Republic of Uganda
Ministry of Health

Uganda National TB and Leprosy Program

Jul 2020 – June 2021 Report

November 2021

Acknowledgement

The National TB and Leprosy control program (NTLP) is grateful to the enormous support from all key stakeholders: The top management of the Ministry of health for the commitment, advocacy, and overall support towards the TB leprosy response. The government of Uganda through the different ministries, departments, agencies, and district local governments, implementing and development partners at all levels, the civil society, faith-based organizations, and the communities of Uganda. In a special way, we appreciate all the front-line health care workers for ensuring TB services continued during the COVID 19 response activities.

We appreciate the financial support from the Global Fund to fight AIDS, Tuberculosis and Malaria (GFATM), PEPFAR and US government funding and implementing mechanisms including USAID, Centers for Disease Control and Prevention (CDC), Department of Defense (DoD), Defeat TB, UNICEF, German Leprosy Relief association (GLRA), Doctors for Africa (CUAMM), the academia and research institutions, World Health Organization for the technical support all Ministries and departments who have taken on the fight against TB in their ministries to address the determinants of the disease and ensure no one is left behind.

We would like to thank the program staff at the National TB and Leprosy program headed by the Assistant Commissioner Health Services-TB Leprosy control, for their working tirelessly to ensure continuity of TB services and for their input in compilation of the report. Lastly appreciation goes to all the M&E team for finalizing the report, defeat TB for supporting the editorial design and printing of this report.

Foreword

The National TB and Leprosy control Division is under the Department of National Disease Control of the Ministry of Health (MoH). The Division is charged with performing the national core function of tuberculosis (TB) and Leprosy control by establishment of country wide facilities for quality diagnosis and treatment of TB and leprosy, trough planning, resource mobilization, coordination, monitoring and evaluation, supervision, and capacity building for smooth implementation of TB and leprosy prevention, care, and management of leprosy-related disabilities. The program has implemented the first year of the people centered 2020/2021 to 2024/2025 national strategic plan (NSP).

This year, the global COVID-19 pandemic restrictions and related challenges disrupted service delivery, access to diagnosis and care, infrastructure and human resources which resulted in more missed cases and mortality from TB.

Although the country realized a drop in TB incidence (2.7%) and mortality 35% as per 2020 Global TB report, we remain among a high TB and TB/HIV burden country. Leprosy continues to be considered low burden countries although we are surrounded by high burden countries like South Sudan, Democratic Republic of Congo and Tanzania which requires heighted surveillance for the disease to sustain the elimination status and attain Zero leprosy status by 2030.

This report presents progress against our implementation of annual operational and national strategic plan and highlights our achievements as we strive to a 20% reduction in tuberculosis incidence by 2024/25.

This report highlights the performance by regions and districts in key indicators and key activities implemented in the financial year and prioritized activities for the financial year 2021/2022.

The National TB program together with stakeholders achieved the highest treatment coverage among incident cases of 84% (69,162/82,341) including 8,706 children, and 558 people with drug resistant TB. Females constituted 38.3% of all notified cases. The TB treatment success rate has steadily increased from 72% in 2018/19 to 78% in FY 19/20 and now to 84% against a national target of 90%. The country has a GeneXpert network of 289 GeneXpert machines in 264 health facilities including 16-module machines in 7 Regional referral hospitals. The Division coordinated a four-day TB catch up campaign where over 1500 missing patients were diagnosed and started on TB treatment. The effort has since been replicated by some IPs and districts with improved case identification

Leprosy notifications were 202, with 53% males and 12% children. The treatment completion was 75%, a significant drop from last year's 84% for multibacillary (MB) and 55% paucibacillary (PB). Our efforts need to double for us to realize zero Leprosy status.

