework –February 2014, and the ending Millenium Development Goals (MDG) and Sustainable Development Goals (SDG). The NSP will be a basis for for costing and funding support from the Development Partners (DPs). The plan provides a platform around which imlemeting Partners, will deliver Leprosy and TB, TB-HIV services in a coordinated and harmonized manner. The development process used establishes a baseline indicators and targets against which the progress and impact of Leprosy and TB interventions will be tracked, monitored and evaluated for appropriate actions. The full package has five plans (parts) linked together i.e. core, operation, budget, Technical Assisstance and Monitoring and Evaluation (ME) plan.

## **1.2 PROCESS OF DEVELOPING- NLTSP**

The development process of the strategic plan included the Country dialogue meetings during the development of Short Application Process (SAP). Program review meeting was held under the technical support from WHO, GLRA and Solthis. Several other consultation meetings took place; all attended by NLTP staff from the national to the district level, the Development and implementing partners. A stakeholders meeting was held to confirm and review national priorities for inclusion in the CCM-SAP. Under the facilitation of the external consultant a desk review of relevant documents and reports (see reference list) was conducted, inception report including the roadmap to guide the process developed and agreed by NLTP management team and WHO technical support. A team was formed to participate in assembling the strategic plan. Participatory tools were developed to guide the key five workshops held at different times with Partners and Stakeholders for a number of days so as to ensure ownership of the planning process. Partners’ workshop had the objective of promoting collaboration between the Public and Private practitioners engaged in delivering Leprosy/TB services in Planning for NLTP SP 2016-2020. A stakeholders’ workshop to apply the findings from the desk review, partners’ workshop and EPI analysis was held. Annual program review meeting was held to input into the draft, and operation and M&E workshops were held as part development process of the Strategic Plan. Finally dissemination and endorsement meeting was held for the New NLT-SP 2016-2020.

---

<sup>3</sup> Government of Sierra Leone (2013). The Agenda for Prosperity – Road to middle income status. Sierra Leone’s third generation poverty reduction strategy paper (2013 – 2018)

<sup>4</sup> Government of Sierra Leone (2008). Agenda for Change (2008 – 2012)

## **CHAPTER TWO -BACKGROUND**

### **2.1 COUNTRY PROFILE**

#### **2.1.1 Geography, Administration and History**

The Republic of Sierra Leone which is situated on the West Coast of Africa shares borders with Guinea and Liberia countries. Its 400km coastline overlooks the North Atlantic Ocean and has approximately 71,740 sq. km land area. The climate is tropical with a hot, humid and rainy season from May to October and a dry season from November to April.

Administratively the country has four regions namely Northern, Southern, Eastern and Western area where the capital Freetown is located. The Western Area region is sub-divided into Western Rural and Western Urban. Regions are divided into 12 Districts and 149 chiefdoms. With recent decentralization, the country has been divided into 19 local councils further sub-divided into 392 wards. Each ward is headed by an elected councilor<sup>5</sup>. The country is home to about 20 distinct language groups reflecting a diversity of cultural traditions. The districts are administered by District Councils consisting of a district chairman, administrators and councilors; while the chiefdoms are governed by locally elected paramount chiefs. See annex 1- Map of Sierra Leone. Sierra Leone has a long historical and geopolitical context of poverty, high illiteracy rate characteristics of a country that is recovering from disasters including the prolonged 12-year civil war that ended in 2002, followed by Cholera outbreak and of recent Ebola Virus disease.

#### **2.1.2 Population**

The last Population and Housing Census conducted in 2004, indicated that the population of Sierra Leone was 5.0 million people; with the country's projected population for 2014 at 6.2 million where 42% is below 15 years and 61% living in rural in 2013 compared to 63% in 2004 See annex 2 -Population pyramids of the general population. According to the World Bank data the population annual growth has declined from 3.82% annual rate in 2004 to 1.84% by 2013. The population increased in size by 40 496 over the last 4 years. There were no changes in population structure.

In 2009 the Government of Sierra Leone revised its National Population Policy to address fundamental issues of population. In 2013 a country demographic survey was conducted and gave key features on demography where Fertility rate dropped to 4.9 in 2013 compared to 5.1 in 2008. The use of modern family planning method improved to 15.6% in 2013 from 6.7% in 2008.

#### **2.1.3 Economy**

The performance of the Sierra Leonean economy which is predominantly agriculture then services and mining has been declining since the post-independence era, with its greatest decline during the 10-year civil conflict. Since the end of the conflict in 2002, several measures have been put in place to improve the economy and the quality of life of the people. Measures put into place included the introduction of five-year development frameworks such as the Poverty Reduction Strategy Papers (PRSP), the Agenda for Change, and the Agenda for prosperity.

The Agenda for Change enabled the economy to grow at an annual average of 6 percent between 2007 and 2012, and Economic recovery had picked up with GDP growth rate recorded at 6% in 2013. With Ebola outbreak in 2014 gains were reverted back. The mining sector accounted for 12 percent of GDP in 2012 (SSL, 2012), mainly due to the discovery and mining of iron ore in 2011 in the Northern region. The Gross National Income (GNI) per capita (current dollar, purchasing power parity (PPP) is \$1,690 while the GDP growth rate was 6% in 2013. Poverty

---

<sup>5</sup> Health sector Recovery Plan/ Basic Package

headcount ratio at \$1.25 a day (PPP) (% of population) was 56.6% in 2011. The Human Development Index rank for Sierra Leone is 177 out of 187 countries<sup>6</sup>.

Unemployment Rate in Sierra Leone averaged 3.38 percent from 2004 until 2013, reaching an all-time high of 3.4% in 2005 and a record low of 3.2% in 2013. Unemployment Rate in Sierra Leone is reported by the Statistics Sierra Leone<sup>7</sup>. Youth unemployment was a major cause of the 11-year civil war in Sierra Leone and remains a serious threat to the peace that is currently enjoyed in the country. An estimated 800,000 youths between the ages of 15 and 35 are actively searching for employment and remains high at 70%<sup>8</sup>.

## 2.2 HEALTH CONTEXT

### 2.2.1 Performance of Millennium Development Goals (MDGs)

With a life expectancy of 45.6 years in 2013 (WB); high maternal and neonatal mortality rate, Sierra Leone presents as one of the Country with poorest health indicators in the world. As it appears from the data below, with exception of TB and Malaria; Sierra Leone is unlikely to meet MDGs by end of 2015. Although prior to the onset of the Ebola outbreak in 2014, Sierra Leone had made substantial progress towards a number of MDG's targets for health and nutrition.

**Table 1 Millenium development goals**

Indicator	Statistics	
	Baseline*	Latest**
Under five mortality rate per 1000 live births	268	161
Maternal Mortality rate per 100000 live births	2300	1100
Deaths due to HIV/AIDS per 100000 population	20.2	54.2
Deaths due to Malaria per 100000 population	276	101.8
Deaths due to be among HIV negative people per 100000 population	90	43

Source: Country statistics and global health estimates by WHO and UN partners 2012

\*1990 for under-five mortality and maternal mortality; 2000 for other indicators

\*\*2012 for deaths due to HIV/AIDS and malaria; 2013 for other indicators

### 2.2.2 Disease burden and cause of deaths

The burden of disease is dominated by preventable communicable diseases with the majority of childhood mortality attributed to malaria as major cause of illness, others are; diarrhoea, acute respiratory infections and neonatal conditions. The major causes of deaths in the country are attributable to nutritional deficiencies, pneumonia, anemia, malaria, tuberculosis and now HIV/AIDS<sup>9</sup>. In terms of top 10 causes of death (causing about 57%), Lower respiratory infections was the leading cause of death, followed by Tuberculosis killing 8.1 thousands people in 2012<sup>10</sup>. As regards to EVD by March 2015, the country had witnessed 8,300 confirmed cases and 3,180 deaths<sup>11</sup>. Evidence shows that poor health systems, weak infrastructure, lack of infection prevention and control measures contributed to the rapid spread of Ebola. The health and sanitation sector experienced a range of direct and indirect effects as a result of the epidemic, with the potential to reverse recent progress towards the MDG targets.

<sup>6</sup> UNDP (2014). Human Development Report. New York, UNDP

<sup>7</sup> 2015 Trading Economics

<sup>8</sup> UNDP-Sierra Leone; Tackling Youth Unemployment in Sierra Leone

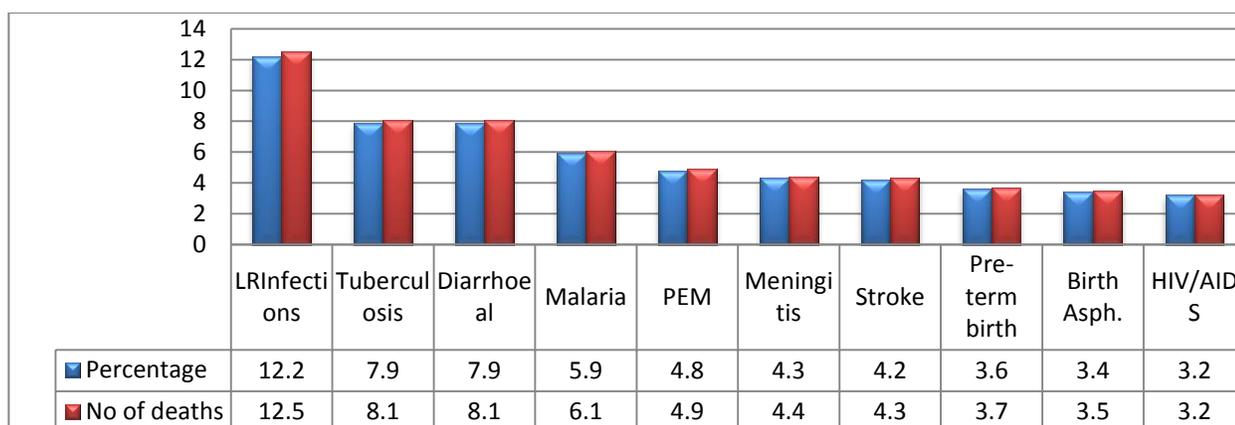
<sup>9</sup> National Health sector Strategic Plan (2010-2015)

<sup>10</sup> Country statistics and global health estimates by WHO and UN partners-2012

<sup>11</sup> WHO (2015). Ebola Situation Report March 04, 2015. Geneva, WHO. <http://www.who.int/csr/disease/ebola/situation-reports/en/>;

Accessed 11 May, 2015

**Figure 1 Top 10 causes of deaths in 2012**



Source: Country statistics and global health estimates by WHO and UN partners-2012

### 2.2.3 Non communicable diseases (NCD)

In terms of proportional mortality percentage for total deaths, all ages both sexes; communicable, maternal, perinatal and nutritional conditions contribute 66% of total deaths (102,000), where NCD are estimated to account for 12 % of the total deaths. Diabetes 2%, CVD 9%, cancers 2%, Other NCD 12%, injuries 8% and chronic respiratory diseases 1%. This data indicates the presence and impact of NCD in the country<sup>12</sup>. The National STEPS survey for the prevalence of risk factors for NCDs conducted in November 2009 indicates that, the majority (99%) of the population is exposed to at least one risk factor such as; tobacco smoke, consumption of less than 5 servings of fruits and/or vegetables on average per day, low level of physical activity, overweight, or raised blood pressure. 27% of the population is exposed to 3 to 5 of these risk factors. Evidence from hospital-based morbidity data also shows an increasing trend of cardiovascular diseases including hypertension and strokes; diabetes; cancers; sickle cell disease and epilepsy (MoHS, 2013).

### 2.2.4 Progress in essential services prior EVD

Based on the results of the preceding two Demographic and Health Surveys (DHS 2008, 2013) there have been notable coverage gains in access to essential services – including modern contraception (7% to 16%), skilled birth attendance (42% to 62%), malaria bed net utilization (26% to 49%), malaria treatment (6% to 77%), diarrhea management (68% to 88%) and basic immunization (DPT3 54% to 78%) (Measure DHS and Statistics Sierra Leone, 2008) (Measure DHS and Statistics Sierra Leone, 2013).

Levels of stunting among children under five have been reduced from 34% to 29%, and wasting from 7% to 5% (MoHS UNICEF and Irish Aid, 2014)<sup>13</sup>. Infants under 6 months who are exclusively breastfed tripled from 11% in 2008 to 32% in 2013, the 2014 National nutrition Survey reported 58.8%. Levels of anemia are high (79.9%), and only half of children regularly consume foods rich in Vitamin A (Measure DHS and Statistics Sierra Leone, 2013). The results point to have more women and children still at risk of weak immune status.

**Table 2 Main National Health Indicators**

Indicator	2013	2004
-----------	------	------

<sup>12</sup> WHO –Noncommunicable Diseases Country Profiles. 2014

<sup>13</sup> National Nutrition Survey (2014) Essential basic health package

Infant Mortality Rate (rate per 1,000)	107.2	130.1
Under-fives Mortality rate (rate per 1,000)	160.6	208.1
Maternal Mortality Ratio (Rate per 100,000)	1100	1165 (2005)
Neonatal Mortality rate	44.3	50.7
Child stunting rate (%)/Underweight	38/16	
Total fertility rate (overall)	4.9 urban 3.5, rural 5.7	5.1 urban-3.8, rural 5.8
Life expectancy at birth females in years	45.8	41.8
Life expectancy at birth, total (years)	45.6	41.3
Life expectancy at birth males in years	45.3	40.9
Birth rate, crude (per 1000 people)	36.6	42.2
Use of improved drinking water source	61%	50.3%

Source: Various including SLDHS 2004/2013

## 2.3 HIV SITUATION IN SIERRA LEONE

According to SLDHS 2013, HIV prevalence was 1.5% among adults ages 15-49 years, which was constant compared to 2008 SLDHS. HIV prevalence in women was 1.7% highest in women between 35-39 years at 2.6%. In men HIV prevalence was 1.3% and peaks at 2.9% in men aged 30-34 years. HIV prevalence in urban was twice that in rural areas at 2.3%, while Western region has the highest HIV prevalence of 2.7%. The SL Spectrum 2014 puts the population living with HIV to be 55,544 and children 0-14 years at 3,832. The same spectrum puts the adult population requiring ART to be 47,856 and children 1,189. The estimated number of HIV –Positive pregnant women in need of PMTCT services was 3,239 in 2013<sup>14</sup>. SL HIV Program data 2013 report that 2,452 were TB/HIV co infected, the estimate of 5% of patients in HIV care are co-infected with TB. The HIV prevalence among sex workers was 8.5%, among Men having sex with Men (MSM) HIV prevalence was 7.5% and People who Inject drugs (PWID) was 1.4%. Another group experiencing concentrated epidemics includes police with HIV prevalence of 5.8%, fishermen and women had HIV prevalence of 3.8%, military- 3.3% and migrants 2.2% respectively<sup>15</sup>

The Mode of transmission (MOT)<sup>16</sup> done in Sierra Leone identified population groups having high incidence and at higher risk of getting HIV in Sierra Leone include (with their incidence contribution); fisher folk (10.8%), traders (7.6%), transportation workers (3.5%) and mining workers (3.2%). Sex workers and their clients and partners accounted for an estimated 39.7% of new infections, while MSM and Intravenous Drug Users (IDU) with incidence contribution of 2.4% and 1.4% respectively.

## 2.4 HEALTH CONTEXT

### 2.4.1 Health care levels

The health care level system is organized into three levels i.e; Peripheral Health Units (PHU) with the extended Community Health Worker (CHW) programme; District Hospitals; and Referral Hospitals The district hospital provides back-stopping for the PHUs and provides outpatient, inpatients and diagnostic service for referred cases lower level (PHUs) and the population living within its immediate environment. District health services are managed by District Health Management Teams (DHMT).

<sup>14</sup> Sierra Leone Spectrum 2014

<sup>15</sup> UNAIDS Population size estimate 2013

<sup>16</sup> UNAIDS Population size estimate 2013

The tertiary level comprises of specialized hospitals including Lakka Government Hospital, Ola Doring Children's Hospital, Princes Christian Maternal Hospital (PCMH) and Connaught Hospital. Three regional Hospitals (namely Maken, BO and Kenema Hospitals are gradually being upgraded to serve as tertiary referral hospitals.

#### **2.4.2 Health care network**

The Sierra Leone's health system is served by a network of 1,264 public and private health facilities, including 40 hospitals, 23 of which are government owned and the rest are private and non-government and faith based organizations<sup>17</sup>. The Government public services account for approximately 80% of health service utilization. There were 772 health facilities in the country prior to the civil war that started in 1991. By the end of the conflict in 2002 there were 406 facilities remaining and by the end of 2014 there were over 1000 health facilities nationwide. *See annex 4 for Distribution of health facilities in Sierra Leone*

## **2.5 NATIONAL HEALTH POLICY, SYSTEMS AND STRATEGIES**

### **2.5.1 Health policy and strategies**

In 2009 the Government of Sierra Leone introduced the National Policy for free health care services. The National Health Sector Strategic Plan (NHSSP) 2010-2015 was developed with a reducing inequalities and improve the health of the people. Key interventions are defined in the Basic Package of Essential Health Services (BPEHS). Priority emphasis has been placed on prevention and control of communicable and selected chronic and non-communicable diseases, as well as on trauma and related injury, Reproductive and Child Health, adolescent health, and the well being and health of vulnerable groups. The health sector of Sierra Leone should be viewed within the broad historical, socio-economic and geo-political context of high rates of poverty and illiteracy; a country still in the process of recovery from crises including the civil war (1990-2002); the cholera epidemic (2012); and currently the EVD outbreak (2014-present). *See annex 5 for health specific performance indicators*

The Agenda for Prosperity (A4P)<sup>18</sup>, Sierra Leone's third generation poverty reduction strategy paper was developed following an expiration of the Agenda for Change in 2012<sup>19</sup>. A4P prioritized strengthening health programmes. Basic Package of Essential Health Services (BPEHS, 2010) specifies a prioritized but limited package of high-impact and cost-effective interventions to address the major causes of death and diseases in Sierra Leone. Free Health Care Initiative (FHCI, 2010) was introduced in the first year of the NHSS Plan (2010 – 2015). Joint Program of Work and Funding (JPWF, 2012-2014) is a multi-year framework that aligns interventions to key sector priorities. National Health Compact (2011), is a framework outlining roles and responsibilities of the Government of Sierra Leone and its partners regarding implementation of the NHSSP (2010 – 2015), JPWF (2012 – 2014) and BPEHS (2010). Results and Accountability Framework 2010-2015 (2011), articulates the M&E requirements to support health services management and how to engagement of stakeholders. Health Sector Recovery plan purpose is to strengthen the overall resilience of the health system.

### **2.5.2 Health systems analysis**

#### **2.5.2.1 Health system development**

Health system's performance impacts Leprosy and TB program directly. 12 years after the war the health system remains weak and vulnerable to epidemics. In 2012 the country suffered a cholera epidemic which sent early signals on the weaknesses of the health system.

#### **2.5.2.2 Leadership and Governance**

A number of partners are engaged in the health sector with the major external supporters being: The Global Fund to Fight AIDS, TB and Malaria (The Global Fund), the UK Government (DFID), ) African Development Bank Group

---

<sup>17</sup> Health sector recovery plan

<sup>18</sup> Government of Sierra Leone (2013). The Agenda for Prosperity – Road to middle income status. Sierra Leone's third generation poverty reduction strategy paper (2013 – 2018)

<sup>19</sup> Government of Sierra Leone (2008). Agenda for Change (2008 – 2012)

(ADB)the World Bank (WB) group, European Union (EU), and GAVI<sup>20</sup>. With EDV others include: DFID, Germany Agency for International Cooperation (GIZ), Norwegian Agency for Development Cooperation (NORAD), United States Agency for International Development (USAID), Bill and Melinda Gates Foundation, Control of communicable Diseases (CDC), Global Ebola Response<sup>21</sup>. The major coordination challenge facing the Government is having limited leverage to hold implementing and donor partners accountable for results<sup>22</sup>. One of the MOHS Flagship Programs, and a priority within the HSRP is the establishment of the Service Level Agreements (SLAs), a mechanism for tracking and coordination of the implementation of health activities within the country. A SLA management unit is currently being established within the HSS Hub and over 15 SLAs have already been approved with several others currently undergoing review.

### 2.5.2.3 Service delivery

Despite the efforts to improve the availability of services<sup>23</sup>, gaps in the quality of health care still persist. While 90% of health facilities provide MCH services the quality of these services remains sub-optimal. Only 1% of health facilities had basic amenities<sup>24</sup>, including standard measures for ensuring patient safety<sup>25</sup>. Just 35% of facilities had basic equipment required for service delivery<sup>26</sup>. Despite a recent effort to strengthen 13 hospitals and 65 CHCs nationwide and upgrade them to EmONC status, an assessment conducted in July 2014 suggested not a single facility had been sufficiently upgraded to meet standards across the seven domains assessed – with a lack of necessary equipment, staffing, supplies, water and sanitation noted as frequent obstacles<sup>27</sup>. The HSRP Essential Health Services pillar aims to restore services that were disrupted to their pre-Ebola coverage levels.

### 2.5.2.4 Human resources

According to a recent (August 2015) analysis of payroll data and the HRIS database, there are currently 275 doctors, 291 midwives, 1,394 nursing officers and state registered nurses, and 2,815 state-enrolled community health nurses in the civil service.<sup>28</sup> Furthermore, health workers were disproportionately affected by the Ebola outbreak, with 124 Ebola deaths among health workers (Health Facility Assessment Report, March 2015). By January 2015, a total of 296 health care workers are known to have been infected with EVD with 221 deaths, including 11 specialized physicians<sup>29</sup>. Sierra Leone faces a chronic shortage of skilled human resources and in order to meet the WHO minimum standard of 22.8 skilled health workers for 10,000 population, Sierra Leone requires approximately 14,000 health workers (4,000 doctors and 10,000 nurses). As of 2010, Sierra Leone had only 2 skilled providers per 10,000 population, and the country ranked fourth from the bottom of a list of 49 priority low-and-middle-income countries for health worker-to-population ratios<sup>30, 31</sup>. Based on the recent Human Resources for Health Strategic Plan, 64% of skilled health worker posts are currently vacant.

Like other health services Leprosy and TB services are affected by un-equal distribution of health professionals, where 50% are concentrated in capital city-Freetown, even then numbers are small where only 185 doctors are in position in the entire country. No post graduate exists for medical practitioners, and therefore the health workforce is currently dominated by auxiliary level workers – MCH Aides and CHOs. Another factor that contributes to poor productivity is a limited structured in- service training and no continuing professional development program for

---

<sup>20</sup> WHO (2014). "Sierra Leone Country Profile"

<sup>21</sup> WHO EBOLA OUTBREAK TO RECOVERY-Sierra Leone Progress Report 2015

<sup>22</sup> CCM Short Application Process 2015

<sup>23</sup> including a network of nearly 1,200 PHUs, task-shifting, and the Free Care Initiative which reduces financial access barriers for pregnant women, lactating mothers and children under 5

<sup>24</sup> Sanitation facilities, Emergency transport, Consultation room, Improved water supply, Communication, Power supply and internet connection

<sup>25</sup> WHO (2012). Service Availability and Readiness Assessment: Sierra Leone, WHO

<sup>26</sup> Thermometer, stethoscope, adult and child scales, BP apparatus and light source

<sup>27</sup> Ministry of Health and Sanitation (2014). Facility-Improvement-Team-and-QuICFIT-Assessment-Report (2014). Summary of Health Facility EmONC Readiness July 14

<sup>28</sup> 2015 Mid-Year Performance Report for HRH, 20 August 2015

<sup>29</sup> WHO (2015). <http://apps.who.int/ebola/en/status-ouTbreak/situation-reports/ebola-situation-report-7-january-2015>. Accessed 11 May 2015

<sup>30</sup> Chen, L., T. Evans, et al. (2004). "Human resources for health: overcoming the crisis." *Lancet* 364: 1984-1990

<sup>31</sup> WHO. (2014). "Global Atlas of the Health Workforce " Retrieved February 11, 2015

health care workers at all levels. The availability of funds remains a major challenge to filling vacancies, with large numbers of recent graduates staffing health facilities in a voluntary capacity<sup>32</sup>. To address urgent shortages, a national community health worker policy was established in 2012, with nearly 13,000 CHWs trained and supported by local and international NGOs to provide a range of services including integrated community case management (iCCM),

#### **2.5.2.5 Health care financing and Partners**

Total health expenditure is approximately \$95 per capita – of which 13% comes from donors, 16% from government, and 76% from private out-of-pocket household contributions ([Government-of-Sierra-Leone 2010](#); [WHO 2014](#)). Government expenditure on health as a percentage of total government expenditure is just 12.3%, approaching the 15% target of the Abuja Declaration<sup>33</sup>. However, 61.1% out of pocket is very high and makes health care inaccessible for the average Sierra Leonean who is likely to live below the poverty line. The government is heavily reliant on donors for support of its health services with funds flowing through budget support or directly to the Ministry and implementing partners. Major external supporters of the health sector include The Global Fund to Fight AIDS, TB and Malaria (The Global Fund), the UK Government (UKAid), European Union (EU), African Development Bank (ADB), and GAVI<sup>34</sup>.

