THE REPUBLIC OF UGANDA

MINISTRY OF HEALTH

NATIONAL TUBERCULOSIS AND LEPROSY CONTROL PROGRAMME

Revised National Strategic Plan 2015/16 - 2019/20

June 2017

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TABLES AND FIGURES

LIST OF ACRONYMS

AFB	Acid-fast bacilli
ACSM	Advocacy, Communication and Social Mobilization
AIDS	Acquired Immunodeficiency Syndrome
ART	Anti-Retroviral Treatment
ARVs	Anti-Retroviral
CB DOTS	Community Based DOTS
CBO	Community Based Organization
CBR	Community Based Rehabilitation
CDR	Case Detection Rate
CPT	Co-trimoxazole Preventive Treatment
DOT	Directly Observed Therapy
DOTS	Directly Observed Therapy, Short Course Strategy
DTLS	District TB & Leprosy Supervisor
DTU	Diagnostic &Treatment Unit
DST	Drug Susceptibility Testing
EAPHLNP	East African Public Health Laboratory Networking Project
EPTB	Extra-Pulmonary TB
EQA	External Quality Assurance
GDF	Global Drug Facility
rGLC	Regional Green Light Committee
GLRA	German Leprosy and TB Relief Association
GoU	Government of Uganda
HC	Health Centre
HCT	HIV Counselling and Testing
HIV	Human Immunodeficiency Virus
HSD	Health Sub District
HMIS	Health Management Information Systems
HSS	Health Systems Strengthening
HSDP	Health Sector Strategic Development Plan
IC	Infection Control
ICF	Intensified Case Finding
IPT	Isoniazid Preventive Therapy
LMIS	Logistics Management Information System
LTBI	Latent TB Infection
M&E	Monitoring and Evaluation
MB	Multibacillary Leprosy
MDR	Multi-Drug Resistant TB
MDT	Multi Drug Therapy
MLI-CHS	Makerere Lung Institute College of Health Sciences
METS	Monitoring and Evaluation Technical Support Program
MoLGSD	Ministry of Labour, Gender and Social Development

NACP	National AIDS Control Programme
NTLP	National TB & Leprosy Control Programme
NTRL	National TB Reference Laboratory
PB	Paucibacillary Leprosy
PBC-TB	Pulmonary Bacteriologically Confirmed TB
PEPFAR	Presidential Emergency Plan For AIDS Relief
PFP	Private for Profit
PLHIV	People Living with HIV
PMDT	Programmatic Management of Drug Resistant Tuberculosis
PPM	Public-Public Mix or Public-Private Mix
PNFP	Private Not For Profit
PTB	Pulmonary Tuberculosis
RHITES	Regional Health Integration To Expand Services
SCC	Short Course Chemotherapy
SCHW	Sub-county Health Worker
SLD	Second Line Drugs
SOP	Standard Operating Procedures
SSM	Sputum Smear Microscopy
TB	Tuberculosis
TSR	Treatment Success Rate
UHSC	Uganda Health Supply Chain
UBOS	Uganda Bureau of Standards
UNMHCP	Uganda Minimum Health Care Package
USTP	Uganda Stop TB Partnership
VHT	Village Health Team
WHA	World Health Assembly
WHO	World Health Organization
XDR	Extensively Drug Resistant TB

FOREWORD

The Ministry of Health National Tuberculosis and Leprosy Control Programme (NTLP), in collaboration with partners, revised its five-year strategic plan 2015/16 – 2019/20 to incorporate findings from the 2014/15 national tuberculosis (TB) prevalence survey. The survey revealed a higher TB burden than previously estimated and demonstrated that over 40,000 TB cases are missed every year. Although the TB survey revealed a more accurate estimate of the TB burden, the observed declining trend in TB case notification over the last 5 years could exacerbate TB transmission and lead to increased drug-resistant TB. The survey findings have several programmatic implications, including the imperative for more intensive efforts to detect the missing TB cases and to adequately respond to the expanded TB/HIV epidemic, requiring several changes in NTLP's strategies and interventions.

The revised National Strategic Plan also better aligns with the World Health Organization's (WHO) End TB Strategy and incorporates recommendations from various program reviews. Globally, Uganda is among 30 countries with the highest TB/HIV burdens. Although Uganda has made some progress to control tuberculosis and leprosy, we need to do a lot more to meet the national and global targets for TB and to prevent the emergence of extreme TB control challenges such as drug-resistant TB.

TB treatment outcomes have improved, with an 80% treatment success rate for TB patients, 88% of TB/HIV co-infected patients started on ART and 74% of multidrug-resistant TB successfully treated. Yet, the following challenges threaten to undermine our progress: low case detection of multidrug-resistant TB reported at 17% of estimated cases and high mortality rate of 18%. About 45% of TB patients are co-infected with HIV, and paediatric TB is underdiagnosed. Limited community awareness and involvement in the fight against TB, as well as stigma associated with TB, continue to hinder efforts to effectively control TB.

In 2004, leprosy was eliminated as a major public health problem. Therefore, the country is experiencing a loss in leprosy clinical skills and late diagnosis of leprosy, while many Northern, North-western and South-eastern districts are seeing pockets of high leprosy incidence. We must urgently respond to irreversible grade-2 disability, which affects about 30% of new patients. The NTLP, therefore, calls for all partners to align their plans to this Strategic Plan and to increase financing and involvement of all stakeholders in the fight against TB and leprosy. I wish to express my appreciation to all of you who worked tirelessly to develop this Strategic Plan.

Sincerely,

Prof. Anthony Mbonye
Director General of Health Services

ACKNOWLEDGEMENTS

The Ministry of Health greatly acknowledges the contributions of various TB, TB/HIV and Leprosy stakeholders as well as institutions that supported the review of this five-year NTLP Strategic Plan, 2015/16 – 2019/20. The review was necessitated largely by the need to reflect the findings and program implications of the national TB disease prevalence survey 2014/15 and to align the NSP to the End TB Strategy 2016 - 2035.

The review of the National Strategic Plan was facilitated by a team of National Consultants led by Professor Nuwaha Fred in collaboration with Dr. Katamba Achilles, Mr. Mayora Chrispus and Dr. Imoko Joseph F. The team was guided by Dr. Mugabe Frank Rwabinumi, the Program Manager of the MoH-NTLP, with support from Dr Aldo Burua, Dr. Kasozi Samuel and Dr Raymond Byaruhanga of MSH/TRACK TB project. The national team was supported by an External Consultant, Dr. Gargioni Giuliano of WHO Headquarters Geneva.

Individuals and institutions that participated in the technical review meetings included: Dr. Mugabe Frank Rwabinumi, Dr. Eldard Mabumba, Dr. Stavia Turyahabwe, Dr. Ebony Quinto, Dr. George Upenytho, Dr. Claudio Mara, Faith Mirimo and Steven Ekaru of NTLP, Dr Seyoum Dejene (USAID), Dr. Birabwa Estella (USAID), Dr. Mary G. Nabukenya Mudiope (IDI), Dr. Aldo Burua and Dr. Simon Muchuro (MSH/TRACK TB), Hawa Nakato, Ambrose Jakira and Victoria Nakiganda of MSH/UHSC), Dr. Moorine Sekadde (NTLP/Baylor Uganda), Prof. Moses Joloba, Abdunoor Nyombi, Raymond Asiimwe, Ekuka Godfrey, Awongo Peter and Fred Kangave of NTRL, Dr. Simon Kalyesubula (EAPHL), Dr. Rosemary Odeke (CDC), Dr. Joseph Kawuma (GLRA Uganda), Dr. Abel Nkolo (WHO Uganda), Dr. Hudson Balidawa and Dr. Mina Ssali (ACP/MOH), Dr. Raymond Byaruhanga, Dr. Lukoye Deus, Dr. Henry Luwaga, Enock Kizito and Denis Sama (MSH/TRACK TB), Dr. Bruce Kirenga (MLI-CHS), Dr. Simon Walusimbi (CDC/METS), Dr. Christopher Wandira (URC-RHITES-SW), Dr. Andrew Mukuye (Baylor), Dr. Paddy Busulwa and Dr. Paul Isiko (USTP), Dr Kaggwa Nswemu (Uganda Prisons), Dr Kusasira Stephen (UPDF), Mukasa Joseph (RPMT-Jinja) and Dr. Eric Wobudeya (Mulago National Referral Hospital).

The following individuals in addition to those mentioned above participated in the stakeholders meeting: Dr Denis Tindyebwa and Dr Iriso Robert of ANNECCA, Kenneth Cheuvia (STAR-E), Dr Pamela Donggo (URC-ASSIST), Dr Henry Musinguzi (PHS), Ndhego R and Musoke Stephen (St Elizabeth Mukono).

In addition to the stakeholder consultative processes, the individuals below participated in the writing and review of the NSP until its finalization; Dr. Mugabe Frank Rwabinumi, Dr. Joseph Imoko, Dr. Aldo Burua, Dr Samuel Kasozi, Dr. Claudio Marra, Dr. Moorine Sekadde, Dr. Byaruhanga Raymond and Dr. Joseph Kawuma. Special mention is made of Dr. Giuliano Gargioni, of WHO Global TB, who provided the technical support to the successful revision of this strategic plan.

The overall process of revising the NTLP Strategic Plan 2015/16-2019/20 was possible through technical and financial support from USAID through Management Science for Health's TRACK TB Project.

PART 1: CURRENT SITUATION

1. Background

1.1. Country Profile

1.1.1 Location

Uganda is a landlocked East African country bordered by South Sudan in the North, Kenya in the East, Democratic Republic of Congo in the West, and Tanzania and Rwanda in the South. It has a surface area of 241,550.7Km^2 of which 199,807.4 km^2 is covered by land.

1.1.2 Population and demographics

According to the 2014 census, the estimated 2016 population is 36,743,902. About 47.9% of the population is younger than 15 years; 18.6% (up from 12.5% in 2002) live in urban communities. The total fertility rate is 5.8 births per woman (down from 6.9 births per woman in 1995). The life expectancy at birth is 63.3 years (men 62.2, women 64.2, up from 50.4 years in 2002). Infant and under-five mortality rates are 53 and 80 deaths per 1,000 live births respectively[1]. The maternal mortality ratio decreased from 438 maternal deaths per 100,000 live births[2] in 2011 to 360 maternal deaths per 100,000 live births in 2013.[3]

1.1.3 Economy and development

The economy expanded by 5.0% in FY2014/15, less than the 5.3% projected, but more than the 4.6% recorded in FY2013/14[4]. Despite sustained economic growth, almost 1 in every 5 people lives in absolute poverty[5]. Regional variations exist as the highest proportions of people living in absolute poverty are in the northern (49%) and eastern (24.6%) regions while the lowest poverty levels are in the western (2.8%) and central (5.4%) regions. In 2016, Uganda ranked 163 out of 188 countries on the Human Development Index (HDI)[6], which captures a nation's progress in achieving a long and healthy life, knowledge, and a decent standard of living for its people. Uganda's HDI has dropped 3 positions since 2010.

1.1.4 Education

Uganda introduced universal primary education in 1997 and free secondary education in 2007. The literacy rate among persons aged 10 years and older increased from 70% in 2002 to 72% in 2014. The literacy rates are higher among: men than women (77% vs. 68%), and urban than rural residents (85.9% vs. 68.3%)[7].

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[1] Uganda Bureau of Statistics. National Population and Housing Census 2014 Main Report. http://www.ubos.org/onlinefiles/uploads/ubos/NPHC/2014%20National%20Census%20Main%20Report.pdf

[2] Uganda Demographic and Health Survey 2011. http://www.ubos.org/onlinefiles/uploads/ubos/UDHS/UDHS2011.pdf

[3] World Health Organization. World Health Statistics 2015. http://apps.who.int/iris/bitstream/10665/170250/1/9789240694439_eng.pdf

[4] Uganda Ministry of Finance, Planning and Economic Development. National Budget Framework Paper FY 2016/17 – 2020/21. http://budget.go.ug/budget/sites/default/files/National%20Budget%20docs/National%20Budget%20Framework%20Paper%20(NBFP)%20FY%202016-17.pdf

[5] UNFPA. The State of Uganda Population Report 2014: Harnessing Uganda's Demographic Dividend for Socio-Economic Transformation. http://uganda.unfpa.org/en/publications/national-population-and-housing-census-2014

[6] United Nations Development Programme: Human Development Report, 2016. http://report.hdr.undp.org/

[7] National Population and Housing Census 2014 Main Report

1.1.5 Governance

Uganda follows a decentralized system of governance enshrined in the National Constitution (1995) and Local Government Act (1997). The system has five tiers of local governance linked through political and administrative units as shown in Annex 1. The country currently has 116 districts, 1,382 sub-counties, 7,241 parishes and approximately 59,000 villages.

The Central Government is responsible for overseeing national affairs and services; formulating national policies and standards; monitoring the implementation of national policies and services; and ensuring compliance to standards and regulations. Line Ministries under the Central Government have similar functions.

The local governments are responsible for providing basic social services (including health) according to national policies and priorities, recruiting and managing human resources, collecting and allocating taxes, and approving district work plans and budgets.

1.2 The Health Sector

1.2.1 Organisation of the National Health System

The National Health System (NHS) is made up of the public and the private sectors. The public sector includes health facilities under the Ministry of Health (MoH) and the health services under the Ministries of Defence, Education, Internal Affairs (Police and Prisons) and Local Government.

Ministry of Health services are structured into:

- National referral hospitals (NRHs) that are semi-autonomous;
- Regional referral hospitals (RRHs) that are self-accounting and under MoH oversight; and
- District health facilities, managed by local governments
    - Public general hospitals
    - Health centre (HC) IVs, HC IIIs and HC IIs
    - Village health teams (VHTs, HC Is)

The National and Regional Referral Hospitals and some of the general hospitals have training institutions, managed by the Ministry of Education, for doctors, nurses, laboratory and paramedical staff.

The private health sector consists of private not-for-profit (PNFPs) providers, private health practitioners (PHPs) and traditional and complementary medicine practitioners (TCMPs). Private not-for-profit providers and private health practitioners are autonomous as granted by their respective legal proprietors. Private not-for-profit providers contribute significantly to the health services provided in the country: of all hospitals, 52% are public, 41% are private not-for-profit providers and 7% are private for-profit (PFP).[8] As public-private partnership is a guiding principle in the Government of Uganda's (GoU) health strategy, the GoU subsidizes private not-for-profit facilities and a few private hospitals. For the last 5 years, about 20% of private not-for-profit facilities' total revenue comes from the GoU to help cover the minimum health care

[8] Government of Uganda Ministry of Health. Health Sector Strategic Plan 2010/11-2014/15. http://www.health.go.ug/docs/HSSP_III_2010.pdf

package. Meanwhile, the private for-profit sector is quickly growing with most facilities concentrated in urban areas.

The MoH's core responsibilities include: policy formulation and analysis, strategic planning, development of standards and quality assurance, resource mobilisation, capacity development, technical support supervision, coordination of health services, investigation of epidemics, research, and monitoring and evaluation.

Districts and health sub-districts (HSDs) play a key role in delivering and managing health services at the district level. The health centres provide basic health prevention, promotion, curative and rehabilitation health services. District local governments pass health related by-laws and monitor the health sector's performance in the districts.

1.2.2 Health planning and financing

Health planning

The national and district levels lead health sector planning. At the national level, the Ministry of Health, in collaboration with development partners, develop strategic plans such as the 2015/16-2019/20 Health Sector Strategic Development Plan (HSDP). HSDP is aligned to the National Development Plan II and provides overall strategic direction for stakeholders' contributions to improving the population's health. The HSDP aims to accelerate movement towards universal health coverage to realize a healthy and productive life. Further, HSDP aims to reduce premature and preventable morbidity and mortality and decrease related health disparities. District local governments create their five-year development and annual operational plans based on the national plan.

Health financing

Health sector funding comes from domestic revenue and development assistance. Both central and local governments (though local government's contribution is very negligible), as well as loans, contribute to domestic revenue. The district health system receives over 95% of its financing from the central government. Development assistance plays a major role in financing health services; however, a bigger proportion of this is off budget. The Ministry of Health has a big challenge tracking donor off-budget support.[9]

The health sector remains grossly underfunded. Government allocation to health as a percentage of the total Government budget averaged about 8% from 2010/11 to 2015/16, which is 1.8% short of the Health Sector Strategic Development Plan (HSDP) target of 9.8% and well below the African Union's Abuja Declaration that recommends a 15% budget allocation for health[10]. This translates into a Government contribution of US $12 per capita expenditure on health. This per capita health expenditure is $56 below the five-year HSDP recommended minimum of $73 per capita in the year 2015/16. The Government finances 17% of the total health expenditure, health development partners 41% and the private sector including

[9] Ministry of Health: Health Sector Strategic & Investment Plan, 2010/11-2014/15; June 2010.
[10] African Union, (April 2001): Abuja Declaration on HIV/AIDS, Tuberculosis and other related infectious diseases.

households (out-of-pocket expenditures on user fees) 42%[11]. The 42% household out-of-pocket spending on health is far above WHOs maximum 15% recommendation.

1.2.3 Human resources for health

Both national and district levels recruit staff for the health system. At the national level, the Health Service Commission recruits staff for the Ministry of Health headquarters and for the national and regional referral hospitals. At the district level, the District Service Commission recruits staff for the public general hospitals and for health centres. Local governments are responsible for the management and development of human resources for health in their districts.

Although development policies, strategies and plans have resulted in some improvements in the management and development of human resources for health, the health sector continues to experience challenges recruiting, motivating and retaining staff. In 2010/11, only 56% of approved posts had been filled by health workers, but a recruitment drive by the MoH and support from partners resulted in 75% of posts filled in 2015/16. Inequitable distribution of staff is another challenge as many health workers prefer to work in urban rather than rural areas[12]. NTLP staffing levels are even worse than the national average with only 3 (43%) out of the 7 approved medical officer positions in the central level NTLP structure filled.

1.3 The National Tuberculosis and Leprosy Control Programme (NTLP)

1.3.1 History of NTLP

Prior to 1990, TB and Leprosy control programs were separate entities. A joint National Tuberculosis and Leprosy Control Programme (NTLP) conceived in 1988 became operational as a pilot project in 1990 and nationwide in 1995.

1.3.2 NTLP structure and integration in general health services

The NTLP is a disease control program under the Department of the National Disease Control in the Ministry of Health (MoH). The NTLP performs the national core functions of TB and leprosy control including the establishment of country-wide quality patient-centred diagnosis of TB and leprosy and treatment; coordination of TB and leprosy prevention and care services; and prevention and management of leprosy-related disabilities.

The operational structure of NTLP consists of three levels:

1. National level, also referred to as the Central Unit
2. Regional level, previously referred to as the zone
3. District level

Subsequent to the recommendation of the September 2013 external comprehensive NTP review, Central Unit developed an appropriate staffing structure of 77 positions (Annex 2); however, this is yet to be approved. Of these, 22 (34%) and 43 (66%) are funded by Government

[11]Annual Health Sector Performance Report 2015/16
[12] Ministry of Health: Annual Sector Performance Report, 2009/2010

and partners, respectively. In the National TB Reference Laboratory (NTRL), only 3 of the 4 approved positions are filled by government, 23 positions are filled by partners, and 15 are volunteers.

The districts in the country are grouped into 12 regions, according to the 12 MoH Regional Performance Monitoring Teams (RPMT) structure in September 2014. A Regional TB and Leprosy Focal Person (RTLFP) supports TB and leprosy care and prevention services in each of the 12 regions. Currently, all 12 regions are functional but at varying levels. Of the 12 RTLFPs, 6 positions are funded by the government, 5 by the Global Fund to Fight AIDS, Tuberculosis and Malaria and 1 by the German Leprosy and TB Relief Association.

At the district level, the District Health Officer (DHO) is responsible for the management of health service delivery including TB and Leprosy care and prevention services. The DHO appoints a District TB and Leprosy Supervisor (DTLS) to oversee TB and leprosy care and prevention services in the district. At the health sub-district level (HSD), the officer in charge of the HSD (usually a Medical Officer) is responsible for the management of health service delivery including TB and Leprosy care and prevention services. The HSD officer in-charge assigns a Health Sub-District Focal Person to oversee TB and Leprosy care and prevention services at the HSD level. At the district, HSD and health facility levels, TB and Leprosy care and prevention services are integrated into the general health services.