This year saw a recovery performance from the COVID-19 lockdown, with the community awareness, screening, and testing (CAST-TB) campaign, Active case finding, quality improvement collaboratives and engagement of the private sector and media, among other innovations to find and treat those with TB and provide preventive therapy for those eligible. These would not have been possible without the tremendous efforts of our health workers, partners in and in the neighboring countries, local government leadership, the private sector, and the oversight of the Ministry of Health through the coordination by the National TB and Leprosy Program. I would like to appreciate the leadership of the following local governments: Iganga, Apac, Sembabule, Nakasongola, Busia, Budaka, Lamwo, Fort Portal City, Arua City and Dokolo for their performance across several indicators including case finding, contact screening, GeneXpert access for pulmonary confirmed (P-BCs) TB patients, treatment success and TB Preventive Therapy for eligible ART clients. I would also like to extend my appreciation to the districts of Obongi, Oyam, Terego, Moroto, Otuke, Adjumani, Apac, Yumbe and Lwengo who exhibited excellent performance in the traditional indicators of case detection and treatment success.

There is a lot of work still to do to meet the UNHLM targets that are due next year 2022. So far, we only seemed to have managed to exceed the target for TPT among people living with HIV (346%). The rest remain low, especially TPT for contacts >5 years (4%) and treatment coverage (58%). There also remains a huge funding gap compared to that estimated for the achievement of End-TB targets ($158m for the year 2021). Through the multi-sectoral approach to ending TB and Leprosy, we call upon the stakeholders in the districts, other ministries, departments, and agencies as well as the civil society and private sector to ensure intensified efforts to achieve global and the NSP targets of greater than 90% treatment coverage, treatment success rate, TB prevention for eligible populations, awareness creation and greater than 90% access to GeneXpert for all TB patients. The Ministry has designed innovative activities to be implemented at community level at designated times on top of routine programming to hasten the progress towards achieving the UNHLM targets. One such activity is the CAST TB Leprosy campaign to be implemented every September and March each year reaching majority of Ugandans with TB Leprosy services.

I am hopeful that this report will be a useful guide for coordination of your much-appreciated efforts to make the end of the TB epidemic and zero Leprosy status a reality in this Country by 2030.

For God and my country.

Dr. Henry G. Mwebesa
Director General Health Services

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For God and my country.

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Executive Summary/ Programmatic achievements

The current people centered strategic plan is guided by the four major areas including strengthening Community systems, TB Leprosy prevention, diagnostic and treatment services, information management including digital technology, resource mobilization leadership, multisectoral collaboration and accountability. The plan has over 21 indicators including about 4 impact indicators and the report provides an account of key result areas for the FY 2020/21.

Table 1: Performance Summary by indicator

Indicator	Baseline	Target 2020/21	Performance 2020/21	Source of data	Remark
TB incidence rate/100K	200	192	161	GTR	Slow reduction in incidence of 2.7%
TB mortality rate/100K	45	39	37.5	GTR	35% reduction since 2015
TB catastrophic Costs%	53	42	-		No data. Requires survey
Incidence of grade 2 disability among new Leprosy cases/1m	0.60	0.57	-		
% of Leprosy notification that are children	8	7	12	DHIS2	
% PBC-TB patients whose contacts were traced	33	43	-		Data not available. 37,996 PBC notified.
Contact screening coverage among contact identified	33	43	80.3	DHIS2	The yield of new TB cases identified from among contacts was 5771(3.3%)
% of eligible children under 5 years who are contacts put on TB preventive	27	58	33.4	DHIS2	
% of eligible contacts > 5 years put on TB preventive	0	49	8.2	DHIS2	
% of notified TB cases with a documented HIV status	99	100	100	DHIS2	
% of eligible PLHIV given TB preventive therapy	9	90	60.1	DHIS2	
TB treatment coverage (%)	76	88	84	DHIS2	
TB case notification per 100K	151	172	161	DHIS2	
% of incident TB patients <14 years notified. Childhood TB treatment coverage	64	88	70.5	DHIS2	
% of TB cases notified from the private sector	20	23	-	DHIS2	Data not available
% of notified new and relapse TB cases with bacteriological confirmation	53	62	58	DHIS2	
% of notified new and relapse TB patients Diagnosed using WHO recommended rapid tests	45	60	-	DHIS2	
% of notified, bacteriologically confirmed TB cases with DST for rifampicin	45	54	73%	DHIS2	
% of MDR T B case detected (DR-TB Treatment Coverage)	37	52	37	DHIS2	558 Cases of RR/MDR-TB detected during the FY
TSR of notified TB patients	72	88	84.3	DHIS2	
% Leprosy patients reached for contact tracing	0	54	-	DHIS2	No data
% of contacts of Leprosy patients given single dose Rifampicin preventive therapy	0	20	-	DHIS2	No data
Proportion of all forms of leprosy patients who successfully complete treatment	72	85	75%	DHIS2	