#### **2.5.2.6 Health information system**

The National health information system is faced with a range of challenges<sup>35,36</sup>, which include, delays in submission and lack of completeness of reports on service provided and utilization of drugs and supplies collected from facilities. At the central level reports submitted by the districts are not consistently entered into the national database, and the MoHS often struggles to provide relevant national- or district-level data on demand. Finally, data from hospitals are not yet captured in the system.

#### **2.5.2.7 Medicines, Health Products and Vaccines**

Despite efforts under the Free Health Care Initiative, essential medicines remained scarce, particularly at PHUs. Stock-outs of essential medicines occur far too frequently. A recent survey noted an average of just 28% of 14 tracer medicines<sup>37</sup> were available at the time of assessment, with just 1% of facilities having the full list in stock. When limited to the availability of the five national priority medicines, only 17% had all in stock with average availability of 71%<sup>38</sup>. Supply chain management is based on a ‘push system’; a more effective supply management system would be a ‘pull system’.

## **2.6 DISEASE TRENDS -EPIDEMIOLOGY**

### **2.6.1 Leprosy disease burden 2001-2013**

#### **2.6.1.1 Introduction**

The burden of Leprosy disease presented here is the trend in cases reported, those with disability grade two and the proportion of children affected. a target set by the World Health Organization (WHO), yet a number of new cases continue to be notified annually from few districts. The three major indicators in 2013 indicate that there were still challenges in addressing Leprosy disease, e.g., the disability grade 1 and 2 among new cases was 20%, and 11% respectively, whereas the child proportion of New Leprosy cases was 11% in 2013.

---

<sup>32</sup> Ministry-of-Health-and-Sanitation (2012). Joint Programme of Work and Funding 2012-2014. National Health Sector Strategic Plan 2010-2015, Government of Sierra Leone

<sup>33</sup> Ministry of Health and Sanitation (2015). National Health Accounts, 2015

<sup>34</sup> WHO (2014). "Sierra Leone Country Profile

<sup>35</sup> Ministry-of-Health-and-Sanitation (2011). Free Health Care Initiative Report: April 2010-March 2011. 2

<sup>36</sup> Ministry-of-Health-and-Sanitation (2012). DHIS Data quality assessment

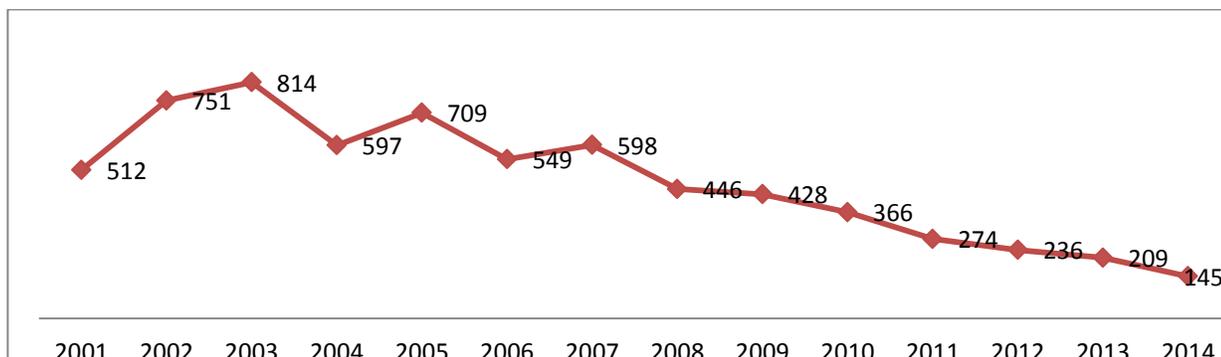
<sup>37</sup> Amitriptyline, amoxicillin, atenolol, captopril, ceftriaxone injection, ciprofloxacin, co-trimoxazole suspension, diazepam, diclofenac, glibenclamide, omeprazole, paracetamol suspension, salbutamol inhaler and simvastatin

<sup>38</sup> WHO (2012). Service Availability and Readiness Assessment: Sierra Leone, WHO

### 2.6.1.2 Trends in cases notification

Following the introduction of Multi-Drug Therapy (MDT) in 1983 the prevalence of Leprosy has gradually decreased over years, e.g. it decreased from 512 in 2001 to 202 cases at the end of 2013, see figure below.

**Figure 2 Number of cases notified**

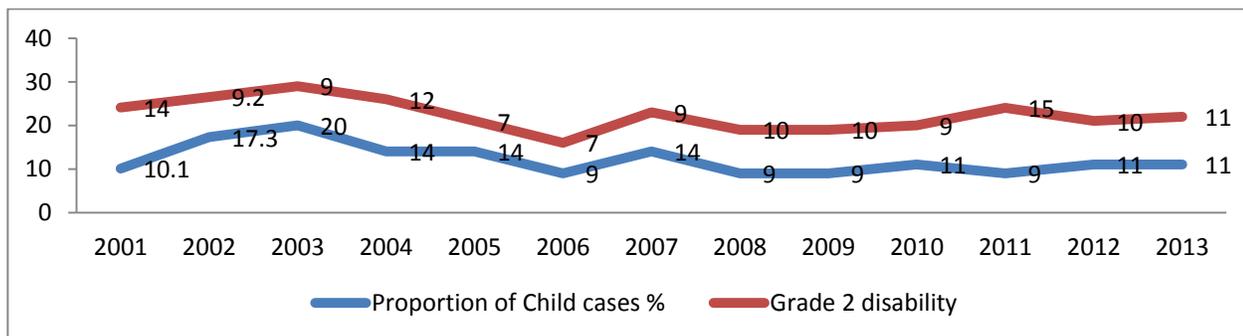


Source: NLTP Annual program data 2015

### 2.6.1.2 Proportion of Children among new cases

The child proportion in 2001 was 10.1% and peaked at 20% in 2003, then gradually decreased to 9% in 2006 and stabilized at 11% between 2012 and 2013. See figure 3

**Figure 3 Proportion of children and disability grade 2**



Source: NLTP Annual program report 2014

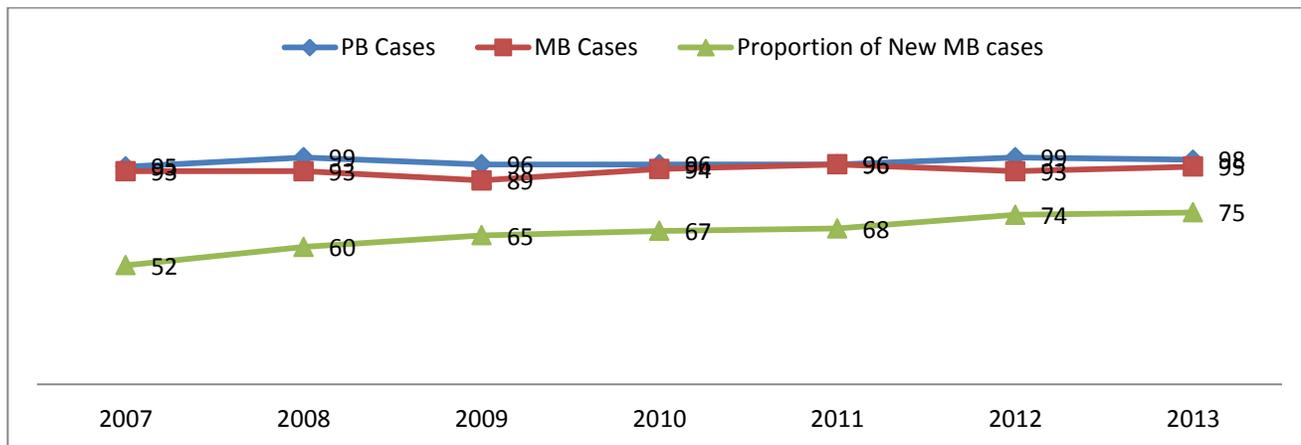
### 2.6.1.3 Trend disability grade 2 among newly detected patients

The trend in disability grade 2 from 2001 is indicated in the figure 3 above. It was highest at 15% in 2011 and lowest at 7% in 2006. With 11% of grade 2 disability in 2013, above the recommended level of below 10% by (WHO)/ILEP.

### 2.6.1.4 Case with-holding-treatment outcome trend

Treatment of Leprosy patients (both Paucibacillary (PB) and Multibacillary (MB) have been maintained above 90% over the years since 2007 except in 2009 where the MB treatment rate fell to 89%. The proportion of MB cases has increased from 25% in 2007 to 75% in 2013.

**Figure 4 Trends on treatment outcome of Leprosy**



Source: NLTP annual reports

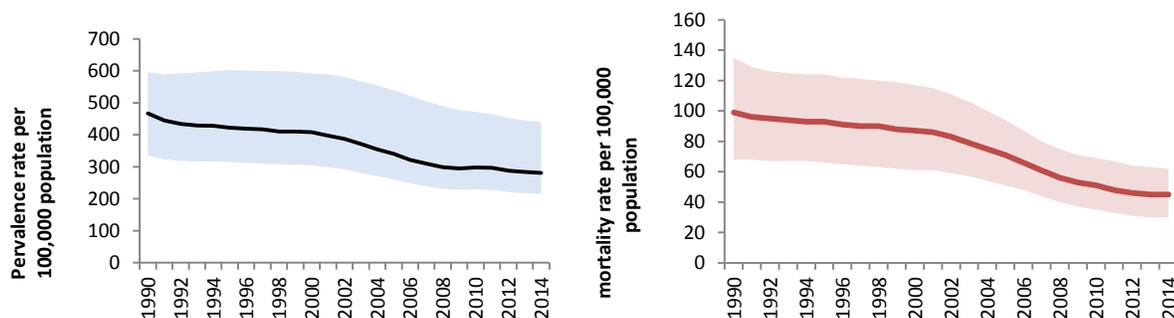
## 2.6.2 Tuberculosis disease burden and trends

### 2.4.2.1 Incidence, Prevalence, Mortality and TB-HIV co-infection

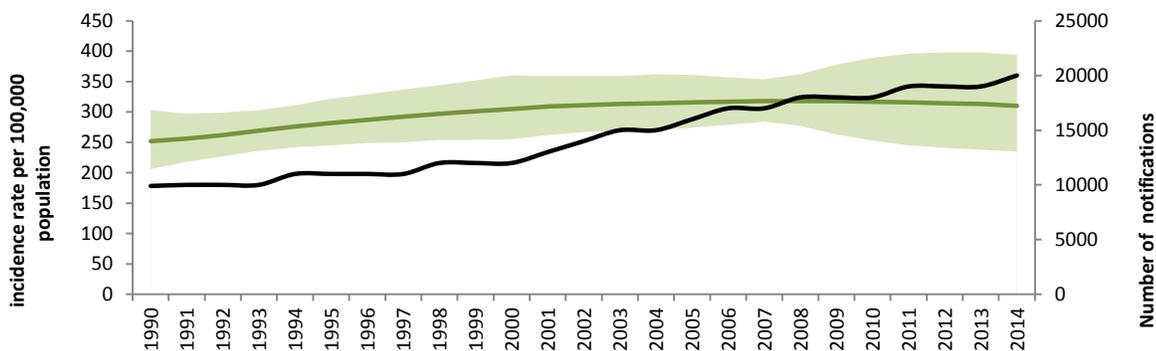
Although the prevalence of TB in Sierra Leone has been declining since 1990 to 2014, it is unlikely to reach the Stop TB Partnership targets of halving rates by 2015. With a prevalence rate of 441/100K it means around 28000 persons have active TB in the country at any time<sup>39</sup>. TB incidence should be falling to half by 2015 as compared to 1990 incidence levels. The incidence was up to 318/100K in 2008 decreasing slowly to only 310 per 100000 population. Over the last 25 years TB notifications increased from 9,900 to 20,000 cases per year.

Regarding mortality rate, Sierra Leone reached Stop TB partnership target of halving mortality rate with 45 per 100,000 population TB new and relapse mortality rate in 2014 TB from 99 per population in 1990, See figure 5a-c.

Figure 5 Trends in TB prevalence (a), Incidence (b) and Mortality(c)



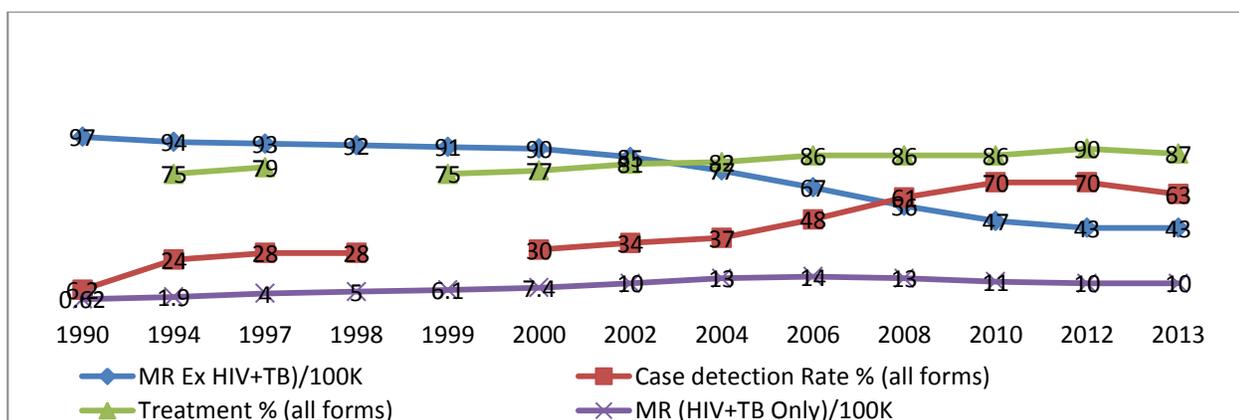
<sup>39</sup> EPI analysis, (a prevalence of 441 (95% CI: 228-722) per 100, 000 population. Around 28,000 (95% CI: 14,000-46,000)people have active TB



Source: WHO TB Global report (Tb data base)/EPI analysis

SL will likely not reach the Stop TB Partnership Global Plan target on improving case detection to at least 70% since it reached 63% [50-83] in 2013- see figure 6. SL will likely reach the target of 90% treatment success rate for new and relapse with 90% success of all newly TB registered in 2012.

Figure 6 Trends for mortality, case detection rate and treatment



Source: Source: WHO TB Global report (Tb data base)

These estimates are based TB case notifications which are unlikely to be correct as there is evidence of under-reporting of primary lost to follow-ups and deaths<sup>40</sup>.

### 2.6.2.3 TB-HIV co-infection burden

The estimated mortality rates of Tb cases who are HIV-positive per 100,000 population increased from 1990 to 2006 and fell in 2008 and less declined to 2013 from 0.62 to 14/100K and to 10/100K in 2013. With estimated deaths from TB HIV-Positive to be 600 in 2013. According to NLTP program reports the estimated incident was 0.36% in 1990, increased gradually to 6.1% in 2002, and then to 9.8% almost remained constant at 12% for three years without decline.

<sup>40</sup> NLTP -EPI analysis 2015

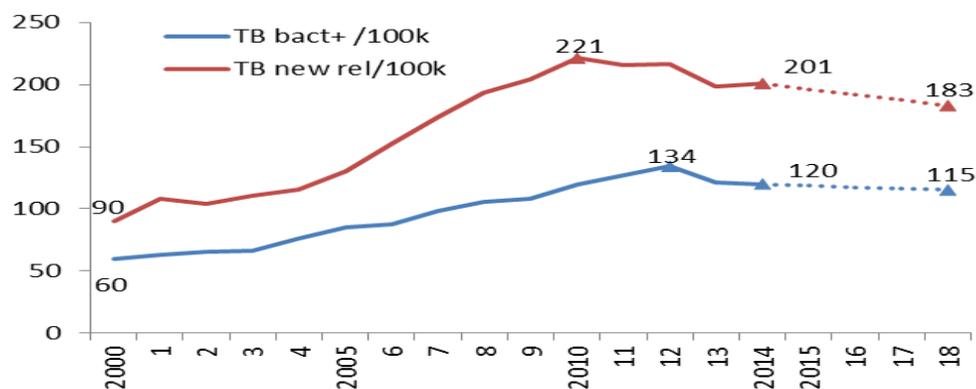
### 2.6.2.4 Burden of Multi Drug Resistant TB

WHO global report estimates the percentage of TB cases with MDR –TB to be 0.9% on the average and 23% for the retreatment cases based on national DRS study performed in 1997 and updated. On the low side with 210 Tb drug resistant from notified pulmonary and retreatment TB cases in 2013. The NLTP has not started working management of MDR-TB as well as conducting DST for patients.

### 2.6.2.5 TB case notification

**All cases and bact +ve:** TB case notification rate trend for bacteriologically confirmed (SS+) and TB new and relapse increased from 1990 peaking at 134/100,000 population and 221/100,000 population in 2010-11 then started declining. If the trend continues then CNR bact +VE will be 116.6/100K by 2017.

**Figure 7 Trend in TB cases (all forms and bacterially +ve confirmed)**



Source: WHO Tb Global data base

**Table 3 Trends in Extra-Pulmonary and relapses**

	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014
Exp	400	487	338	388	484	551	480	706	854	776	831	775	570	489	509
Relapse	44	33	47	33	123	58	130	168	62	165	82	64	94	235	276
Other rt	330	239	340	99	153	234	167	205	338	302	491	382	423	262	244

Source : WHO Country profile and NLTP

## **CHAPTER 3: NLTP STRUCTURE AND PERFORMANCE**

### **3.1 ORGANIZATION OF NLT PROGRAM**

#### **3.1.1 Policy and history**

Sierra Leone launched a National Leprosy and Tuberculosis Control Program (NLTP) in 1973 with the German Leprosy Relief Association (GLRA) serving as the main sponsor through the years. In 1983 the program initiated treatment of Leprosy with Multi-drug Therapy (MDT). In 1993 a Memorandum of Understanding (MOU) was concluded between the Ministry of Health and GLRA, an ILEP coordinating member to take on board TB treatment, in view of the results achieved in reducing the prevalence of Leprosy. The Program then became the National Leprosy and Tuberculosis Control Program (NLTCP) in 1990 with a National Coordinator heading the program. In 1993, when WHO proclaimed TB as a global emergency, the government appointed a Program Manager to head the program.

#### **3.1.2 Goals, Objectives and strategies**

The vision of NLTP is; ‘Sierra Leone free of Leprosy and Tuberculosis’, where the goal has been to reduce the Leprosy and Tuberculosis burden, and broad objectives are; to prevent transmission of the infections, thereby reducing the incidence of the two diseases. Treat all patients diagnosed and prevent the development of complications and severe disability in Leprosy. Strategically; ensuring that TB and Leprosy control is integrated into the general health services within the Ministry of Health. Leprosy and Tuberculosis services are brought as close as possible to the community and services are free of cost to the patient. The program had six main specific objectives extending from 2008-2012 strategic plan to part of the draft strategic plan 2013-2015 as follows:

##### **Leprosy**

- To reduce the prevalence of Leprosy to <1 case per 10,000 population.
- To reduce disability grade 1 and 2 among new cases to < 10%,
- To reduce proportion of children among new cases to < 5%
- To have limited the worsening of disability during treatment to < 2%

##### **Tuberculosis**

- To detect 70% of the estimated new sputum positive pulmonary TB cases.
- To raise the treatment success rate of sputum pulmonary positive TB cases to 85% and maintain that level.
- The performance of the above objectives will be presented in another section.

Please note: The achievements of the program objectives appear under section 3.2

#### **3.1.3 Functions and roles**

The Program Manager (PM) is responsible for the day to day management of the program, supervision of staff and coordination of program activities of partners and government. The manager is a link between service providers while supervising TB and Leprosy work with other stakeholders. The NLTP is under the directorate of Disease Prevention and Control, hence the manager reports to the director.

NLT program has a limited number of partners involved in Leprosy and TB implementation. On quarterly basis the NLT program organizes a program review meeting usually under the technical support from WHO, GLRA and Solthis, who also participate in program review meeting. Other partners who attend include but not limited to; UNICEF, CARDNO and GLRA. The meeting is generally attended by NLTP staff, the district, health workers from hospitals and children wards. At the central level where the Program manager functions mainly, liaises with country representative or their technical staff on Leprosy and TB issues, which may be related to supervision, advocacy and policy.

At the district level, Leprosy and TB programme activities are co-coordinated and supervised by the District Health Management Team (DHMT). The coordination and day today supervision of NLTCP activities is undertaken by the District Leprosy and TB supervisor, and collaborates closely with the district Monitoring and Evaluation unit and

other units of the DHMT. The LTB Coordinator reports to the District Medical Officer. See roles have not changed significantly they appear in chapter.

### 3.1.4 Program funding

The Leprosy and Tuberculosis program budget was estimated at USD 7.3 million<sup>41</sup> in 2013 and only a portion was funded, due to various reasons including limited absorption capacity. The trend of financing indicates that for 2013-2015 the TB program was mainly funded internationally<sup>42</sup>, where Global fund contributed over 80%. Resources from WHO is mainly provided in a form of Technical assistance such as training. Although the Government domestic funding looks little; yet the contribution is reflected in health personnel salaries and office spaces, TB treatment centres and diagnostic infrastructure provided by the government. The stakeholders' meeting indicated that there is a limited implementing partners and funding and lack of budgeting of TB activities in district plans. See table 4 below

**Table 4 TB funding contribution**

	2013	2014	2015
<b>Government revenues</b>	38,161	354,312	350,510
<b>Germany</b>	167,667	156,391	88,067
<b>WHO</b>	100,000	105,500	105,500
<b>Global Fund</b>	1,779,691	1,181,890	2,084,056
<b>TOTAL</b>	2,085,519	1,798,093	2,628,133

Source: TB Financial gap analysis 2015 for GF Short application Process

### 3.1.5 Laboratory and X-ray service organization

#### 3.1.5.1 Laboratory performance

Sputum smear microscopy has remained the main diagnostic method in the Sierra Leone, with a good laboratory network of 170 microscopy laboratories and one central reference laboratory. See annex 6. The acceptable level of performance for 102 labs controlled was 73%, the quality of diagnosis was quite unacceptable and total discordant recorded was over 20%. Three districts out of 102 had unsatisfactory performance the quality of diagnosis. Following assessment (2013), the following districts had Centres whose performance was totally unacceptable (Kagbantama-44%), Daru (40%), Rogbara (53%), Mapaki (31%). See the table below;

**Table 5 Summary of performance of 102 laboratories**

<b>No. and % of labs with satisfactory performance: 74 (73%)</b>		
<b>Number of Laboratory</b>	<b>Discordant%</b>	<b>Performance</b>
<b>63</b>	0-5	Good
<b>11</b>	>5-10	Satisfactory
<b>9</b>	>10-15	Unsatisfactory
<b>5</b>	>15-20	Poor
<b>14</b>	>20	Very poor
<b>Target for optimal performance- Zero Errors!</b>		

Source: NTLP-Annual Report 2013

<sup>41</sup> WHO country profile report

<sup>42</sup> Id

### 3.1.6 Program coverage

By the end of the war in 2002, the National TB program had a geographical coverage of 50% of the districts and the proportion of the health centres delivering TB services dropped. However, the TB treatment centres increased steadily from 99 in 2008 to 170 in 2014<sup>43</sup>, equivalent to 42% increase, giving a ratio of 1 per 36,515 at an estimated population of 6.2 million in 2014. The Country has reached the Global target at a range of 50000-100000 population per centre.