Table 1 below summarizes the responsibilities for TB and Leprosy control at the Central Unit (national), regional and district levels:

Table 1: TB and Leprosy Control Responsibilities, by health system level

Level of management	Responsibilities
National level (Central Unit) (Programme Manager) including NTRL	Formulate and revise policies and guidelines Develop strategic and operational plans Mobilise resources Set standards and quality assurance Lead advocacy, coordination and networking Train national and regional teams including regional TB and leprosy focal persons, regional implementing partners Conduct monitoring and evaluation Lead surveillance of (DR)-TB Lead operational research
Regional level (Regional TB and Leprosy Focal Person)	Assist the program manager with the above responsibilities Supervise district TB and Leprosy activities Mentor District TB and Leprosy Supervisor (DTLS) Lead advocacy, coordination and networking in the region Disseminate policies and guidelines Train district health teams Conduct monitoring and evaluation Lead operational research

Level of management	Responsibilities
District level (District Health Officer)	Plan and prioritize TB and Leprosy care and prevention interventions Ensure compliance to national policy and guidelines Support and supervise the DTLS, District Laboratory focal person (DLFP) and health sub-district in-charges Identify training needs and support training Monitor and evaluate TB and Leprosy care and prevention interventions Mobilise resource Lead advocacy, coordination and networking in district Conduct operational research
District TB and Leprosy Supervisor	Supervise health workers implementing TB and Leprosy care and prevention services Ensure compliance to national policies and guidelines Train, support and supervise health sub-district focal persons and sub-county health workers. Ensure availability of drugs at health facilities Validate data on TB and Leprosy Update district registers
Health sub-district in-charge and health sub-district focal person	Support the DTLS to ensure that the above activities are done at health sub-district level Lead advocacy, coordination and networking in health sub-district
Sub-county health worker (link between health facility and community)	Support the Village Health Team and local council III to identify treatment supporters for patients Train, support and supervise treatment supporters Deliver drugs and other supplies to treatment supporters Conduct advocacy, communication and social mobilization activities Identify people with TB and carry out contact tracing
Facility level	Diagnose TB Initiate treatment Follow up with patients Record and report cases (through DHIS)
Community level	Village Health Team and local council III: Refer people with presumptive TB to health facilities Support treatment

1.3.2.1 Laboratory network

National TB Reference Laboratory (NTRL)

The National TB Reference Laboratory (NTRL) is under the NTLP Central Unit. NTRL provides leadership and technical guidance to all laboratories in the national TB laboratory diagnostic network so they can provide quality laboratory services that contribute to the reduction of the TB and leprosy burden in the country. Additionally, NTRL provides laboratory services for TB diagnosis, surveillance and monitoring. In 2013, the NTRL was accredited as a supranational TB laboratory (SRL), the second SRL in the WHO African region.

Regional and district laboratories

Smear microscopy using Ziehl Nielsen (ZN) stain was the main laboratory diagnostic tool for TB until 5 years ago, when new laboratory diagnostic tools were introduced in the country. However, ZN microscopy remains the first diagnostic test for most presumptive TB patients.

All 14 regional referral hospitals have laboratories that function as regional laboratories.

District laboratories performing ZN increased from 303 in 2006 to 1,485 by 2015/16. Table 2 below shows the breakdown of diagnostic and treatment units performing ZN smear microscopy by level of facility. Over 1,000 of the facilities with ZN smear microscopy services are owned by the Government and 230 by private not-for-profit organizations. About 15% of diagnostic facilities have microscopes that are poorly functional or monocular.

Table 2: Number of DTUs performing ZN smear microscopy services by level of health facility

	Hospital	Health centre IV	Health centre III	Health centre II	Others (AIC & TASO)
Number of facilities	137	155	1,150	24	19

By June 2012, more than 120 facilities, mainly hospitals and health centre IVs with heavy workloads, had introduced smear microscopy using LED microscopes. All regional and district laboratories have received a fluorescent LED microscope, yet many facilities need microscope repairs and supplies of LED stains.

Since 2013, the NTRL and 3 private laboratories in Uganda perform TB Culture and Drug Susceptibility Testing (DST). While NTRL does culture and DST using both solid (Löwenstein Jensen) and liquid (MGIT) media, the private laboratories use liquid media. NTRL and 2 private laboratories perform Line Probe Assay (LPA) laboratories. NTRL uses LPA for detection of resistance to second-line medicines. NTRL also does smear microscopy and Xpert MTB/RIF.

In 2012, partners introduced Xpert MTB/RIF assay, an automated molecular test to rapidly detect Mycobacterium TB (MTB) and resistance to Rifampin (RR), in 24 health facilities. By the end of 2015/16, 111 Xpert MTB/Rif machines had been deployed in 105 peripheral laboratories (87 public, 13 private not-for-profit, 2 private for-profit, and 3 research facilities). NTLP currently recommends Xpert MTB/Rif as the test of first choice for all presumptive TB cases at diagnostic and treatment units (DTUs) with Xpert MTB/Rif machines and for high-risk groups such as previously treated TB cases, contacts of DR-TB patients, health care workers, HIV+ clients, children (0-14 years), prisoners, diabetics, pregnant and lactating mothers in DTUs without the technology. To increase detection of RR, this plan recommends that facilities without Xpert MTB/Rif machines refer samples of all pulmonary TB (PTB) cases to those with machines.

1.3.3 Ministry of Health and National Leprosy Control Programme policy

The Ministry of Health and partners developed the Uganda National Minimum Health Care Package (UNMHCP), which prioritises TB and leprosy under the communicable diseases cluster.

According to Ugandan law, all diagnosed TB patients must be notified of their status.

Currently, there is no nation-wide vital registration system with standard coding for International Classification of Diseases. Vital registration data are available at some facilities though coverage is unknown. Only about 30% of children younger than 5 years of age have birth registrations.

In recent years, the NTLP has revised and aligned its guidance to international recommendations. The NTLP recommends:

- Use of the 4-month regimen of rifampicin and isoniazid (RH) continuation phase rather than 6-month regimen ethambutol and isoniazid (EH) continuation phase regimen, which has been associated with more relapses and deaths than RH;
- Introduction of Isoniazid Preventive Therapy (IPT) among eligible persons living with HIV and children under-five contacts of persons with new bacteriologically confirmed TB cases since the beginning of 2015;
- Adoption and the use of antiretroviral therapy in all HIV-infected TB patients irrespective of CD4 count (in 2015/16 provided ART to 88% of co-infected patients).

The NTLP also prioritizes childhood TB through the development of paediatric TB guidelines and implementation of a training programme, resulting in improved case detection in children in some districts.

For many years, TB case finding was mainly passive. However, with the establishment of TB/HIV collaborative activities in 2005, active case finding was introduced among persons living with HIV. Additionally, the 2014/15 TB prevalence survey's revelation that over 40,000 TB cases are missed annually affirms the need for more proactive case finding strategies in the fight against TB in the country. Hospitalization during treatment is not encouraged for clinically stable patients. Patients are expected to receive treatment at home with support of a treatment supporter. National policy still requires BCG vaccination of babies at or soon after birth to prevent severe forms of TB, TB meningitis and miliary TB.

1.3.4 Access to TB and leprosy care and prevention services

NTLP has national coverage with diagnostic and treatment services for TB and leprosy in every health sub-district in the country. Each of the 214 health sub-districts provides services to over 170,000 people, on average. About 7% of the health centres provide TB treatment services only and do not have diagnostic services. In FY 2009/2010, 72% of the population lived within a 5-km radius from a public or private health facility.

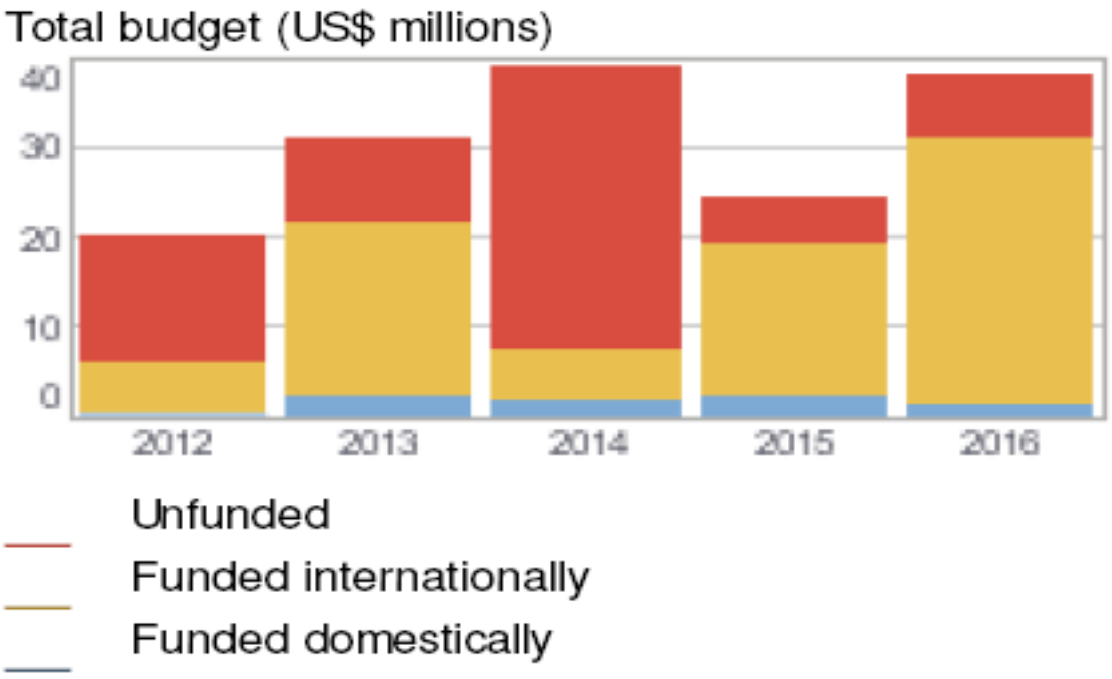
1.3.5 NTLP budget

NTLP's funding, as in the entire health sector, is insufficient to cover the need. For example, of the USD $38 million budgeted for Uganda's TB Control in 2016, about 82% (4% from domestic sources and 78% from international sources) was funded, leaving a 19% funding gap (Figure 1).[13] In addition, NTLP's budget is part of the Ministry of Health budget as NTLP is not a vote controller. The funding from the central government to the NTLP covers salaries of staff and

[13] World Health Organization: Global TB Report 2016, Uganda Country Profile.

procurement of anti-TB medicines. The German Leprosy and TB Relief Association (GLRA) supports NTLP to fund most of the leprosy care and prevention services. WHO provides the drugs for leprosy.

Figure 1: NTLP budget



Source: WHO Global TB Report, 2016

1.3.6 Role of the private sector in TB and leprosy control

As the private health sector contributes 50% of the health outputs in the country, it plays a significant role in referral from TB diagnosis to treatment. Primarily only the private not-for-profit facilities collaborate with the NTLP, while private health providers and traditional health providers rarely collaborate with NTLP.

In the urban centres, private health facilities are relatively abundant and much closer to the majority of the population as compared to public health facilities. Unfortunately, the quality of TB care in the private health facilities is poor, as studies from 2001[14] and 2009 showed. Only 5% of the 1,003 private facilities assessed in Kampala routinely provided TB treatment services. Furthermore, private clinics demonstrated a very low index of suspicion for TB. Only 16% of private facilities had the written recommended national guidelines for TB diagnosis and treatment; only 13% were familiar with TB drug regimens and only 4% of facilities had anti-TB medicines. Although 42% of the private facilities had a laboratory, only 35% of them did sputum smear microscopy[15].

[14] World Health Organization, (2001): Involving private practitioners in Tuberculosis control, Issues, Interventions, and emerging policy framework. WHO/CDS/TB/2001.285. Pg.17-21, 58.
[15]Draft Report, Situational Analysis of Private Health Providers' Service provision in Tuberculosis Care and Management under the PPM DOTS Programme, Kampala District, August 2009

In 2011, the UNION, through a TB Reach project, partnered with and improved the capacity of 100 private clinics in the slums of Kampala district to diagnose and treat TB. This has changed the perception of private clinics that are prepared and supported to control TB. Additionally, the UNION in 2014/15, worked with private health facilities in KCCA, Wakiso, Mukono, Jinja and Buikwe districts, improved treatment success rates among their patients to 84% and found 84 active TB patients through contact tracing.

1.3.7 Partnerships in TB and Leprosy Control

Uganda Stop TB Partnership (USTP), formed in 2004, is an autonomous non-profit organization akin to the Global Stop TB Partnership. USTP aims to mobilize untapped human and material resources to jointly contribute to the fight against TB. A full-time secretariat, supported by the Global Fund and its partners, strengthens coordination among 60 partners.

The **National Coordination Committee for TB/HIV**, launched in 2005, coordinates the fight against the dual TB/HIV epidemic.

Established in 2016, the **National Coordination Committee (NCC) for TB** is chaired by the Director General of Health Services and comprises officials from MoH, other line ministries and key partners involved in TB and leprosy control in the country. The NCC generates policies; advocates for and mobilizes human, material and financial resources; advises on and recommends new and innovative interventions in TB disease prevention and control; provides oversight as well as monitors implementation of strategies for TB disease control; rallies all partners and ensures effective coordination to avoid duplication; and promotes programmatic research. The Central Unit NTLP is the Secretariat responsible for implementing NCC decisions.

The partner mapping in Annex 4 shows various partners' involvement in NTLP activities in Uganda. Potentially, the partners will play a large role in the implementation of the NSP 2015/16-2019/20 based on the services they deliver as mapped.

1.4 Human Immunodeficiency Virus

Human Immunodeficiency Virus (HIV) remains the greatest risk factor for TB, the leading cause of death among the 1.6 million people living with HIV (PLHIV) in Uganda. The prevalence of HIV among the general population increased from 6.4% in 2005 to 7.3% in 2011,[16] potentially exacerbating the TB epidemic. However, the rising coverage of antiretroviral therapy among people living with HIV (88% in 2015/16)[17] could mitigate potential negative impacts. Despite the recommendation[18] to distribute isoniazid to all people living with HIV who are eligible, IPT coverage has remained low in the country.

Uganda adopted WHO's TB/HIV guidance in 2005 and updated it in 2012. The current TB/HIV collaboration is based on 12 activities. Uganda recommends the one-stop centre model for delivering integrated TB/HIV services; that is, a TB/HIV co-infected patient receives TB and HIV

[16] 2011 Uganda AIDS Indicator Survey
[17] Annual Health Sector Performance Report 2015/16
[18] Uganda National Guidelines on Collaborative TB/HIV Activities, Second Edition, 2013

services at the same visit and at the same clinic by the same health worker or health care team. A total of 1,800 ART sites and about 1,500 TB treatment sites exist. However, TB/HIV services are not fully integrated in most of the sites.

2. Epidemiological Situation of TB

2.1 TB Incidence, Prevalence and Mortality

In 2014/15, Uganda carried out a nationwide community-based TB disease prevalence survey, the first of its kind in the country. Apart from establishing a more accurate estimate of the TB burden, the survey provided a benchmark for future comparisons. The survey established the prevalence and incidence of TB at 253/100,000 (95% CI: 191 – 315) and 234/100,000 (95% CI: 145 – 345) respectively—much higher than previous prevalence and incidence estimates of 159/100,000 and 161/100,000[19], implying that over 40,000 TB cases are missed annually. The observed high prevalence across age groups suggests that TB transmission is still widespread despite implementation of the Stop TB strategy[20]. The survey also found that: TB is approximately 1.3 times more prevalent among urban than rural residents; nearly 3 times more prevalent among men than women; nearly 3 times more prevalent among HIV-negative than HIV-positive individuals at community level; and TB hot spots exist in both urban and rural areas. Further, the survey found poor health-seeking behaviour among symptomatic presumptive TB cases (39% did not seek care, 12% self-medicated); also, women tended to use health services more often than men. Among those who sought care, only 16% were offered a TB test (10.3% sputum examination and 6% CXR). In addition, the survey identified TB cases among individuals without TB symptoms, bringing into question the sensitivity of the current symptom screening. The survey also showed that the country still has a young epidemic.

TB Mortality: Uganda, like most developing countries, does not have a well-established vital registration system. TB mortality data in current use are based on WHO estimates. In 2015, the TB mortality rate, excluding HIV, was 5.5 deaths per 100,000 population; the TB mortality rate, including HIV, was estimated at 6.4 per 100,000 population.

Measuring TB incidence directly through strengthened surveillance: While the ultimate goal is to directly measure the incidence from TB notifications, a combination of measures are necessary: strengthened routine surveillance, better quantification of underreporting and universal access to health care. In the meantime, NTLP should advocate for government to establish and strengthen vital registration to derive mortality data, and the MoH and partners should consider a repeat prevalence survey in 5 to 7 years.

2.2 TB Notifications

In 2015/16, a total of 43,858 TB patients of all types were notified; 42,320 of these were incident (40,149 new and 2,117 relapse), representing a case notification rate of 118.7 per 100,000 population or a case detection rate of 50.7%[21], indicating a slight decline from the 45,268 overall and 43,305 incident patients notified in 2014/15 and a 2007 case notification rate of 145 per

[19]WHO Global TB Report, 2015
[20]WHO Stop TB Strategy 2006 - 2015
[21]NTLP Annual Report 2015/16

100,000 population. Men continued to predominate with a male-to-female ratio of 1.8:1. As in previous years, the majority, 86%, had PTB. For every notified clinically diagnosed PTB patient, about 2 were bacteriologically confirmed PTB cases.

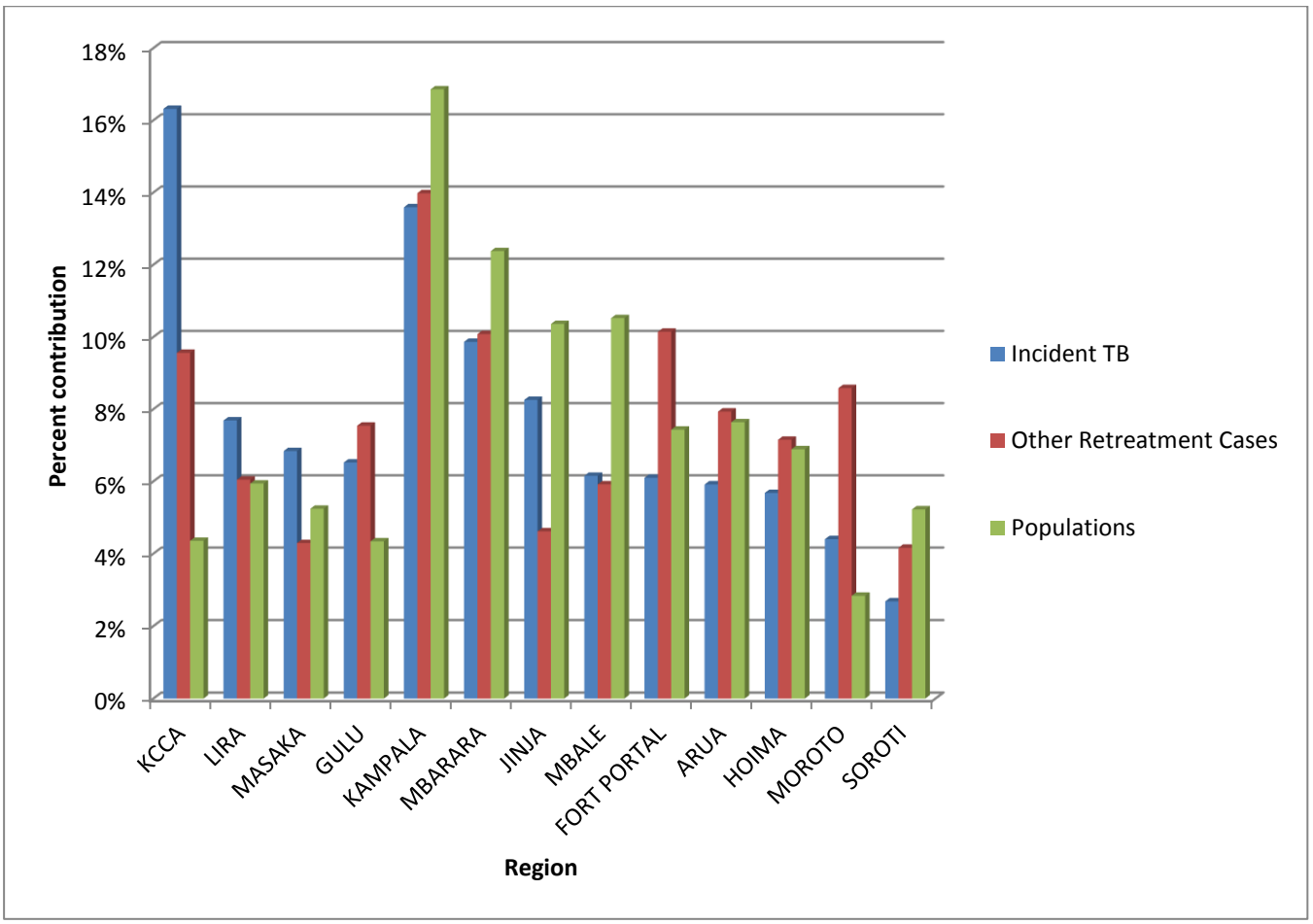
Given the high HIV co-infection rates, 41.5% in 2015/16, it is probable that the low clinically diagnosed pulmonary TB is due to under-diagnosis rather than a different epidemiological situation in Uganda. The declining notification of clinically diagnosed and EP-TB may be responsible for the declining TB case notifications overall. Factors for these are enumerated under 2.3 below.