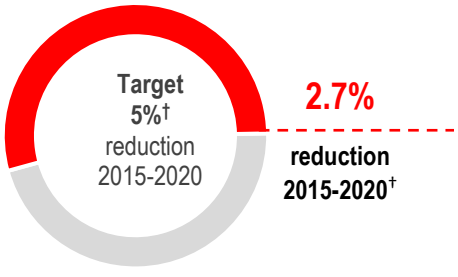
The Program with support from partners achieved the following:

- Developed, tested, and piloted an electronic case-based surveillance system for TB and leprosy. It is envisioned that scale up will be done between 2-3 years and will be completed by the 2023/24 financial year
- Installed digital X-ray machines and conducted TB screening using the machines at facility and community level with computer aided detection and Artificial Intelligence
- Strengthened diagnostic capacity for TB case finding, 11 GeneXpert machines were installed at 11 HCIIIs. Seven 16 module GeneXpert machines were installed at Regional Referral Hospitals including Jinja, Mbarara, Fort portal, Arua, Lira, Moroto, and Gulu
- Organized and conducted orientation of district health officers for all districts on TB (135 DHOs, 5 KCCA Division Medical Officers and Municipal/City Medical Officers of Health), this has led to increase in awareness and TB screening and follow up by the district/city/municipal health leadership
- The National TB and Leprosy Strategic plan for 2020/21 to 2024/25 was finalized and implementation of the same has started. Additionally, the Multisectoral Accountability Framework document for TB was also completed and launched at the 3 national stakeholders conference.
- The Program with funding from Global Fund procured and distributed 50 motorcycles to support coordination, supervision of TB and leprosy activities in districts without motorcycles. The motorcycles were handed over by the then Hon. Minister of Health, General Duties Hon. Nabbanja Robinah.
- Procured and distributed computers to all MDR-TB initiation health facilities in addition to video-conferencing facilities. These have supported capacity building for MDR-TB at regional referral hospitals
- Developed and implemented a TB catch up campaign with support from the Global Fund grant for mitigation of COVID19 disruption in TB services delivery where about 8,383,561 people were reached with key messages through meetings, radio, home visits and social media platforms which mobilized the general population to turn up to for TB screening, testing, and treatment. We trained 150 district staff (DHO, DTLS, DHE) who in turn oriented 10,560 implementers (2,640 HWs & 7,920 VHTs) in 50 districts. A total of 125,781 people were screened from the community, 39,067 people with presumptive TB identified, and an additional 1,511 TB cases were confirmed.
- Coordinated the TB response. Together with the National Emergency Operations Centre and partners the Program has continued to coordinate the Uganda National TB emergency response, this has led to increased TB case finding in Lango, Karamoja, Acholi and Uganda Prison Services. Additionally, the response has now expanded to Teso, Bukedi and Bugisu. Case finding in these regions is currently on the rise as well. The Program coordinated the TB National Coordination Committee, where partners presented implementation strategies based on national guidance. Participation in technical working committees of the MoH has equally been ongoing.