### 3.1.7 Private sector involvement

The private and NGO sector has 2 hospitals and a number of clinics providing services. As far as TB is concern, Private sector was only partly involved in TB control countrywide, with limited reporting from the military and prisons health service facilities. Contribution in case notification is indicated and increasing involvement from 2013 to 2015. Proportion of all TB smear positive cases from the Private sector, 2014-2015, increased from (364)5% in 2013 to (553) 7% in 2014 and (762) 10% in 2015.

## 3.2 PERFORMANCE OF NATIONAL PAST STRATEGIC PLANS

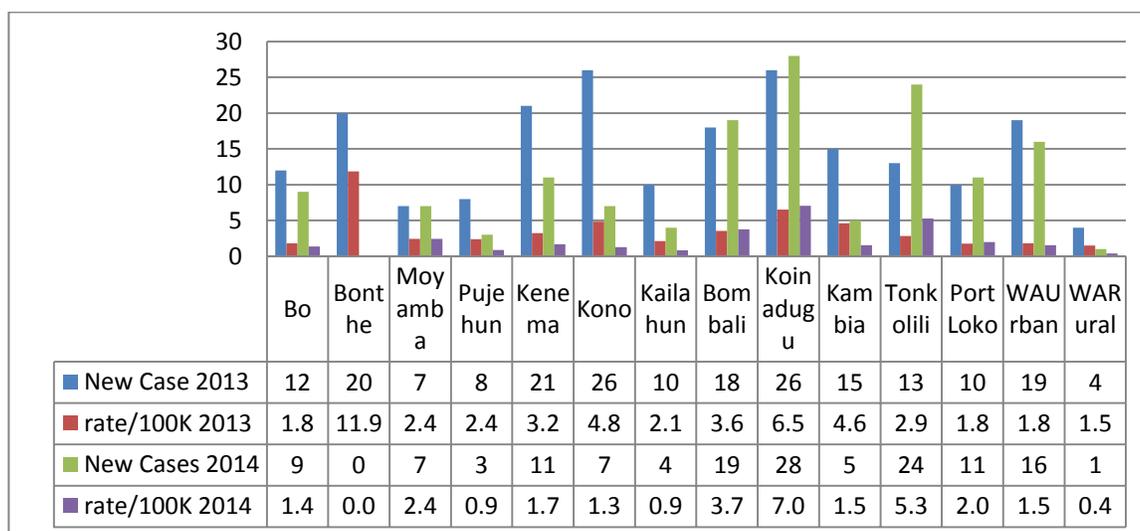
This section looks at the key performance indicators covering the draft strategic plan period of 2013-2015 and few years in the strategic for 2008-2012.

### 3.2.1 LEPROSY PERFORMANCE

#### 3.2.1.1 Case notification for 2013/2014 per district

The total number of cases reported in 2013 was 209, with a national rate of 3.1 per 100,000 population and in 2014 cases were 145 with the rate of 2.2 cases per 100000 population, showing a decrease in cases. However, almost all districts reported new cases except Bonthe district, surprisingly it had the highest rate per 100000 in 2013.

Figure 8 District Leprosy cases and rate 2013-2014



Source NTLP reports data

#### 3.2.1.2 Disability grade 2

The total disability grade 2 for 2013 was 24 with a national average rate of 0.36/100K, in 2014 it was the same situation, although the districts reported different cases and rate for instance Kenema district reported 4 cases of

<sup>43</sup> Draft program strategic plan 2013-2017

disability grade 2 in 2014 and 2 cases in 2014. Port Loko and Western Area Rural did not report cases of grade 2 disability.

### 3.2.1.3 Leprosy completion rate

The national average for treatment completion rate increased in 2014 to 96.8% from 2013 of 94.8%. Kambia and Bon districts reported well below national average i.e 66.7% and 69.2%. See annex 5 for district reporting and completion of treatment for 2013-2014

## 3.2.2 TB-HIV Collaborative activities

### 3.2.2.1 HIV Testing of TB cases

Recording and reporting tools incorporates HIV related data in addition to routine TB data used in both public and private health facilities. The program continued to monitor HIV prevalence among TB cases by testing registered TB patients and tracked the proportion of TB patients receiving HIV related interventions, including post-test counseling for HIV, those with HIV were put on ART and cotrimoxazole preventive therapy (CPT). The proportion of TB cases (all forms tested) increased from 38.8% in 2011 to 92.7% third quarter of 2015, i.e. 1378 HIV positive TB cases<sup>44</sup>. See table below

**Table 6 TB cases (all forms) tested for HIV, put on ART and CPT**

Year	Total TB case notifications	Tested for HIV		HIV positive		ART		CPT	
		n	%	n	%	n	%	n	%
2011	12943	5022	38.8	456	9.1	126	27.6	121	26.5
2012	13354	11655	87.3	1343	11.5	569	42.4	344	25.6
2013	12334	11,190	90.7	1,417	12.7	901	63.6	719	50.7
2014	12724	11048	86.8	1308	11.8	890	68.0	805	61.5
2015	11572	10728	92.7	1378	12.8	964	70.0	882	64.0

Source: NLTP- EPI Analysis October 2015

### 3.2.2.2 TB-HIV Co infection prevalence and care

TB/HIV co-infection increased from 9.1% in 2011 to 12.8% in 2015 \*3<sup>rd</sup> qtr) for TB cases (all forms) compared to increase from 6.9% TB-HIV co infection for Bact +ve in 2011 to 8.4% in 2015 (3<sup>rd</sup> qtr). Although in 2015 HIV testing was higher in sputum smear positive patients (94.4%) the proportion that were co-infected with HIV was lower. See the table below

**Table 7 Bacteriologically confirmed +ve tested for HIV**

	Total smear positive cases	Tested for HIV		HIV positive	
		n	%	n	%
2011	7435	5308	71.4	365	6.9
2012	8031	7224	90.0	567	7.8
2013	7390	6729	91.1	545	8.1
2014	7451	6862	92.1	553	8.1
2015	7436	7016	94.4	590	8.4

Source: NLTP- EPI Analysis 2015 October

Patients on ART/CPT: According to WHO and TB-HIV Policy all patients eligible for ART should receive it, although there has been an increase from 27.6% in 2011 to 70%, yet more have not been covered, where also those receiving CPT increased from 26.5% to just 64%, a percentage that is well below WHO standards.

<sup>44</sup> This may be underestimated because it was observed that HIV tests that are carried out during TB treatment are not always updated in the TB registers (EPI analysis October 2015)

### 3.2.2.3 Geographical and district variation

HIV testing did not appear to be significantly affected by the EVD crisis. HIV testing remained above 85% for TB cases in all districts in 2014 apart from in Bonthe and Bombali where only 21.6% and 76.1% of TB cases were tested, respectively. In terms of TB-HIV coinfection Bonthe, Kailahun and Tonkolili had the lowest TB-HIV coinfection prevalence of 0.6%, 1% and 1.3% with Western urban and rural having TB-HIV coinfection prevalence of 20.9% and 18% respectively above the national average of 11.8%. The proportion of TB-HIV co-infected cases placed on ART is therefore likely to be inaccurate. This is demonstrated by the reporting error in Tonkolili where more than 100% of HIV positive cases were placed on treatment.

## 3.2.3 Tb Case finding and notification

### 3.2.3.1 TB case notification (all forms) and rate and change

During the performance period as noted already, the program was able to collect data and information on TB cases (all forms), bacteriologically +VE confirmed, and negative, extrapulmonary (EP) and retreatment. The EPI analysis was conducted in October 2015 to provide the true picture of performance. From 2011 to 2015, numbers and case notification (all forms) of TB decreased and significant decreases in CNR were observed in 2013 and 2015 of 9.4% and 10.7%, respectively. Possibly due to delays in procurement of drugs or with recording and reporting. It is unlikely that the program had increased TB notifications in 2014 during the EVD crisis.

Figure 9 Tb notification (all forms) and CN rate



Source: NLTP EPI analysis October 2015

In 2014, 95.9% (12,209/12,724) of notified TB cases were pulmonary and a very low proportion of 4.0% (515/12,724) were extra-pulmonary. 62.6% (n=7,971) of TB cases were pulmonary sputum smear positive, 23.5% (n=2,990) were pulmonary sputum smear negative and 9.8% (1,248) were pulmonary with no smear results. Western Urban and Bo districts contributed about 45.7% for all notifications during 2012-2014. The Urban district attracted cases from other countries, has better access of services, information, has more service providers, literacy rate and awareness is higher. Military and prisons reports were included in the report but not disaggregated.

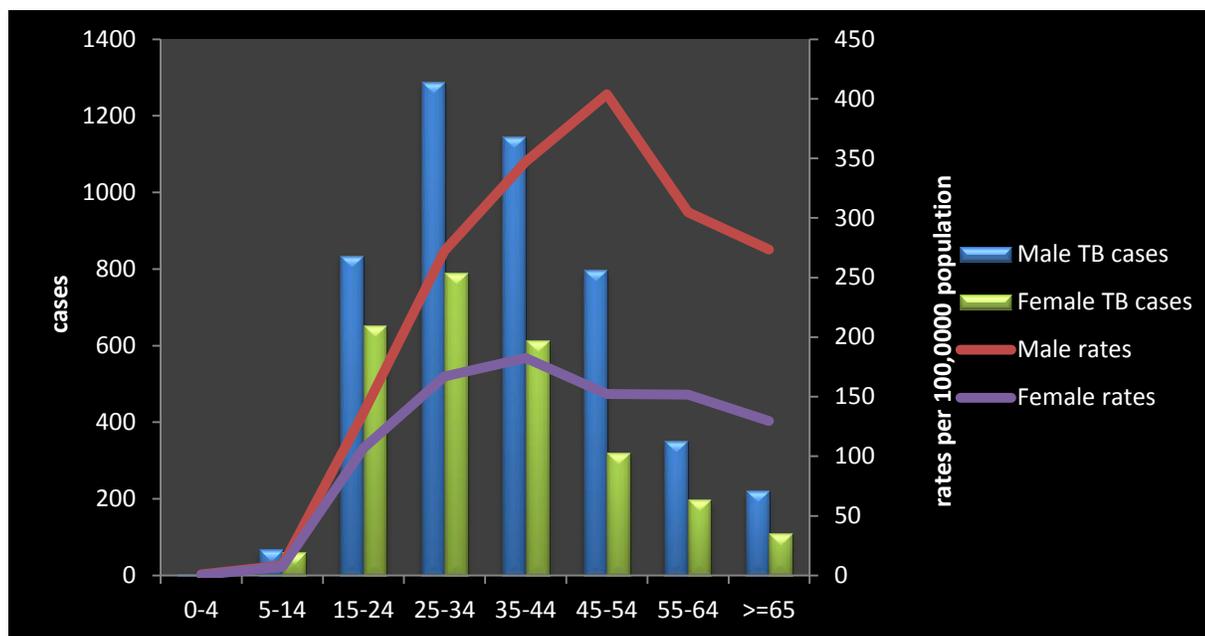
### 3.2.3.2 Age-sex characteristics of Tb case notifications for 2014

The age-sex distribution of the bacteriological confirmed TB cases notified shows a male/female ratio of 1.7. (Male: 4707 (63.2%), and female: 2743 (36.8%). This may be attributed to the social risk factors such as alcohol consumption, which is higher in men, 55% men smoke compared to 14% in women<sup>45</sup>. The highest number was in

<sup>45</sup> Follow the source of this

age groups of 25-34 years for both males and females, and the number of TB cases decreased as age increased. The highest rates were in 45-54 year (404 per 100,000 population for men and for women in 35-44 years (182 per 100,000 population). For both men and women cases decreased after the age of 54 years.

**Figure 10 TB notification and CNRs by age and sex in 2014**



Source: NLTP –EPI Analysis 2015 October

The trends in male to female ratio, pulmonary to extra-pulmonary disease ratio and presumptive cases to sputum smear positive TB notifications ratio are consistent between 2012 and 2014, see table 8 below .

**Table 8 trends in Male to Female TB ratios**

YEAR	Male: Female	Pulmonary :Extra-pulmonary	New: Retreatment *	Ppn 0-14 year olds**	Suspects:Notifications
2012	1.5	22.4	15.7	14.1	2.8
2013	1.5	24.2	14.9	13.6	3.1
2014	1.6	23.7	14.3	11.2	2.6
2015	1.3	19.5	14.1	10.3	2.7

\* Smear positive only

\*\* Excludes retreatment cases

Source: NLTP –EPI analysis

### 3.2.3.3 Regional variations in Case Notification Rates for 2011-2014

There are noticeable geographical variations in terms of Tb CNR per 100,000 population (all forms), the overall CNR for pulmonary TB decreased in most districts except, Bonthe where it was 113/100K in 2012 and increased to 483.7/100K well above the national average of 215.5/100K. It is difficult to draw any conclusion because about 50% of district rates in 2013 were lower than in 2014 (Bombali, Bonthe, Kenema, Koinadugu, Pujehun and Wurban).

The Extra-pulmonary TB average rate was 10.6/100K and six districts had higher rates than national average, where Bombali had the highest of 31.8/100K .

**Table 9 Pulmonary TB CNR per 100 K (all forms) from 2012-2014**

YEAR	Bo	Bombali	Bonthe	Kailahun	Kambia	Kenema	Koinadugu	Kono	Moyamba	Portloko	Pujehun	Tonkolili	WA Rural	WA Urban	Overall
2012	346.3	171.9	113	82	156.7	204.7	80.9	215	110.4	244	101.7	217	284.3	472.8	237.4
2013	272.4	142.2	112.7	87.3	144.4	173.3	75.5	216.2	79.5	195.7	69.5	200.3	317.3	444.4	214
2014	267.6	154.9	483.7	61.7	136.1	183.5	77.2	163.6	76.9	166.7	87.3	197.3	353.2	418.7	215.5

Source NLTP-EPI analysis

As for Bact +Ve in 2014; ten districts' CNRs (Bact +ve) were below the national average of 120/100K, e.g. Koinadugu district had CNR of 56 cases per 100K of Bact +ve , and only 4 districts were above the national average, Western Area –Rural had a highest CNR of 272/100K population.

**Table 10 Sputum +ve and Extra-pulmonary TB cases 2015 per district**

Bo	Bombali	Bonthe	Kailahun	Kambia	Kenema	Koinadugu	Kono	Moyamba	Portloko	Pujehun	Tonkolili	WA Rural	WA Urban
761	584	90	219	277	664	211	378	156	708	195	695	674	1830
69	131	21	2	12	22	10	13	13	36	24	38	23	146

Source: NLTP draft data for 2015

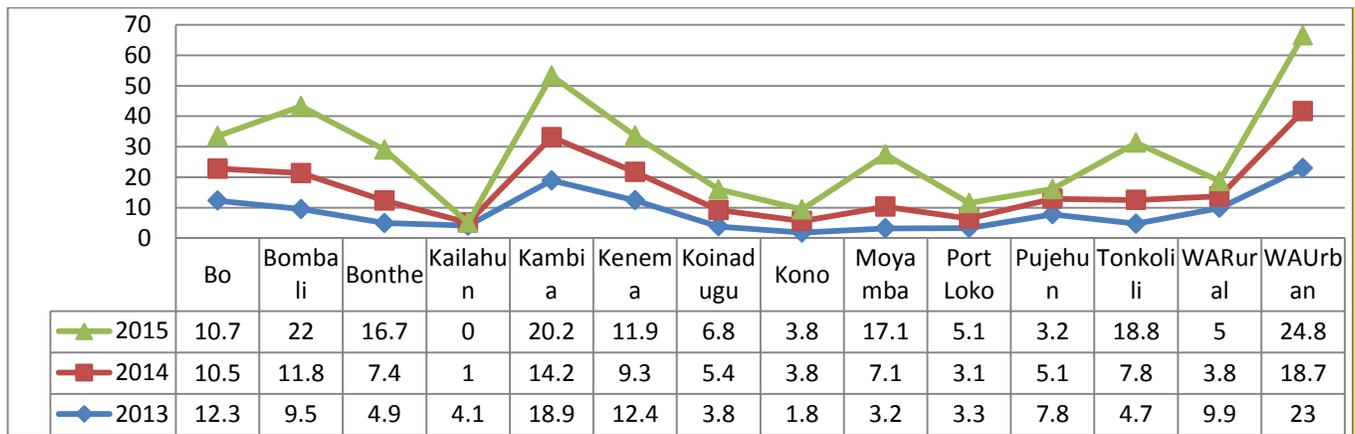
### 3.2.4 Childhood Tuberculosis

#### 3.2.4.1 Tb notification (all forms)

The proportion of children TB cases (all forms) ranged from 5-15%, which is within the expected range for lower income countries at 11.2% in 2014<sup>46</sup>. This was a decrease from 14.1% in 2012 and 13.6% in 2013. The ratio of 0-4 to 5-14 year olds is within the expected range for 2012-n=1810 (1.7), 2013-n=1771 (1.7) and 2015-n= 1138(2.0) There are district variations in the proportion of cases that are children, where the proportion was found to be below the expected range in Kailahun, Kono, Port Loko and Pujahun districts. On the other hand the proportions were exceptionally high in 2015 in Kambia, Moyamba, Tonkilli and Western Urban districts which may indicate that there is either under diagnosis of adults or over diagnosis of TB in children.

**Figure 11 Proportion of TB cases that are 0-14 years old**

<sup>46</sup> NTLTP-EPI Analysis 2015 October.



Source: NLTP EPI Analysis \* Proportion of TB cases that are 0-14 years old (excludes pulmonary smear positive retreatment cases)

In 2013 among 7390 new bacteriologically +VE confirmed cases reported 103 (1%) were children cases aged under 15 years old, this increased in 2014 to 135 (1.8%) among 7453 new Bact +VE. This is far below the WHO estimate of 10% of expected childhood as regards to treatment outcome (Ola Hospital)

### 3.2.4.2 Paediatrics at Ola During Children's Hospital

A register review conducted at Ola During Children's Paediatrics referral Hospital in the country during EPI analysis; indicated high numbers of lost to follow up children on treatment. The whole year of 2014 data indicated that 24.9% (92/369) were lost to follow up, much higher than the national average for the same period of 7% (940/13032). Only 65% (240/369) of children treated at Ola Hospital successfully completed treatment in 2014 which is below than the national average of 83% (10830/13032).

### 3.2.5 Extra Pulmonary TB

During the period of 2012-2014, extra pulmonary TB on average for the whole country was 4%, however, there are regional variations. Bombali district has the highest for all three years, i.e. 16%, 23% and 28% for 2012 to 2014 respectively.

Table 11 Percentage of Extra Pulmonary TB

YEAR	Bo	Bombali	Bonthe	Kailahun	Kambia	Kenema	Koinadugu	Kono	Moyamba	Portloko	Pujehun	Tonkolili	WA Rural	WA Urban	Overall
2012	6	16	8	1	8	2	3	2	5	4	0	3	5	3	4
2013	5	23	9	1	5	2	4	2	2	4	1	5	4	3	4
2014	4	28	1	1	6	3	4	2	7	4	0	7	3	2	4

Source: NLTP- EPI Analysis 2015

There are geographical variations of Extra-pulmonary CNR for districts with Bombali having the highest above overall national averages which were 9.1% in 2014, 8.9% in 2013 and 10.6% in 2012, this is a falling trend. See table below

Table 12 Extra -Pulmonary CNR for districts

Year	Bo	Bombali	Bonthe	Kailahun	Kambia	Kenema	Koinadugu	Kono	Moyamba	Portloko	Pujehun	Tonkolili	WRural	WUrban	Overall
2014	9.4	43.9	7	0.4	8.8	5.2	3	2.9	5	6.5	0.3	12.9	9.5	9.6	9.1
2013	12.7	32.9	9.8	0.4	7.8	4	2.8	3.4	1.8	7.7	0.6	9.7	13.2	11.8	8.9
2012	22.2	31.8	10.1	0.9	14.2	3.6	2.8	3.9	6.1	10.4	0	7	15.1	13.9	10.6

Source: NLTP-EPI analysis

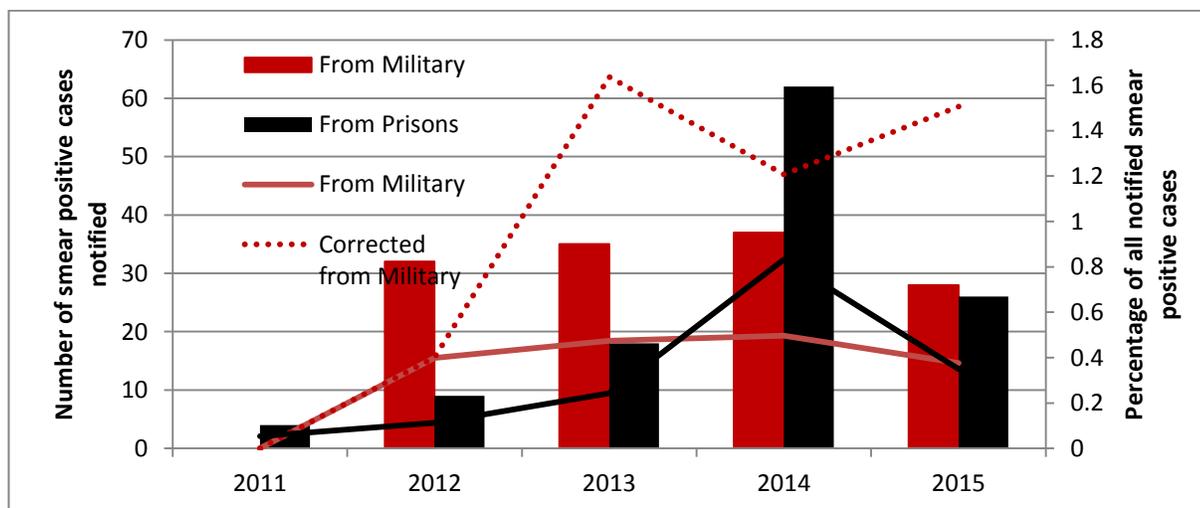
### 3.2.6 TB in pregnancy

In 2014, 73 pregnant mothers were tested, 21 were bact +Ve cases confirmed and 43 clinically TB diagnosed and 1 had extra pulmonary Tb. Pregnant women are at an increased risk of having perinatal deaths and premature birth and low birth weight.

### 3.2.7 Military and Prisons case notification

During the ended and current draft strategic period, the National Leprosy and Tuberculosis program commissioned TB treatment centers in the Military hospital and Prisons. Military hospitals are reporting to the TB programme. The trend of percentage contribution of all notified smear positive cases has been increasing from 2011 to 2014. Around 300 cases are notified per year from the military hospital<sup>47</sup>.

Figure 12 Notified cases from Military and Prison system; 2011-2015



Source: NLTP EPI analysis

### 3.2.8 Treatment outcome

For the period 2012-2014 the treatment outcome for TB cases (all forms) has been above Global set target of 85% except for 2014 which was 83.7%, in 2012 it was 90% and in 2013 it was 87%. The main reasons for not completing treatment were lost to follow up (7.3%, 940/12933) followed by not evaluated (4.7%; 610), deaths

<sup>47</sup> NLTP EPI analysis October 2015

(3.5%; 448) and treatment failure (0.8%; 105). The percent for Lost to Follow up was high in 2012- 6.5%, in 2013 it was 6% and in 2014 it was 7.6% of all cases evaluated.