Regional contribution to national notifications versus regional populations: In 2015/16, as in previous years, the regional contribution to national TB case notifications continued to vary as some regions contributed the equivalent of their populations while others contributed far less than would be expected from their populations (see Figure 2). Four regions (Moroto, Gulu, Masaka and Lira) and KCCA notified proportionately more incident cases than would be expected from their populations. The range varied from KCCA, which notified four times more incident patients than would be expected from its population, to Gulu and Moroto, which notified 0.5 times more cases than would be expected from their populations. The other 6 regions notified fewer patients than were expected from their populations. Soroti had the lowest case notification rate of 60/100,000.

The regional variation is attributable to a combination of factors. A higher prevalence of TB in slums around cities like KCCA where a study by Guwatudde et al (2003) estimated TB prevalence to be 4 times more than the national average; the findings of the recent survey indicated that TB is slightly more prevalent in urban than rural areas. Other factors include varying populations; for example, the day population in KCCA is twice the night population, as only half the population stays in Kampala during the day to transact business and possibly seek health care including for TB. At night, half the population retires to surrounding districts, and yet the night population is used to estimate the denominator, i.e., expected TB patients. The other plausible explanation is that patients from districts in other regions seek care from KCCA and the large hospitals in the other 4 regions. However, it is also possible that the majority of "missed cases" are in the regions that detect far fewer cases than their populations would suggest. These could be regions to target for finding the "missed cases".

Figure 2 shows that five regions (KCCA, Kampala, Mbarara, Jinja and Lira) with approximately half (49.8%) of the national population notified nearly half (45%) of the incident patients in the country.

Figure 2: Contribution to national TB case notifications and population by region (2015/16)

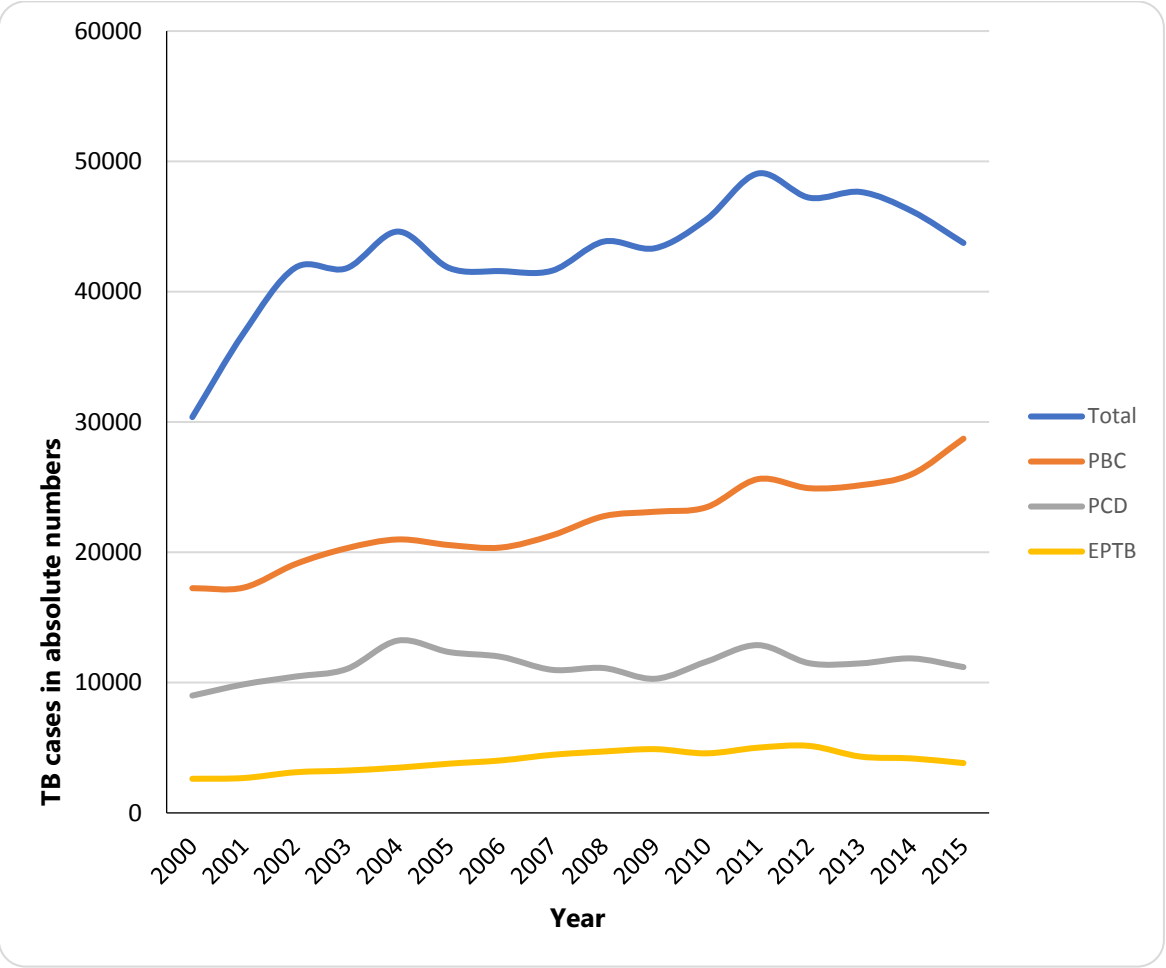


2.3 Trends in TB Case Notifications

Figure 3 displays trends in TB case notification, with minor year-to-year fluctuations, for all categories of TB over the last 15 years. Over the last five years, there was a decline in overall TB case notifications. Nationally, the decline is largely attributed to low diagnosis and notification of clinically diagnosed extra-pulmonary TB (EPTB).

Prior to the 2014/15 TB prevalence survey, the decline in TB case notification was attributed to a declining TB burden. As the survey revealed a much higher TB prevalence, the decline in TB case notification is actually an indication of annual missed TB cases, resulting from weaknesses in the health and surveillance systems and low health worker capacity. Figure 3 shows that the overall decline in smear-negative PTB and EPTB notifications could be largely due to under-diagnosis and under-reporting.

Figure 3: National trends in TB case notifications (2000-2015)

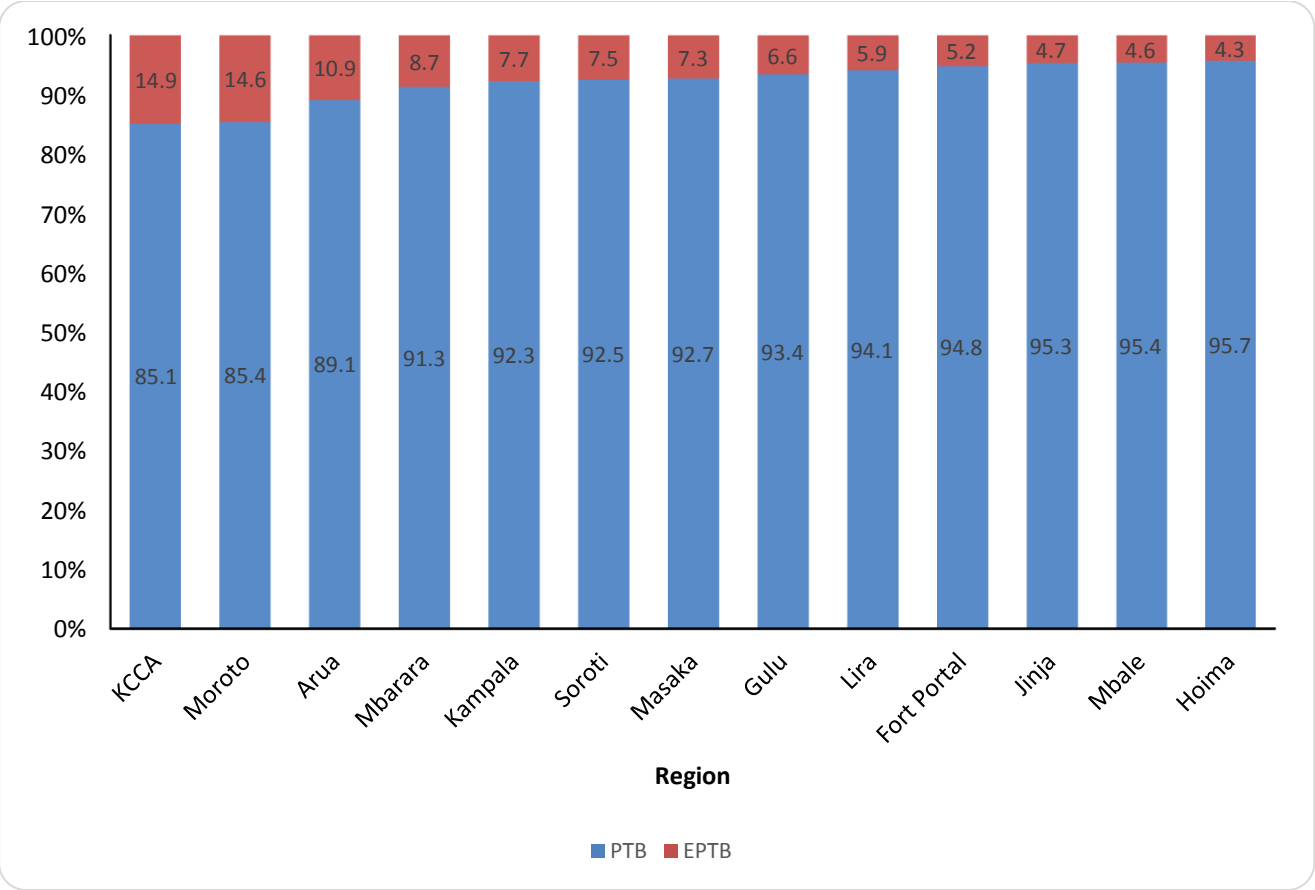


Under-diagnosis and under-reporting could result from a combination of factors including: over-reliance on microscopy to make a diagnosis of PTB; lower level health cadres including nurse aides not trained to detect PTB; non-functionality of X-ray machines that could be used as a supportive diagnostic tool for diagnosing smear-negative PTB; and poor access to and underutilization of Xpert MTB/Rif machines. Also, communities might lack access to doctors approved by NTLP to diagnose smear-negative PTB and initiate treatment. The TRACK TB project in Kampala achieved a pulmonary TB clinically diagnosed/reported rate of 27% and maintained a proportion of extra-pulmonary TB at 15%.

2.4 Pulmonary Versus Extra-Pulmonary TB

From 2007 to 2015/16, extra-pulmonary TB (EPTB) constituted about 8-11% of patients notified nationally as opposed to the expected 15-20% (see Figure 4 below). Over the years, only KCCA and Moroto Region have persistently notified close to 15% of all TB cases as EPTB. This could be due to a high number of referral facilities in KCCA and to pastoralists who tend to consume raw milk and milk products in Moroto region. It is worth exploring the contribution of bovine TB to EPTB in Moroto. On the other hand, EPTB constituted as low as less than 5% of notified patients in Hoima, Mbale and Jinja regions. The low proportion of EPTB in these regions is likely to be associated with under-detection due to difficulty in diagnosing EPTB rather than due to differences in the epidemiological picture in the country.

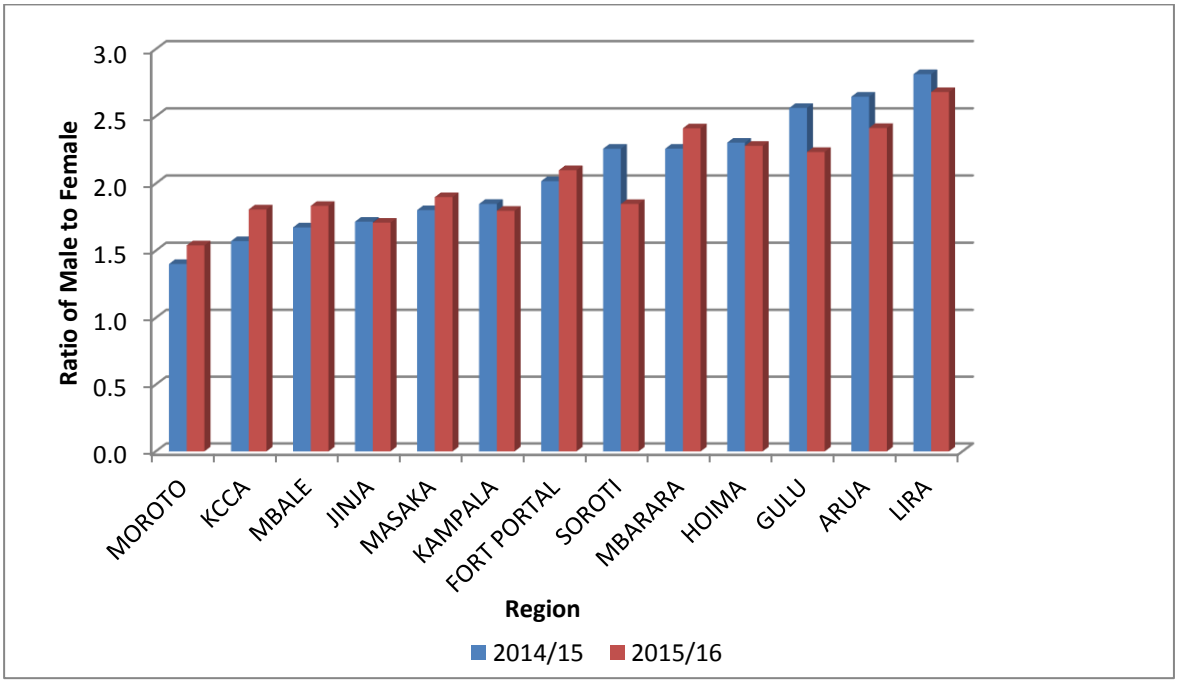
Figure 4: Patient notification by site (PTB or EPTB) and zone (2015/16)



2.5 Gender-based TB Diagnosis

Although the general population has fewer men than women (with a male to female ratio of 0.95:1), men constituted the majority of patients notified from 2007 to 2015/16. For example, in 2007 the male-to-female ratio of case notifications was 1.38:1 and this kept rising steadily over the years to 2: 1 in 2015/16. Figure 5 displays regional variations over fiscal years 2014/15 and 2015/16. According to the 2014/15 TB disease prevalence survey, TB is three times as prevalent among men as women, a finding that should be noted while interpreting regional variations. For example, the five regions (Moroto, Mbale, Jinja, Moroto and Soroti) and KCCA that notified fewer than 2 male cases per female case, with the lowest ratio 1.5:1 in Moroto, could also be the regions where the majority of missed male cases are located. These would be the regions to target for finding the "missed TB cases" in general, and "missed male" TB cases in particular.

Figure 5: Male-to-female ratio of TB cases by region, FY 2014/15 and 2015/16



2.6 TB Age Distribution

In 2013, Uganda adopted WHO's recommended tools and definitions outlined in *Definitions and reporting framework for tuberculosis – 2013 revision*,[22] enabling the NTLP to disaggregate all cases by age group. Since then, childhood TB cases represent 7–8% of all cases notified, less than the expected 10-20% childhood TB[23]. Approximately 50% of Uganda's population is under 15 years of age.

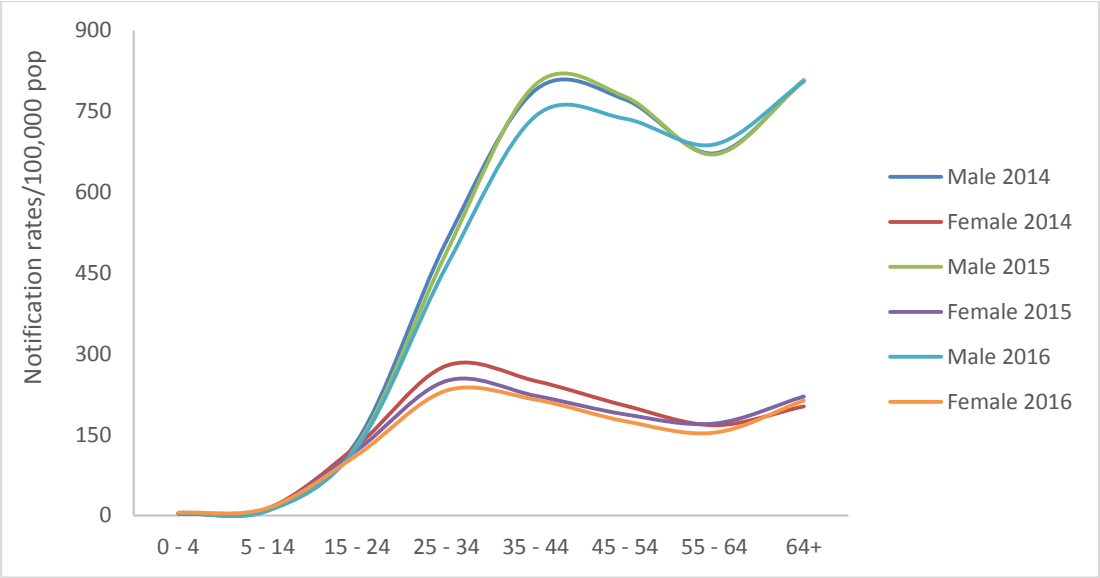
The age and sex specific notification rates for 2010 - 2013 for new smear-positive PTB patients demonstrate three points as shown in Figure 6.

- The 35-44-year age group has the highest notification rates. A second peak in notification rates represents the over-65 age group.
- These are also socioeconomically and sexually active age groups, so TB has negative implications on the economy and the dual TB and HIV epidemics.
- In younger age groups (below 15 years), girls and boys have similar notification rates however, males over 24 years predominate the females thereafter in terms of TB notification rates.

Because Figure 6 shows notification rates of new smear-positive PTB patients only, the rates in the lower age groups are small. Children, especially those younger than 10 years, have more frequent smear-negative PTB or EPTB.

Figure 6: Age and sex specific new smear-positive PTB notification rates (2010-2013)

[22] http://apps.who.int/iris/bitstream/10665/79199/1/9789241505345_eng.pdf
[23] WHO, Towards Zero Deaths Roadmap for Childhood TB

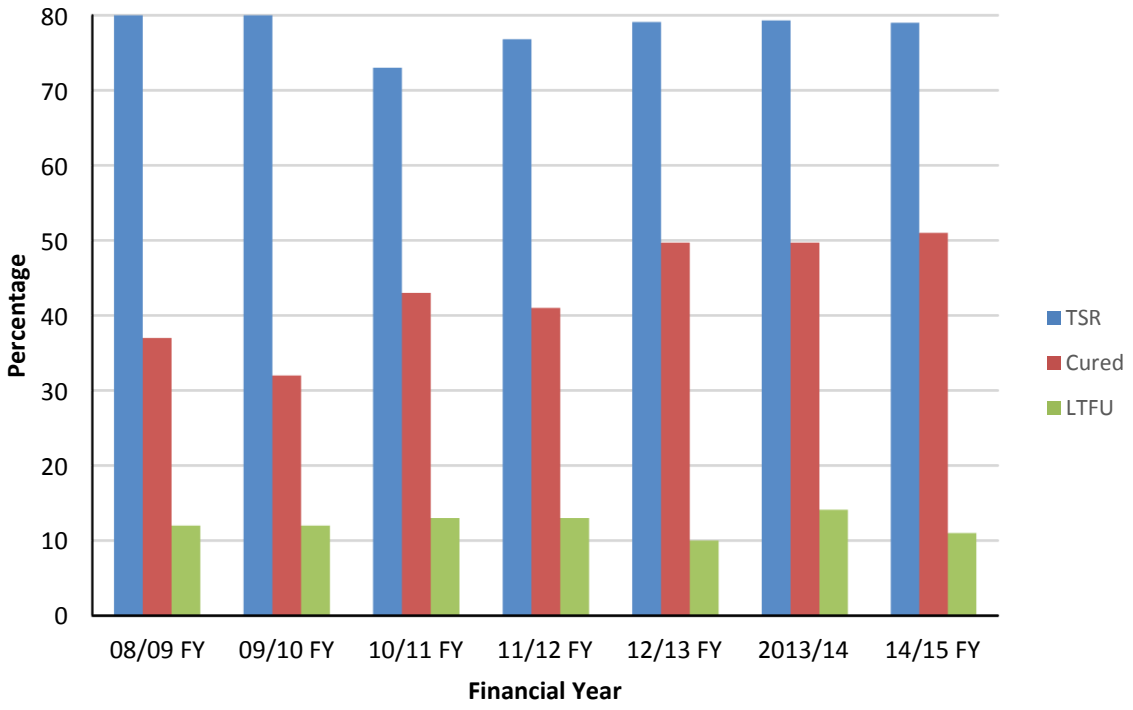


2.7 Treatment Outcomes

Case holding among drug susceptible TB cases has remained a challenge in the country. For example, of the 2014/15 new bacteriologically confirmed cohort, only 79% were successfully treated (51% cured and 28% treatment completed) while 21% had unfavourable outcomes (5% died, 1% failed, 4% were not evaluated, and 11% were lost to follow up). Although the failure rate was only 1%, this is unlikely to be a true reflection of the reality as less than 50% of the smear-positive cohort did all the recommended follow-up smear examinations. Regional variations in treatment outcomes exist. Lira had the best outcomes with 90% of 2014/15 cohort successfully treated, followed by KCCA (87%) and Masaka (84%). Moroto had the lowest treatment success rate of 60%, followed by Arua (66%) and Hoima (68%).