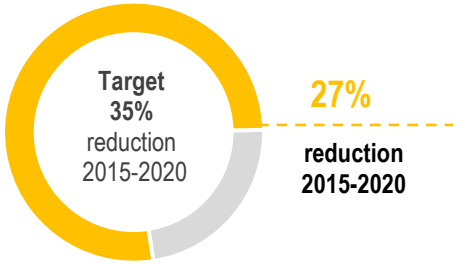
Performance summary

National TB Impact Indicators - 2020 milestones

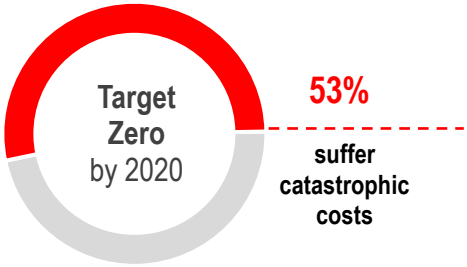
TB INCIDENCE RATE†



NUMBER OF DEATHS 2015-2020†



TB RELATED CATASTROPHIC COSTS‡



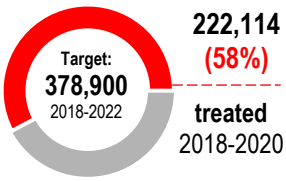
† NSP 2015/16-2019/20 target was 5%, Global WHO target was 20%;

‡Catastrophic cost study Uganda

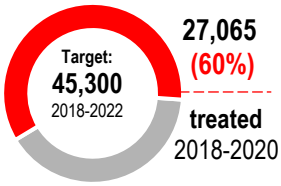
Progress on UNHLM targets

UN high-level meeting on TB: Treatment targets

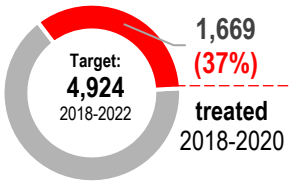
TB TREATMENT (ALL AGES)



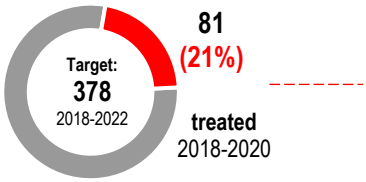
TB TREATMENT (CHILDREN)



MDR-TB TREATMENT (ALL AGES)



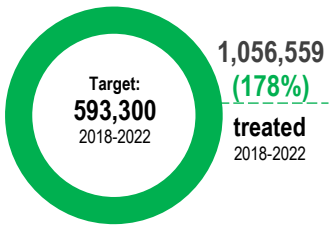
MDR-TB TREATMENT (CHILDREN)



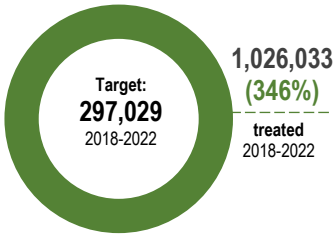
*Numbers started treatment are from January 2020-June 2021; previous years/children use case-detection as proxy.

UN high-level meeting on TB: TB preventive treatment targets

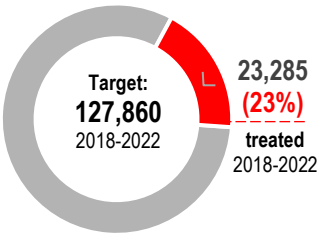
TPT ALL AGES



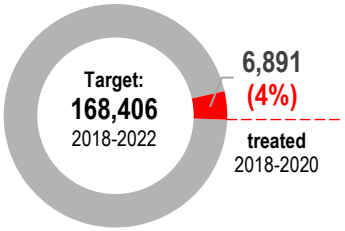
TPT FOR PEOPLE LIVING WITH HIV



TPT FOR CONTACTS <5YRS

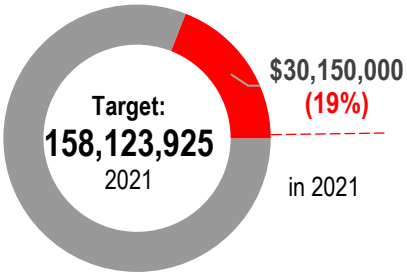


TPT FOR CONTACTS >5YRS

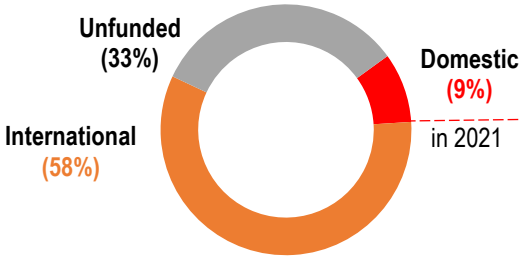


UN high-level meeting on TB: Funding targets

UNIVERSAL ACCESS TO TB PREVENTION, DIAGNOSIS, TREATMENT AND CARE



CONTRIBUTION TO TB FUNDING



Uganda TB country profile (population 2020: 45.7 million -WHO estimate)