Deaths were high i.e. in 2012 it was 3.8%, in 2013 was 3.1% and in 2014 was 3.6% of all cases excluding those not evaluated. When compared with deaths among the New and Retreatment cases; deaths were; 6.2% in 2012 of all cases evaluated, it was 4.8% and 6% in 2013 and 2014 respectively. The failed treatment excluding those not evaluated contributed 0.9% in 2012, in 2013, 0.8% and 0.85% in 2014, as for the failed treatment, New and Retreatment cases bacterially +Ve were as follows: 2012 it was 1.1%, in 2013 it was 0.82% in 2014 it was 1%.

**Table 13 Treatment outcome of all forms**

	All smear Positive			Smear-VE not done			Extra-pulmonary			Total		
	2012	2013	2014	2012	2013	2014	2012	2013	2014	2012	2013	2014
NE	288	197	379	235	295	208	26	28	23	549	520	610
LTF	463	432	481	305	318	439	50	29	20	818	779	940
Died	233	246	245	212	141	189	27	15	14	472	402	448
Fa	86	92	82	24	10	19	6	0	4	116	102	105
Suc	6740	7780	7157	3582	3427	3204	669	491	469	10991	11698	10830

Key: NE-Not evaluated, LTF-Lost to Follow up, Fa-Failed, Suc-Successful- *Source NLTP-EPI 2015*

As regards to district treatment outcome performance; three districts registered below the target of 85% i.e. Bombali (77.5%), WA rural 68% and WA urban 78%. As regards to death outcome, Kenema has the highest percentage of 5.8% followed by Bombali of 5.5%. In terms of LTF, Bo has the highest at 11.8%, followed by Western area Urban of 11.1% and next being Western area rural at 10.8% remember the national average was 7.3%

### 3.2.9 Drug Resistant TB performance

#### 3.2.9.1 Delays in MDR-TB system set up

Although the target was to detect 500 MDR-TB cases out of 700 in 2014 and 2015 respectively, this was not achieved because the MDR-TB system was not established and therefore the interventions did not start.. Regular data has not been collected to determine how many of MDR-TB patients have been cumulatively enrolled on treatment and which of these are being HIV co-infected.

#### 3.2.9.2 MDR-TB estimates using GeneXpert

The MDR-suspects to be screened using GeneXpert were to include the following: retreatment cases, failed to convert at 2/3 months, and those failed at the end of treatment (Cat I and Cat II, new and retreatment. The estimated number of MDR cases for 2013 from EPI analysis was arrived at as follows<sup>48</sup>:-

**Table 14 Estimated No to screen with GeneXpert for RMP resistant and TB**

Year	Estimated No. to screen with GeneXpert for RMP resistant and TB	
2014	Smear positive retreatment cases	520 (6.9%)
	Smear negative /ND retreatment cases	276
	Extra-Pulmonary retreatment cases	34
2014	Failed to convert	107
	2013	Treatment failures
Pregnant women		52
	TOTAL	1094

<sup>48</sup> From EPI analysis 2015

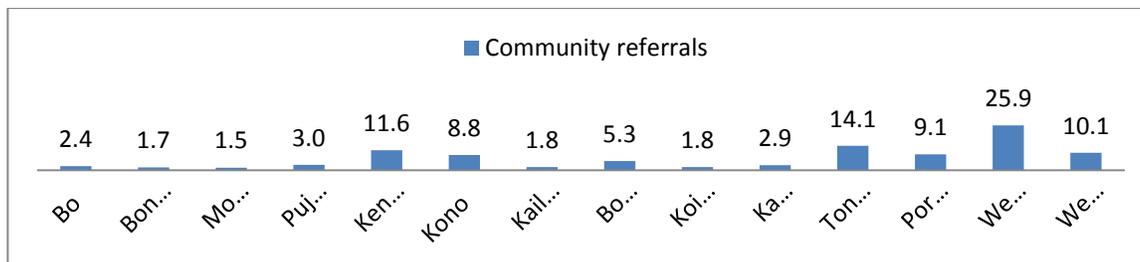
Source: NLTP-EPI analysis

Based on current data it is estimated that approximately 1094 cases are eligible for screening.

### 3.2.10 Community TB care

The purpose of community TB care was to ensure that contribution of Non- TB providers increased community referrals. The Community DOTS Provider's (CDPs), supported the program in screening of TB presumptive patients and ensured that the clients adhered to medication all along the duration of treatment community-based management and provided support to the patient. The program developed a service guide for them, and some received bicycles for transporting sputum and tracing lost to follow-up. Their performance in the districts is reflected in reporting where all of 187 patients registered for Community DOTs, 98.9% were successfully treated. Pujehun registered and reported 86.6% of all patients, 7 districts did not report. GF supported community sensitization with Advocacy Communication and Social Mobilisation activities by the District supervisors. However, the progress of community TB care was impacted by Ebola outbreak due to myths, both from CHW and the community, and has aggravated stigmatization and discrimination.

Figure 13 Contribution of Community referrals from each districts



Source NLTP data-2014

## **CHAPTER FOUR-ISSUES FROM REVIEW AND SWOT ANALYSIS**

### **4.1 ISSUES COMING OUT OF THE DESK REVIEW**

#### **4.1.1 Country Profile**

- i. Although Life expectancy at birth total (years) increased from 41.3 years in 2004 to 45.6 years in 2013, yet the improvement is very low compared to other developing countries.
- ii. With the exception of TB and Malaria; Sierra Leone is unlikely to meet other Millennium Development Goals by the end of 2015, partly as a result of EVD impact.
- iii. Out of the ten major causes of deaths; tuberculosis is the second after Lower Respiratory track causing about 8100 deaths per year i.e 7.9%.
- iv. Sierra Leone is likely not to reach the Stop TB Partnership targets of halving 1990 prevalence rates by 2015, with 432 TB new and relapse prevalence rate in 2013 from 595 in 1990
- v. There are districts and groups with high HIV prevalence than country HIV prevalence which is 1.5% (15-49). i.e. Western region with the highest HIV prevalence of 2.7%, Sex workers (8.5%). HIV incidence of fisher folk is (10.8%), traders (7.6%), transportation workers (3.5%)
- vi. Government expenditure on health as a percentage of total government expenditure has reached 12.3%, approaching the 15% target of the Abuja Declaration .
- vii. There has not been a comprehensive Program assessment after the NLTP strategic plan 2007-2011 and since program inception no prevalence survey has ever been conducted.

#### **4.1.2 Human and financial resources**

- i. By January 2015, a total of 296 health care workers were known to have been infected with EVD with 221 deaths, including 11 specialized physicians<sup>49</sup>.
- ii. In order to meet the WHO minimum standard of 22.8 skilled health workers for 10,000 population, Sierra Leone requires approximately 14,000 health workers (4,000 doctors and 10,000 nurses).
- iii. As of 2010, Sierra Leone had only 2 skilled providers per 10,000 population. Based on the recent Human Resources for Health Strategic Plan, 64% of skilled health worker posts are currently vacant.
- iv. The national program –central unit level is limited by lack of specific coordinators for TB/HIV collaborative-comorbidities (ii) Drug-Resistant TB and diagnostic links (iii) Childhood TB/Other vulnerable groups (iv)TB care and prevention and (vi) Advocacy, policy and communication.

---

<sup>49</sup> WHO (2015). <http://apps.who.int/ebola/en/status-ouTbreak/situation-reports/ebola-situation-report-7-january-2015>. Accessed 11 May 2015

- v. The trend of Leprosy and TB program funding indicates that the program is mainly funded internationally<sup>50</sup>, where Global fund contributed over 80% of the total funding. Related to this there is a limited number of implementing partners who have integrated TB community based services into their program. The Government's contribution is through supporting health service providers, infrastructure and health facilities

#### 4.1.3 Leprosy

- i. The disability grade 1 and 2 among new cases was 20% (recommended was 10%), and 11% respectively, whereas the child proportion of New Leprosy cases was 11% in 2013.

#### 4.1.4 Diagnostiscs

- i. The country heavily lies on sputum-smear microscopy, although is a low-cost diagnostic option for TB but has low sensitivity and specificity, therefore it is not able to differentiate between susceptible and resistant forms of the disease, hence missing out many TB patients.
- ii. There is no capacity to detect and treat MDR-TB patient in the country as there is no 1<sup>st</sup>/2<sup>nd</sup> line Drug susceptibility testing (DST) for all persons with bacteriologically confirmed TB, failed re-treatment, primary lost to follow-up, extra pulmonary TB and retreatment .
- iii. Regular data is not collected to determine how many of MDR TB patients are cumulatively enrolled on treatment and which of these are being HIV co-infected.
- iv. The TB Central Reference Laboratory and Lakka government hospital face erratic water and electricity supply. The CRL is not yet equipped with modern and efficient diagnostic equipment to carry her national functions.

#### 4.1.5 Private sector participation

- i. Although the contribution in case notification of the private sector is increasing yet it could contribute more in case detection and notification.
- ii. The engagement of Civil society organisations in TB, TB-HIV and Leprosy services especially the community based TB care is inadequate.

#### 4.1.6 Performance –

- i. **TB/HIV co-infection:** TB/HIV co-infection was 14in 2015 for TB cases (all forms) and for Bact +ve was 8.4% in 2015 (3<sup>rd</sup> qtr). Only 68% of -HIV con-infected (all forms)was put on ART and 61.5% for bact +ve (NLTP 2014). There were district variations with Western urban and rural having TB-HIV co infection prevalence as high as 20.9% and 18% respectively well above the national average (2015 draft data).
- ii. **TB case notification:** The age-sex distribution of the bacteriological confirmed TB cases notified is highest in the age groups of 25-34 years and 35-44 years for both males and females. HIV prevalence peaks at 30-34 years for men and women.
- iii. **Childhood TB:** Of the total new bacteriologically +ve confirmed cases reported ; only 1% and 1.8% were children cases aged under 15 years old, this is far below the WHO estimate of 10% of expected childhood TB.
- iv. **Extra-pulmonary TB:** While overall extra pulmonary was 4% Bombali district reported the high percentages for three consecutive years from 2012 to2015 of 16%, 23%, 28%, reasons were not established.

#### 4.1.7 Treatment outcome:

- v. Although treatment outcome performance for the country has been above the Global target of 85%, three districts registered below the target Bombali (77.5%), Western Area rural 68% and Western Area urban 78%. Kenema has the highest percentage of 5.8% followed by Bombali of 5.5% of death outcome

---

<sup>50</sup> Id

- vi. The percentage of Lost to Follow up (LTF) increased to 7.6% in 2014 from 6% in 2013 of all cases evaluated with Bo having the highest LTF at 11.8%, followed by Western area Urban of 11.1% and next being Western area rural at 10.8%.

#### 4.1.8 Community TB care

- i. Community TB care was impacted by Ebola outbreak due to myths, both from CHW and the community. The Ebola Virus Disease aggravated stigmatization and discrimination. Community Health Workers (former CDP) do not have sustainable incentive to keep them functioning.
- ii. Community awareness is limited with lack of BCC strategies and mobilization. In 2014 only 34% of patients received nutritional support.

## 4.2 SWOT ANALYSIS

### 4.2.1 Internal appraisal (strengths and weaknesses)

Internal factors are derived from appraisal of the following areas: program systems, health care workers and human and financial resource, skills, structures, service delivery and program management style. The detail explanation appears under gap analysis section, while interventions and activities to build on strengths and solve areas of weakness appear under objectives and strategic interventions chapter and details activities appear in the operation plan. Details of tracking program performance appear under targets and indicators in the M&E Plan

**Table 15 Internal Appraisal factors**

	<b>STRENGTHS</b>	<b>WEAKNESSES</b>
i	Presence of a well-established health structure at all levels i.e. 170 TB treatment centres, MCH and PMTCT Clinics located within the hospital or other clinics with presence of HIV counselors. Central Unit dedicated and committed Program staff	Weak capacity of staff at the district and peripheral levels to diagnose and manage co-morbidities and lack of adequate capacity building activities and support for Leprosy and TB health care workers
ii	Availability of guidelines and existence of Standard tools for reporting program data. Surveillance structure from the district to national level is in place with computers in all DHMT's offices	Lack of policy and procedures to facilitate joint programming and integration of TB, HIV and RMCHN programs so as to strengthen collaboration among these programs.
iii	Presence of WHO global strategies, guidelines such as those from STOP TB Partnership and GLRA which are currently providing guidance.	Laboratory space is not adequate and presence of some old and faulty microscopes. The equipment is not in good condition- e.g. six microscopes in three sites were not in good conditions. As for X-ray machines; out of 10 X-Ray machines from ten districts, 2 are not functioning, 5 are working and in good condition, and 3 have yet to be installed. There is no means for validation, calibration and maintenance of laboratory equipment and for installation there is no formal contract for the installation of the laboratory equipment
iv	Presence of paper based forms and registers for data collection on TB and Leprosy Notification	Absence of the National level TB, Leprosy and HIV working group and other technical working groups for childhood TB, Nutrition, Non-communicable diseases and comorbidities and Monitoring and Evaluation.
v	The program has 168 TB treatment centers	There are inadequate reporting tools, and information is

	which are microscopy centers with well-functioning binocular and reagents and other materials to perform sputum tests TB with adequate .	not fully integrated into the DHMT DHIS, There are no logistics for contact/ lost to follow-up tracing
vi	Presence of experienced District Leprosy/TB supervisors in all districts and specifically for Prevention of Disabilities (POD) a trained personnel visits all districts to assess PAL and works with Social worker on rehabilitation	The National Program does not have Social and Behavior change communication strategy and adequate information dissemination system for Leprosy, TB, and TB-HIV
vii	There is a well-established Quality Assurance system covering most of TB microscopy laboratories with laboratory referral system for patients from lower level to the nearest diagnostic center for service.	Inadequate transport facilities to support effective supportive supervision, program monitoring, coordination and mentoring for district health service providers.
		Poor feedback from the program and poorly motivated staff at the TB treatment centres as there are no trained dots (TB treatment) centres in-charges
		Frequent stock-out of drugs, test kits; and inadequate supply of drugs for prophylaxis i.e. treatment and prevention of opportunistic infections
		Inadequate Human Resource both in competence, and positions at the Central Unit to supervise and coordinate quality and effective Leprosy/TB services especially in Childhood TB, TB_HIV collaborative activities, Policy and Advocacy, TB care and Prevention, Leprosy and Supportive systems.
		There is no proper system of documentation, sharing of good practice also there are no operational research activities
		Inadequate number of Civil society organizations integrating TB/Leprosy services in their community based interventions, and limited collaboration between NTLP with private sector particular in Leprosy activities.
		Lack of supportive referral system for PALs to higher health level for physical rehabilitation and inadequate support for PALs and community groups for treatment and rehabilitation of Leprosy patients
		Lack of training of health care providers on Leprosy, and stigma and discrimination, are factors that make Leprosy still not properly integrated in the general health care system and remains as a vertical program
		There has never been TB prevalence survey, updated TB drivers of infection and Leprosy program evaluation to determine Tb burden at least every 10 years of program implementation
		There is no ward set aside for admission of the patients that will be diagnosed of DR-TB for management and limited capacities for health care providers to manage of DR-TB, Leprosy and advocacy activities,
Limited resources for lost to follow-up and contact tracing both for children, PLHIV and adult TB patient		

#### 4.2.2 External Appraisal (PEST Analysis)

The factors external to the program are listed as opportunities to build on and threats (major challenges) to guard against. These may fall in one or more of the following; political economic, social and technological). The strategic interventions and activities to utilize the opportunities and mitigation strategies for threats appear in other sections

**Table 16 External Appraisal (PEST Analysis)**

OPPORTUNITIES	THREATS/CHALLENGES
Presence of Local Radio stations in all districts	Leprosy and TB programs have weak financial systems with funding heavily depending on external financing due to small domestic contribution and a limited number of Development Partners As for Leprosy; the only Partners i.e GLRA assisting on Leprosy is cutting down on her budget line on activities
The MOHS has developed policy to recognize and integrate Community Health Care Workers into national health system	Limited social protection schemes known to Leprosy/TB clients, with unknown financial and social consequences of Leprosy/TB diseases to a patient, family and households.
Presence of key Public organs such as; the Directorate of nutrition in the MOHS and Ministry of social welfare: deals with children and women issues and an agency for poverty alleviation (NACSA) and health education Unit	Non availability of regulatory approaches and mandatory for TB case notification
Leprosy and TB programs have financial and technical commitment/ support reassured from the Government, GLRA, GF, CDC and WHO	Inadequate or absence of integration/ collaboration of TB, HIV, MCH, PMTCT programs at all levels
Presence of Social Mobilization Committees at every chiefdoms in all the districts	There is no well-established DST practice, not even for first line drugs. There is no single GeneXpert machine for MDR-TB case detection and treatment.
Presence of WHO technical support for guidelines, policy and capacity building of MOHS program staff and Nutritional support programs from WFP and UNICEF	Irregular water and power supply in Lakka Hospital where the Central Reference TB Laboratory is located
National Commission for Persons with Disabilities (NCPD) has been set-up for sensitisation on the Disability Act 2011, for capacity building of the Commission and Disabled Persons Organisations (DPOs)	Retention of trained TB CHWs poses a problem partly because of the availability of lucrative mining companies in industrial districts. Limited nutritional support for TB patients and lack of involvement of TB support groups from partners and relevant ministries/sectors
Increased community sensitization and awareness, on health issues as a result of Ebola Epidemic	Stigma and discrimination, negative Traditional beliefs/cultural practices of the community people, self-medication and late reporting to the health facilities
Presence of political will supporting the programme	Other competing agenda (Racism Terrorist Attacks, civil wars and migration) at international levels which may change priorities of the Development Partners
Willingness of TB expert clients and communities to participate in the program	Occurrence of health emergencies, such as disease outbreaks (EVD, Cholera) and natural disasters e.g floods
Strong will for public and private partnership in implementation of TB interventions	

## CHAPTER 5- DETAILED GAP ANALYSIS

### PILLAR ONE

#### 5.1 TB EARLY CASE DETECTION

##### 5.1.1 Wider district variations in TB case notifications and treatment success rates lower than the national levels may reflect missed TB cases

Noted already that Sierra Leone will not meet the Global target of halving TB prevalence and incidence rates by the end of 2015 compared to 1990 values, although no prevalence survey has ever been conducted to determine the actual TB prevalence. From 2011 to 2015, numbers and TB case notification (all forms) decreased and significant decreases in CNR were observed in 2013 (9.4%) and 2015 (10.7%) respectively. It is unlikely that the program had increased TB notifications in 2014 during the EVD crisis<sup>51</sup>.

It is estimated that 67% of new TB cases were notified in 2013, where the national TB case notification rate was 205 cases (all forms) per 100000 populations. However, there are wider district variations of case notifications, it has not been confirmed whether this is due to epidemiological difference, although it may reflect missed cases in 10 districts with CNR below the national average. The EPI analysis indicated a major differences between cases notified and those put on treatment, indicating missing or extra cases<sup>52</sup>

**Table 17 Table Difference between TB cases notified and reported treatment outcomes**

CASES	2011	2012	2013
Notified as a case	12943	13354	12334
Registered outcomes	12707	13431	12933
Missing or Extra cases	-236	77	599

*Source: NLTP EPI Analysis October 2015*

62.6% (n=7,971) Tb cases were pulmonary sputum smear positive, while 23.5% were pulmonary smear negative and 9.8% had no smear results, indicating that there is a limited capacity to confirm the infectious people in the community.

National program was able to maintain treatment success rate above the global target of 85%, where treatment success was high in new cases (87.1%; 6788/7794) compared with retreatment cases (66.5%; 369/555). Retreatment cases were more likely to be lost to follow up, fail treatment, die and not be evaluated compared with new TB cases<sup>53</sup>. There were variation in district is noted as a gap, i.e. districts that performed below the national average were; Bo, Bombali, Western Urban, Western Rural district . Treatment failure and deaths were high in Bombali too. Bo, Western Urban and Western Rural districts had the highest rates of lost to follow up (11.8%, 11.1% and 10.7%, respectively against national average of 7.6% in 2014). Western Rural and Bombali districts had the highest rates of cases that were not evaluated treatment outcome (17.2% and 10.1%, respectively). Koinadugu had no poor outcomes recorded as all of those that did not complete treatment were recorded as not evaluated.

<sup>51</sup> NLTP EPI Analysis 2015

<sup>52</sup> NLTP EPI Analysis 2015

<sup>53</sup> NLTP EPI Analysis 2015

### **5.1.2 There are multiple factors for increased lost to follow-up rate**

Lost to follow up increased from 6% in 2013 to 7.6% in 2014 of all TB cases evaluated (part of poor treatment outcome). and from death proportions increased from 3.1% in 2013 to 3.6% in 2014 with retreatment reaching as high as 6%, which indicates variance in programmatic performance across the country. After being on treatment for two weeks some patients drop out of treatment because they feel better. Stigmatization and discrimination and poverty contributes as patients prefer centres that are far away from their communities, and when they run out of transport money they miss their treatment appointment. In addition to transport costs, income poverty plays a greater role, as the illness brings with it extra burden on their family roles, as a result of hospitalization or weakness they are no longer able to provide for their family. Follow up is challenging for the HCW because some patients do not volunteer correct addresses. Lack of training, communication and counseling skills and negative attitude from health care workers compounds to the problem of lost to follow up and contact tracing as some patients do not give correct information.

### **5.1.3 There are several factors behind the delays in case detection**

Delays in diagnosis and cases not detected or not reported at the health facilities are attributed to limited capacity of health care workers to make appropriate clinical assessment for TB. Most patients present late or do not present at all at the health facilities due to limited awareness of TB symptoms and stigma and discrimination, or they start self-medication and report later. There are cultural beliefs of acceptance that TB/Leprosy are diseases which run in families and therefore are accepted as a norm.

Another factor is lack of support and motivation for community health workers to reach the remote areas for creating awareness on TB disease so as to increase demand for TB services. As a result there is limited TB/health information dissemination reaching the community and there is limited contact tracing of family members of TB patients.

## **5.2. LABORATORY CAPACITY AND TB DIAGNOSTICS**

### **5.2.1 Lack of modern TB diagnostics capacity in the country**

Lack of diagnostic facilities, such as laboratory and Chest X-ray facilities and capacities are obstacles for early diagnosis and ultimately treatment as a result health services miss many TB patients, misclassify them, or identify them only at an advanced stages of the disease.

There are no culture laboratories in SL; the country only uses sputum smear microscopy in 168 out of 170 TB treatment centers. Sputum smear microscopy has both low sensitivity and specificity and cannot differentiate between susceptible and resistant forms of the TB and as a result facilities miss many TB patients, misclassify them, or identify them only at advanced stages of the disease. Although there are three levels where diagnosis of TB is supposed to be done, yet the referral system is bypassed, and there is a high rate of community and self-referral to health facilities. The challenge facing the referral system is inadequate admission facility, capacity whilst awaiting for laboratory results, lack of feedback mechanism and patient follow up between care providers.

Even though there are diagnostics' guidelines for all health care providers there is no policy for TB diagnostic at national level. A new Country Strategic plan for Laboratory is being developed and the implementation of the ending plan was faced with lack of qualified personnel to address all objectives in the plan. Currently there is no means for validation, calibration and maintenance for laboratory equipment and for installation. There is no formal contract for the installation of the laboratory equipment.

The only CRL in the country was recently renovated and upgraded to Bio Safety Level /3 (BSL) to enable it perform culture and DST using traditional as well as new technologies – Migit – Liquid, Line Probe Assay and Gene Xpert, 'MTB+ Rif resistant'. It has not started functioning and is faced with erratic water and electricity supply. The CRL is not receiving all slides from the districts partly because there is no laboratory supervision from CRL to the lower levels, i.e. the system for specimen collection, transport and referral mechanisms and reporting of results in a timely fashion using modern information and communication tools is poorly functioning.

Drug Susceptibility Testing (DST) services are not available to support diagnostic services, while culture and sensitivity were stopped because of lack of constant electricity supply, which resulted into high temperatures leading to contamination. In the past years re-treatment samples specimen were being taken to the Super laboratory in Germany.