Figure 7 displays treatment outcomes (treatment success rates, cured rates, and loss to follow up rates) for the new pulmonary bacteriologically confirmed (PBC) TB cases over the past 7 years. It shows that while cure rates were increasing steadily, they did not reach the desirable level, and treatment success rates stagnated below 80%, well below the AFRO average of 85% and the 2015 Stop TB Program target of 90%. Over the years, nearly 20% of the cohorts had unfavourable outcomes; if not addressed adequately, these outcomes could lead to an increase in multi-drug or rifampicin-resistant TB (MDR/RR-TB) in the future. The low cure rates and the unnecessarily high unfavourable outcomes could indicate poor quality service delivery.

Figure 7: National treatment outcomes for new PBC (2008/09-14/15)



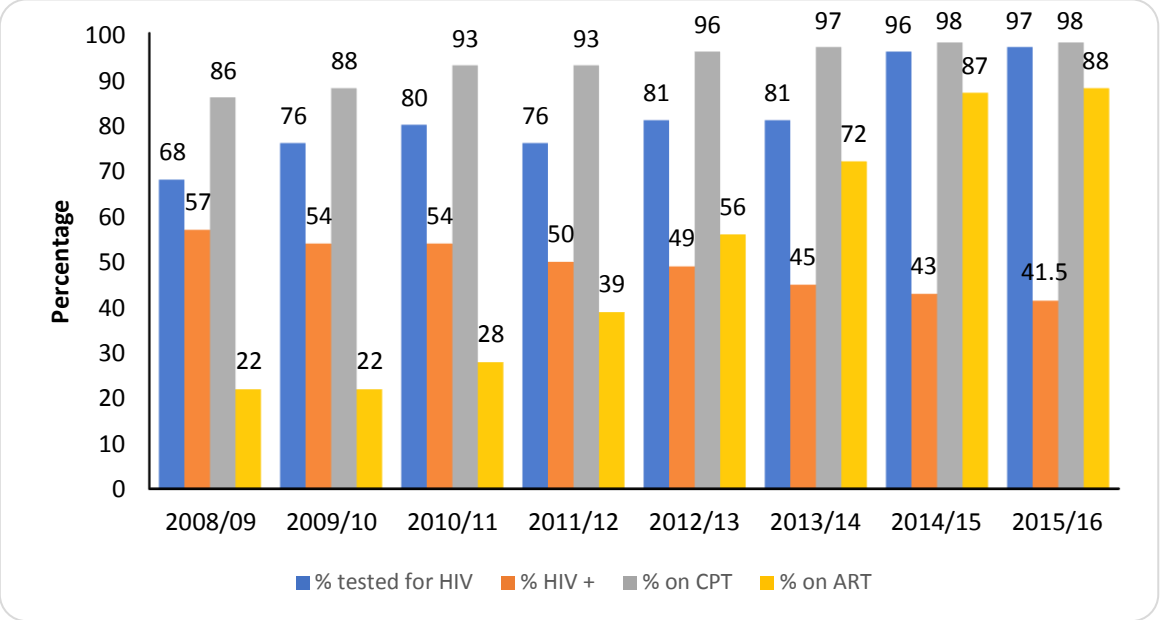
Reasons for sub-optimal performance may include poor recording and reporting, failure to obtain the definitive treatment outcomes of transfer-outs, challenges with implementation of Directly Observed Therapy (DOT) and community-based Directly Observed Therapy Short Course Strategy (CBDOTS), and insufficient involvement of families and communities in providing treatment support to patients. Sub-optimal cure rates indicate poor quality patient care services.

2.8 TB/HIV Collaborative Services

In Uganda, TB control is based on the 4 principles, 3 pillars and 10 components of the End TB Strategy, while HIV control is based on a combined HIV prevention strategy. TB/HIV collaboration is based on 12 interventions recommended under the second edition of TB/HIV collaborative activities.

The National Coordination Committee (NCC), formed in 2005 alongside the National Policy Guidelines for TB/HIV Collaborative Activities, standardized implementation of TB/HIV collaboration, leading to substantial progress in key TB/HIV indicators (see Figure 8).

Figure 8: Trends in TB/HIV services (2008/09-2015/16)



For example, the proportion of TB patients with a documented HIV test result increased from 68% in 2008/09 to 97% in 2015/16, and Co-trimoxazole Preventive Therapy (CPT) coverage among TB/HIV co-infected patients rose from 86% in 2007 to 98% in 2015/16. Though the anti-retroviral therapy (ART) coverage among TB/HIV co-infected patients increased from 22% in 2008/09 to 88% in 2015/16, it remained suboptimal. Similarly screening for TB among people living with HIV improved from 27% in 2006 to over 92% in 2015 under the guidance of the AIDS Control Programme; however, the proportion of TB cases found remains low. The HIV-positivity rate of TB patients tested was 41.5% in 2015/16 compared to 54% in 2010.

2.9 MDR/RR-TB, Programmatic Management of Drug-Resistant TB

The National Drug Resistance Survey (DRS), conducted in December 2009 through February 2011, found 1.4% of new smear-positive patients; 12.1% of previously treated smear-positive patients had MDR/RR-TB. [24]The survey found an association between MDR/RR-TB and urban settings and an age greater than 35 years. Based on these DRS prevalence estimates, and the 2014/15 national TB prevalence survey, MDR/RR-TB among expected pulmonary TB patients would be approximately 2,000 annually.

In 2012, the programme introduced programmatic management of drug resistant tuberculosis (PMDT) in 2 treatment initiation sites and eventually expanded to 15 initiation sites. Some progress has been noted. The programme reviewed PMDT guidelines, introduced shorter regimens, built capacity of health workers to manage MDR/RR-TB, carried out regional Green Light Committee (rGLC) Missions, and improved infection control measures. In addition, the programme introduced audiometry to ensure regular testing for any hearing defects. Enrolment in treatment has also been rising. In the FY 2015/16, the program noted a remarkable treatment success rate of 74% among the 2013/14 cohort, compared to the global treatment success rate of 52%.

[24]D Lukoye et al, PLoS ONE 8(8), 2013.

The male-to-female ratio for MDR/RR-TB patients is 1.90:1, which is comparable to the male-to-female ratio of TB in the country (1.84:1 in 2014). Among MDR/RR-TB patients, 91% were tested for HIV, and 58% were HIV-positive. Of the co-infected patients, 97% received co-trimoxazole preventive treatment and 84% received anti-retroviral therapy.

3. NTLP Achievements and Challenges to Date

Table 3 shows progress, including the year of assessment, on key indicators for the National Strategic Plan 2012/13 - 2014/15, also relevant for the NSP 2015/16 - 2019/20.

Table 3: Progress on key indicators NSP 2012/13-2014/15

#	Indicator	Baseline (year)	Target 2015	Progress so far
Impact				
1	Prevalence rate for TB per 100,000 population	181 (2011) WHO estimate	176	253 (2014/15) prevalence survey estimate
2	Percentage of grade 2 disability among newly detected leprosy cases	20.4% (2010)	13%	27% (2015/16)
Outcome				
1	Case notification for all cases (new and relapse)/100,000 pop	128 (2010)	137	119 (2015/16)
2	Case detection rate for MDR cases	13% (2010)	50%	17% (2015/16)
3	Treatment success rate among new smear positive TB patients	71% (2010)	80%	79% (2014/15 cohort)
4	Cure rate among new smear-positive TB patients	34% (2011)	45%	51% (2014/15 cohort)
5	Treatment success rate among new smear-negative & extra-pulmonary TB patients	59% (2009)	68%	68% (2013)
6	Treatment success rate of retreatment TB cases	70% (2009)	79%	70% (2013)
7	Treatment success rate among confirmed cases of MDR-TB	unknown	60%	74% (2013/14 cohort)
8	TB Case fatality rate among smear positive TB patients	4.5% (2010)	4%	5% (2013 cohort)
9	Treatment success rate (completion rate) for MB leprosy cases	85% (2010)	90%	77% (2013/14 cohort)
Output				
1	Number of health workers diagnosed with TB in the previous one year	Unknown		69 (2014)
2	Percentage of all TB patients on DOT	40% (2011)	60%	67% (2014)
3	Percentage of confirmed cases of MDR-TB enrolled on treatment according to national guidelines	12%(2011)	80%	100% (2014)
4	Percentage of MDR patients on DOT	100%	100%	84% (2014)

5	Percentage of health facilities reporting no stock outs of anti-TB medicines in the last 3 months before assessment.	64% (2010)	80%	90% (surveyed 26% of DTU)
6	Percentage of TB patients tested for HIV	80% (2011)	95%	97% (2014)
#	**Indicator**	**Baseline (year)**	**Target 2015**	**Progress so far**
7	Percentage of HIV-positive TB patients treated with CPT	90%	98%	98% (2015/16)
8	Percentage of HIV-positive TB patients treated with ART	34%	60%	88% (2015/16)
9	Percentage of previously treated TB patients completed DST for MDR TB diagnosis	52% (2011)	80%	65% (2015/16)
10	Percentage of districts submitting timely reports	87%(2011)	95%	99% (2013)
11	The prevalence of high false negative (HFN) reduced in all DTUs	9% (2011)	<5%	3% (2015/16)
12	Proportion of community members knowledgeable about TB	unknown	50%	Unknown
13	Proportion of community members knowledgeable about leprosy	unknown	50%	Unknown
14	Percentage of new cases of leprosy that are children <15 years of age	8% (2011)	5%	6% (2015/16)
Inputs and Process				
1	Senior Medical Officer positions at NTLP filled	02 (2011)	6	3 (2014)
2	Percentage of NTRL staff financed by Government	9%(2011)	30%	10% (2014)
3	Number of NTLP central unit staff trained on management, leadership and advocacy	01(2011)		1 (2014)
4	Number of NTLP central unit staff who have attended a technical course on TB or leprosy control	01 (2011)	6	2 (2014)
5	Number of public TB culture laboratories	01(2011)	3	01 (2015/16)
6	Number of health facilities with functional Gene Xpert MTB/Rif services	26 (mid 2012)	200	105(2015/16)
7	Proportion of the anti-TB medicines budget funded by GoU	40% (2011)	100%	No data
8	Number of sites initiating MDR treatment	3	12	15(2014)
9	Number of NTLP zones aligned to MoH regions (updated)	09(2011)	13	12(2015/16)
Colour legend				
Target met				
Target on track, possible to reach by 2015				
Target not on track, probably not met by 2015				

The green rows in the table above indicate NTLP's achievements in recent years, yet several indicators are not on track for achieving the set targets; for targets that are not routinely monitored, their progress is unknown. The NSP 2015/16 - 2019/20 addresses these challenges.

4. NTLP's Strengths, Weaknesses, Opportunities and Threats

4.1 Strength and weaknesses of NTLP

Table 4: NTLP Strengths and Weaknesses

Strengths	Weaknesses
➢ Established NTLP Structure ➢ Availability of technical working groups that develop normative policies, guidelines and diagnostic algorithms ➢ Quality assured sputum microscopy laboratory network with over 1,480 DTUs ➢ Functional TB Specimen Referral System (TSRS), with trained staff and equipment, covering all districts ➢ National TB Reference Laboratory accredited as a supranational laboratory. NTRL performs external quality assurance for the country's TB bacteriology network. ➢ Diagnosis and treatment of TB is free of charge to the public. ➢ TB and HIV care and treatment services are integrated into the district PHC services and available up to Health Centre level III. ➢ TB/ HIV collaborative policy guidelines have been rolled out to all districts. ➢ The GeneXpert platform is available in 106 facilities, covering 68% of districts. ➢ Drug resistant TB diagnostic and treatment capacity has expanded to 15 treatment initiation sites. ➢ The NCC for TB implemented the revitalised Uganda Stop TB Partnership (USTP), an essential complement to MoH efforts. ➢ Existence of some CBOs and networks that are focused on TB ➢ Procurement and supply chain management for TB medicines are integrated into the NMS.	➢ Inadequate diagnostic capacity for smear negative, paediatric, extra pulmonary and drug resistant TB ➢ Underutilisation of existing diagnostic services ➢ Low community awareness about TB and low demand for TB services ➢ TB/HIV interventions are inadequate in terms of intensified case finding (ICF), the provision of Isoniazid Preventive Therapy (IPT) and Infection prevention and control (IPC) and ART coverage. ➢ Substantial number of diagnosed people not put on treatment ➢ Suboptimal treatment outcomes ➢ Very low involvement of private health providers, traditional and complementary health practitioners in TB control activities ➢ Irregular supply of TB reagents and supplies to diagnostic facilities ➢ Low quality of supervision and lack of mentorship to ensure adherence to guidelines on treatment especially from districts to lower levels ➢ Poor data collection, storage, access and utilization for performance improvement at all levels. Using research findings for programme improvement. ➢ Low quality of supervision from district to lower level ➢ Limited implementation of TB preventive therapy (in this case IPT) for the under-five contacts. ➢ Systematic screening of contacts (contact tracing/ reverse contact tracing) is not conducted

4.2 Opportunities and Threats to NTLP

Table 4 cont.: NTLP Opportunities and Threats

Opportunities	Threats
➢ MoH senior management recognizes that the current level of domestic funding the NTLP receives is inadequate. ➢ MoH set priorities in TB control including the following: training of village health workers; early TB detection with high cure rates; increased case detection through contact tracing; strengthening of programmatic management of drug resistant TB; infection control; better TB/HIV collaboration; strengthening of M&E and adequate follow-up of all patients. ➢ The MOH employed Regional Performance Monitoring Teams, which include TB staff. ➢ The presence of international partners provides huge opportunities for TB control in Uganda. ➢ The MoH Quality Assurance Department developed a QI framework to guide QI activities in the country. ➢ Renewed international recognition of the importance of TB control in children. The Xpert MTB/Rif platform has now been adopted as the first diagnostic test in children. ➢ Adoption of the 'one-stop-centre' model for TB/HIV care should facilitate provision of care for co-infected patients. ➢ The accreditation of the NTRL as a supranational reference laboratory is of great value to Uganda, potentially	➢ Uganda has not yet declared TB an emergency following the Africa Regional Declaration of Maputo in 2005. ➢ The Government's financial commitment to TB control is not commensurate to the high TB burden. ➢ High donor dependence especially for PMDT ➢ The District Administrations, whose budget funds district health service operations, often share a very limited budget because of the external financial support to TB control, resulting in poor support to community activities. ➢ Inadequate staffing levels in the central and zonal NTLP level ➢ Dependence on foreign companies for maintenance and service of essential equipment such as biosafety cabinets and Xpert MTB/Rif platform ➢ The function of the NTRL as a supranational reference laboratory: supranational activities may consume so much time that insufficient capacity remains to perform national activities. ➢ Lack of access to services in hard-to-reach areas, often worsened by seasonal conditions of the terrain. ➢ Reduced attention for TB due to non-communicable diseases such as diabetes and cardiovascular diseases that have become more prevalent and compete for resources ➢ Poor advocacy, stigma and discrimination against people with TB ➢ Insecurities in neighbouring countries bring about uncoordinated mass population movements across borders

boosting the laboratory capacity in the country. ➢ Mobile phone and Internet technologies provide great potential for recording and reporting, for ordering medicines and commodities, for tracking orders and other applications that are not yet known. ➢ The Global Fund New Funding Model supports strengthening community systems. ➢ The MoH is implementing the updated DHIS2 system. ➢ Several research institutions now participate in TB research.	➢ Low visibility of TB constituency in various fora ➢ Insufficient implementation of the available normative guidance (contact tracing, infection control) ➢ Low community awareness about TB and low demand for TB services ➢ Failure to execute the approved MoH structure

4.3 Analysis of Challenges and Gaps

NTLP still faces a number of challenges including:

1. Widening gap between expected and notified TB cases, low proportion of children among notified TB patients and stagnant treatment outcomes;
2. Inadequate TB/HIV integration with insufficient TB case finding and prevention among the HIV-infected;
3. Inadequate diagnostic and treatment capacity for MDR/RR-TB;
4. Gaps in programme management and systems.

4.3.1 Widening gap between expected and notified TB cases, low proportion of children among notified TB cases, and stagnant treatment outcomes

While Uganda has developed technical guidelines for most components of TB prevention and care, their incomplete operationalization as well as partial adherence to standards contribute to the low notification rate among TB patients, according to the 2014/15 national TB prevalence survey (see Annex 3 for programmatic implications).

The 2014/15 national prevalence survey's finding of high positivity rates in several districts indicate health centre workers' lack of capacity to suspect and diagnose TB, particularly among children and high-risk populations. Health facilities are not systematically screening children and contacts of known TB patients to diagnose active disease or latent infection. Collecting samples from children is particularly challenging as most children younger than 6 years old cannot produce sputum, yet only some referral hospitals offer gastric lavage and sputum induction to diagnose TB in young children.

Community knowledge, awareness and cultural beliefs about TB affect individuals' health seeking habits and completion of treatment. In communities that lack knowledge of TB symptoms and awareness of its risks, individuals may delay seeking care when they present TB symptoms. According to the national prevalence study, 39% of individuals with TB symptoms did not seek care. Presumptive TB patients might drop out of care during the diagnostic period, and diagnosed TB patients might stop care before initiating treatment or while on a treatment regimen. For example, 10% of diagnosed TB patients drop out of care before starting treatment at some facilities.

Inadequate and overworked staff, long waiting times, disrespectful treatment, and drug stock-outs contribute to poor quality care, deterring presumptive TB clients and known TB patients from seeking diagnosis and treatment at the health facility.

Health centre workers continue to use less sensitive screening and diagnostic algorithms, as they lack access or capacity to use more sensitive diagnostics such as LED microscopy (10% diagnostic facilities are covered), Xpert MTB/Rif (only 111 machines are deployed, and radiology, which is usually only functional in referral hospitals. Non-functioning microscopes and frequent stock-outs of drugs and commodities further hinder TB diagnosis and treatment.

Screenings and systematic assessments of TB services for high-risk, key populations also remain a challenge, as services are not reaching many of these populations. Key populations include: prisoners, armed service members, police officers, internally displaced persons, residents of slums and peri-urban locations, refugees, and members of fishing and nomadic communities. Populations from prisons and armed services have received some services, but these remain limited, especially as prison health staff deem TB a lower health priority.

In urban settings, people seek care at private facilities, and in rural areas, people's first point of contact in the health system is usually a traditional or complementary health provider. Yet, private health providers and traditional and complementary providers are not adequately involved in TB control.

Recording and reporting recommendations state that all detected TB cases, regardless of whether patients start treatment or not, should be registered, but some service providers are not adhering to these recommendations. Some diagnostic and treatment units are still only registering cases as they are started on treatment. Although guidance stipulates that DS units should register and notify all TB cases, whether DS- or MDR/RR-TB, some diagnostic and treatment units are not complying.

For many years, identifying TB cases has been mainly passive with the exception of active TB case finding among people living with HIV and on-entry screenings among prisoners. This strategic plan emphasizes a pro-active approach requiring health workers at health facility and community levels to actively ask about TB symptoms at each visit to support case finding and patient's management.

Stagnant treatment outcomes

Treatment success rates for smear-positive new cases stagnated around 80%. The main reason is a persistently high loss to follow-up rate of more than 10% and a death and transfer-out rate around 5%. Regions show variations in treatment success rates (TSR). For example, among the 2014/15 cohort, Lira and Masaka plus KCCA, attained TSR of over 85% while Moroto, Arua and Hoima had a TSR of less than 70%. Patients receive inadequate treatment support, and health workers do not proactively follow up with patients who have interrupted treatment. Insufficient community support to TB patients and absence of patient treatment enablers, except in drug-resistant TB cases, also lead to stagnant treatment outcomes.

4.3.2 Inadequate TB/HIV integration with insufficient TB case finding and prevention among people living with HIV

Testing TB patients for HIV and providing CPT to co-infected patients has achieved high coverage. However, the ART coverage for co-infected patients has lagged behind (88% in 2015/16). Uganda still uses a referral system where co-infected patients attend HIV services that may not be available in the same location where they get TB care; no fast-track system to ensure ART initiation exists. As there are more ART than TB treatment sites, ART sites should be accredited to provide integrated TB/HIV care.

NTLP's guidelines for intensified case finding, isoniazid preventive therapy (IPT) and infection control, are not systematically implemented by health workers. Although 92% of people living with HIV were systematically screened for TB in 2015, the screening's yield was very low, casting doubt about the quality of the screening. Although IPT for HIV-infected eligible clients has been rolled out, coverage remains low at around 5% (2013). Lack of prioritization and adequate resources may have resulted in inadequate isoniazid stocks, thus contributing to low IPT coverage.

Health facilities are not systematically implementing infection control guidelines, posing risks of TB transmission to health centre workers and facility users. In addition, current infection control interventions target facilities that provide TB services while paying little attention to general health facilities and communities.

Lack of "active case finding" and TB screening in communities, as well as the current emphasis on screening people living with HIV for TB yet inadequate community TB case finding, could explain the survey finding that TB is nearly three times more prevalent among HIV-negative than HIV-positive individuals at community level. Additionally, it may be necessary to include use of CXR as a screening tool for TB among people living with HIV.

4.3.3 Inadequate diagnostic and treatment capacity for MDR/RR-TB

Programmatic management of drug-resistant TB (PMDT) is highly dependent on donor funding, severely limiting existing programme's improvement and scale-up. Only one public health culture facility exists, and only some MDR/RR-TB treatment facilities have appropriate infrastructure to admit patients in need of hospital-based care.

Sub-optimal utilization of Xpert MTB/Rif technology is associated with low referral. The current policy advises use of Xpert MTB/Rif as the first test in DTUs where Xpert machines are located. As an interim measure, the programme proposes prioritizing testing of all detected TB patients with Xpert MTB/Rif as a step towards universal access to drug susceptibility testing; diagnostic and treatment units without Xpert MTB/Rif machines will refer samples to those with the technology. This will be included in the revised algorithm.

Treatment initiation and adherence are major challenges. Clinical decision-making, based on clinical and laboratory monitoring, is weak. Systematic screening of patients for potential adverse effects though introduced is still limited. The information flow between laboratory and clinician is still weak, contributing to the weak decision-making regarding treatment status. Health centre workers have no pro-active system for following up with patients who have missed their appointments.

Facilities manage treatment, and only 15 treatment initiation sites serve MDR/RR-TB patients. Patients can continue treatment at any facility, although the nearest facilities may not be close to patients' homes. Community-based treatment with trained treatment supporters is lacking. Some initiation sites have challenges implementing social support in terms of transport and nutritional support provided through the Global Fund grant, making adherence to the long treatment regimen even more difficult. Contact investigation of MDR/RR-TB patients is critical,

and while it happens in over 90% of cases, its adequacy and timeliness may still be wanting. Though preventive therapy for contacts without active TB is not available, early detection of contacts with TB can prevent disease progression.

Maintaining adequate levels of staff who are trained in clinical management and PMDT remains a challenge. Retention of trained staff is low due to transfers and rotations. Staff view work with MDR/RR/-TB patients as risky and are reluctant to stay on. After training, staff receive limited follow-up mentoring and supervision to support their efforts to improve their work. Surveillance, including recording and reporting, of MDR/RR-TB at all levels is insufficient. No adequate data are available for both clinical and programmatic decision-making. In addition, there are no current data on the MDR/RR-TB burden to inform programming, as the last DRS survey was carried out over 5 years ago,

The NTLP initially worked to improve patient management, so MDR/RR-TB had not been the programme's first priority. However, systematic testing with either Xpert MTB/Rif or culture of at least all retreatment patients (26% in 2015/16) is still a challenge. Additionally, the long and toxic regimen to treat MDR/RR-TB could negatively impact patients' adherence to treatment. As such, the programme plans to introduce shorter regimens. Similarly, issues of inaccessible laboratory tests such as liver and renal function tests complicate quality management of MDR/RR-TB. Audiometry tests have been introduced, although not all treatment initiation sites are regularly carrying out these tests.

4.3.4 Gaps in programme management and systems

Programme management and health systems challenges are complicating implementation of TB control interventions. The programme has inadequate financial resources, as almost a third of the budget is unfunded. In addition, the country heavily depends on donors as the Government funds less than 10% of the budget; in 2015/16, the Government funded only 4% of the budget. The ministries have supported several interventions to improve the quality of care provided, but these mainly address HIV and maternal and child health, while neglecting TB response. Additionally, the programme is required to abide by specific funding restrictions. Though the National Health Strategy includes decentralisation as one of its guiding principles, engaging communities remains a considerable challenge. Existing community structures do not receive the necessary support to address TB, nor are they well informed about TB.

NTLP's Central Unit is severely understaffed. For example, only 22 (34%) of the 77 positions in the proposed staffing structure (shown in Annex 2) are filled by Government, while 43 (66%) are filled by partners. In the National TB Reference Laboratory, only 3 of the 39 positions are funded by the Government. Though partners fill the gap to a certain extent, reliance on partners carries a certain risk should partner funding decrease or be withdrawn.

Procurement and supply chain management has several weaknesses leading to commodity insecurity. A FY 2015/16 assessment of TB medicines showed that availability of first-line drugs fluctuated from 69% in first quarter to 96% in fourth quarter while second-line drugs ranged from 79% to 100% in the second and fourth quarters, respectively. Facilities continue to report stock-outs of some medicines or commodities. Quantification based on projected numbers

rather than actual numbers lead to expiry of some drugs. Knowledge of ordering and follow-up of orders and deliveries at facility level are inadequate. At the national level, there is insufficient coordination between the stakeholders involved in PSM for TB medicines and commodities.

While the NTLP has developed monitoring and evaluation (M&E) system guidelines and standard operating procedures for recording and reporting, data quality assessment and analysis, clear guidance on integration into DHIS2 and roles of key players in recording and reporting are needed. It is not known if underreporting occurs and if so, to what extent. Very little information is available on key populations like congregate settings, health workers, the undernourished, migrants, refugees, residents of slums and fishing communities. Treatment outcome monitoring that was previously happening only for smear-positive TB patients and was not disaggregated by HIV-status is now monitored for all forms of TB. The TB reporting forms now include Age and sex disaggregation for all forms of TB, enabling the program to assess the proportion of children among notified TB cases. However, there is still need to improve data quality. The database for DR-TB patients has incomplete data that does not support patient management and monitoring and evaluation of PMDT. Electronic data capture, integration of NTLP reporting into DHIS2, and the establishment of strong vital registration systems are also needed.

While several research institutions investigate TB in the country, there have been few efforts to translate findings into programme improvement or change in interventions. The NTLP is in the process of revising a 2013 research agenda, but limited resources have prevented implementation. Analysis of routinely collected data rarely happens at lower levels.

PART 2:TUBERCULOSIS

5. Guiding Principles for the NSP 2015/16 – 2019/20

During the implementation of this revised NSP, NTLP will apply the guiding principles of the third National Health Policy.[25] Additionally, NTLP will adopt pro-active and quality improvement approaches, and in collaboration with partners, NTLP will ensure NSP's alignment with WHO's End TB Strategy.

5.1 Guiding principles for the NSP

Table 5: Guiding principles of the National Health Policy

Guiding principle	NTLP response
Evidence-based and forward looking strategy	Ugandan TB guidelines are in line with international recommendations.
Pro-poor approach and sustainability	TB services are free at the point of care.
Partnerships	The Uganda Stop TB Partnership coordinates partner involvement and collaboration. The NTLP formed the NCC to prioritize TB and support resource mobilization.
Primary health care	TB care and prevention services are available in almost all health facilities.
Uganda National Minimum Health Care Package (UNMHCP)	TB care and prevention, including for DR-TB, is part of the Uganda minimum health care package.
Integrated health care delivery	TB care services are delivered in an integrated manner.
Gender-sensitive and responsive health-care	No specific response from NTLP
Mainstreaming of health in all policies	The NTLP collaborates with other health programmes, as well as the public and private sector in TB care provision.
Uganda in the international context	Harmonisation of cross-border TB care services are in very initial stages of development.
Patient-centred care	Where possible, the TB patient is treated close to home.

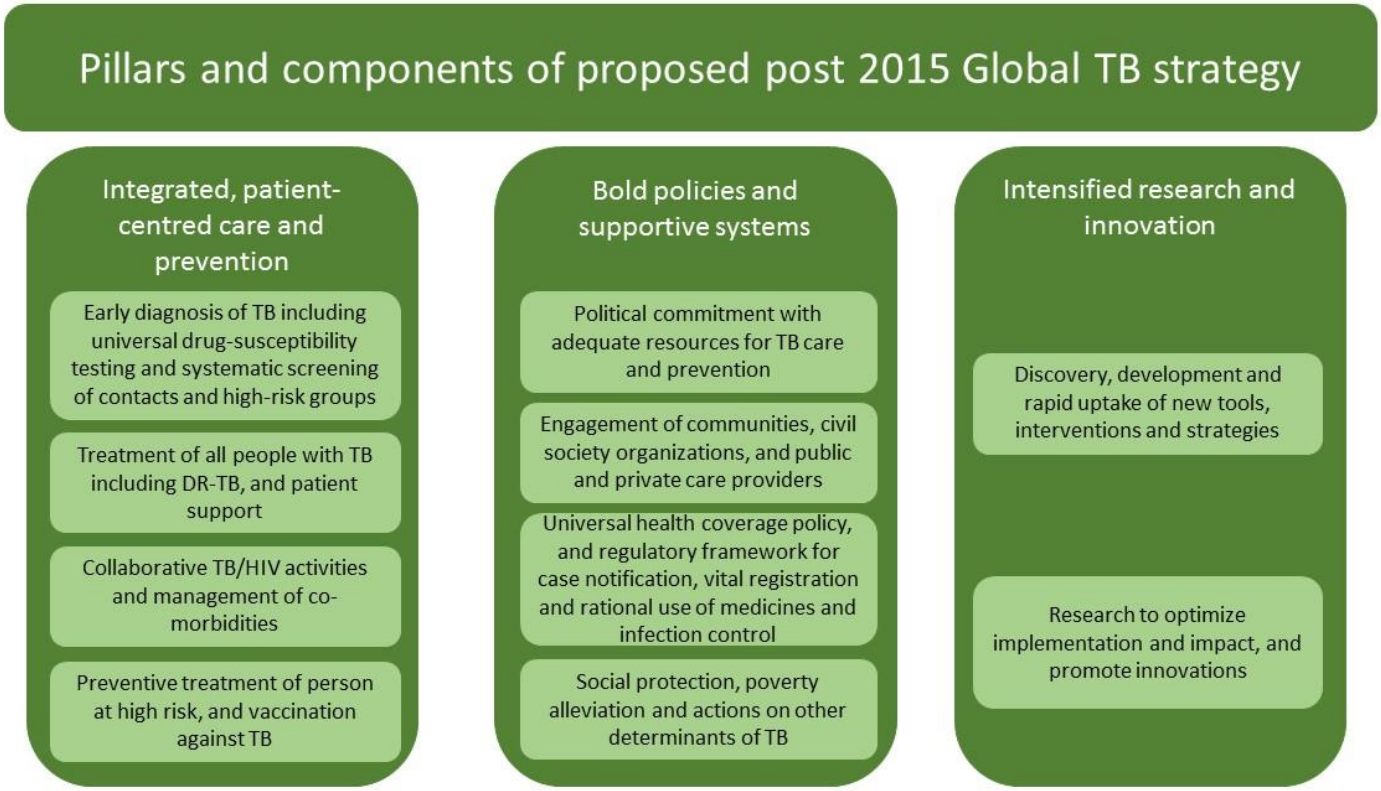
5.2 Alignment with WHO's End TB Strategy 2016 – 2035

The NSP aligns with WHO's End TB Strategy 2016 - 2035 with its three pillars and 10 components (see Figure 9 below) hinged on the 4 principles of: government stewardship and accountability, with monitoring and evaluation; strong coalition of civil society and communities;

[25]Health Sector Strategic Plan III 2010/11 – 2014/15.

protection and promotion of human rights; and the country-level adaptation of the strategy, with global collaboration.

Figure 9: The End TB Strategy Pillars and Components



5.3. Response to TB Prevalence Survey's Programmatic Implications

The programme and partners are utilizing the findings and implications of the 2014/15 national TB prevalence survey (summarised in section 2 and detailed in Annex 3) to update this strategic plan, thereby improving TB control in the country.

6. NSP 2015/16 - 2019/20 Vision, Goal, Objectives and Strategic Interventions for the Control of Tuberculosis

This revised National Strategic Plan (NSP) for TB and Leprosy 2015/16 – 2019/20 is aligned to the Health Sector Development Plan 2015/16 - 2019/20, WHO's End TB Strategy as well as WHO's Global Leprosy Strategy 2016 - 2020. It also addresses recommendations from the regional Green Light Committee (rGLC), USAID missions, the revised Xpert MTB/Rif policy, and the revised urban DOTS model.

6.1 Vision

A Uganda free of tuberculosis.

6.2 Goal

Reduce the incidence of TB by 5% by 2019/20, i.e. from 234/100,000 in 2015/16 to 222/100,000 by 2019/20.

The 2014/15 national TB disease prevalence survey established the current incidence of 234/100,000 and indicated that over 40,000 TB cases are missed annually. This incidence will not decrease until most of the missed cases are identified and successfully treated to stop further transmission.

6.3 Operational Objectives

The following four NSP objectives, three specific to TB and one referring to both TP and leprosy, will facilitate the achievement of the goal articulated above.

1. Increase case notification rate of incident TB cases from 119/100,000 in 2015/16 to 156/100,000 in 2019/20, and increase the treatment success rate among notified incident cases from 74% in 2015/26 to 85% by 2019/20.

2. Strengthen TB-HIV integrated care for co-infected patients and to increase ART coverage among TB/HIV co-infected patients from 88% in 2015/16 to 95% by 2019/20.

3. Increase the drug-resistant TB case detection rate from 17% in 2015/16 to 51% in 2019/20, and increase the treatment success rate from 74% in 2015/16 to 80% by 2019/20.

4. Strengthen systems for effective management of tuberculosis & leprosy services to meet the NSP targets.

6.4 Strategic Interventions by Objective

The following 26 strategic interventions will contribute to the achievement of the 4 operational objectives articulated above.

1. Increase case notification rate of incident TB cases from 119/100,000 in 2015/16 to 156/100,000 in 2019/20, and increase the treatment success rate among incident TB cases from 74% in 2015/16 to 85% by 2019/20.

1.1 Increase the capacity of health workers to screen and diagnose TB, with a focus on childhood, extra-pulmonary and clinically diagnosed TB.

- Develop, revise, print and disseminate diagnostic and treatment guidelines as well as standard operating procedures. Collaborate with the Ministry of Education to incorporate new development in TB control in curricula of training institutions
- Develop a comprehensive training and facility mentorships package for health workers in management of TB disease with a focus on diagnosis of clinical, EP-TB and childhood TB.
- Develop a training plan cascading from national to facility level.
- Build capacity of HWs including on sample collection in children.
- Provide health facilities with equipment for sample collection among children.

1.2 Improve access to and use of quality laboratory and radiology services for TB diagnosis and treatment monitoring.

- Improve utilization of available diagnostics (Xpert MTB/Rif, FM/ZN microscopy, LAM, sample collection and referral system), culture & DST and second line LPA.
- Invest in additional laboratory equipment: Xpert MTB/Rif machines, LED microscopes.
- Maintain equipment functionality and supplies.
- Provide guidance on using Xpert MTB/Rif technology to test all presumptive TB cases in facilities with machines and to test high-risk groups in other facilities as a means towards universal access to drug susceptibility testing.
- Strengthen, expand and maintain operational systems for referral of samples including recruitment of hub riders.
- Invest in x-ray machines including digital x-rays. Provide a guide on x-ray reading and interpretation, and train staff in how to use x-ray machines.
- Expand diagnostic units to more public and private facilities.
- Decentralise external quality assurance to the regional level, procure buffer stocks and mentor the laboratory staff at the health facilities.
- Strengthen referral of HIV and TB samples in an integrated way to improve reporting of results**.**

1.3 Register and initiate treatment with all diagnosed TB patients, and support their adherence to treatment regimens.

This intervention attempts to standardise registration of presumptive TB patients, as well as registration and reporting of all diagnosed TB patients regardless of their drug resistance pattern or whether they have started treatment. Standardising registration of presumptive TB cases is recommended.

- Review notification forms to capture all TB patients whether diagnosed through the laboratory or clinically.
- Support training and mentoring of bio-statisticians and provide airtime for following up reports.
- Provide patient appointment registers; support health workers (airtime etc.) and village health teams to reach out to patients who have not kept their appointments.
- Ensure sub-county health workers support patients' adherence to treatment.

- Strengthen DHIS-2 implementation and move to a fully electronic system for TB recording and reporting.

1.4 Empower patients, their families and communities to recognise and refer presumptive TB patients to diagnostic facilities, support treatment adherence and conduct contact tracing. Under this intervention communities will be engaged in care for TB patients. The diagnosis of a community member will provide an opportunity for village health teams to further engage the community in contact tracing, providing IPT to those eligible, and referring presumptive patients.

- Develop and disseminate guidelines for health workers and community health workers to empower patients and communities.
- Develop and disseminate contact tracing tools.
- Support provision of isoniazid preventive therapy (IPT) to under five-year-old contacts of new PBC cases.
- Educate the community on TB, the available interventions, and where to find services.
- Develop and disseminate key messages on TB.
- Identify and train family and community members as well as TB champions.
- Support sub-community health workers to recruit treatment supporters and to provide data capture tools.
- Enable former patients to participate in treatment support.
- Educate patients about their rights and responsibilities.
- Advocate with decision-makers.
- Connect patients with community support groups to improve their livelihoods and to reduce catastrophic expenditures due to TB.

1.5 Establish and strengthen facility and community health systems to facilitate referral of presumptive TB patients to diagnostic facilities as well as support treatment adherence and systematic TB screening among contacts (CHEWs, CLFs and VHTs).

- Map out and identify relevant Civil Society Organisations (CSOs).
- Train and provide CSOs with recording and reporting tools.
- Establish linkages among CSOs as well as between CSOs and the formal health facilities.

1.6 Strengthen TB care and prevention in key populations, such as those in prisons, health workers, internally displaced persons and refugees.

- Conduct a situational analysis on activities in the prisons.
- Conduct systematic screening for TB and HIV, upon entry into prison, periodically during prison term, and prior to exit from prison. Implement the 3 I's for TB/HIV: intensified case finding, isoniazid preventive therapy and infection control for TB.
- Establish referral system for samples and link congregate and prison settings to district health systems.
- Use experience gained in prisons to expand implementation to other key populations such as internally displaced persons, refugee camps, children, health workers and communities with poor access such as Karamoja.

- In collaboration with UNHCR and partners, conduct a baseline assessment in all refugee settlement and the surrounding areas to bench mark TB services and design appropriate interventions to address the gaps.

1.7 Strengthen and expand public-private mix (PPM) approaches for TB care and control, in line with the national policy framework.

- Finalize National PPM Guidelines adapted from WHO.
- Map, identify and engage private health providers.
- Develop and implement a system for accrediting and regulating private facilities.
- Implement programs for capacity building, supportive supervision and mentorships in TB and HIV management. Provide incentives, such as performance-based financing.
- Implement lab quality assurance and operations research.
- Develop a referral mechanism for presumed TB from other private providers.
- Facilitate referrals and capture data disaggregated by provider.
- Increase involvement of traditional medical practitioners in TB care.
- Develop strategies for engaging the corporate world in TB prevention and care.

1.8 Implement an urban TB care and prevention strategy for cities and municipalities.

The following actions have improved outcomes in Kampala Capital City Authority and will be expanded to other municipalities:

- Link facilities with communities to minimise initial loss to follow up.
- Conduct home visits to support DOT implementation.
- Support sputum sample referrals, systematic screening and contact tracing.

1.9 Integrate TB care and prevention services into care for non-communicable diseases and reproductive, maternal, new-born, child and adolescent health.

- Integrate drug-resistant and drug-susceptible TB care and treatment services in to care and treatment programs for other co-morbidities e.g. diabetes mellitus, undernutrition and or co-existing drug, alcohol, tobacco abuse and services for the elimination of HIV transmission from mother to child.
- Build capacity in TB management and provide recording and reporting tools.
- Provide supervision and mentorships for integrating TB care and prevention into care for RMNCAH and NCDs.

2. Strengthen TB/HIV integrated care for co-infected patients and increase ART coverage among TB/HIV co-infected patients from 88% in 2015/16 to 95% by 2019/20.

2.1 Strengthen collaboration, coordination and monitoring mechanisms for TB/HIV integration.

At national level:

- Hold coordination meetings (TB/HIV NCC).
- Update TB/HIV policy guidelines.
- Hold joint NTLP and ACP planning and M&E activities, such as supportive supervision, mentorships, and data reviews, validation, and data quality assurance.

At district level:

- Establish and strengthen district mechanisms including the appointment of focal persons to monitor TB/HIV integration, performance review meetings, joint TB/HIV mentorships with TB and HIV teams and implementing partners.
- Support the National AIDS Control Programme (NACP) to strengthen surveillance for TB of people living with HIV.

2.2 Scale up implementation of the one-stop model for co-infected TB patients.

- Finalize, print and disseminate the guidelines for implementing and monitoring a one-stop shop centre. Train health workers in TB/HIV co-management at national, regional and facility levels followed by facility mentorships.
- Invest in logistics management at the TB/HIV care point, and monitor proportion of facilities implementing one-stop shop services, per set standards.

2.3 Implement TB/HIV interventions to decrease the burden of HIV among patients with presumptive and diagnosed TB.

- Ensure that patients with presumptive and diagnosed TB receive HIV counselling and testing.
- Ensure co-infected patients receive prevention and treatment, CPT and ART, as per national guidelines.
- Train and mentor health workers (with emphasis on MDR/RR-TB treatment sites[26]) on TB/HIV and ART management.

2.4 Support implementation of intensified case finding (ICF), i.e. active TB case finding among people living with HIV and provision of IPT in HIV care clinics.