During EVD the CRL was well renovated and served well the purpose. Currently there is no single GeneXpert machine in CRL, and those planned to be procured are yet to be delivered. On the same note there is no human resource capacity for detecting, treatment and managing TB drug resistant.

As regards to X-ray facilities, all regional headquarters towns, referral hospitals and some private health facilities use X-ray to support diagnosis of TB especially in children. Most district hospitals do not have functional X-ray machines i.e. they are non-operational either because they have not been installed or they are obsolete. The private owned X-Ray services are very expensive and therefore difficult to access. The country currently does not use CT scan and other imaging facilities in TB diagnosis, coupled with this there is limited personnel and capacity for X-ray reading, X-ray consumable and reagents. See annex VII

## **5.3 DRUG SUSCEPTIBILITY TESTING AND DRUG RESISTANT TB**

### **5.3.1 Lack of system and capacity to detect and treat Drug resistant TB**

Drug Susceptibility Testing is not done to any of the persons with bacteriologically confirmed TB, as there is no capacity for DST in the country (see laboratory capacity above); such as infrastructure, trained human personnel, equipment and reagents. The current SNRL is Borstel. No nationally representative drug resistance survey of new pulmonary TB cases has been carried out.

Currently there is no well established system and national policy for the management of Drug Resistant -TB. However, there is a draft treatment guideline and the laboratory is almost ready for diagnosis with the procurement of Gene Xpert currently on the way and plans for the setting up of DST facility supported by GF are almost ready. see annex VIII for GeneXpert machines allocation.

There are no existing TB diagnostic policies at the national level and guidelines are currently being revised. From the current TB programme data it is not possible to calculate accurately the number of TB drug resistant cases. New TB cases on Cat I treatment and retreatment cases on Cat II treatment that fail treatment are more likely to have drug resistance but without DST testing it is unclear how many of these cases are drug resistant. If the facilities were available based on the current data it is estimated that approximately 1094 cases were eligible for screening<sup>54</sup>.

## **5.4 CHILHOOD TUBERCULOSIS**

### **5.4.1 Under diagnosis and reporting of TB in children**

The proportion of children TB cases (all forms) decreased from 14.1% in 2012 to 11.2% in 2014 suggesting that fewer children were being diagnosed or reported compared with the adults, although this is within the expected range for lower income countries at 11.2% in 2014<sup>55</sup>. In some districts the proportions were lower than the national average for 2015, e.g. in Kailahun (1%), Pujehun (3.2%) Kono (3.8%) and Western Rural (5%) again suggestive of under diagnosis of children. The proportions were exceptionally high in 2015 in Western Urban (24.8%), Bombali (22%), Kambia (20.2%) and Tonokolili (18.8%) districts which may indicate that there is either under diagnosis of adults or over diagnosis of TB in children. The possible explanation is that Ola Hospital may be seeing the children from the under performing

---

<sup>54</sup> NLTP –EPI Analysis 2015 October

<sup>55</sup> NLTP-EPI Analysis 2015 October.

As demonstrated by a register review at Ola During Children’s Hospital in 2014, 0-14 year children had high TB-HIV co-infection of 14% (19/135) in 2014. Despite this situation there was no routine contact tracing and TB screening for children living with TB patients and those with HIV including severe malnutrition. The factors attributed relate to low ‘index of suspicion’ by health care workers for TB among the children and most do not have skills to make correct diagnosis of TB in children. There is neither a focal person nor a childhood TB technical working group at the Central level and there is lack of resources to do contact tracing and follow up.

**Table 18 Children proportions for TB cases that are 0-14 years old excludes pulmonary smear +ve re-treatment cases**

Year	0-14 year olds		Total TB cases	Ratio 0-4:5-14 year olds
	N	%	N	%
2012	1810	14.1	12842	1.7
2013	1771	13.6	11837	1.7
2014	1372	11.2	12207	1.3
2015	1138	10.3	11046	2.0

*Source: NLTP data: EPI analysis October 2015*

The ratio of 0-4 to 5-14 year olds is within the expected range of 1:1.5. However, during 2014 the ratio dropped to 1.3 which suggests that during the EVD crisis 0-4 year olds were under diagnosed or under reported. The ratios exclude pulmonary smear positive. In 2013 among 7390 new bacteriologically +VE confirmed cases reported 103 (1%) were children cases aged under 15 years old, this increased in 2014 to 135 (1.8%) among 7453 new Bact +VE. This is far below the WHO estimate of 10% of expected childhood TB<sup>56</sup>.

#### **5.4.2 Lost to follow up for children is above the national adult average**

The national average of lost to follow up was 7% (940/13032) in 2014. A register review conducted at Ola During Children’s referral Hospital indicated that 24.9% (92/369) children were lost to follow up. Only 65% (240/369) of children treated at Ola During Children’s Hospital successfully completed treatment in 2014 which is below the national average of 83% (10830/13032). Not all reasons for adult defaulting apply to children except that, children depend on parents’ availability and social economic situation.

#### **5.4.3 Absence of guidelines and policies for Childhood TB**

The absence of Childhood TB working group at the National level to provide guidance on areas like integration of Child TB services into other services such as; HIV, Maternal and Child health, reproductive health and family planning services which at the moment is not happening, underscores the importance of TB in children. Partners work in isolation with different foci; another factor that contributes to under diagnosis of TB in children. This is partly because there has not been a national policy to promote inclusion of TB services as part of integration to ensure early case detection and treatment of TB in children; as a result childhood TB did not feature in the past National Strategic plans, partly because the program considered only adults. There has not been standard national guidelines on children treatment, except WHO ones although their use is not consistent throughout the country. The national guidelines which include childhood TB are in the final process of development.

The country has no sensitive diagnostic tests which are not based on sputum specimen. Gastric washes are not currently undertaken from children and there is only one digital X-ray machine at Ola During Children’s Hospital for children, also capacity to interpret the films from the health workers is limited, including using clinical diagnosis and management of TB in children. This may be a reason why; the regimen of the adult is not taken into account when deciding on the treatment regimen that the child should receive<sup>57</sup> living with infectious adult identified. Coupled with this there has not been adequate capacity building activities related to childhood TB for

<sup>56</sup> WHO Country profile 2014

<sup>57</sup> EPI analysis October 2015

health workers, moreover Child experts in TB are lacking. Even at the central level there is no focal person to coordinate childhood TB supervision, mentoring and capacity building at the lower levels. The national data is not disaggregated to identify HIV infection, and therefore difficult to know how many TB-HIV co-infected children received ART and CPT.

## **5.5 TB-HIV COLLABORATIVE ACTIVITIES**

### **5.5.1 Only 68%% of TB patients diagnosed with TB receive ART and 61.5% of those receive CPT<sup>58</sup>**

As noted already in the review situation analysis section, TB-HIV co-infection has been constant at about 12% for the last four years; this is higher than the national HIV prevalence of 1.5%. The EPI analysis noted that the documented proportion of TB cases with HIV tested and or status known was 86.8% and 92.7% of all TB notified cases in 2014 and 2015 respectively. Observing that this was underestimated since HIV test carried out during TB treatment were not always updated in the TB registers. Also it was noted that TB screening was not carried out in HIV positive partners of those who are TB-HIV co-infected. About 30% of TB-HIV infected did not receive antiretroviral treatment (ART) and 36% were not on Cotrimoxazole Preventive Therapy (CPT). All people living with HIV should have promptly received ART, since the goal for collaborative TB/HIV activities is to decrease the burden of TB and HIV infection in the people at risk of or affected by both disease. There was a major mismatch between HIV testing coverage, ART and CPT and subsequently prevention.

### **5.5.2 Absence of TB-HIV collaborative Policies at National level for various 11 components of collaboration**

From the SWOT analysis one of the major weakness raised was that currently there are no updated TB-HIV policies to guide the TB/HIV collaborative activities as well as TB/HIV technical working group to ensure proper integration and collaboration between TB and HIV programs. Even the existing guidelines for TB/HIV collaboration are outdated and no guidelines on the identification and management of co-morbidities exist.

In general terms there are no policies put in place to facilitate joint programming between the two programs. The two programs i.e. HIV and TB in the country do not have policies targeting at increasing effectiveness and efficiency between them. Other policies that are not in place are those that emphasize the provision of TB prevention, diagnosis and treatment for high risk groups, for multisectoral collaboration between the ministry of health and sanitation with other ministries especially those dealing with water, food, social welfare, and poverty alleviation and education and NGO.

Policies that ensure early and prompt detection of HIV associated TB care so as to minimize initiation of ART are not in place. Other areas that do not have policies yet include; allocation of adequate technical and financial resources to address the TB-HIV burden, ensure equitable access to key population at risk of TB and HIV, including client oriented approaches and comprehensive package of services for these groups at risk. Although the list of missing policy looks long, most of these can be combined in one single policy document.

### **5.5.3 Limited TB/HIV collaborative activities and integration of TB-HIV into other services at all levels**

Although HIV is reported to be involved in TB planning and vice versa, a gap exists in that there is no formalised joint TB and HIV planning and mechanism for collaboration between TB and HIV programs and therefore no joint single plan for TB/HIV. To some extent there was an attempt to submit a joint plan during the development of Short Application Process for submitting to Global fund. There has been occasional joint supervision and training of both TB supervisors and HIV counselors. Although there are efforts to integrate TB and HIV service delivery, TB and HIV care has not be fully integrated with services for maternal and child health and PMTCT especially in districts with high HIV prevalence like Western Area Urban. Although with the introduction of option B+ for PMTCT, TB/HIV would be integrated into the MCH.

---

<sup>58</sup> NLTP data 2014 (2015 draft data indicates 71% for ART coverage and 64% for CPT coverage in 2015

Currently there is no formal mechanism for collaboration between TB and HIV programs with other key players providing HIV services to high risk groups and the communities. Routine TB screening for PLHIV heavily depends on clinical assessment of symptoms but no rapid TB diagnostic tools such as Xpert MTB/RIF, are available yet. At the community levels there is no provider initiated HIV testing and counseling in place for all presumptive and diagnosed TB patients. There is collaboration at the time of estimation for procurement of drugs for PLHIV requiring isoniazid and ART for TB patients. Since the country has not started addressing drug resistant TB; HIV associated MDR-TB, the mortality and morbidity cannot be estimated.

#### 5.5.4 Lack of specific Non-communicable diseases, Comorbidities and nutrition strategy and guidelines

As noted already people diagnosed with TB are not routinely assessed for comorbidities, i.e. being screened for diabetes and smoking and drugs, although this would be the normal tests. There are no guidelines on the identification and management of comorbidities and at the national level diagnosis is done but not at district levels. Currently there is no national collaborative framework to integrate management of communicable and non-communicable diseases. Poor nutrition status is an additional risk factor for TB patients. Nutritional status assessment is done for all TB patients; depending on their condition they receive nutritional support. Nutritional support was provided to 66% of patients and 34% did not receive the support, although the quality and quantity is questionable. Below is a summary of district variations and performance that has been analyzed above

**Table 19 District key data variations reflecting performance**

District	CNR below National	Proportion of TB cases that are 0-14 years old-2015 (<10.3	Extra-pulmonary TB CNR 9.1/100K	HIV prevalence>1.5(2013)	TB-HIV co-infection (11.8%/2014)	Lost to follow-up rate >7.2%	Treatment success rate 90%-2013	Community case notification(2014)
Bo	267.6	10.7	9.4	1.4	7.6	11.8	82.5	0
Bombali	154.9	22	43.9	1.2	9.0	4.7	77.5	0
Bonthe	483.7	16.7	7.0	1.4	0.6	0.5	94.8	0
Kailahun	61.7	0	0.4	0.9	1.0	0.8	97.7	162
Kambia	136.1	20.2	8.8	0.9	6.8	0.6	97.1	5
Kenema	183.5	11.9	5.2	1.0	4.6	1.3	89.8	0
Koinadugu	77.2	6.8	3.0	1.0	2.6	0.0	91.0	11
Kono	163.6	3.8	2.9	2.5	4.5	5.7	89.5	3
Moyamba	76.9	17.1	5.0	1.0	7.3	1.4	97.7	0
Port Loko	166.7	5.1	6.5	1.5	7.8	2.5	89.4	0
Pujehun	87.3	3.2	0.3	0.8	5.8	0.9	98.2	2
Tonkolili	197.3	18.8	12.9	0.7	1.3	1.1	92.4	0
Western Rural	353.2	5	9.5	3.5	18	10.7	68.8	2
Western Urban	418.7	24.8	9.6	2.5	20.9	11.1	78.4	2
<b>Overall</b>	<b>215.5</b>	<b>10.3</b>	<b>9.1</b>	<b>1.5</b>	<b>11.8</b>	<b>7.2</b>	<b>83.1</b>	<b>187</b>

Source: Various, NLTP,EPI analysis,SL-DHS-2013

## 5.6. HIGH RISK GROUPS FACTORS

### 5.6.1 Identification of TB high risk groups and drivers of infection has not been updated

The identification of the high risk groups and TB risk factors and drivers was done but it needs to be updated. The reasons are partly because there is a limited capacity to collect and analyze surveillance data to identify determinants of TB and Leprosy, as there is no operational research going on at the Central unit. The following key affected population groups were identified; fisher-folks, migrant laborers, refugees, Slum dwellers, miners and prisoners. Children who are the most important group have been covered already in other sections.

**Prisoners:** The 2014 NLT program data indicated that out of 7451 bacterial confirmed +ve, 61 were from the prisons, the data was not disaggregated for all prisons cases from the Western Urban Area where Tb cases are notified from. The risk factors of being a prisoner are based on overcrowding in poor ventilated rooms, and poor nutritional status. The TB infection and prevalence rates have not been estimated since prison hospitals also receive patients from surrounding communities.

**People living with HIV:** Noted already that the national HIV prevalence is 1.5%, whereas the TB-HIV coinfection has been almost 12% for four consecutive years i.e. from 2012-2015. 22% of PLHIV were screened for TB in HIV care or treatment settings<sup>59</sup>. The HIV-TB coinfection is not documented. While the HIV incidence is high in key population. The GeneXPert recommended for testing are currently not used in all clinical settings.

#### **TB in pregnancy:**

In 2014 report; 73 pregnant mothers were tested for TB, 21 were bact +Ve cases confirmed and 43 clinically TB diagnosed and 1 had extra pulmonary Tb, 8 were not screened. Pregnant women are at increased risk to have perinatal deaths and premature birth and low birth weight.

**Health care workers** exposed longer to infectious TB patient and with inadequate infection control practice are at a high risk of getting infected. No study has been done yet to establish the situation of TB infection among the health workers or work places.

**Personnel in Uniform:** This group has been recognized from other studies to be a high risk group for HIV, which means with TB-HIV coinfection they stand a high risk.

**Malnutrition-moderate and severe:** Noted already the program underscores the role of nutrition as a risk factor or a consequent of TB, hence the rationale for nutritional assessment and support. Good nutrition improves the treatment outcome but also an incentive for treatment adherence, even then in 2014; 33.6% of patients did not receive nutritional support. (see poverty below)

**Poverty:** Studies have confirmed that there is a strong correlation between TB and poverty. A study conducted in India indicated that the very poorest people are more than five times as likely to have TB compared to the richest prevalence in the group<sup>60</sup>. By extrapolation with chronic malnutrition which is another risk factor, Stunting in children was highest in Kono district followed by Western Rural Areas regarded to have poor households<sup>61</sup>. There is no readily available data linking poverty and TB prevalence in the country.

**Diabetes:** There is no specific data to show the TB prevalence in diabetics in the country, however, TB is 2.5 times more likely to get in people with diabetes. The international diabetes federation predicts the prevalence of diabetes

---

<sup>59</sup> HIV AIDS programmatic gap analysis 2015 July.

<sup>60</sup> *Stop Partnership, Global Plan to End TB- Stop 2015*

<sup>61</sup> SL-Demographic and Health Survey 2013

in Sub-Sahara Africa to rise by 98.1% in the year 2010-2030<sup>62</sup>. Currently there is no specific attempt to screen all diabetes patients for TB.

**Miners/Fisher folks, slum dwellers, refugees and migrants:** The number of miners and magnitude of TB, and TB-HIV co infection is not known among these high risk groups, however, the HIV incidence is higher (see section on situation analysis). Before the start of the Civil War 1991; 250,000 people made a living in the mining and quarrying sector but there is neither data nor interventions specific for the mines except the reports from nearby health facilities.

## 5.7 LEPROSY GAP ANALYSIS

### 5.7.1 Despite the country reaching global Leprosy elimination target, yet the burden of the disease is still evident.

During the 2014 the program reported 145 new Leprosy cases, and the number of cases registered for treatment was 188 with a completion rate of 94%, where 24 new cases of disability grade 2 were reported, and 11% in 2013 above WHO/ILEP recommended level of 10%. This is the evidence that there is a considerable proportion of patients diagnosed at an already advanced stage of the disease. Child proportion among new cases was 11% in 2013 indicating that Leprosy was still being transmitted in the area.

The burden is as a result of the following challenges: With the exception of GLRA there is limited partners' involvement in the Leprosy program interventions. More focus and interest is in tuberculosis and HIV, with limited domestic funding results in Leprosy activities not being well resourced and disease neglect. This might be a reflection of a sense of complacency following the initial success of Leprosy elimination in the country.

### 5.7.2 Low level of community awareness on Leprosy disease

Another challenge is the low level community awareness and knowledge of signs and symptoms of Leprosy disease and disabilities, partly because the component of IEC in the program is weak, even though the disease is integrated into the district health system. Lack of community knowledge is coupled with the traditional healers treating the suspected discolorations of the skin, which delays seeking for proper medical attention. With passive case finding the distance to access to health care service is an obstacle for some clients to visit health facility coupled with lack of basic expertise in clinical Leprosy since there is inadequate capacity building for the health care service providers' to manage Leprosy disease.

### 5.7.3 Limited support to People affected by Leprosy (PAL)

Although a system to increase the quality of Leprosy is in place for smear collection to confirm diagnosis, care after cure of completed Leprosy cases and follow up, yet there are no clear and updated policies to prevent disabilities and rehabilitation. The support for PAL and community groups for treatment and rehabilitation is inadequate. German Leprosy Relief Association (GLRA) supports with the provision of food allowance, shelter, educational and medical support for some Leprosy clients and their families is overstretched. Few Non-Governmental Organizations (NGOs) such as; Hellen Keller international, Sight savers, Handicap International and Orthopedic Outreach Foundation assist with certain disability services. Probably the most neglected area is the support and availability of footwear and materials, prosthesis and other appliances for PALs.

Lack of supportive referral system of PAL to higher level for physical rehabilitation and those referred to Lakka hospital is only for further management. Those who recover are reluctant to be discharged as a result they remain in the hospital for so long. Fear of stigma and discrimination and poverty are some of the factors behind this situation. Currently there is no capacity building for health care workers to provide Septic, Preventive, Reconstructive Surgery (SPRS) and eye care services to eligible PALs.

---

<sup>62</sup> International Diabetes Federation (IDF) Diabetes Atlas, 5<sup>th</sup> edn, Brussels, Belgium: International Diabetes Federation, 2011.  
**Page 48 of 77 Final Draft- CORE PLAN- National Leprosy and Tuberculosis Program Strategic Plan (2016-2020) -14<sup>th</sup> May 16**

## **5.8 PATIENT-CENTRED APPROACH TO LEPROSY AND TB CARE**

### **5.8.1 Front line HCW, in-charge of health facilities district health managers, program workers, decision makers are yet to be conversant with patient centered approach to TB care.**

While there may be few or no training for HCW on; patient care, ethics, patients' rights, confidentiality; yet the package of 'patient-centred approach' to Leprosy and TB care remains fragmented in the country. Sometimes patients air their grievances for not getting adequate attention to provide proper disease symptoms, or reactions to the drug use, adherence and treatment duration, but they are not heard. Even then many lack understanding that to be heard is their human right. Congestion in health facilities, lack of equipment, HCW busy schedules contribute to denying patients' sufficient time for counseling and receiving relevant health education, i.e. their right to information. Quality care of an individual is at stake partly because health facilities for hospitalization, laboratory capacity for investigation and monitoring treatment are few and lack standards. As most of old facilities were not designed for integration because they were built when patients were fewer, so they lack capacity and privacy for the patient. Space for health education and relevant IEC materials are lacking in a number of health facilities, even then most patients are illiterate.

Quality time to listen, build trust and partnership for patient's care and provider relations is limited, because there are some Health Care Workers who do not abide to their professional work ethics, have negative attitude, arrogance, lack listening skills, stigmatize and discriminate patients or they fear infection. There are HCW workers who assume that patients do not need to be involved in planning for their treatment and subsequent follow up.

## **PILLAR TWO**

## **5.9 ENGAGING CIVIL SOCIETY, COMMUNITIES AND THE PRIVATE SECTOR**

### **5.9.1 Lack or inadequate policies, guidelines and standards to support CSOs, communities, private sector engagement into TB services**

The Civil Society Organizations such as; NGOs, CBOs and Faith based institutions have a comparative advantage in reaching communities with no or limited access to the health services, however, policies, guidelines and procedures are required to engage and integrate TB services into their existing portfolio of work such as HIV, (reproductive, maternal, newborn, child and adolescent health (RMNCAH). These policies are not in place yet to allow and guide CSOs to better support Community Based Health Workers (CBHW) and volunteers. Apparently the known CSOs' number engaged already in TB services is very small to provide national coverage, or if they exist, their locations are not known to the NLTP. NLTP does not have a mechanism in place to reach out to them. Even those that exist have not integrated TB-HIV interventions in their work.

At least 35 CSOs are known to be involved in HIV only activities and only 5 CSOs are known to have integrated TB/HIV services. There is no National coordinating body for CSOs dealing with TB-HIV, only CARKAP and NEHIPS serve as national umbrella bodies coordinating CSOs working in HIV/TB, at least these ones coordinate closely with the National Leprosy and TB Program. The umbrella CSOs do not have adequate financial resources to effectively coordinate all the known 40 support groups and 35 small CBOs across the country.

Although the policy guideline for registration of NGOs to provide general development work exist, there is no national policy and guidelines specific for TB services regulating entry of CSOs to provide the services, as a result there is lack of control on quality of services delivered by the few CSOs, lack of clarity on roles and responsibilities of NGOs, duplication of activities and finally lack of effective engagement of CSOs by the National LTB program. This could lead into limited diagnosis and reporting of TB cases to the national system. Another missing policy is

the one to facilitate the voice of affected communities and the CSOs in relation to their TB as well as health needs as a right, as already the Government has given this provision of free health for all. Lack of engagement of ex-TB patients in support of peers in treatment and adherence is a reflection that TB is a vertical program still, with minimal or no community engagement in TB, TB-HIV interventions.

### **5.9.2 Inadequate community awareness and demand for Leprosy and TB services**

Although the purpose of community TB care was to ensure that contribution of Non- TB providers increased community referrals, this was not well achieved during 2014, partly because of lack of TB/Leprosy knowledge by the communities. The progress of community TB care was also impacted by Ebola outbreak due to myths, both from CHWs and the community which aggravated stigmatization and discrimination.

Community awareness, active participation and collaboration on TB and Leprosy services at all stages is limited with lack of BCC strategies and mobilization as a result in 2014 only 34% of patients received nutritional support, while 7 districts did not report community referrals. The annual program report indicates that the late presentation of patients to health facilities was mainly attributed to low level of awareness of people about Leprosy and TB diseases. At lower level, the performance of health personnel was a challenge since there was no adequate integration as there were many other programs which required attention. The linkage between clinical health services and the community health systems remains weak in areas like involvement of ex-patients, PLHIV in advocacy for TB, contact and lost to follow-up tracing.

### **5.9.3 Lack of supportive supervision and motivation for community health workers**

In an effort to strengthen the community health systems the government of Sierra Leone developed a policy for CHW in June 2012, with a focus of increasing access of service to women and children at the grassroots. With an estimated 1300 CHWs in communities, their integration into the national health workforce is still a complex challenge<sup>63</sup>. Their role of linking community based health care to the clinical health facilities and referral system is hampered by limited supervision, retention and motivation. For instance the CHW for TB (CPD) number is not known and those working in Tb did not have sustainable incentives to keep them functioning. There are districts which did not have active CPD (CHW) which resulted into no community referrals, transport of sputum samples and active case finding. All these affected negatively, case detection and treatment outcomes. CHW dealing with other programs such as HIV, Maternal and child health, malaria do not have skills to integrate TB activities. Lack of supportive supervision, incentives and retention schemes for those with commitment has posed a challenge which forced most of them to seek better opportunities.

### **5.9.10 Partnership with private service providers is inadequate and limited to few health care providers and is at an infancy stage**

The NLT developed a guideline on Public Private Mix (PPM), but is still in the draft form. The focus initially was on those individual private practitioners and Private Health facilities (Hospital Clinics) with whom the NLTP had already formal contacts. The guidelines were to enhance delivery of quality services through implementation of DOTS strategy/elements in the country and provided schemes for collaboration with private service providers.

Although the guidelines are in the draft form, there is no explicit policy requiring engagement of relevant public and private providers in contributing to the national goals and objectives. The skills, resources and capacity from the NLTP to supervise and support the private sector is lacking. Moreover the public sector capacity (NLTP-Government)) has not been able to conduct mapping of all TB service providers in the country to identify their potential and capacity. Equally there has never been an evaluation to know the magnitude of the TB burden managed outside the public sector, and whether standards of treatment were being followed or not. Partly because the TB private service providers and institutions collect data, but the data is not transmitted to NLTP and the mechanism for effective data collection outside the program is lacking. This is due to lack of effective policy governing TB data collection and utilization. Despite all these the trend of proportions of all TB smear positive cases from the private sector increased from 5% in 2013, 7% in 2014 and 10% in 2015. Even then it is difficult to assess the partnership based on these proportions. The data collected from the military hospital does not represent the true picture of sick people in the 'uniform'. TB case notification in the military was limited to 34 military

---

<sup>63</sup> GOSL, MOHS, Policy for CHW in Sierra Leone 2012

hospitals located at Wilberforce military barracks, Freetown. Like the military reports from the Prisons have also been limited to the central prisons located at Pademba Road, Freetown. This limitation has resulted to low TB case notification from these two institutions.

There are other challenges of engaging all care TB Services providers across the country, such as lack of trust of public health workers to CSOs, which are perceived as media people and look for criticism, but also they do not like to share their budgets and plans. In some cases TB services is feared due to the airborne nature as a result most health workers fear to engage in providing TB services given few personnel and protective gears and motivation.

## **5.10 HUMAN RIGHTS AND SOCIAL PROTECTION**

### **5.10.1 Inadequate system for Certification and accreditation of private service providers**

Currently there is no mechanism for certification and accreditation of private providers linking them with NLTP to enable them provide quality care, no regulatory framework for TB control which includes mandatory TB case notification, rational use of TB drugs and infection control in all health facilities. Since new diagnostics have not been in use in private clinics there are no policies yet. It is not clear whether all private facilities use National Standards of TB care in line with the International Standards of TB care.

### **5.10.2 Still long way to reach Universal Health Coverage (UHC)**

Noted already under previous section that TB and Leprosy diagnosis, treatment and prevention services are provided free as part of National Policy of health care services (2009). Agenda for Prosperity (2012) after expiration of Agenda for Change introduced new policies and services to ensure better health services for Sierra Leoneans. However, gaps in the access, equity and quality of health care still persist. This situation faces TB and Leprosy services.

There is a chronic shortage of skilled human resources and un-equal distribution of health professionals, where 50% are concentrated in capital city-Freetown. Numbers are also small where only 185 doctors are in position in the entire country. With the high level of poverty, the domestic financing-i.e. out of pocket for TB is very high due to low individual income making health care including TB and Leprosy inaccessible. The services that are made free (drugs) are almost externally funded. Patients suffer financial hardship when it comes to traveling to access those services. Sierra Leone is far from reaching UHC. Currently there are other schemes to scale up UHC such as health insurance schemes which include TB and Leprosy Care. As regards to infection control in the TB treatment centres, there are no IPC guidelines specific for TB treatment centers.

### **5.10.3 Lack of established coordination mechanism in place to support vital registration**

Although TB is a notifiable disease, it is not mandatory for private practitioners to report TB cases in the national system as there is no regulatory approaches and mandatory case notification. Also there is limited community sensitization and awareness, poor health education in communities on the disease (TB). There is a plan to improve vital registration system by harmonization of the vital registration system with other registration system like national identification card, NASSIT, under-five registration and births and deaths.

Currently the Central unit is stretched and limited in terms of capacity and human resource competences to advocate to the policy makers for policies that are TB- sensitive and coherent with national TB and Leprosy care and prevention policies. The policies would focus on the importance of equitable access, quality control, rational use of medicines based on evidence from TB surveillance data and operational research which is not happening now.

### **5.10.4 Limited awareness of patients to social protection schemes**

Sierra Leone has social protection measure policy for TB and other vulnerable population; unfortunately there is lack of awareness for TB patients and other vulnerable Population on these social protection measures. The program through the support of partners provides some enablers and transportation refund as a measure to alleviate

the burden of income loss and non-medical cost of seeking and staying in care, unfortunately there has been lack of enabler package and transport cost for TB patients for a period of 8 months<sup>64</sup>. However, no national assessment has been done to determine the adverse social and financial consequences for Leprosy and TB affected households and effects of being sick at individual level such as social rejection, or stigma and discrimination, studies interruption or loss of employment.

## **5.11 PROCUREMENT AND SUPPLY MANAGEMENT**

### **5.11.1 Limitations to uninterrupted supply of quality assured drugs and diagnostic tests**

A well-functioning procurement system and pharmaceutical services is essential for the success of Leprosy and TB service delivery. Although the National Leprosy and TB Control Program was able to avoid stock out of Drugs and other Health equipment and Health Product at National and District levels, yet there were limitations in the supply management chain. These limitations were related to forecasting, drug management capabilities, storage and rational use. The following were limitations in the supply management system:

- Lack of coordination with the district Procurement Supply Management staff, the TB products managed by others instead of the District/Hospital Pharmacist
- Delays in transporting drugs and health products at all levels in the supply chain some time leading to stock out at the facility level
- Irregular monitoring of Procurement Supply Management activities at districts and Primary Health Unit levels
- Lack of proper warehousing space for TB drugs and health products at all levels
- Like many other staff dealing with TB and Leprosy there is lack of motivation of PSM staff at all levels, which interferes with productivity

## **5.12 HUMAN RESOURCE AND PROGRAM MANAGEMENT**

### **5.12.1 Central Institutional human resource' inadequate capacity to provide policy guidance, advocacy, coordination, capacity building, monitoring and supportive supervision to lower level Leprosy and TB service delivery.**

Ultimately the success of the National Strategic Plan hinges on adequate size and capacity for a central coordination team. This is currently inadequate, however, WHO and GF have been making efforts to support this crucial area. The functions of ensuring an interrupted supply of quality assured drugs and diagnostic tests, quality data collection, storage, analysis and dissemination, promoting partnership, capacity strengthening for other players through supportive supervision, coordination, policy dialogue, program advocacy and financial resource mobilization; all require certain level of skills and competencies most of which are missing.

The program team is currently small, stretched and crowded in a small office space, which is against the Workplace Infection Control practices. The Central level program team has four senior staff i.e a program manager, 1 pharmacist, 1 ME officer 1 Logistician and other support staff. The TB care and prevention, Childhood TB, TB/HIV collaborative activities and –management of comorbidities and drug resistance TB, Policy, Advocacy and Partnership promotion, Community TB care and CSOs engagement do not have specific national level people. ‘End TB Strategy- global plan targets of 90-(90)-90<sup>65</sup> and development goals will not be achieved without adequate HR.

---

<sup>64</sup> National Leprosy and Tuberculosis Program

<sup>65</sup> reach 90% of all people who need TB treatment, including 90% of people in key populations, and achieve at least 90% treatment success

## CHAPTER 6. VISION, GOALS, TARGETS, OBJECTIVES AND INTERVENTIONS

### 6.1 VISION AND GOALS

Sierra Leone is free of tuberculosis i.e. zero deaths, disease and suffering due to tuberculosis

### 6.2 GOALS

**TUBERCULOSIS:** To reduce the incidence of Tuberculosis in Sierra Leone by 20% (62/100000) population) by 2020

**LEPROSY:** To reduce the incidence of grade -2 disabilities among new cases less than one per million population by 2020

### 6.3 TARGETS

- Reach 85% of all people with TB and place all of them on appropriate therapy first line, second line and preventive therapy by 2020
- By 2020, reach 75% of the key population, the most vulnerable, underserved and at risk populations with access quality TB treatment and care
- Reach 90% treatment success for all people diagnosed with TB through affordable treatment services adherence to complete and correct treatment and social support by 2020.
- Reach 75% of TB-affected families facing catastrophic costs due to TB by 2020
- Leprosy eliminated in high endemic districts by 2020
- Achieve disability grade 2 among newly diagnosed Leprosy patients to 5% by 2020.

### 6.4 TB EARLY CASE DETECTION AND TREATMENT

Early diagnosis and prompt treatment of ALL people who require treatment and providing them with effective therapy<sup>66</sup> and reporting them in the national system is the main purpose of the objective, strategic interventions and activities. The interventions aim at increasing case detection rate, increase treatment outcomes, by focusing on the factors that cause missed cases and lost to follow-up rates and deaths. Other strategic interventions that contribute towards this intervention appear in sections on ; engaging CSOs/communities and promoting partnership with and private service providers. Training community health workers, social and behaviour change communication, systematic screening. Integration of childhood TB services with other services and strengthening and increasing laboratory capacity.

*Objective 1. To increase TB case detection rate by 25% by 2020 through strengthening routine case notifications and addressing vulnerable groups of; prisoners, miners and diabetics and treat 90% successfully.*

**Strategic Intervention 1.1** Increase capacity of the districts with lower CNR than national average

#### Activities

- 1.1.1 Establish and promote coordination mechanism specific for Tb early diagnosis, care, treatment and prevention
- 1.1.2 Develop a short plan with DHMTs to identify factors causing poor performance in their districts
- 1.1.3 Identify high risks groups in the districts and improve capacity to rapidly detect and initiate treatment for them
- 1.1.4 Build capacity of the health care service providers in areas of needs
- 1.1.5 Support implementation of systematic TB screening in health facilities, in-patients wards and communities
- 1.1.6 Organize learning exchange visits for sharing lessons among best and poor performing districts

**Strategic intervention 1.2** Conduct intensified TB case finding

#### Activities

---

<sup>66</sup> (drug-susceptible and resistant TB) and preventive therapy appear under other components

- 1.2.1 Orient Service providers on intensified TB case finding at outpatients' clinics, HIV and AIDS Care and Treatment Centre; diabetic clinic and RMNCH
- 1.2.2 Train community health workers and former TB patients on active case finding of contact of infectious TB cases
- 1.2.3 Print and distribute training materials, job aids and SOPs for systematic screening and active case finding

**Strategic Intervention 1.3** Promote active case finding in prisons and provide quality TB care and prevention services

**Activities**

- 1.3.1 Create awareness on TB care and prevention for prisons and military authorities
- 1.3.2 Build service providers' capacity in prison centers on systematic screening and active case finding
- 1.3.3 Carry systematic TB screening among prisons workers, remands and inmates

**Strategic Intervention 1.4** Increase treatment success rate to the national rate for all districts performing below and ensure contact and LTF tracing in all districts especially those with high rate

**Activities**

- 1.4.1 Build capacity of HCW in communication and patient centered care, counselling skills and family support
- 1.4.2 Strengthen adherence and increase treatment success rate
- 1.4.3 Increase access to enablers for the patient, e.g. provide sufficient nutritional package
- 1.4.4 Strengthen referral networks to bring treatment and care closer to patients far from health facilities
- 1.4.5 Collaborate with religious and traditional elders on adherence of TB treatment
- 1.4.6 Support community health workers with enablers to conduct tracing of lost to follow up
- 1.4.7 Strengthen and support ex-patients groups to provide social support for treatment adherence

## 6.5 LABORATORY CAPACITY AND TB DIAGNOSTICS

Early and accurate diagnosis and subsequent management of TB patients relies heavily on a good laboratory network, sputum referral system, staff skills and quality laboratory. The improvement of the weaknesses detailed in gap analysis under this component is reflected in strategic interventions and activities.

*Objective 2: To increase laboratory capacity for bacteriological diagnosis of TB and drug resistance assessment*

**Strategic Intervention 2.1** Expand the diagnostic facilities from the current 170 to 200 with a focus to unreached areas with low diagnostic facilities (sputum microscopic)

**Activities**

- 2.1.1 Promote and strengthen National Level coordination of the country Laboratory network
- 2.1.2 Renovate the existing TB treatment centers and construct new ones
- 2.1.3 Appoint, recruit and train new staff to man the laboratories

**Strategic Intervention 2.2** Ensure constant and adequate availability of diagnostic (laboratory /X-ray& other) equipment and reagents

**Activities**

- 2.2.1 Procure laboratory equipment reagents, water purification plant and other consumables
- 2.2.2 Provide means of transportation for health commodities from the central stores to District and to the Primary Health Units
- 2.2.3 Procure X-ray machines and other imaging technologies to support TB diagnosis

**Strategic Intervention 2.3** Decentralize laboratory function from the Central Reference Lab to some of districts

**Activities**

- 2.3.1 Prepare a decentralization guidelines plan
- 2.3.2 Develop, review and upgrade laboratory/diagnostics policy, guidelines and SOP
- 2.3.3 Strengthen specimen referral and feedback system between TB diagnostic centres and CRL

## 6.6 DRUG SUSCEPTIBILITY TESTING AND RESISTANT TB

The objective, strategic interventions and activities are geared at establishing a system to detect drug resistant tuberculosis cases, treat all of them and prevent further drug resistant TB. This will require good laboratory capacity, staffing, referral system, space for patients' admission, monitoring of patient's health once on treatment, increase financial resource and community awareness. Procurement of Gene-Xpert machines, proper TB data disaggregation for new and retreatment for pulmonary smear positive cases.

**Objective: 3** *To enroll and treat 90% of all diagnosed DR-TB patients on appropriate treatment by 2020*

**Strategic Intervention 3.1** Increase early case detection and diagnosis of drug resistant tuberculosis  
**Activities**

- 3.1.1 Diagnose patients already hospitalised at Lakka hospital using GeneXpert instrument available in Connaught or PCMH
- 3.1.2 Establish early diagnosis of MDR-TB by using Gene-Expert molecular technology following procuring and training staff on the use of the machine
- 3.1.3 Build capacity of Lakka Hospital as a center for providing quality MDR-TB services
- 3.1.4 Conduct training in early identification of DR-TB Presumptive cases (DR-TB suspects) by each health facility
- 3.1.5 Conduct laboratory diagnosis of DR-TB Presumptive cases (DR-TB suspects)

**Strategic Intervention 3.2** Treat all TB drug resistant diagnosed patients at all health facilities  
**Activities**

- 3.2.1 Train health personnel in DR-TB management of patients at the National, Chest Clinic and Lakka Hospital and in all district hospitals
- 3.2.2 Ensure the supply chain is uninterrupted for Drug resistant TB
- 3.2.3 Manage MDR-TB patients at health facilities

**Strategic Intervention 3.3** Prevent occurrence or drug resistance and coordinate Drug resistance interventions in the country  
**Activities**

- 3.3.1 Prevent occurrence of drug resistance Tb in the health facilities
- 3.3.2 Establish an electronic M&E system for monitoring MDR-TB treatment and feedback system between TB diagnostic centres and TB referral laboratory using telephone (SMS machines)
- 3.3.3 Coordinate MDR-TB interventions across the country

**Strategic intervention 3.4** Establish a system for gradual introduction of decentralized DR-TB management services and for early initiation of treatment and care  
**Activities**

- 3.4.1 Refurbish identified health facilities in targeted districts to accommodate Drug resistant TB-services
- 3.4.2 Provide ambulatory management and care of MDR-TB patients in the decentralized districts

## 6.7 CHILDHOOD TUBERCULOSIS

Children is an important vulnerable and a high risk group for TB infection. A number of weaknesses and challenges highlighted under gap analysis need to be addressed with a focus on increasing active child TB cases diagnosis, treatment and case notification. This requires increasing Health Care Workers' capacity, strengthening TB-HIV collaborative activities, integrating TB screening and services with other child and Maternal health services. Improve diagnosis using new diagnostic technology and recruitment of a focal person and advocating for TB in children by forming technical working group, increasing resources.

**Objective 4:** *To increase proportion of children cases aged under 15 years old, from 1.8% in 2014 to 8% among new Bacteriologically confirmed +ve cases by 2020.*

**Strategic Intervention 4.1:** Integrate Childhood TB and TB-HIV services in all health facilities providing; reproductive, maternal and newborn and other child health services

### Activities

- 4.1.1 Establish coordination mechanism for childhood TB interventions countrywide
- 4.1.2 Develop referral tools and feedback mechanism for linkage between MNCH clinics and TB, TB-HIV units
- 4.1.3 Develop and strengthen TB screening, treatment and prevention systems in health facilities
- 4.1.4 Improve IPC activities in paediatrics health facilities to minimize TB transmission from adults to children
- 4.1.5 Monitor drug adverse reaction

**Strategic intervention 4.2** Build capacity of all health service providers involved with childhood TB diagnosis, management and prevention

### Activities

- 4.2.1 Identify and train all HCW directly involved in providing pediatric services
- 4.2.2 Train Health Care Workers on management of TB in children
- 4.2.3 Train HCWS in child and maternal clinics on presumptive TB patient identification (increase index of suspicion)

**Strategic intervention 4.3** Intensify child TB screening and diagnosis using high quality TB diagnostics

### Activities

- 4.3.1 Procure and distribute child TB diagnostics equipment (e.g. Gene-Xpert and digital x-ray machines) and consumables
- 4.3.2 Conduct contact tracing of all children living with adult sputum positive cases
- 4.3.3 Screen for HIV infection, malnutrition and other chronic lung diseases to all TB diagnosed children and aggregate the data for under one and under 15 years

**Strategic Intervention 4.4** Increase childhood Tb treatment outcome (increase success rate)

### Activities

- 4.4.1 Introduce a robust referral and feedback system for active follow up of children on treatment
- 4.4.2 Trace lost to follow-up from Ola pediatrics hospital lost during EVD crisis

**Strategic Intervention 4.5** Integrate prevention, early detection and treatment of maternal TB and TB-HIV into all RMNCH services

### Activities

- 4.5.1 Assess the magnitude of maternal TB and HIV associated TB (situation analysis)
- 4.5.2 Build staff capacity in screening and management of TB-TB/HIV pregnant women
- 4.5.3 Conduct contact tracing of all partners and children living with pregnant women who are TB sputum positive

## 6.8 TB-HIV COLLABORATIVE ACTIVITIES

The focus for this component is on implementing TB-HIV collaborative activities so that all TB diagnosed clients are screened for HIV and other co-morbidities. Those diagnosed with HIV access appropriate management and care, and those negatives receive relevant counselling for preventive measures. As for HIV clinics the aim is to screen TB infection for all PLHIVs and those with TB-HIV coinfection receive appropriate care and management. Also TB-HIV partners are contacted and screened for HIV. The strategies and activities improve weakness identified, build on the strengths and take advantage of opportunities to implement the 11 elements of TB-HIV collaborative activities at all levels.

**Objective 5:** *To test all TB diagnosed clients for HIV and increase the percentage of co-infected patients enrolled for ART/CPT from 68% in 2014 to 100% and provide them with Cotrimoxazole Preventive Therapy and screen 90% of TB-HIV partners by 2020.*

**Strategic Intervention 5.1** Ensure TB-HIV collaborative mechanisms are strengthened from the national to the health facility level

### Activities

- 5.1.1 Establish TB/HIV collaborative Joint TWG both at national and at district levels of 8-12 people
- 5.1.2 Develop TB/HIV policies, protocols and guidelines to effectively enhance integration, coordination and collaboration.
- 5.1.3 Develop TB/ HIV guidelines on treatment/monitoring and popularize them in communities and health facilities
- 5.1.4 Conduct joint planning, monitoring supervision and evaluation of collaborative TB/HIV activities
- 5.1.5 Establish and strengthen TB-HIV collaborative committees at the District and Primary Health Units levels

**Strategic intervention 5.2** Ensure all TB Patients diagnosed with HIV are enrolled for care and Treatment and receive ART/CPT

### Activities

- 5.2.1 Update registers and tools to record and report on TB-Coinfection for all ages and gender
- 5.2.2 Train staff on identification and treatment strategies for HIV/TB for both TB and HIV clinics
- 5.2.3 Carry out TB screening in HIV positive partners of those who are TB-HIV co-infected

**Strategic intervention 5.3** Establish and strengthen delivery of integrated TB and HIV services

### Activities

- 5.3.1 Orient the TB/HIV Collaborative Committee on 'one stop shop' approach at the health facilities
- 5.3.2 Implement same days for HIV and TB clinics at all facilities (Move towards 'one stop shop' at 75% of health facilities with TB)

**Strategic interventions 5.4** Introduce and strengthen IPC measures and practices in all the health facilities

### Activities

- 5.4.1 Increase early rapid diagnosis and proper management of TB patients in all facilities (minimal time of exposure)
- 5.4.2 Conduct training for HCW on TB infection control and practice protection measures
- 5.4.3 Counsel HCW working at TB clinics with TB symptoms and immune-suppressed to check their HIV sero-status and undergo TB diagnostic screening.
- 5.4.4 Upgrade the current TB diagnostic centers into integrated TB/HIV clinics
- 5.4.5 Conduct community awareness and sensitization on infection and prevention controls and availability of treatment for TB/HIV

**Strategic intervention 5.5** Improve TB services among People Living with HIV, their families and communities

### Activities

- 5.5.1 Develop tools and guidelines for identification of PLHIV and families in the community

5.5.2 Provide support and care to TB-HIV people and their families identified

**Strategic Intervention 5.6** Support appropriate nutrition, food safety, and household food security of TB and TB-HIV families

**Activities**

- 5.6.1 Conduct nutritional assessment of TB –TB/HIV patients and HIV exposed children by skilled staff
- 5.6.2 Give nutritional therapy to patients with severe malnutrition in line with WHO recommendation
- 5.6.3 Promote awareness on water, food safety, hygiene and household food security

**Strategic Intervention 5.7** Ensure quality, accessible and affordable, TB, TB-HIV care and treatment services are provided to Key Population and co-morbidities.

**Activities**

- 5.7.1 Provide Key population with TB, TB-HIV KP friendly services
- 5.7.2 Address barriers to service such as stigma and discrimination
- 5.7.3 Carry out Social mobilization for KP support at the community level
- 5.7.4 Find and treat TB patients with co-morbidities with a focus on Diabetes

## 6.9 HIGH RISK GROUPS AND RISK FACTORS

As noted TB prevalence survey has never been conducted to determine the magnitude of TB burden in the country and the identification of high risk groups and TB risk factors was done long ago. Since there has not been a program assessment for many years therefore the strategic interventions and activities are geared to understand the burden and drivers of infection so as to take appropriate measures with a focus on workplaces and mining sector.