- In collaboration with NACP, engage health workers in HIV clinics to carry out intensified case finding for TB among people living with HIV and provide IPT to those without active TB disease.
- Encourage streamlined reporting of IPT initiation and completion in HIV clinics.
- Conduct training, mentorships and quality improvement coaching to improve IPT coverage.
- ACP and NTLP will discuss the development of more sensitive algorithms that may include use of CXR and frequency of application in screening for TB among people living with HIV to improve the yield of active case finding among people living with HIV.

2.5 Implement TB infection control (TBIC) practices in all health care facilities as well as congregate and community settings.

- Develop and disseminate standard operating practices on TBIC.
- Orient health workers on TBIC.
- Support facilities in the development and implementation of appropriate IC plans.
- Conduct annual assessment of healthcare workers' capacity to diagnose TB using symptom screenings and CXR.
- Sensitise communities on TB transmission, management and appropriate TB IC practices.

[26] Emphasis is placed on health workers in DR-TB treatment sites as ART coverage among DR-TB patients is lower than that among DR-TB cases (68% vs. 88% among 2015/16 DR and DS-TB cohorts respectively).

- Assess the suitability of installing Ultra Violet Germicidal Irradiation equipment in high-risk and highly congested settings, and provide training in maintenance and use.

3. Increase CDR MDR/RR-TB from 17% in 2015/16 to 51% in 2019/20 and raise the treatment success rate from 74% in 2015/16 to 80% by 2019/20.

3.1 Ensure early detection of MDR/RR-TB and improve patient linkage to care.

- Expand use of Xpert MTB/Rif, increasing access to DST (LPA, LJ culture and liquid DST) through sample referral. While it will take time to reach universal access to DST, this plan proposes to start by referring samples of all PTB cases detected in DTUs without an Xpert MTB/Rif machine to sites with the machines.
- Improve recording of all diagnosed MDR/RR-TB patients in the unit register and line-listing at district and national level.
- Strengthen e-reporting of diagnosed MDR/RR/-TB patients using GXAlert.
- Expand and strengthen MDR/RR-TB surveillance through training and mentorship at all TB units.
- Provide transportation from diagnosing facilities to treatment facilities to assist patient referral.
- Strengthen MDR/RR-TB surveillance among high-risk groups (prisoners, health workers and contacts of confirmed MDR/RR-TB patients, retreatment patients) and contact tracing.
- Provide supportive supervision and mentorship to all TB facilities on an ongoing basis.

3.2 Ensure early initiation of treatment and improve the quality of care for MDR/RR-TB patients.

Improve MDR/RR-TB patient management:

- Build the capacity of health facilities in MDR/RR-TB management: train health workers at treatment sites and follow-up facilities; print and disseminate tracing guidelines and patient management guides to all districts and follow up facilities
- Develop a system with unique patient identifiers with GIS systems to map patients and connect diagnosed patients to MDR/RR-TB treatment.
- Improve the connection of diagnosed MDR/RR-TB patients to MDR/RR-TB treatment.
- Support operations of facility and national MDR/RR-TB expert panels.
- Implement continuous supervision, mentorship and performance reviews.
- Support patients' adherence to treatment and mitigate catastrophic consequences of TB disease by providing treatment adherence enablers to patients (e.g., food and transport).
- Ensure availability of MDR/RR-TB medicines and ancillary drugs and support introduction of shorter second-line regimens.
- Implement one-stop shops for MDR-TB/HIV co-infected patients (training/joint clinics with ART teams).
- Strengthen pharmacovigilance for Second Line Drugs (SLDs) through training of regional teams, collection of data and analysis, feedback exchange and annual supervision.

Strengthen patient monitoring:

- Establish monthly follow-up clinics.

- Support treatment monitoring (enabling patients to access tests like audiometry, thyroid, liver and renal function tests, haematology tests, chemistry, ECG, x-ray, etc.).
- Explore the possibility of leasing equipment for MDR/RR-TB diagnosis and treatment monitoring.
- Provide risk allowance for health workers in MDR-TB treatment facilities and follow up sites.
- Conduct outreach to MDR-TB clinics in hard-to-reach communities.

3.3 Expand access to and improve MDR/RR-TB management including through home-based care for patients unable to visit a follow-up facility

- Procure, facilitate and support ambulance services for transporting MDR/RR-TB patients.
- Expand access to and improve MDR/RR-TB treatment by establishing decentralised community based MDR/RR-TB care.
- Establish additional MDR/RR-TB treatment initiation sites in 4 unique settings (Prisons, Jinja RRH, Moroto, and a second site for Kampala).
- Support integration of MDR/RR-TB services into the district minimum health care package.

3.4 Implement infection control practices in all MDR/RR-TB treatment initiation and follow-up facilities as well as in communities.

- Ensure implementation of appropriate infection control measures for healthcare staff working with MDR/RR-TB patients.
- Provide personal protective equipment (face masks for patients and N95 for health workers), fit test equipment and train health workers in fit testing.
- Remodel MDR/RR-TB sites where necessary (Kitgum).
- Assess infection control practices in health facilities, annually screen health workers for TB and revise infection control guidelines.
- Implement appropriate TBIC measures at community level to reduce risks of spread within the community.

3.5 Strengthen data management, monitoring and evaluation of MDR/RR-TB care.

- Implement a web based system for MDR/RR-TB patient management.
- Print and disseminate MDR/RR-TB recording and reporting tools.
- Train health workers on use of the tools and conduct periodic data quality audits as well as integrate MDR/RR/-TB reporting to DHIS-2.
- Introduce dashboards for monitoring MDR-TB care, data sharing and use of data for decision-making at national, regional, district and facility levels.

4. Strengthen systems for effective management of tuberculosis & leprosy services to meet the NSP targets.

4.1 Advocate for increased financial resources from domestic sources and ensure efficient and effective use of available finances.

- Advocate with political and high-level government officials for increased financial resources from domestic including Government sources in particular (from 4% to at least 15% by third FY).
- Advocate for effective and efficient use of available resources including use of other providers such as private health providers to improve resource absorption.
- Advocate for high leprosy burden districts to commit resources to leprosy interventions.
- Support training of NTLP and partner staff on financial reporting to improve financial reporting systems.
- Support execution of costing studies to obtain data on catastrophic cost indicators.
- Support availability of logistics for Central Unit Office operations.
- Organize quarterly meetings of the National Coordination Committee for TB to identify priority interventions, financing, infrastructure and human resource needs; discuss logistics gaps and funding priorities; update the NCC members on progress in implementation.
- Engage development partners and government to commit more resources to fund identified critical priorities.
- Involve NCC, partners, Parliamentary TB caucus in oversight of TB and leprosy control services.
- Engage Parliamentary TB caucus through quarterly advocacy review meetings to legislate on TB control.
- Ensure TB is prioritised in government financial allocations and spending at national and district levels.
- Organize annual TB stakeholders conference.

4.2 Engage communities and stakeholders in TB and leprosy prevention and care.

- Establish and maintain community-based systems for TB and leprosy care and prevention. Support strengthened community systems.
- Carry out social mobilization to raise community awareness through various social and electronic media, including radio and TV.
- Conduct quarterly coordination meetings with community groups.
- Organise advocacy campaigns including the annual commemoration of World TB Day.
- Hold advocacy campaigns targeting poorly performing districts.
- Sustain operations of partnerships such as Uganda Stop TB Partnership and National Coordination Committee for TB through quarterly meetings.

4.3 Improve human resource capacity at all levels to effectively deliver TB and leprosy services

- Advocate with Ministry of Public Service and Ministry of Finance for more human resources through adoption of the approved MOH structure and for filling the revised NTLP positions.
- Advocate for recruitment of staff for high volume facilities.
- Improve skills through training and mentorship at all levels.
- Explore the possibility of task shifting, for example, empowering the nurses and clinical officers to manage TB.

- Build the capacity of the TB/leprosy staff by supporting the National TB/Leprosy training institution Buluba.
- Attend TB conferences.
- Conduct supportive supervision and mentorships at national, regional and district levels.
- Advocate for the integration of Regional Performance Monitoring Teams (RTLFP) into Regional Hospitals as well as advocate for district local governments to prioritize and fund operations of District TB and Leprosy Supervisors.

4.4 Enhance physical infrastructure for TB prevention.

- Renovate the NTLP office block. Improve internet connectivity for better use of new technologies and for office operations.
- Advocate for construction or renovation of TB wards at all general hospitals.

4.5 Improve the quality of TB care and ensure patient safety at all levels.

- Periodically review and disseminate TB quality improvement guidelines, training manuals and standard operating procedures for TB prevention and care.
- Build capacity of health workers at different levels to implement quality improvement for TB care.
- Monitor implementation and conduct bi-annual assessments of quality of TB care services, through documentation of quality improvement projects, use of dashboards and quality improvement data, and reports to the NTLP. Quality improvement in TB care will be implemented in collaboration with implementing partners.

4.6 Improve availability of quality assured TB and leprosy medicines, supplies and equipment at all levels.

- Support national-level quantification, forecasting, procurement, ordering and monitoring the pipeline and stock levels at facilities.
- Provide updates to MOH commodity security groups, district medicines supervisors, National Medical Stores (NMS), Joint Medical Stores (JMS), National Drug Authority (NDA), Medical Access Uganda Limited (MAUL)and relevant partners at quarterly meetings.
- Implement the TB web-based quantification and ordering system to monitor ordering and stock levels (develop the system, provide trainings at national, district and facility levels and integrate data in to DHIS-2).
- Conduct pharmacovigilance at facility level.
- Establish a mechanism for ensuring quality of TB medicines and supplies.
- Advocate for NDA to conduct quality assurance and regulation of medicines used to treat TB.
- Initiate procurement of TB medicines (both SLD and FLD including paediatric formulations) and paediatric isoniazid for IPT among contacts.

4.7 Strengthen M&E systems for tracking performance and measuring outcomes and impacts to guide decision-making.

- Improve recording and reporting, data management and analytical capacity at all levels.
- Develop electronic TB monitoring and evaluation system (eTB).

- Strengthen TB supervision at all levels.
- Develop an electronic recording system for TB and integration of TB reporting into DHIS-2.
- Conduct training, supervision, mentorship, on-site data verifications, and DQAs.
- Conduct district, regional and national data management and performance review meetings.
- Establish a system for reporting on trainings, support supervision, mentorship, performance reviews and other program activities.
- Strengthen data collection, analysis and use at all levels for planning, advocacy. Design cost effective interventions based on information generated.
- Strengthen capacity of the NTLP to conduct TB epidemiological assessments.
- Produce quarterly and annual performance reports.
- Implement the balanced score card and strengthen M&E partnerships and coordination.

4.8 Implement the NTLP-led TB research agenda in collaboration with the Uganda TB research community.

- Ensure that the Uganda TB research agenda, relevant to improving NTLP operations, is implemented.
- Review the research agenda.
- Train NTLP staff in operational research.
- Conduct monthly Operations Research (OR) meetings to share and discuss research findings as well as their implications on the program.
- Implement a drug resistance survey (DRS), inventory studies to assess potential under-reporting, study on catastrophic costs, stigma index study and national TB expenditure assessment.
- Assess what is spent on TB in Uganda; study a TB patient pathway.

PART 3: LEPROSY

7. Leprosy 2015/16 - 2019/20 NSP

7.1 Leprosy Epidemiology

Leprosy is still endemic in Uganda. A total of 1,003 new cases were reported to NTLP during the last 3 years. Figure 10 shows the districts where new cases were detected in 2013, revealing that over 60% were in 10 of 116 districts.

Figure 10: New leprosy cases detected (2014)

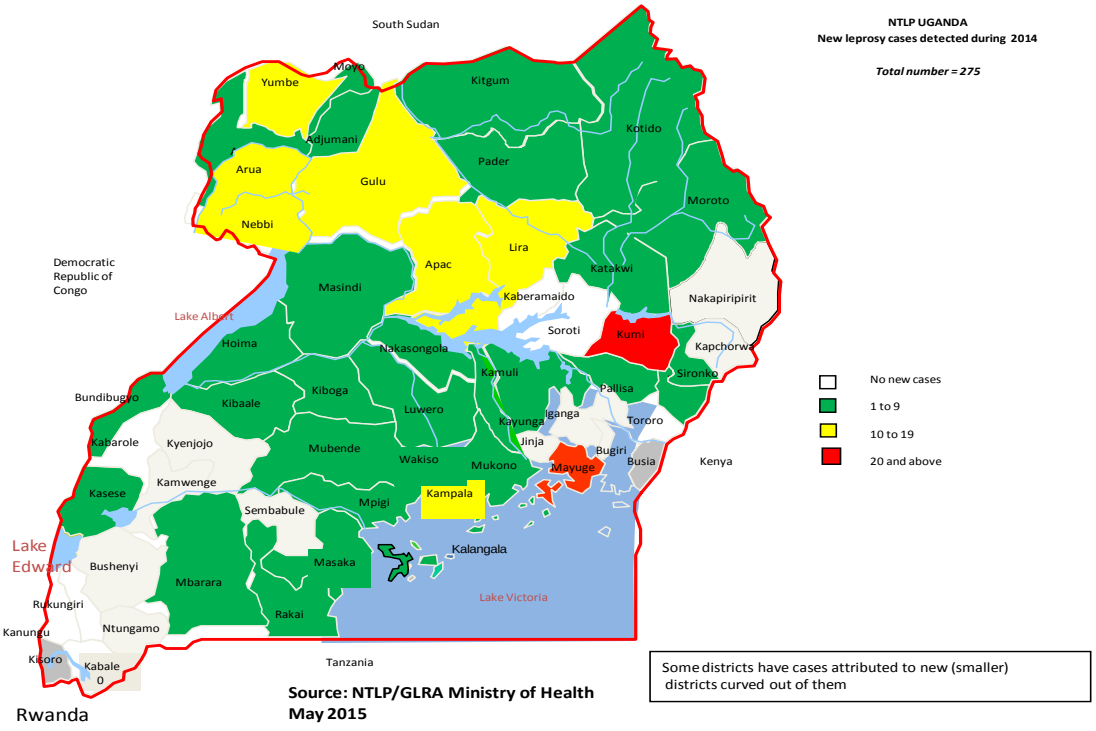
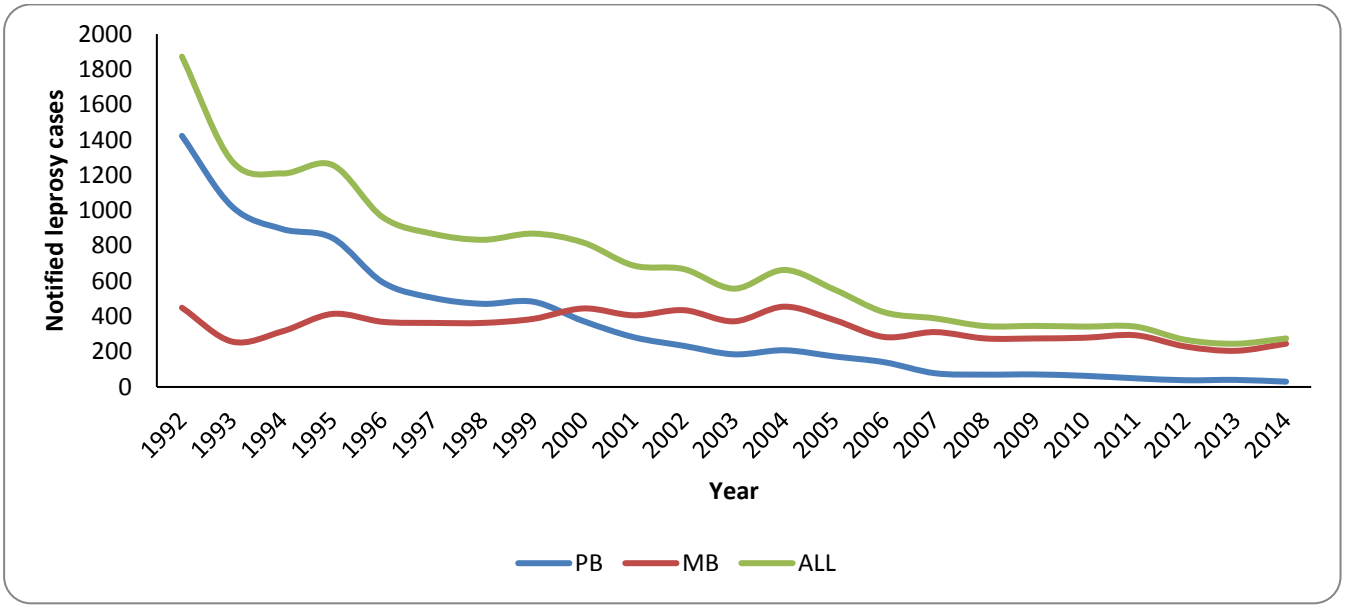


Figure 11 displays a gradual decline in notification of new leprosy cases, classified as paucibacillary leprosy (PB) and multibacillary leprosy (MB), from 346 in 2009 to 275 in 2014.

Figure 11: Trend of new leprosy case detection (1992-2014)



This downward trend is associated with a persistent proportion of child cases (6%-9%) and an increasing proportion of new cases with visible grade 2 disabilities (Gr2D) at the time of detection, from 18% in 2010 to 27% in 2015/16. The presence of childhood leprosy cases indicates continuing transmission in the community while the high proportion of Gr2D indicates an increasing delay in detection.

7.2 Role of Partners in Leprosy Control

In addition to the international NGO, German Leprosy and TB Relief Association (GLRA), five faith-based organizations (Buluba, Kagando, Kuluva, Kumi, Morulem and Nyenga) provide leprosy care and rehabilitation services. These partner organizations host four out of six workshops producing rehabilitative appliances for leprosy affected persons.

A newly formed local NGO, the Uganda National Alliance against Leprosy (UNALEP), is engaged in advocacy and interventions to improve access of persons affected by leprosy to care and rehabilitation services.

The private sector is not substantially involved in leprosy control. The few private dermatologists who have diagnosed patients referred them for treatment within the public health system.

7.3 Leprosy Interventions and Results to Date

There is one leprosy diagnostic and treatment facility in every endemic health sub-district. Patients who need treatment for complications are referred to the designated regional leprosy referral facility. However, all Primary Health Care (PHC) facilities are expected to suspect and refer cases to designated diagnostic units. ZN microscopy on skin smears is the first diagnostic test to confirm leprosy relapses as well as to confirm diagnosis of leprosy in any suspected cases where the diagnosis cannot be established by clinical examination alone.

The majority of new leprosy cases are detected when people with suspect symptoms are screened at health facilities; an increasing number of cases are detected through examination of household contacts of known patients. Out of 217 new cases detected in 2015/16, the case finding method was indicated in nearly all 215 (99%) of the cases; of those, 22 (10%) were detected through contact examination while 83% were detected through examination of general suspects. The yield was similar the previous year.

These case-finding methods are dependent on the presence of relevant knowledge and skills among health workers and the general population; both are diminishing.

Pre-service training institutions include leprosy in their curricula, but NTLP does not influence the actual training provided in the institutions; in-service leprosy training opportunities are provided to health centre staff, particularly those from health facilities where patients are receiving multi-drug therapy.

The increasing proportion of new cases with Gr2D, from 18% in 2010 to 27% in 2015/16, points to an increasing delay in detection. The WHO Expert Committee on Leprosy aims to reduce the proportion of new leprosy cases with Gr2D disabilities to less than 1 per million population by 2020. At the end of 2015/16, the proportion in Uganda stood at 1.3 per million population.

Primary health care provides leprosy treatment, using the WHO recommended multi-drug therapy (MDT) regimen. WHO provides the MOH with an annual supply of MDT blisters; the supply is sufficient to meet the country's needs but uneven distribution of leprosy cases complicates efficient distribution of the medicines.

A cohort of 288 multibacillary (MB) patients were started on MDT in 2013/14 and of these, 77% successfully completed the treatment. The national target of 87% was not attained mainly for operational reasons i.e. lack of follow up with patients transferred out to other facilities and loss to follow up. Out of the 7 suspected relapses after MDT reported to NTLP in 2015/16, only 2 potential relapses were put on treatment as the 5 did not appear to have relapsed with leprosy and hence were dropped. The 2 relapse patients who were started on treatment responded well with another course of the usual MDT.

The general health system has not integrated services for prevention and management of disabilities; NGOs facilities manage these services, but they may not offer sufficient geographical coverage. The limited data available from facilities suggest an increased frequency of admissions (in-patient care) for management of foot ulcers.

In collaboration with the line ministry for rehabilitation, the NTLP is implementing ongoing interventions to promote the inclusion of persons affected by leprosy in mainstream community-based rehabilitation opportunities, but the coverage and impact of these are unknown.

8. Identification of Gaps

8.1 SWOT Analysis for Leprosy Control

Table 6: Strengths, weaknesses, opportunities and threats of the Leprosy Program

Strengths	Weaknesses
➢ Presence of guidelines for diagnosis and treatment ➢ Consistent M&E system ➢ Partners supporting the programme ➢ Uninterrupted supply of leprosy medicines ➢ Specialised rehabilitation centres for leprosy ➢ Presence of leprosy referral centres	➢ Health care workers have inadequate leprosy management knowledge and skills ➢ Lack of community awareness of leprosy ➢ Insufficient leprosy information and education communication materials
Opportunities	**Threats**
➢ Global 2016 – 2020 Strategy ➢ The Global Leprosy Community working towards elimination ➢ Collaboration with Ministry of Gender, Labour and Social Development ➢ Mainstreaming of People with Disabilities movement ➢ Presence of local NGOs strengthening leprosy control e.g. UNALEP, COMBRA ➢ Presence of leprosy referral centres used as training centres	➢ Leprosy control activities have to compete for scarce funding normally allocated to diseases with high case numbers. ➢ Heavy donor dependence ➢ Moving leprosy to neglected and tropical diseases could lead to it being neglected even among the rest of NTDs. ➢ High prevalence of leprosy in the neighbouring countries ➢ Inadequate involvement of affected persons and their communities in leprosy control services

8.2 Analysis of Challenges and Gaps

Leprosy care and treatment services are not fully adequate for the changing epidemiologic situation. Leprosy occurs infrequently and is diagnosed late with complications. Few health centre workers have diagnostic skills to detect leprosy, and the relative rarity of the disease may result in health care workers losing these skills. Low awareness and leprosy-related stigma in communities and among health care workers may negatively impact health-seeking behaviour. Communities do not have peer educators to support leprosy patients with treatment and to conduct contact investigation. Public health laboratories do not perform leprosy skin smear microscopy; only private laboratories do these. Rehabilitation services are only available in a few private not-for-profit institutions. Existing referral mechanisms are weak.

Because leprosy is relatively rare, decision-makers lose interest in supporting interventions for leprosy control, resulting in reduced and or non-existent government financing for the disease. Partners fund most activities, and WHO provides the necessary medicines.

9. Guiding Principles for the Leprosy Component of NSP 2015/16 - 2019/20

The leprosy component of the NSP incorporates six guiding principles and aligns the plan to the Global WHO Strategy.

Guiding principle	NTLP response
Government responsibility and strengthening partnerships	Planning for and funding leprosy control, prioritising high burden pockets in districts and sub-district levels. Work through partnerships with international NGOs, church-based organizations, and people affected by leprosy.
Strengthening health systems	Enhance and sustain knowledge about leprosy and its control among health care providers and the communities Implement all medical interventions for leprosy patients within existing health systems Support effective mentorship and supervision to assure sustainability of leprosy control services. Health training institutes should include leprosy in their curricula. Social workers and social support systems should facilitate actions towards societal inclusion of those affected.
Quality leprosy services	Provide quality services according to the revised NTLP Manual Provide special attention to children by promoting early detection through screening, facilitating diagnosis and access to care. Conduct contact surveillance Engagement of village health teams and other community systems is essential for improvement of treatment adherence
Participation of persons affected by leprosy	Build capacity of persons affected by leprosy in early identification of new cases, treatment adherence, advocacy and setting up networks for social economic empowerment
Monitoring, evaluation and research to support leprosy control	Improve timeliness and completeness of reporting basing on the WHO monitoring and evaluation framework. Conduct data validation and reviews as well as data quality assurance should be conducted alongside those for TB.
Linkages with local and international research bodies	Advocate for more funding and support for identifying research initiatives especially focusing on innovative implementation strategies and interventions to attain national and global targets

10. NSP 2015/16 - 2019/20 Vision, Goal, Objectives and Strategic Interventions for the Control of Leprosy

10.1 Vision

A Uganda free of leprosy

10.2 Goal

To reduce the incidence of Grade 2 disabilities (Gr2D) among new leprosy cases from 2.3 per million population in 2014[27] to less than 1 per million population by 2019/20.

10.3 Operational Objectives

To provide quality leprosy services and reduce the incidence of grade-2 disabilities among new cases to fewer than one per million population by 2020.

1. To increase the proportion of leprosy endemic districts with annual plans containing leprosy activities aligned to NSP from 50% in 2014 to over 95% in 2020.
2. To reduce the proportion of new child leprosy cases with Grade 2 disabilities from 12% in 2014 to zero by 2020.
3. To increase MB MDT completion from 91% in 2014 to 95% in 2020.
4. To increase the proportion of persons affected by leprosy with insensitive feet who are provided protective footwear from 50% in 2014 to 100% in 2020.
5. To increase the proportion of persons affected by leprosy accessing self-care support from less than 5% in 2014 to 35% in 2020.

10.4 Strategic Interventions by Objective

For each of the 5 operational objectives, NTLP recommends the following 15 interventions and their respective actions.

L1. Increase the proportion of leprosy endemic districts with annual plans containing leprosy activities aligned to NSP from 50% in 2014 to over 95% in 2020.

L1.1 Improve the management of the leprosy control programme including coordination, networking and collaboration.

- The NTLP should map out the leprosy hotspots and effectively integrate leprosy services in public health care interventions.
- NTLP should advocate with the government to take primary responsibility for leprosy control. NTLP will make deliberate efforts to support high burden districts in identifying leprosy related issues to be included in district plans.

[27] 2014 is quoted as this is the year with full data on disability was reported compared to 2015/16 when only 79% was reported

L1.2 Create new partnerships and consolidate existing ones.

Apart from soliciting financial support, government should take the lead in engaging potential stakeholders in the leprosy control programme including the existing NGOs involved in leprosy control, community based organizations and organizations responsible for implementing activities targeting other neglected tropical diseases. Such networking and collaboration would make activities like contact surveillance and support for treatment adherence and self-care more cost effective.

L1.3 Support the function of a leprosy focal point at national and district level.

- National and district levels should support and maintain the function of leprosy focal point as part of other responsibilities of the designated persons.
- The focal point will be responsible for informing the health service managers about the leprosy burden and how to address it.

L1.4 Establish a functional, integrated referral system.

- Establish a clear referral system integrated within the overall PHC services for suspected cases or those with complications to ensure beneficiaries have access to the services. Wherever possible the referral system should include dermatologists and Dermatology clinical officers at the appropriate levels.

L2. Reduce the proportion of new child leprosy cases with Grade 2 disabilities from 12% in 2014 to zero by 2020.

L2.1 Reduce the proportion of new child leprosy cases from 6% in 2014 to less than 2% in 2020.

- Treat the finding of any new child leprosy case, with or without disabilities, as a critical incident
- Develop tools for the management of such incidents
- Ensure the related indicators demonstrate not only the continuing transmission of leprosy but also the quality of the case-finding services.
- Carry out systematic examination of school children by joining/combining with/supplementing activities for examination of children and adolescents for other purposes.

The other early case detection strategies described later will apply for detecting any emerging child leprosy cases.

L2.2 Reduce the proportion of new leprosy cases with Grade 2 disabilities from 28% in 2014 to less than 10% in 2020.

- The most effective way to prevent leprosy related disabilities is the timely detection of new leprosy cases before the onset of complications. This requires sufficient community awareness so that individuals with suspect signs and symptoms are referred early.
- Promote early case detection in all districts through registration and systematic examination of the household contacts of newly detected cases. The use of local FM radios has been demonstrated to be an effective tool to increase community awareness

about leprosy and also to mobilise people to participate in time-limited, intensified case finding activities like skin-camps. Such skin camp approaches will also be used as opportunities for on-job training of workers in leprosy.

- Ensure the reliability of routine programme data on disability, as the indicator used for early case detection is based on Grade 2 disabilities. At the time of diagnosis, identify patients with Grade 1 disability as they require additional care to prevent them from deteriorating. The data on extent of Grade 1 disability of feet (loss of sensation) is necessary for estimation of protective foot-wear requirements.

L2.3 Increase Health workers' knowledge and skills to diagnose leprosy.

- Equip the health system with the knowledge and skills to respond to the referrals from the community especially being able to diagnose and treat leprosy.
- Improve the health workers' knowledge and skills, according to the level of endemicity of leprosy. The NTLP (supported by the new NCC at ministry of health) has the mandate to establish where the needs for capacity building are and to design strategies to address them.
- Leprosy should remain part of the curricula of pre-service health training institutes; additional institutional training and refresher training will be required for focal points at national level, in the high burden districts and in facilities with critical roles in management of the leprosy referral system.
- Disseminate portions of the NTLP Operational Manual during quarterly review meetings.
- Integrate mentorship and support supervision with TB programme activities; in some instances, targeted support supervision will be necessary as review and evaluation of leprosy patients requires time and clinical skills.
- For the duration of this planning period leprosy will remain part of the expected formal training of regional, district and health sub-district focal persons.

L2.4 Ensure availability of leprosy skin smear services.

- Laboratory services, particularly skin smear microscopy services are required for confirming the diagnosis in patients with suspect symptoms but lacking other cardinal signs and also for the diagnosis of leprosy relapses. As this service is almost entirely dependent on PNFP facilities at the moment, it will be necessary to the NTRL to ensure availability of this service through capacity building of its staff and establishing a system for quality assurance of the services.

L3. To increase the Multi Bacillary MDT completion from 91% in 2014 to 95% by 2019/20.

L3.1 Sustain the MDT supply management.

- The NTLP will be responsible for timely ordering of MDT supplies from WHO and assuring timely distribution and stock management at Regional levels.
- Regional focal points will place quarterly orders (based on numbers of new cases) of MDT supplies and ensure availability at district level.
- Include stock counts of MDT blisters at regional and district level in quarterly reports.

L3.2 Improve the quality of leprosy services in endemic districts.

The treatment outcome for the relatively longer MB treatment was not consistent during the last 5 years. Poor treatment outcomes reflect poor quality of care for leprosy patients, resulting from health system deficiencies or the leprosy patients themselves.

- Make deliberate efforts to ensure improved adherence to treatment through greater engagement of community structures, thus improving access and encouraging patients to take their medicines.
- The NTLP data managers will support region and district staff to document and report the treatment outcomes of all patients.

L3.3 Increase health workers' knowledge and skills in care and prevention of disabilities.

- Provide supportive supervision and mentorships for staff offering care for leprosy patients from national, regional and district levels.
- Validate diagnosis, classification and disability grading reports that are sent to national levels.
- NTLP will develop a tool to be used at facility level for monitoring the occurrence of leprosy reactions and the outcomes of interventions to manage them.
- Treat suspected relapses after MDT as critical incidents;
- Develop a tool for providing detailed information.
- NTRL will be responsible for linking with services for molecular biological investigation of relapses.

L3.4 Maintain routine surveillance activities in all regions and districts.

- Whereas the present recording and reporting system is case-based and captures essential data for programme management, it should be improved by adopting a case based electronic registration system.
- Use GIS for more accurate mapping of areas (up to sub-county level) where new cases are detected to identify hot spots more accurately and implement focused interventions.
- Maintain the current quarterly reporting formats alongside the entries into DHISII; some modifications will be required for purposes of meeting the data requirements of the M&E plan.
- All districts in the country are expected to generate such reports even in the absence of new cases or patients on treatment (Zero reporting).
- Conduct data quality assessments. To be combined with the same interventions for TB.

L.4 To increase the proportion of persons affected by leprosy with insensitive feet provided with protective footwear from 50% in 2014 to 100% in 2020.

L4.1 Improve screening for assessment of foot-wear requirements.

Leprosy patients with primary nerve function impairments (essentially dryness and loss of sensation) if not properly cared for will develop secondary impairments (with ulcers and deformities) which are more expensive to manage and are associated with increased risk of stigmatization and discrimination

- Include skills training for assessment of Grade 1 disability as part of the capacity building interventions described above.

L4.2 Improve access by those with insensitive feet to appropriate footwear.

- Provide protective foot-wear to prevent deterioration of feet with sensory impairment, and encourage the patient to perform other essential self-care practices.
- The measures to improve coverage with protective footwear will include sourcing of funds to minimise the cost to the individual patients and changing to more socially acceptable types of foot-wear.
- Supplement the production from the present shoe workshops with procurement of mass-produced footwear to cover the needs of most patients leaving the workshops to concentrate on more complicated cases.

L5. To increase the proportion of persons affected by leprosy accessing self-care support from less than 5% in 2014 to 35% in 2020.

L5.1 Establish a database of leprosy affected persons with rehabilitation needs.

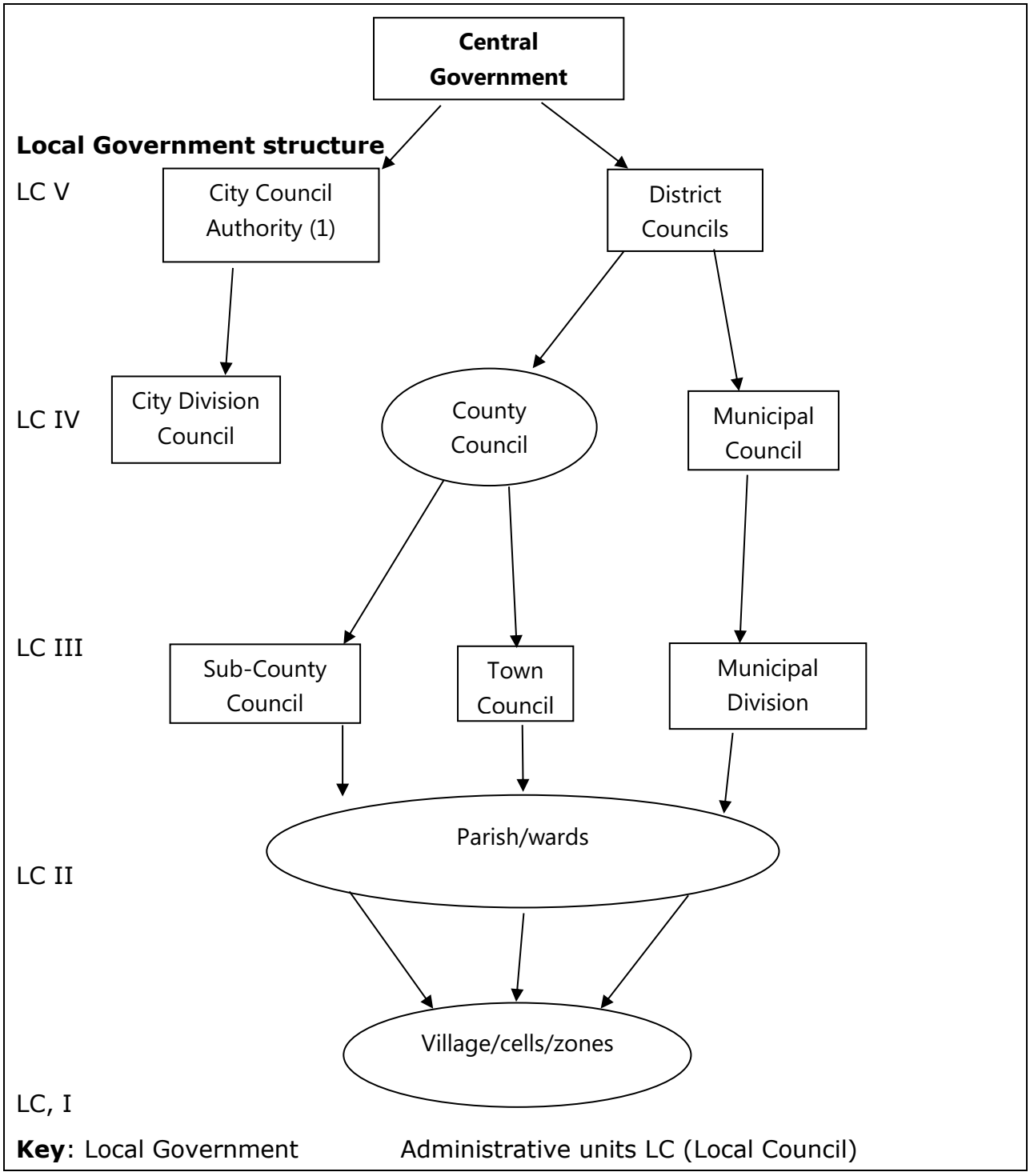
An estimated 20% to 30% of people affected by leprosy are left with residual impairments at the end of treatment, requiring continued home-based care. Some data are available on the numbers of such people but not from the whole country. The available estimates are made from the disability data at the start of MDT.

- Establish a district-level database to track people with residual impairments and their rehabilitation needs to facilitate planning of appropriate interventions.

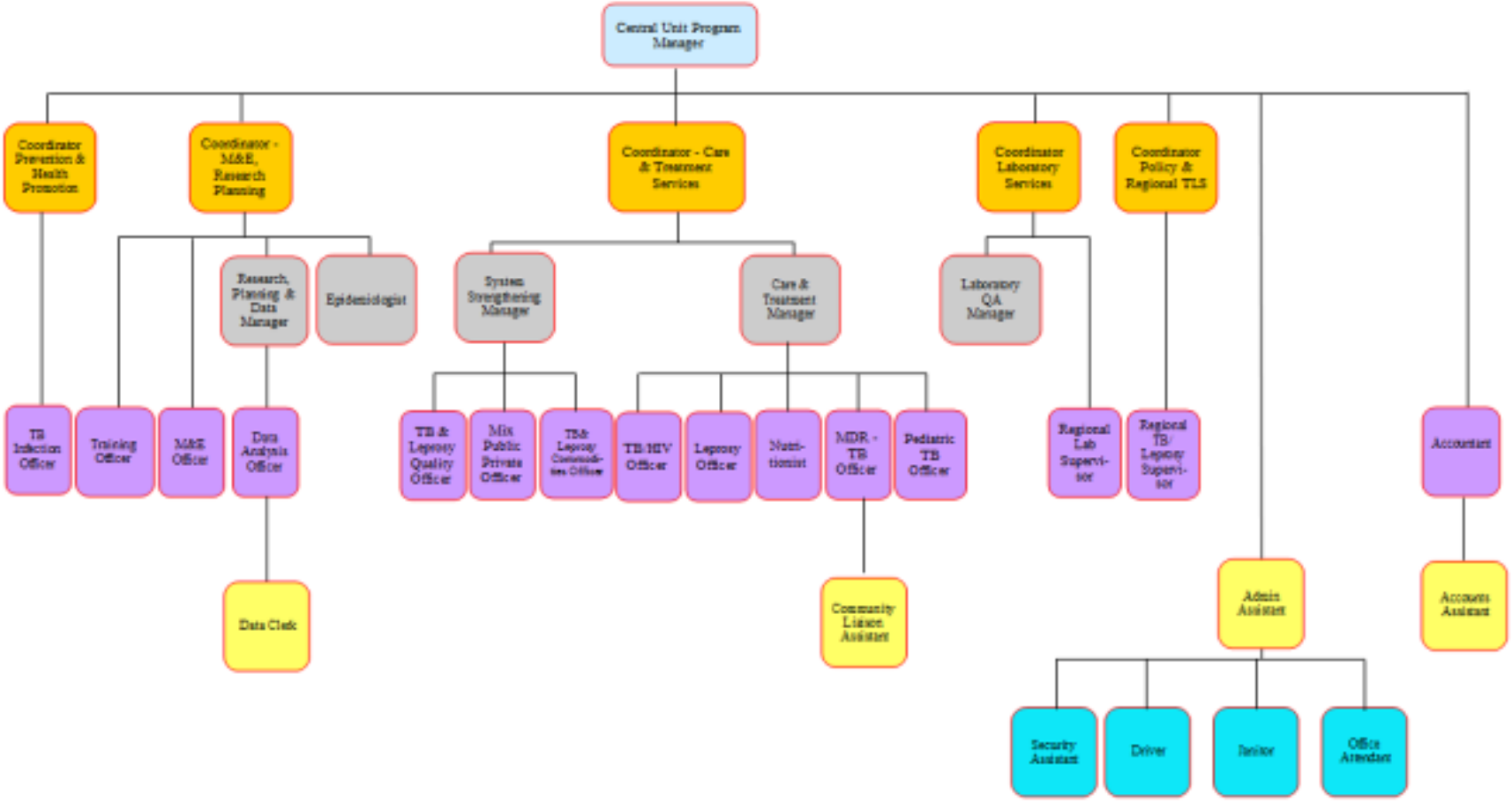
L5.2 Improve access to available rehabilitation services.

- The district focal point will work with community development staff to support persons affected by leprosy to access the services of community-based resource persons (e.g. those engaged in Community Based Rehabilitation) and to promote the formation of community self-care/ income-generating groups; this has been proved to be a cost-effective intervention.
- Consolidate collaboration with the disability section of the Ministry of Gender Labour and Social Development to support persons affected by leprosy with residual rehabilitation needs with access to opportunities for social and economic empowerment.
- The NTLP will work with partners, including persons affected by leprosy themselves, to implement the interventions.

ANNEX 1: Structure of Governance in Uganda



ANNEX 2: Proposed NTLP Structure



ANNEX 3: Programmatic implications of 2014/15 TB prevalence survey

According to the 2014/15 national TB disease prevalence survey results, 87,000 new cases occur every year. Given that Uganda notified 46,171 TB patients during the same period (WHO, 2015), the survey results revealed that 40,829 patients were missed in 2014. This calls for prompt action to halt TB transmission and the TB epidemic in Uganda.