**Objective 6:** *To establish the magnitude of TB burden and risk drivers in the country and manage accordingly*

**Strategic Intervention 6.1** Promote systematic TB infection screening and TB services at workplace

**Keys activities**

- 6.1.1 Identify workplaces and surrounding communities known to be at high risk of getting TB infection
- 6.1.2 Organize a one day advocacy meeting with senior authority on the need of workplace interventions i.e. TB systematic screening, awareness raising for TB, TB-HIV services at workplaces
- 6.1.3 Facilitate the formation of TB, TB-HIV committee, and social dialogue groups at workplaces
- 6.1.4 Provide support in terms of referral systems, drug supplies, laboratory reagents and capacity building for health facilities supporting workplace interventions
- 6.1.5 Collaborate with employers and senior leadership to implement infection control practices

**Strategic Intervention 6.2** Establish the risks, TB burden and prevention control measures in the mining sector

**Activities**

- 6.2.1 Promote partnership and networking between health facilities and mining companies
- 6.2.2 Train HCW from health facilities surrounding mines on TB in mines sites
- 6.2.3 Conduct active case finding among mine workers and families/communities

## 6.10 LEPROSY STRATEGIC INTERVENTIONS

The strategic interventions and activities for Leprosy address measures to be taken to address factors that cause delays in seeking health care. These are related to community and health care insufficient knowledge on Leprosy disease and disability, stigma and discrimination. Other purpose is to improve the quality of life of persons with disability and prevent worsening of disabilities, increasing the support to people affected by Leprosy.

**Objective 7:** *To reduce the incidence of disability grade 2 among newly diagnosed leprosy cases from 20% in 2014 to less than 5% by 2020 through enhancing early case finding and treatment of Leprosy patients*

**Strategic Intervention 7.1** Promote involuntary early case detection and treatment by increasing awareness on the signs and symptoms of Leprosy disease

**Activities**

- 7.1.1 Conduct awareness meetings on Leprosy with community, religious leaders, elders and People Affected by Leprosy etc.
- 7.1.2 Introduce and scale up chemoprophylaxis among contacts of Leprosy patients
- 7.1.3 Develop and distribute Leprosy recording and reporting tools to the health facilities
- 7.1.4 Print Information Education Communication and Behavior Change Communication materials on Leprosy
- 7.1.5 Establish partnership with traditional healers and People Affected by Leprosy on Leprosy activities
- 7.1.6 Provide support to communities and PALs' groups to implement Leprosy care, treatment and rehabilitation

**Strategic intervention 7.2** Initiate and promote partnership between the National Leprosy and TB program and potential Organizations

**Activities**

- 7.2.1 Identify areas of collaboration, concerns, opportunities, strengths, limiting factors which might hinder partnership growth
- 7.2.2 Put in place mechanism for planning and coordination for partnership growth

**Strategic Intervention 7.3** Strengthen prevention of disability and enhance psychosocial and Physical rehabilitation of Leprosy patients and clients

**Activities**

- 7.3.1 Support the orthopedic technical center in the production of prosthesis PALs, training of staff on the use of prosthesis
- 7.3.2 Develop, print & distribute guidelines for prevention of disabilities and IEC materials for self –care
- 7.3.3 Support referral of PALs to health centers for physical rehabilitation
- 7.3.4 Assess and support People Affected by Leprosy on rehabilitation and education and housing
- 7.3.5 Build capacity of doctors, nurses and physiotherapist to provide Septic, Preventive, Reconstructive Surgery (SPRS) and eye care services to eligible PALs
- 7.3.6 Train health care providers on Leprosy, case finding, diagnosis and management

## **6.11 PATIENT -CENTRED APPROACH (PCA) TO LEPROSY AND TB CARE**

The purpose of objective, strategic interventions and activities is to address the gaps identified during SWOT and Gap analyses. Patient-centred approach to Leprosy and TB care covers the whole program and without it most targets cannot be met. Limited awareness for both service providers and the patient is the main area of concern.

**Objective 8:** *To promote and respect patient's rights while providing the best quality Leprosy and TB care based on individual needs*

**Strategic Intervention 8.1** Empower HCW, In-charges of health facilities', program team, DHMT, CSOs, private service providers and decision makers on patient-centered care approach

**Activities**

- 8.1.1 Engage the services of local and International experts to conduct situational analysis on PCCA
- 8.1.2 Implement the Situation Analysis' report recommendations
- 8.1.3 Build HCW's capacity on counseling, listening, stigma and discrimination and PCCA

**Strategic intervention 8.2** Lobby and advocate for Patient-Centred Care approach

**Activities**

- 8.2.1 Advocate to the decision makers for increased TB/Leprosy resources so as to promote patient access to quality and continuum of care
- 8.2.2 Develop appropriate and relevant IEC materials to educate patients on their human rights with a focus on Leprosy/TB

**Strategic Intervention 8.3** Provide affordable treatment and care services to impacted people by Tb, disability, orphans and the elderly groups

**Activities**

- 8.3.1 Identify all impacted groups, orphans, elderly, people with disability and
- 8.3.2 Collaborate with HIV and other programs, CSOs, private service providers working with impacted groups by TB

## **6.12 ENGAGING CIVIL SOCIETY, PRIVATE SECTOR AND COMMUNITIES**

Policies, capacity building and empowerment of CSOs is a prerequisite for the country to tap into their comparative advantage, of increasing access to Community based Leprosy and TB care. Strengthening the NLTP capacity to be able to engage CSOs is equally important. CSOs mapping will be necessary to identify the number, their potential and capacity building needs. Strengthening community health system is another area, while advocating for increased resources to support CSOs advocacy and monitoring role. Supporting supervision, increasing incentives to retain CHWs, building their capacity to integrate TB services into their community based activities will be key.

Promoting Partnership with private service providers so as to ensure they abide to national and international standards, and contribute to national goals and objectives related to early diagnosis, treatment and prevention of Leprosy and TB. Accreditation and certification will be required to ensure the private service providers provide quality services. Therefore the objectives, strategic interventions and activities are geared to addressing the gaps, so as to increase community referral and service providers' contribution to the overall case notification and treatment outcomes.

***Objective 9: To increase the number and proportion of new patients with TB (all forms) diagnosed and notified – (referred) by non-public service providers- (CHWs referral) and private health facilities from 24.1% in 2014 to 40 % by 2020.***

**Strategic intervention 9.1** Build and promote partnership at the national level between CSOs with NLTP for planning and policy making

**Activities**

- 9.1.1 Facilitate and support the formation of National level CSOs' coordinating body for TB, HIV, TB-HIV and Leprosy
- 9.1.2 Support CSOs to engage in policy development and planning /development of guidelines
- 9.1.3 Reach out to CSOs not currently engaged in community based Leprosy and TB care

**Strategic Intervention 9.2** Build capacity of CSOs to support CHWs and other small Community Based Organisations

**Activities**

- 9.2.1 Train potential CSOs to integrate community-based TB services into their work
- 9.2.2 Support CSO's capacity to implement and scale up Community based TB care
- 9.2.3 Promote inter CSOs learning and capacity building

**Strategic Intervention 9.3** Empower communities and CHWs to identify people with presumptive TB and refer for diagnosis and treatment

## Activities

- 9.3.1 Increase community awareness on TB, TB-HIV in the districts underperforming in community referrals
- 9.3.2 Promote community participation in increasing case detection and adherence to treatment

**Strategic intervention 9.4** Promote working partnership between NLTP and private service providers/ other non –state actors

## Activities

- 9.4.1 Finalize Public Partnership Mix strategy for operational guidelines on partnership
- 9.4.2 Conduct assessment of the private service providers in the country
- 9.4.3 Build capacities of Private Service Providers to deliver quality services

## 6.13 HUMAN RIGHTS AND SOCIAL PROTECTION

The issues analyzed under chapter 5 on Gap analysis that relate to lack of mechanism and policies for certification and accreditation of private service providers and access, equity and quality of health care services are a result of interlinked factors. Lack of established coordination mechanism to support vital registration and limited awareness of patients to social protection schemes require actions through advocacy and collaboration with other ministries and sectors. Interventions and activities are meant to address these shortfalls.

*Objective 10: To establish the magnitude of Leprosy and TB impact and effects on the TB-affected families and reduce the effects by 75% by 2020*

## Activities

- 10.2.1 Prepare and disseminate policies on human rights and social protection (local) and related communication materials
- 10.2.2 Build the capacity of relevant health care workers in social protection and human rights
- 10.2.3 Conduct mapping of Institutions involved in poverty alleviation, social scheme, community banking
- 10.2.4 Link support groups to Institutions providing social support, IGA and microcredit schemes

**Strategic Intervention 10.3** Network with political leadership to create an enabling environment for appropriate TB, TB-HIV and Leprosy policies

## Activities

- 10.3.1 Identify relevant areas requiring; new policy and review policy for implementation from the core plan
- 10.3.2 Develop NLTP advocacy strategy from the inputs from the above process
- 10.3.4 Advocate to the relevant policy makers and decision makers on specific policies identified in the strategy
- 10.3.5 Orient NLTCP/private service providers' staff in advocacy and human rights

## **CHAPTER 7 INSTITUTIONAL CAPACITY AND PROGRAM MANAGEMENT**

### **7.1 PROCUREMENT AND SUPPLY MANAGEMENT**

A well-functioning procurement system and pharmaceutical services is a pre-requisite for the running of the program so as to meet the 90% (90)% 90% targets . Proper preparation, dispensing, storage, distribution, and rational use of reagents and medicine management are essential to quality pharmaceutical services. In turn health facilities have a role to forecast, store, and dispense as per prescriptions as well as reporting the use of medicines and other supplies. The purpose of strategic interventions and activities is to build on lessons learnt from past successes and challenges and ensure that the supply management systems are efficient and effective in delivering quality drugs for Leprosy and TB and TB-HIV services, and that drugs are accessible to all clients requiring them. But also address the bottle necks for the next five years.

*Objective 11: To develop and implement an efficient PSM system that ensures timely available and proper management of pharmaceutical and Health equipment and products.*

**Strategic Intervention 11.1** Improve and strengthen Procurement Supply System for Leprosy and TB program  
**Activities**

- 11.1.1 Establish and strengthen program mechanism of managing TB, TB-HIV and Leprosy pharmaceutical and Health equipment and products
- 11.1.2 Conduct regular quantification and forecasting meeting
- 11.1.3 Build staff/districts capacity in forecasting methodologies and use of tools for quantification

**Strategic intervention 11.2** Strengthen storage facility and distribution Network of TB/Leprosy commodities  
**Activities**

- 11.2.1 Provide adequate storage facility and condition at all levels
- 11.2.2 Develop and Sign Memorandum of Understanding with warehouse
- 11.2.3 Implement Standard Operating Procedures for stock management activities
- 11.2.4 Provide Transport facility for the distribution of commodities from Central to District and then to Primary Health Units

**Strategic intervention 11.3** Strengthen Logistics Management Information System (LMIS) and M&E  
**Activities**

- 11.3.1 Provide support for electronic Logistic Management Information System for tracking of Health product at all levels
- 11.3.2 Organize training at District level on implementation of tool
- 11.3.3 Provide support for supervision to monitor PSM activities (consumptions, review stocks status, expiries, storage conditions evaluation etc.) at national and district levels

**Strategic intervention 11.4** Strengthen Quality Control at all levels of implementation  
**Activities**

- 11.4.1 Create and sign Memorandum of Understanding with Pharmacy Board for Quality Control
- 11.4.2 Support the Quality Control (QC) process, so as to ensure the QC of drugs as per Pharmacy Board standards and requirement

- 11.4.3 Support the pharmacy Board to conduct Drug Efficacy Study & Resistant to TB
- 11.4.4 Strengthen the capacity of staff involved in supply chain system of TB drugs and commodities

## 7.2 CENTRAL PROGRAM MANAGEMENT UNIT

Implementation of a comprehensive and an ambitious national strategic plan depends on appropriate organizational structure and strong institutional capacity. Equally the management style which applies segregation of duties, clarity in reporting, shared roles and accountability are all critical to the success of the strategy to deliver the Leprosy and TB services, as per Global Plan to end TB- the paradigm shift. Roles played by the Central unit heavily depend on competence of a team facilitating; policy, supportive supervision, financial resource mobilization and coordination. Therefore the objective, strategic interventions and activities below are set to address that.

**Objective 12:** *To strengthen quantitatively and qualitatively the managerial capacities of the Central Unit of the National Leprosy and Tuberculosis Program by 2020*

**Strategic Intervention 12.1** Advocate for increased TB budget resources both at national and district level by the government, districts and the private sector

### Activities

- 12.1.1 Develop a financial resource mobilization (FRMS) strategy for government and private sector involvement
- 12.1.2 Develop and implement Leprosy and TB social and behavior change communication strategy
- 12.1.3 Increase knowledge and awareness on TB, MDR-TB, TB, HIV and Leprosy
- 12.1.4 Promote social mobilization for TB interventions

**Strategic intervention 12.2** Increase and strengthen the capacity of staff at Central level

### Activities

- 12.2.1 Appoint, recruit, orient, train and motivate additional staff at central level to deal with TB-HIV and comorbidities activities
- 12.2.2 Facilitate the development of Individual Operating Plan (IOP), supervisory plan and learning visits

**Strategic intervention 12.3** Strengthen coordination capacity of the central management unit

### Activities

- 12.3.1 Hire/rent office space to accommodate new staff, and better ventilation
- 12.3.2 Build capacity of NLTCP staff in advocacy, reporting, partnerships, and communication skills

**Strategic intervention 12.4** Build networks, public relations with high level influential political leaders for Leprosy /TB/TB-HIV policies' enabling environment

### Activities

- 12.4.1 Collaborate with relevant ministries to develop policies, protocols and guidelines on regulatory approaches and mandatory case notification and popularizes these documents
- 12.4.2 Build partnership to advocate for policies on social protection for Leprosy/TB infected and TB expert clients

## 7.3 MONITORING AND EVALUATION

A monitoring and evaluation plan including its operationalization is developed separately; although it is linked to the core and operation plan. It covers how ME activities are carried out, data collection, quality assurance and management. Activities to strengthen surveillance system, capacity building and the ME framework covers all indicators and targets to be used for tracking progress of the program for the next 5 years. Few activities on operational research are included. Below is just a list of strategic interventions.

**Objective 13:** *To establish and strengthen an integrated ME system that can support accurately and efficiently the tracking of all identified indicators for measuring TB incidence and mortality.*

- 13.1 Improving data quality for measuring the burden of Leprosy and TB diseases
- 13.2 Improving direct measurement of TB disease burden
- 13.3 Establish and increase staff capacity for operational research and evaluation
- 13.4 Conduct supportive supervision, program evaluation and reviews
- 13.5 Enhancing capacity of M&E staff, health care workers in M&E and activities

## 7.4 HUMAN RESOURCE –KEY FUNCTIONS FOR STRATEGIC PLAN

The response to gap analysis and achievement of strategic plan’s goal and objectives, implementation of strategic interventions and activities will depend on proper positioning of key program staff as per design. Most of the Central level roles have not been filled adequately. Below is the critical and minimal list of key functions, to address key components of the strategic plan.

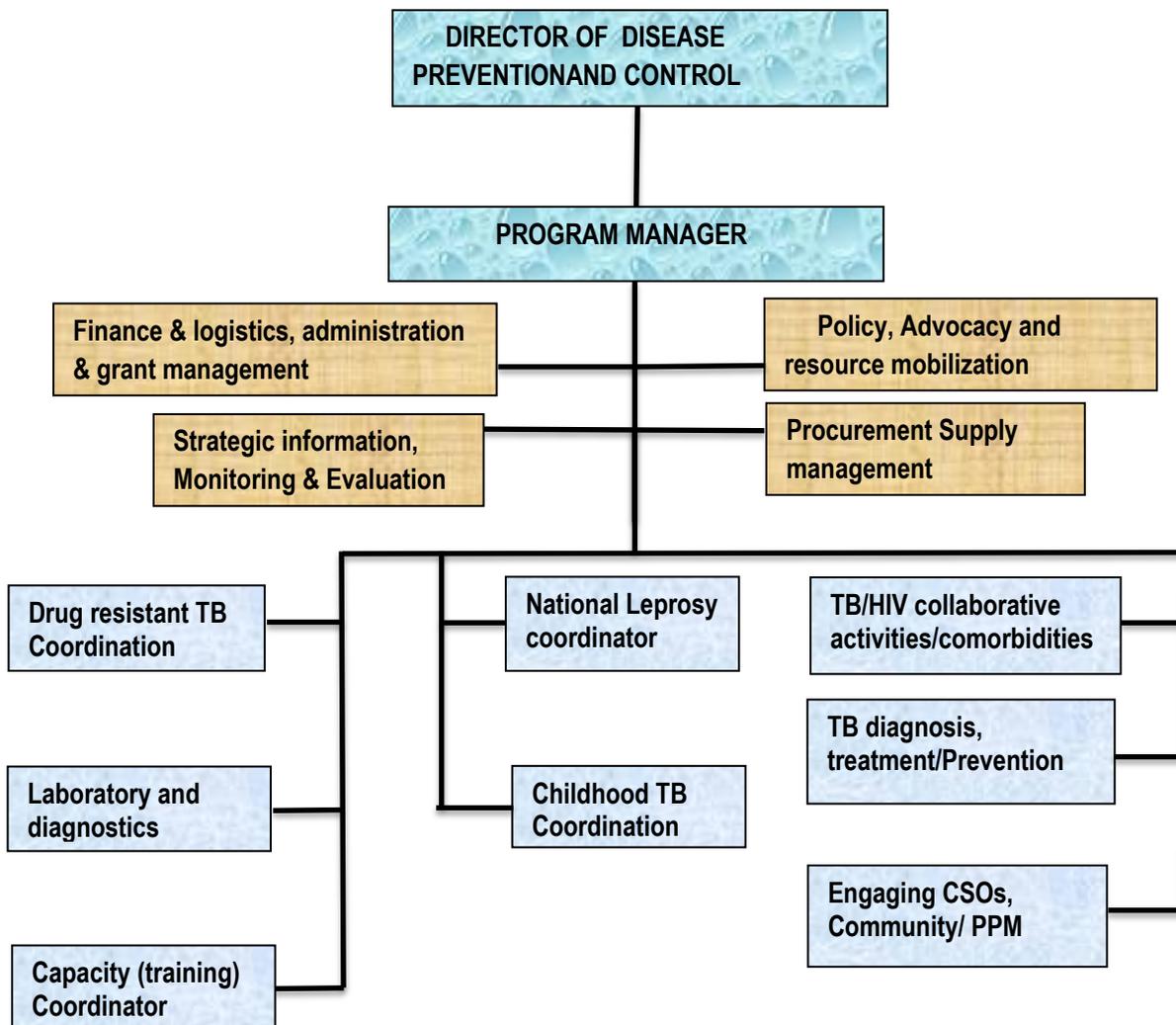
**Table 20 Human resources requirements for the strategic plan**

No	KEY POSITION	MAIN AREAS OF FUNCTION
1	TB diagnosis, notification, treatment and prevention	Coordination of implementation of case detection activities in adults mainly, i.e. intensified case finding-screening including TB services in prisons and military, treatment and notification. Direct relationship with district Leprosy/TB Supervisors, lost to follow-up and contact tracing. Networking with health facilities in-charge and DHMTs. Liaise with procurement team, quarterly program reporting (narrative). May require an assistant. TB in high risk groups other than those mentioned below (childhood)
1	Diagnostic and Laboratory	Supervision, links and coordination of all issues related to laboratory capacity, TB laboratory network /centers expansion. Drug Susceptibility tests (DST), sputum sample referrals, laboratory quality assurance. Rolling out new diagnostic technologies. Capacity building of laboratory staff and supportive supervision. Ensuring bio-safety and external quality assurance
1	Childhood TB	Coordination of all components of child hood TB, i.e. case finding and notification, Child TB integration with other child health services. Ensuring guidelines are followed up, pediatric treatment, HIV testing, liaise with MCH and PMTCT programs.
1	TB-HIV collaborative activities and management of comorbidities	Coordination of all activities falling under the 11 Elements of TB –HIV collaborative activities, management of comorbidities, prevention of TB infection in high risks-groups with a focus on miners and fisher folks. Nutritional support activities
1	Drug resistant TB	Drug resistant TB coordination including MDR-TB case detection (diagnosis) and treatment of all forms and support. Monitoring and decentralization and liaise with Laboratory team, CRL, Chest Clinic. May also coordinate issues related to operational research and pharmacovigilance.
1	Policy, communication, advocacy and resource mobilization	National level advocacy and coordination of policies required in the whole program. Networks with ministries that have a direct or indirect link with TB and TB-HIV. Profile and image of NLTP, resource mobilization from domestic as well as international agencies
1	Engaging others- CSOs/PPM	Coordination of all activities falling under CSOs and community engagement, policies, promotion of Government and Private Partnership. (PPM) Sets in

	(supportive systems)	place the process of engaging business and private sector to support Leprosy and TB, facilitates workplace TB interventions
2	Strategic information and ME/data	Monitoring and evaluation, data collection, carry out routine analysis of TB data and annual reporting. Mid-term reviews, surveys, training coordination. Oversee implementation of EPI recommendations. Coordinates program reviews and carry operation research, assisted also by the data manager or assistant Database manager to develop a single database, data validation and data quality checks, develop TB module in DHS2 in collaboration with the national DHIS2 team
1	PSM-coordination	Coordination of areas related to; Health products, medicine, ensuring an interrupted supply chain, preparation of reports on PSM, forecasting and capacity building of district level PSM activities
1	National Leprosy Coordination	Technical support to the Leprosy and TB supervisors with a focus on Leprosy across the districts in the country (needs to be part of the team)
1	Finance, human resource, administration and logistics	Senior person to deal with administration, logistics, finance, stores, audits, budgeting etc. Information communication Technology (ICT). Grant management coordination. Will need assistants to address specific areas one or combination (logistics/administration/human resources/finance
1	Capacity (Training) building Coordination	Coordination of all capacity building activities planned in the Operation plan. Keeping calendar for all training activities, organizing workshop venues in collaboration with administration and logistics. Ensuring all guides are prepared ahead of training time. Ensuring facilitation and facilitators/trainers meet the required minimum standards. Ensuring annual training reports are compiled on time.
1	Program Management	Representation of the NLTP at the national and International level (program image and visibility). Critical links with Directorate of disease prevention and control at the Ministry of Health and Sanitation. Stewardship and accountability of program resources. Program quality implementation, access and equity issues, advocacy, human rights and social protection. Annual program reviews and workplans coordination Resource Mobilization, networking and new partnership building. Human Resource support and motivation, performance appraisal. Coordinaton of Technical Assistance required, and program and audit responses.

## 7.5 ORGANISATIONAL STRUCTURE (Year 2-5)

Figure 14 Structure to achieve the strategic plan



## **7.6 ROLES AND RESPONSIBILITIES**

### **7.6.1 The Directorate of disease prevention and control**

Ultimately the strategic plan ownership, effectiveness and efficient implementation lies in the DDPC, who has a national level role of endorsing the plan, advocate and mobilize both domestic and international financial and human resource (recruitment, deployment, motivation and retention). DDPC provides performance support to the Central unit in particular to the Program Manager and senior program staff.

Another role is to ensure that the essential medicines and supplies are available through an efficient procurement supply chain at all levels. DDPC liaise with other ministries and sectors to ensure the health sector is functioning to support Leprosy/TB programs as well as CHW policy is implemented. Finally the DDPC has a role to ensure that laws, regulatory frameworks, policies, research, standards and regulations, certification and accreditation systems are followed by all key actors in the delivery of Leprosy, TB and TB-HIV services.

### **7.6.2 Central Unit roles**

The central unit roles and responsibilities are basically fulfilled by the functions already mentioned above, collectively areas covered include: policy, coordination, capacity building, procurements, supervision, monitoring and Evaluation, data collection and analysis, resource mobilization, advocacy, identification of research issues, networking, collaboration and partnership promotion. The central unit links with NACP, NMCP and other programs, in the directorate of disease prevention and control in the MOHS, links with other ministries, development partners and national level CSOs, *see annex IX on Institutional arrangement*.

### **7.6.3 District Level:**

Program activities are coordinated and supervised by the DHMT headed by the District Medical Officers overseeing the District Leprosy and TB supervisors as the technical staff working closely with monitoring and evaluation unit. Detail roles appear in the operation plan.

### **7.6.4 Primary health unit/health facility level**

At the TB treatment centre the service providers' deal with case-finding, diagnosis, treatment and infection control for both TB and Leprosy. They receive technical and logistic support from the Central unit and DHMT.