1. Considering the over 40,000 cases missed every year, the MoH/NTLP, should prioritise interventions to increase TB case finding to curtail the spread of the disease in the community.

   A multi-level approach to enhance TB case finding should be established, starting with increasing strategic investments for TB control and better utilization of available diagnostics. There is urgent need to expand TB screening and diagnostic services to the different health facility levels and to locations with TB hotspots and high-risk population (prisons, health workers, congregate settings, people living with HIV, diabetics, residents of slums and contacts of confirmed and infectious TB patients).

2. **Barriers to access and poor health seeking behaviour**. An important finding of the survey was poor health seeking behaviour of those reporting chronic cough. 39% of symptomatic presumptive TB individuals and 36.7% of symptomatic prevalent TB cases did not take any action for their symptoms. The reasons for not seeking care included: ignored illness (31.1%), self-treated (31%), hindered by cost (16%), did not recognise illness (12%), long distance (5.4%), long waiting time (1.3%) and others (2.9%). Understanding and addressing patients' barriers to service access is crucial to maximise the demand for and utilisation of services. The community should be empowered to seek and demand TB services. The program should adopt an appropriate behavioural change communication (BCC) strategy as well as social and livelihood support. Additionally, to understand and reduce costs in TB care, the Program should conduct a patients' cost survey.

3. **Inadequate screening for active TB**. The survey revealed that among those who sought care due to chronic cough, a very low proportion was offered TB screening; only 10% and 6% respectively were asked to provide a sputum sample and offered x-rays services. If patients with chronic cough have not been recognized as presumptive TB cases at the health facility level, it may be due to lack of training, skilled health centre workers, or resources as diagnostic facilities/ limited or lack of supportive supervision/others on TB case finding. The gaps should be identified and addressed accordingly; through staff training, supportive supervision, improved M&E and staff motivation. Additionally, at the service delivery level, there is need for systematic screening for active TB in high-risk populations and subgroups. This implies the correct identification of presumptive TB cases and timely diagnosis of TB using appropriate tests.

4. **Review TB screening criteria**. The programme should develop and implement a TB screening algorithm that is sensitive, specific and cost effective. In Uganda, the programme is largely dependent on identification of presumptive TB through screening for symptoms, such as a cough that lasts two or more weeks. However, survey data revealed that if health centre workers relied solely on symptom screenings, they would have missed about half of the smear-positive cases (30 out of 66 cases). Addition of chest x-ray to symptom screening allowed the identification of a higher number of bacteriologically confirmed cases compared to the contribution of cough as a symptom alone. The current TB screening criteria should be reviewed and chest x-rays made accessible.

5. **Utilization of diagnostic tools and universal access to DST**. Currently the country relies heavily on smear microscopy and this limits the diagnostic capacity for the smear-negative patients. The survey identified 160 prevalent bacteriologically confirmed cases. Only 66 (41.2%) were smear-positive and the rest were identified by culture or Xpert TBM/Rif. Smear microscopy missed approximately 60% of TB patients, thus the government should urgently expand access to Xpert TBM/Rif and future innovative cost effective diagnostic tools for all presumptive TB patients. In addition, the government should increase investment into culture and drug susceptibility testing (DST) in line with the End TB Strategy.

6. **Integrated TB/HIV services**. An HIV co-infection rate of 27% was found among survey patients compared to 45% based on health facility data (WHO, 2015). HIV co-infection is high at both community and health facility level. Although national guidelines for TB/HIV collaborative services (MoH, 2013) exist up to the health facility level, there is an urgent need to expand these services to the community.

7. **Address TB among the HIV-negative individuals**. The survey results revealed that the prevalence of TB in HIV-positive people was 96.2/100,000 as compared to 261/100,000 among HIV-negative people. This result indicates that the prevalence of TB is higher among HIV-negative than HIV-positive individuals. The government should prioritise TB case finding in all health care service delivery points among HIV negative individuals and involve the community in referring people with symptoms of presumptive TB.

8. **Enhance TB case finding among men**. TB among men (15 years and above) was four times that in women (prevalence among bacteriologically confirmed 734/100,000 men and 178/100,000 women), and the prevalence was higher among those aged 25 and above. The programme should enhance TB prevention, treatment and care among men aged 25 and above.

9. **Enhance TB case finding in urban areas**. Prior to the survey, programme data showed that up to 19% of cases were notified from Kampala city. This presupposed that TB is far more common in urban areas than rural areas. This is in line with the prevalence survey findings that indicated a higher prevalence of bacteriologically confirmed TB of 504/100,000 compared to 370/100,000 in rural areas. The NTLP should use appropriate strategies to enhance TB case finding in urban areas, e.g. the urban TB DOTS model, public private partnerships strategies, engagement of the informal health sector (drug shops, pharmacies, etc.).

10. **TB hotspots existed both in rural and urban areas**. This case clustering further supports contact tracing for all smear-positive TB cases as a way to increase case finding. NTLP should target TB hotspots with interventions such as active case finding, contact tracing and outreach.

11. **Involvement of private health sector and private not-for-profits in TB prevention care and treatment**. Of those who sought care, 62.7% did so at public health facilities. Besides the public sector, the most common first point of contact for people with cough and TB cases was the pharmacy/drug shop, which highlights the important role pharmacies and drug shops can play in TB case-finding activities, especially through the referral of TB suspects by pharmacy staff to appropriate health care providers. In some areas NGOs, Private Not for Profit (PNFP) and Private for Profit (PFP) facilities are the only available providers for TB services. The programme should reinforce private-public partnerships, partner with private not-for-profits and NGO facilities, and involve the pharmacies/drug shops, private practitioners and traditional healers in TB related activities.

12. **Community involvement.** The survey utilised several community engagement strategies including but not limited to: extended working hours and working on weekends, incentives, use of political and technical structures as entry points into the community and use of community resource persons. A participation rate of 91% was recorded even in urban settings, despite the challenges like highly mobile communities and inaccessibility due to fenced/guarded premises. The flexible teams (community health workers/VHTs) were trained and developed skills in community screening for TB. The National TB programme should increase the involvement and participation of the existing community structures in raising awareness about screening and referral for TB prevention, care and treatment.

ANNEX 4: NSP Partner Mapping

NSP 2015/16 - 2019/20 Partner mapping

Name of partner/Project	Technical Area of support	Geographical area of support (regions/districts)	Level of support (No. of districts supported)	Ending period	Amount of funding available	Likelihood of continuation beyond ending period
	USAID funded Projects					
Elizabeth Glaser Paediatric Foundation; Regional Health Integration To Expand Services in South Western (RHITES-SW) Uganda	HIV/AIDS; Malaria; Tuberculosis; Nutrition; Maternal, New born, and Child health; Family planning	Mbarara region: Kiruhura, Isingiro, Ibanda, Sheema, Mitooma, Buhweju, Rubirizi, Bushenyi, Ntungamo, Rukungiri, Kabale, Kanungu, Kisoro, Mbarara and Rubanda)	District level (15 districts)	June2020	FY 2014/15 (USD 421,986)	At the discretion of donor
UNICEF through NTLP in South West	Paediatric TB	**Mbarara region:** Bushenyi, Ibanda, Isingiro, Kabale, Kanungu, Kiruhura, Mitooma, Ntungamo, Rukungiri and Sheema.	District level (13 districts)	June 2020		
University Research Council; Regional Health Integration to Enhance Services in East Central (URC RHITES-EC) Uganda	TB and TB/HIV	**Jinja Region:** Mayuge, Iganga, Bugiri, Buyende, Kamuli, Kaliro, Namutumba, Namayingo, Luuka, Jinja and Busia	District level (11 districts)	June 2020		At the discretion of donor
IntraHealth; Regional Health Integration To Expand Services in Eastern (RHITES-E) Uganda	HIV/AIDS; Malaria; Tuberculosis; Nutrition; Maternal, New born, and Child health; Family planning	**Mbale region**: Butaleja, Budaka, Pallisa, Kibuku,Bukwo, Kween, Kapchorwa, Bulambuli, Sironko, Mbale, and Bududa	District level (12)	March 2017	FY 2016/17 (USD 10,600)	At the discretion of donor

Name of partner/Project	Technical Area of support	Geographical area of support (regions/districts)	Level of support (No. of districts supported)	Ending period	Amount of funding available	Likelihood of continuation beyond ending period
Management Sciences for Health; Track Tuberculosis Activity (TRACK TB Project)	TB, TB/HIV, PMDT and Management Capacity at NTLP	National, Kampala and PMDT initiating hospitals (Mulago NRH, Mbarara, Lira, Hoima and Soroti RRHs and Kitgum district hospital)	MoH/NTLP, District level (KCCA), DR-TB facilities (6) and technical support to USAID funded TB/HIV implementing	December 2017	FY 2015/16 (USD 1,145,849)	At the discretion of donor
John Snow Inc; Strengthening Tuberculosis and HIV/AIDS Response in East Central (STAR-EC) Uganda	*TB and TB/HIV*	***Jinja Region:****Mayuge, Iganga, Bugiri, Buyende, Kamuli, Kaliro, Namutumba, Namayingo and Luuka)*	*District level (9 districts)*	*June 2016*	*FY 2014/15 (USD 750,855)*	At the discretion of donor
University Research Company (URC); Applying Science to Improve Systems (ASSIST) Project And Strengthening Decentralization for Sustainability (SDS)	CQI	**Jinja region:** Luuka, Mayuge, Bugiri and Namayingo				
University Research Company (URC); Applying Science to Improve Systems (ASSIST) Project And Strengthening Decentralization for Sustainability (SDS)	TB, TB/HIV, Laboratory and Radiology	**Gulu region:** Agago, Amuru, Gulu, Kitgum, Lamwo, Nwoya, Omoro and Pader **Lira regions:** Alebtong, Amolatar, Apac, Dokolo, Kole, Lira, Otuke, Oyam,	District level (16 districts)	September 2017		At the discretion of donor
University Research Company (URC); Strengthening	Laboratory Strengthening, TB, TB/HIV and PMDT,	**12 Regional referral hospitals:** Mbale, Gulu, Soroti, Kabarole, Jinja,	Facility level (18)	June 2016	FY 2014/15 (USD 505,331)	At the discretion of donor

Name of partner/Project	Technical Area of support	Geographical area of support (regions/districts)	Level of support (No. of districts supported)	Ending period	Amount of funding available	Likelihood of continuation beyond ending period
Uganda's Systems to Treat HIV-AIDS nationally (SUSTAIN Project)	Infrastructure improvements.	Hoima, Moroto, Masaka, Kabale, Mubende, Lira and Arua **Six district hospitals:** Entebbe, Gombe, Kawolo, Kaabong, Tokora, Abim, and Nebbi				
Uganda Private Health Support Program	1. TB prevention (BCC activities and grants to private sector companies) 2. TB diagnosis and treatment	**150 Private company health facilities** and clinics located in **44 districts** **45 private health facilities in 17 districts:** Kampala (17), Wakiso (5), Kyenjojo (3), Kibaale (2), Jinja (2), Hoima (2), Kabarole (2), Kiruhura (2), Buikwe (2), Masindi (1), Mukono (1), Bugiri (1), Mpigi (1), Bushenyi (1), Tororo (1), Rakai (1) and Lira (1)	Facility level (150) Facility level (45)	June 2018 June 2018	USD 50,000 USD 300,000	Not sure Not sure

Name of partner/Project	Technical Area of support	Geographical area of support (districts/regions)	Level of support/Number of districts supported	Ending period	Amount of funding available	Likelihood of continuation beyond ending period/follow on project
Management Sciences for Health; Uganda Health Supply Chain (UHSC) project	Medicines and supplies management	Countrywide	NTLP central unit and District level (75)	August 2019	Not specific	At the discretion of donor

Name of partner/Project	Technical Area of support	Geographical area of support (regions/districts)	Level of support (No. of districts supported)	Ending period	Amount of funding available	Likelihood of continuation beyond ending period
CDC funded partners						
UNICEF through Baylor and NTLP/MOH	Paediatric TB	**Karamoja region:** Abim, Kotido, Moroto, Napak, Amudat, Nakapririt and Kaabong	District level (7 districts) Facility level through partners i.e. Baylor and CUAMM (126 districts)	December 2017		
Baylor-Uganda: 1. Scaling up comprehensive HIV/AIDS services for adults and children in the West Nile and Eastern regions of Uganda 2. Strengthening National Paediatric HIV/AIDS and scaling up comprehensive HIV/AIDS services in Uganda	Paediatric and comprehensive HIV/AIDS care including adult and paediatric TB/HIV	**Soroti region:** Bukedea, Kumi, Ngora, Serere, Soroti, Amuria, Katakwi and Kaberamaido **Kabarole region:** MoH/NTLP:1 officer Mulago PIDC (COE) Kabarole, Bundibugyo, Ntoroko, Kyenjojo, Kyegegwa, Kamwenge and Kasese	District level NTLP Central unit and District level	March 2017 March 2018	FY2016/17 (USD 50,000) FY2016/17 (USD 268,000)	Not sure Possibility of continuation
Makerere Joint AIDS Program (MJAP)	TB/HIV including support to National TB Reference Laboratory	**Kampala:** Mulago, Butabika NRHs and Makerere University hospital **Mbarara district**: Mbarara district including Mbarara RRH	District level (1) Facility level (4 facilities)	March 2017	FY 2015/16 (USD 400,000)	Likelihood of funding to support Kampala-Wakiso

Name of partner/Project	Technical Area of support	Geographical area of support (regions/districts)	Level of support (No. of districts supported)	Ending period	Amount of funding available	Likelihood of continuation beyond ending period
Mildmay-Uganda	TB/HIV	**Central 1/Kampala:** Wakiso **Central 2 region:** Butambala, Gomba, Mpigi, Mubende, Nakasongola, Mityana, Luwero, Nakaseke, **Masaka region:** Kalungu, Lyantonde, Masaka, Bukomansimbi, Sembabule, Lwengo.	District level (15) All Public facilities (except Regional Referrals) and selected PNFPs without IPs: Health Centres II, III, IV and Hospitals.	March 2017		At the discretion of donor
Infectious Diseases Institute (IDI) 1. Bunyoro HIV Project (BHP)	1. Health system strengthening; HIV testing, care, treatment and comprehensive prevention.	**Hoima region:** Hoima, Masindi, Kiryangongo, Kibaale and Buliisa, Kiboga, Kyankwanzi	District level (97 facilities in 7 districts)	March 2020	USD 216,285/year	Unknown
2. Kampala Capital City Authority (KCCA) Project	All above plus Family planning and OVC	Kampala: 6 KCCA facilities and 2 Private-not-for-profit (PNFP) clinics	Facility level	March 2017	USD 128,228/year	Unknown
3. Arua region		**Arua region:** Nebbi, Zombo, Arua, Koboko, Yumbe, Moyo, Adjumani and Maracha	District level (8)	2019/2020	unknown	
Specific Funding Sources						
Global Fund **Principal recipient:** Government of Uganda	**Financial support:** Treatment inputs Health system strengthening ACSM	Country wide	National level, regional level, district level, Community level	Dec 2017	TB-HIV New Funding Model (USD22million)	New funding model

Name of partner/Project	Technical Area of support	Geographical area of support (regions/districts)	Level of support (No. of districts supported)	Ending period	Amount of funding available	Likelihood of continuation beyond ending period
Sub-recipient: TASO Uganda	Patient support Program management					
International Union Against TB and Lung Diseases (The UNION) Uganda office; *SPARK PLUS TB REACH Project* *Decentralise TB services and engage communities to transform lives of children with TB (DETECT TB) Project*	 *Public-Private Partnership* *Paediatric TB* • *Capacity Building* • *Monitoring and evaluation* • *Community program*	***Kampala:****Makindye, Kawempe, Central, Rubaga and Nakawa divisions* ***Mukono:****Goma and Mukono town council* ***Jinja:*** *5 Municipalities* ***Wakiso:*** *Entebbe, Nansana and Kira town councils* ***Buikwe:****Lugazi and Njeru town councils* *Kabarole and Wakiso districts*	*Facility level* *Community level* *District level* *Facility level* *Community level*	*2015* *April 2017*	*FY2014/15 (USD 745,000)* *USD 1,400,000*	Not sure Unknown
German Leprosy and Tuberculosis Relief Association (GLRA) Uganda	System strengthening for TB, TB/HIV and Leprosy control	NTLP central unit and Zones (South West, West, South East, Central, East/North East, North and North West) **Facilities:** Buluba, Kagando, Nyenga and Kuluva hospitals.	National level (the NTLP central unit and 7 Regional offices) and Facility level (4)	Not specified (At least 3 years ahead)	FY 2015/16 (USD 174,000)	Likely

Name of partner/Project	Technical Area of support	Geographical area of support (regions/districts)	Level of support (No. of districts supported)	Ending period	Amount of funding available	Likelihood of continuation beyond ending period
Doctors with Africa CUAMM	Health System Strengthening District TB capacity building for MDR (Napak and Matany Hospital)	**North East:** Napak district: Matany Hospital	District: general TB PMDT: Facility	December 2016	FY2015/16 (USD 63,853) FY2016/17 (USD 63,853)	Likely
Foundation for Innovative diagnostics (FIND)/ TB REACH Wave3	*Laboratory services*	*TB REACH: Kampala (28 facilities), Kasese (1), Kamwenge (1)*	*Facility level (30)*	*Jul 2015*	*FY 2014/15 (USD 285,081)*	*Unknown*
1. Uganda Catholic Medical Bureau (UCMB); TB REACH Project 2. UCMB ACT (AIDS care and treatment) Project 3. ISLAMIC Medical Bureau	Laboratory services, active case finding TB/HIV, HR Support, Capacity building, M&E	St. Anthony's hospital, Tororo and Nkozi hospital, Mpigi Rubaga, Kisubi, Nsambya, Bishop Asili, Nkozi, Villa Maria, Kitovu, Nyenga, Naggalama, St. Tororo Anthony's, Virika, Angal, Kitgum St. Joseph's, Lacor, Kalongo, Aber hospitals; Kamwokya Christian Caring Community, Kasanga HC111 and ComboniKyamuhunga health centres.	Facility level (3) Facility level (19)	August 2015 March 2018	FY2014/15 (USD 174,276) About USD500,000/year	Not sure

Name of partner/Project	Technical Area of support	Geographical area of support (regions/districts)	Level of support (No. of districts supported)	Ending period	Amount of funding available	Likelihood of continuation beyond ending period
UNICEF	Paediatric TB • Capacity building • Monitoring and evaluation • Research • Community programs • Supplies • Pilot to integrate TB/ HIV into iCCM in Wakiso, Sheema, and Kayunga districts	NTLP central unit **Regions/districts** **Kampala:** Buikwe, Buvuma, Mukono, **Masaka region:** Bukomansimbi, Kalungu, Lyantonde, **Hoima region:**Buliisa, Kiboga, Kibaale, Kiryandongo, Masindi **Central:**Mubende, Wakiso **Mbale region:**Bududa, **Jinja region:**Bugiri, Buyende, Iganga, Kamuli, Luuka, Namayingo, Bukedea, Kaberamaido, **Moroto region:**Abim, Amudat, Kaabong, Kotido, Moroto, Nakapipirit, Napak **Lira region:**Alebtong, Apac, Kole, Lira, Otuke, **Gulu region:** Agago, Amuru, Kitgum, Lamwo, Nwoya, Pader **Arua:** Arua, Nebbi, Yumbe, and Zombo **Mbarara region:** Buhweju, Sheema Bushenyi, Mitooma, Ntungamo and Rubirizi **Kabarole region;** Bundibugyo, Kabarole, Kasese, Kyegegwa, Kyenjojo, Ntoroko	National level District level (56) Facility level Community level	Not sure	About USD 500,000.	Not sure

Name of partner/Project	**Technical Area of support**	**Geographical area of support (regions/districts)**	**Level of support (No. of districts supported)**	**Ending period**	**Amount of funding available**	**Likelihood of continuation beyond ending period**
Clinton Health Access Initiative (CHAI)	Childhood TB diagnosis, care and treatment services, PMDT, Xpert MTB/Rif utilization	NTLP central unit	Not applicable	September 2017	To be determined, contingent on ongoing activity profile	HIGH
MakSPH/METS	Strategic information	National level District level	MOH DHTs	March 2020		High
Rakai Health Sciences Project (RHSP)	HIV/AIDS, TB	Rakai				
Makerere University Walter Reed Project (MUWRAP)	TB/HIV, EQA for Xpert MTB/Rif, TB diagnostics, capacity building, HUB	National level District level Facility level	NTRL-SRL, UNHLS Kampala, Kayunga, Mukono, Buvuma and Buikwe All facilities in Districts being supported	September 2020		High
WEDNET AFRICA *1. STAPS (Strengthening TB Innovations for the Affected and Private Sector)* *2. GITA (Global Fund Involvement of The Affected)*	*Civil society involvement in Global Fund processes* *Capacity building for Civil society*	***Kampala:*** *Nakawa, Makindye, Central and Kawempe divisions* *Kawempe and Nakawa divisions*	*Community based organizations*	*2015* *2015*	*FY2014/15 (135,363)* *FY 2014/15 (USD 19,990)*	*To be rolled out after 2015* *N/A*