### **7.6.5 Community and Community Health Workers**

The community, community health workers and the Expert patients form the last level before reaching the client. They have a role of supporting clients to adhere to treatment, refer presumptive TB patient, participate in social mobilization activities, and raise local resource to support their families and households of sick people. Another area is to participate in contact and lost to follow-up tracing, serve as treatment partner to increase adherence leading to better treatment outcome.

### **7.6.6 Development Partners**

The role of development partner is to ensure financial resources pledged are made available on time and sufficient enough to support the government implement her health goals. Another role is participating in policy and advocacy for Leprosy and TB program, locally and internationally. They also have a role of tracking and monitoring results of the funds they provide i.e. value for money.

### **7.6.7 Private service providers**

Increasingly in this strategic plan, private service providers will make greater contribution in TB case notification and treatment. Their role is to abide to the national and international standards in delivering Leprosy and TB services. They also participate in policy development, dialogue, developing guidelines, capacity building, supportive supervision, M&E and reviews and quality assurance. They are expected to provide timely and quality reports to the national system of reporting.

## 7.7

## CRITICAL SUCCESS FACTORS AND ASSUMPTIONS

Good design of an ambitious and comprehensive strategic plan, with ‘paradigm shift’ of working is not sufficient to achieve objectives and deliver quality services and results; until critical success factors and assumptions that must prevail are fulfilled. For instance; availability and timely disbursement of financial resources with qualified and motivated staff; efficient uninterrupted supply chain for drugs, laboratory supplies and reagents. Without modern diagnostic and referral system to support diagnosis for drug resistant TB, objectives under MDR-TB will not be achieved especially in children and TB-HIV patients. Individual behavior change so as to demand for Leprosy and TB services is necessary even if access is assured. Efficient health system is another important part for the success. Finally each key actor is to play actively the relevant role i.e. from the ministerial, central unit, district, private providers, community and individual level. During SWOT analysis, threats and serious challenges were identified, below is a list of proposed mitigation measures to address them.

**Table 21 Mitigation measures of risks**

	<b>THREATS/CHALLENGES</b>	<b>PROPOSED MITIGATION MEASURE</b>
<b>I</b>	The Leprosy and TB programs has a weak financial system, a small number of development partners and inadequate domestic financial contribution as a result the program funding depends heavily on external financing mainly with Global fund	Central unit and the DDPC to advocate for increased domestic contribution by the Government  Advocate for more support from the private sector and promote partnerships with other Development Partners to increase their funding portfolio
<b>ii</b>	Retention of trained TB CHWs poses a problem with the availability of the lucrative mining companies in industrial district	Advocate to the government for incorporation of TB-CHW into the mainstream health system.  Collaborate with local community leaders to support the TB CHW
<b>iii</b>	Chronic shortage of health care workers at the facility levels and lack of competent and qualified staff at Central unit	Government to recruit, mentor and motivate key Central unit staff/coordinators and position HCW at all facilities
<b>iv</b>	Irregular water and power supply in Lakka Hospital where the Central Reference TB Laboratory is located and may impair start-up of drug resistant TB	Collaboration at the ministerial level among the of MOHS and Ministries of Water/electricity to solve water problem
<b>V</b>	Continued delay to start and establish a system for DST, case detection and treatment of MDR-TB patients	Increased MDR-TB in the community leading to XDR-TB which has increased mortality and high cost of treatment
<b>Vi</b>	Negative Traditional beliefs/cultural practices of the community people, self-medication and late reporting to the health facilities	Empower traditions healers and religious leaders with the correct knowledge on Leprosy and TB, in turn they will educate the community and may set local by-laws to encourage involuntary clinic attendance and limit self-medication
<b>Vii</b>	Other competing agenda (Racism, terrorist attacks and, civil wars) at international levels may change priorities of Developing Partners	The government to have emergency prepared plan and fund in case this happened especially for Leprosy and TB drugs supplies and laboratory supplies
<b>Viii</b>	Increased poverty and limited social protection scheme known to Leprosy/TB clients, with unknown financial and social consequences of Leprosy/TB diseases to a patient, family and households.	Intensify efforts to support ex-patients groups to start their own income generation activities

## PLEASE NOTE:

This Core plan is the base for all other plans; Operation plan details sub-activities, time frame, responsibilities and quantities for each sub-activity or input. Monitoring & Plan: addresses targets, indicators and means of tracking program implementation progress and reviews. Technical Assistance (TA): Identifies all areas in the Core Plan that require TA and details them and Budget plan, draws from the Operation Plan, units and costs are derived using the quantities to estimate the cost of the whole plan. Individual operating plan (IOP). Each member of the team and Implementing Partners draws from the activities to make Annual as well as quarterly plan.

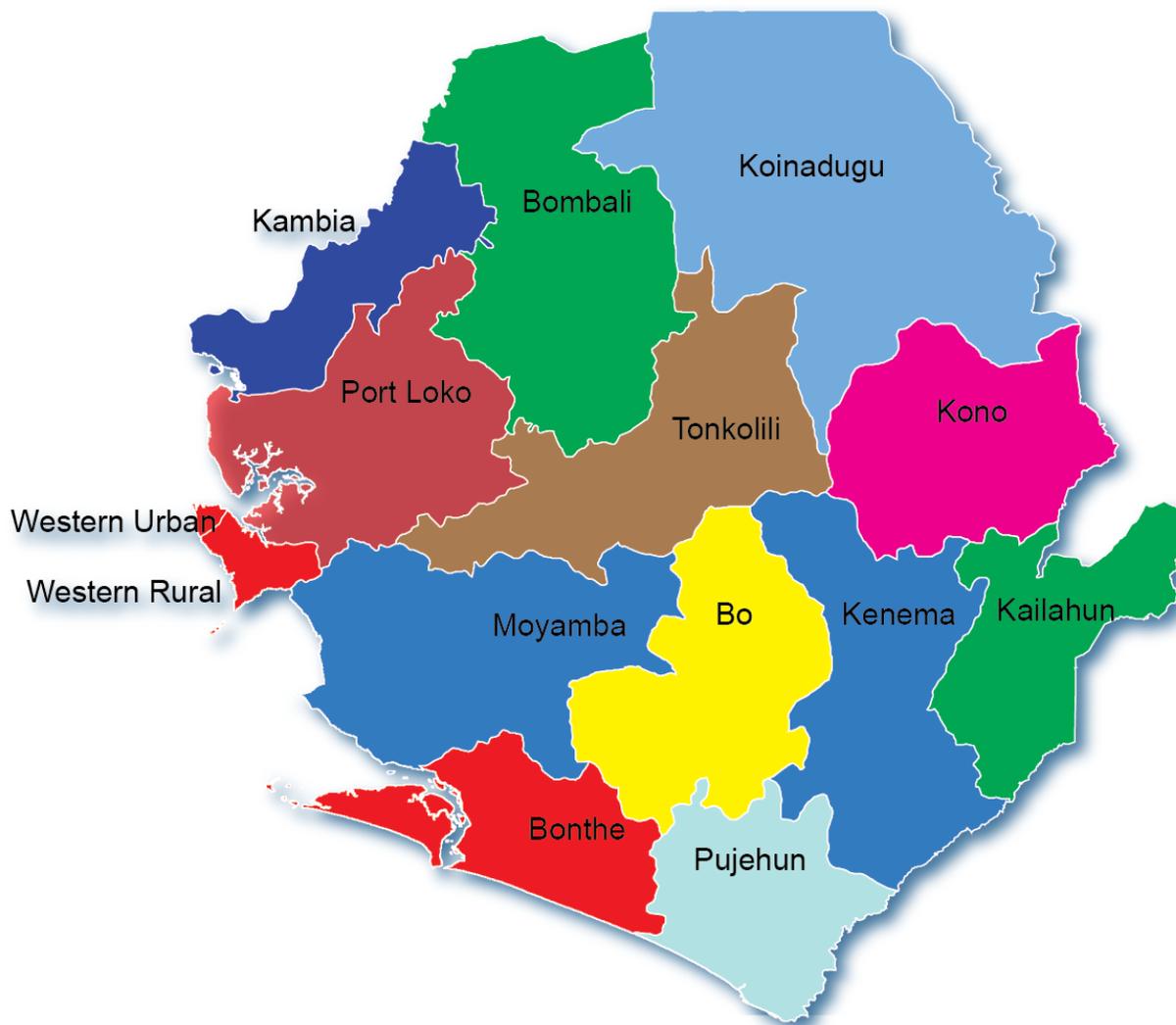
## REFERENCE

1. Country Statistics and global health estimated by WHO and UN partners. Last updated January 2015
2. Country Coordinating Mechanism-Sierra Leone, Short Application process submitted to Global Fund 2015- August
3. Demographic and Health Survey 2013, Statistics Sierra Leone, Ministry of Health and Sanitation ICF International, Rockville, Maryland USA-July 2014.
4. Draft global strategy and targets for tuberculosis prevention, care and control after 2015. Sixty-seventh world health Assembly, provisional agenda .WHO, Report by the Secretariat, 14 March 2014A67/11
5. Global Health Observatory –<http://www.who.int/gho/en>
6. GLOBAL TB- The process for development of national tuberculosis strategic plans
7. GOSL, UNAIDS-Population size Estimation of Key Population of Key Populations August 2013
8. Government of Sierra Leone, Ministry of Health and Sanitation, National Health Sector Strategic Plan 2010-2015
9. Government of Sierra Leone, Ministry of Health and Sanitation, Policy for community health workers, June 2012
10. Joint assessment of National health Strategies and Plans. Joint assessment Tool: the attributes of a sound national strategy: Version 2 September 2011. International Health Partnership. <http://www.internationalhealthpartnership.net/en/home>.
11. Ministry of Health and Sanitation, Health Sector Recovery Plan (2015 – 2020), June 2015
12. Ministry of health and sanitation: Sierra Leone Basic Package of Essential Health Services 2015-2020, July 2015
13. Sierra Leone Population Census/projection(2004), World Bank data
14. Sierra Leone Ministry of health and Sanitation Internal Report of Consultative Workshop on the National Community Health Worker Program in Sierra Leone: Policy, Evidence and Implementation Review- Year?
15. TB strategic Investment Framework work (Prepared by the WHO Global TB Programme, Stop Partnership Secretariat and GF Secretariat to support countries to prepare Concept notes under GF's New Funding Model).GF to fight Malaria TB and HIV. February 2014
16. Toolkit to develop a national strategic plan for TB prevention, care and control, Methodology on how to develop a national strategic plan. WHO, Geneva, Switzerland in collaboration with the WHO collaboration Centre for TB and Lung Diseases, Fondazione S. Maugeri, Care & Research Institute, Tradate, Italy-2015
17. The paradigm shift (2016-2020), Global Plan to End TB- Stop TB Partnership, UNOPS 2015
18. WHO-Enhanced global strategy (2011-2015) for further reducing the diseases burden due to Leprosy (Regional Office for South East Asia).Operational guidelines (Updated)
19. WHO-Enhanced global strategy (2011-2015) for further reducing the diseases burden due to Leprosy (Regional Office for South East Asia)-Strategy and question and answers.

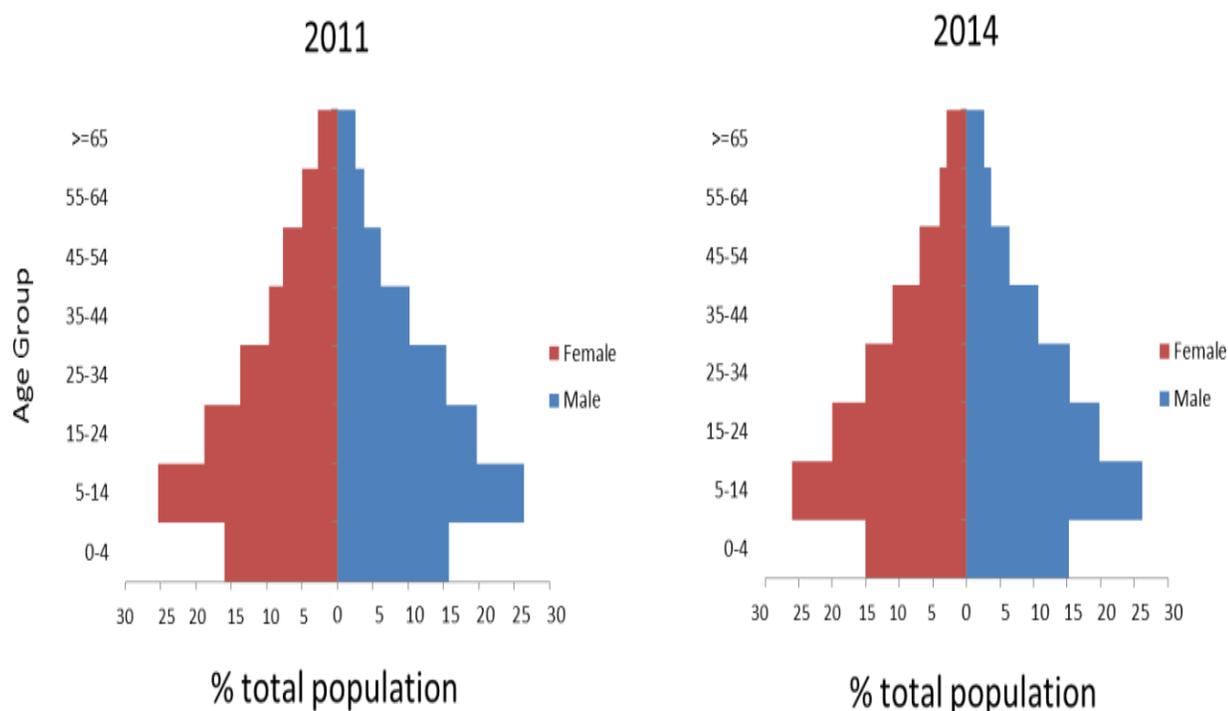
20. World Health Organization, Noncommunicable Disease (NCD) Country Profiles 2014
21. WHO/NLTP-Epidemiological review of TB disease in Sierra Leone –October 2015
22. World Health Organization, Draft global strategy and targets for tuberculosis prevention, care and control after 2015. 67 World Health Assembly, 14 March 2014, Report by the Secretariat

## LIST OF ANNEXES FROM I-VII

### ANNEX I SIERRA LEONE MAP SHOWING THE DISTRICTS



### ANNEX II -POPULATION PYRAMIDS OF THE GENERAL POPULATION



Source: EPI analysis October 2015

### ANNEX III: COUNTRY KEY POPULATION INDICATORS

Indicator	2013	2004
Population, total	6,205,382	4,928,175
Population, female (% of total)	50.3	50.6
Rural population	3,702,398	3,124,660
Rural population growth (annual %)	1.3	4.1
Rural population (% of total population)	60.8	63.4
Urban population growth (annual %)	2.8	5.1
Urban population	2,389,677	1,803,515
Population annual growth	1.8	3.8
Population ages 0-14 (% of total)	41.6	42.7
Population ages 15-64 (% of total)	55.8	54.9
Population ages 65 and above (% of total)	2.7	2.4
Population proportion between ages 30 and 70 years	29.2%*	
Life expectancy at birth, total (years)	45.6	41.3

Source: SL Population Census/projection(2004, World Bank data (2015), WHOSL Demographic and Health Survey 2013/2008, \* WHO, Noncommunicable Disease (NCD) Country Profiles 2014

### ANNEX IV DISTRIBUTION OF HEALTH FACILITIES IN SIERRA LEONE

District	Government					Mission		Private		NGO	Total
	CHC	CHP	MCHP	Clinics	Hospital	Hospital	Clinic	Hospital	Clinic	Clinic	
<b>Bo</b>	23	12	50	1	1	1	6	0	11	3	<b>108</b>
<b>Bombali</b>	16	20	49	0	2	2	3	1	3	0	<b>96</b>
<b>Bonthe</b>	9	9	20	0	2	1	2	0	0	2	<b>45</b>
<b>Kailahun</b>	9	34	12	0	2	1	1	0	0	0	<b>59</b>
<b>Kambia</b>	11	8	31	0	1	0	2	0	0	1	<b>54</b>
<b>Kenema</b>	21	17	63	1	2	1	2	0	3	1	<b>111</b>
<b>Koinadugu</b>	12	6	33	1	1	0	0	0	0	1	<b>54</b>
<b>Kono</b>	11	15	46	0	1	0	1	0	4	4	<b>82</b>
<b>Moyamba</b>	12	6	56	1	2	0	5	0	0	1	<b>83</b>
<b>Port Loko</b>	11	21	55	0	2	1	4	0	1	0	<b>95</b>
<b>Pujehun</b>	14	10	25	0	1	0		0		0	<b>50</b>
<b>Tonkolili</b>	9	8	65	0	1	2	1	0	0	1	<b>87</b>
<b>Western Area</b>	20	10	15	7	12	2	11	2	23	3	<b>105</b>
<b>Total</b>	<b>178</b>	<b>176</b>	<b>520</b>	<b>11</b>	<b>30</b>	<b>11</b>	<b>38</b>	<b>2</b>	<b>45</b>	<b>17</b>	<b>1028</b>

Source: National Health Sector Strategic Plan 2010-2015

## ANNEX V HEALTH SPECIFIC PERFORMANCE INDICATORS

REPRODUCTIVE AND MATERNAL HEALTH INDICATOR	2004	2013
At least 2 antenatal visits	74.30%	76%
Skilled attendant at delivery	42.40%	60%
Institutional deliveries	24.60%	54%
Proportion of women with anaemia	45.2%	44.8%
Pregnant women receiving full tetanus toxoid course	79%	90%
Current use of modern family planning	6.7%	15.6%
% of pregnant women who slept under an ITN in the previous night	27%	53%
Exclusive breastfeeding rate (0-5) months)	11.20%	32%
Fully immunized children	30.20%	58%
Under-fives sleeping under insecticide- treated nets	25.80%	49%
Ant-malarial treatment (under-fives): within 24 hours of onset of	15.10%	36%
Use of improved drinking water sources	50.30%	61
Comprehensive knowledge about HIV prevention among 15-49years (female: male)	14%/24%	25%/31%
Under five year children stunted and wasted	36.4%/20.4%	38%/9%

Source: SLDH Survey (2008 and 2013), Health Sector Strategic Plan 2010-2015

## ANNEX VI LABORATORY NETWORK

District	Population	DOTS Centres	Hospital Labs ZN-	Community Health Labs	Central Reference Lab	Lab to Popn
----------	------------	--------------	-------------------	-----------------------	-----------------------	-------------

			microscope	(microscopy)	(CRL)	Ratio
BO	654142	12	3	9	0	54512
Pujehun	335574	9	1	8	0	37286
Bonthe	168670	4	2	2	0	42168
WArban/Rural	1304507	29	9	17	1	50173
Kailahun	466815	13	2	11	0	35909
Kambia	324623	11	1	10	0	29511
Port Loko	557978	16	3	13	0	34874
Bombali	506729	15	2	13	0	33782
Kono	538021	11	1	10	0	48911
Moyamba	286195	12	1	11	0	23850
Tonkolili	455385	14	2	12	0	32528
Koinadugu	397804	12	1	11	0	33150
Kenema	651124	12	2	10	0	54260
<b>TOTAL</b>	<b>5657851</b>	<b>170</b>	<b>30</b>	<b>137</b>	<b>1</b>	<b>38752</b>

Source: Laboratory program data

The country has 168 microscopy laboratory and one Central Reference Laboratory

## ANNEX VII X-RAY MACHINES DISTRIBUTION

DISTRICT	FACILITY' NAME	NUMBER
BO	Bo Children hospital (1), Serabu hospital (1)	2
Pujehun	Pujehun government hospital (1)	1
Bonthe	United Methodist Church-Mattru Hospital (1) Bonthe government hospital (1)	2
Western /Area (combined)	Chest clinic hospital (1), Leprosy-TB hospital- Lakka hospital (1). Lumley Hospital (1), Central Correctional hospital (1), Rokupa Hospital (1)	5
Kailahun	Kailahun government hospital (1), Nixon memorial Hospital (1),	2
Kambia	Kambia government Hospital (1)	1
Port Loko	Port Loko Government Hospital (1), Catholic Hospital Lunsara (1), Lungi Hospital (1)	3
Bombali	Makeni government hospital (1), Kamakuye hospital (1)	2
Kono	Kono government hospital (1)	1
Moyamba	Moyamba government hospital (1)	1
Tonkolili	Tonkolili government hospital (1),	1
Koinadugu	Kabala Government Government hospital,	1
Kenema	Panguma Mission Hospital (1) Kenema government hospital (1)	2
	<b>TOTAL X-RAY MACHINES</b>	<b>24</b>

## ANNEX VIII a GENEXPERT MACHINES DISTRIBUTION

FACILITY LOCATION	QUANTITY	PRESENT x = new v= existing	RATIONALE
CRL Western area	1	x	Highest TB case load in the country with about (5414) 42% in 2014
Chest clinic Western Area	1	x	
Ola Children Hospital	1	x	This is the main children referral hospital
Southern region	1	x	Will serve Southern region with 5 districts including Bo, Muyamba, Pujehun, Bonthe.
Eastern Region (Kenema government hospitals)	2	v	1 exist at Kono hospital from Faith Based Organization. New one will serve the eastern region with Kailahun, Kenema, Kono districts
Northern Region (Bombali Makeni hospitals)	1	x	Makeni, Tonkolili, Portloko, Kambia, Koinadugu
34 Military Wilberforce Hospital Freetown (have 1 already)	2	v	1 machine exists in the military hospital. Another will be supplied to the hospital and one to the Correctional centre.
Correctional centres	1	x	Military and Correctional facility populations contribute 10% of all cases
<b>TOTAL</b>	<b>10</b>	<b>Only 2 exist</b>	

**ANNEX VIII b GENEXPERT INSTRUMENTS (ACTIVE/NON ACTIVE/PLANNED)**

	<b>SITE NAME</b>	<b>DISTRICT</b>	<b>REGION</b>	<b>SITE STATUS</b>	<b>SITE TYPE</b>	<b>PARTNER</b>	<b>CARTRIDGE SUPPORT</b>
<b>1</b>	Kambia District Government Hospital	Kambia	Northern	Active	Rule out	FIND	FIND
<b>2</b>	PCMH	Freetown	Western	Active	Rule out	FIND	FIND
<b>3</b>	Port Loko District Governemnt Hospital	Port Loko	Northern	Active	Rule out	FIND	FIND
<b>4</b>	Connaught - GX lab	Freetown	Western	Active	Rule out	FIND	FIND
<b>5</b>	PHE-Port Loko	Port Loko	Northern	Not active	Suspects	PHE	PHE
<b>6</b>	Nigerian Emlab	Freetown	Western	Not active	Dead Swabs	WHO	WHO
<b>7</b>	PHE/MOHS-Kenema	Port Loko	Northern	Active	Suspects	PHE	FIND
<b>8</b>	Tonkolili Government Hospital	Kambia	Northern	Planned	Suspects	MSF	MSF
<b>9</b>	Connaught - HIV	Kenema	Eastern	Not active	Suspects	University of Texas	
<b>10</b>	LSHTM vaccine study Laboratory	Tonkolili	Northern	Active	Rule out	LSHTM - EboVac	FIND
<b>11</b>	M34	Freetown	Western	Active	Military	Ministry of Defense	Ministry of Defense
<b>12</b>	Kono	Kambia	Northern	Active	TB Screening	PIH	PIH
<b>13</b>	Connaught Tb Chest Clinic	Freetown	Western	Planned	MDR Suspects	Tb Program	Tb Program
<b>14</b>	Ola Daring Childrens Hospital	Kono	Eastern	Planned	MDR Suspects	Tb Program	Tb Program
<b>15</b>	Bo General Hospital	Freetown	Western	Planned	MDR Suspects	Tb Program	Tb Program
<b>16</b>	Makeni General Hospital	Freetown	Western	Planned	MDR Suspects	Tb Program	Tb Program
<b>17</b>	Kenema	Bo	Southern	Planned	MDR Suspects	Tb Program	Tb Program

Source :GLC Mission briefing -April 2016

ANNEX IX: INSTITUTIONAL ARRANGEMENT