■ Number ● Rate (no. per 100 000 population per year)
K = 000 M = 000 000 B = 000 000 000

90K	16.1K	45.7M
Incidence ■	Mortality ■	Population

Estimates of TB Burden

	Data are for 2020
Total TB incidence	90K (54K - 135K) ■ 196 (117 - 296) ●
% change in incidence rate between 2015 and 2020	-2.7%
HIV-positive TB incidence	30K (18K - 45K) ■ 65 (39 - 98) ●
Incidence (0-14 years)	12K (5.6K - 18K) ■
Incidence (≥15 years)	78K (38K - 119K) ■
Incidence (females)	26K (10K - 41K) ■
Incidence (males)	64K (26K - 102K) ■
HIV-negative TB mortality	7.4K (3.5K - 13K) ■ 16 (7.7 - 28) ●
HIV-positive TB mortality	8.7K (4.4K - 14K) ■ 19 (9.5 - 32) ●
% change in total number of TB deaths between 2015 and 2020	-27%

Notifications

	Data are for 2020
New and relapse cases	60.9K ■ 133 ●
% new and relapse tested with rapid diagnostics at diagnosis	64%
% new and relapse with known HIV status	100%
% pulmonary among new and relapse	95%
% B+ among new and relapse pulmonary	57%
% new and relapse aged 0-14 years	12%
% women among new and relapse	31%
% men among new and relapse	57%
Total cases notified	62.5K ■

UHC and social protection

	Data are for 2020
TB treatment coverage	68% (45 - 110)
TB patients facing catastrophic total costs	53% (50 - 56) Data for 2017
TB case fatality ratio	19% (9 - 31)

TB/HIV care in new and relapse TB patients

	Data are for 2020
Patients with known HIV status who are HIV-positive	20.1K ■ 33%
HIV-positive TB patients on ART	19.4K ■ 97%

Drug-resistant TB

	Data are for 2020
% new pulmonary B+ notified cases tested for RR	63%
% previously treated pulmonary B+ notified cases tested for RR	64%
MDR/RR-TB cases tested for resistance to fluoroquinolones	286 ■
Lab-confirmed MDR/RR-TB cases	470 ■
MDR/RR-TB patients started on treatment	456 ■
Lab-confirmed pre-XDR/ XDR-TB cases	5 ■
Pre-XDR/XDR-TB patients started on treatment	5 ■

Treatment success rate

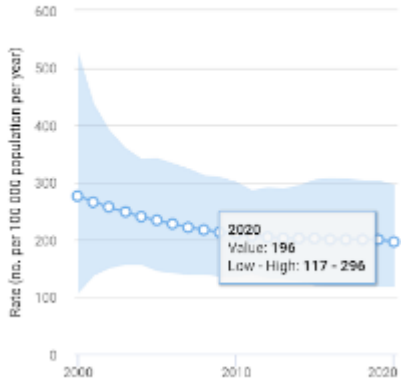
	Data are for 2019, MDR/RR-TB are for 2018
Treatment success rate for new and relapse cases	82%
Treatment success rate for previously treated (excluding relapse) cases	74%
Treatment success rate for HIV-positive TB cases	81%
Treatment success rate for MDR/RR-TB cases started on	78%

TB preventive treatment (TPT)

	Data are for 2020
% HIV-positive people started on ART on TPT	39%
% children (<5 years) household contacts of B+ TB cases on TPT	34% (31 - 37)

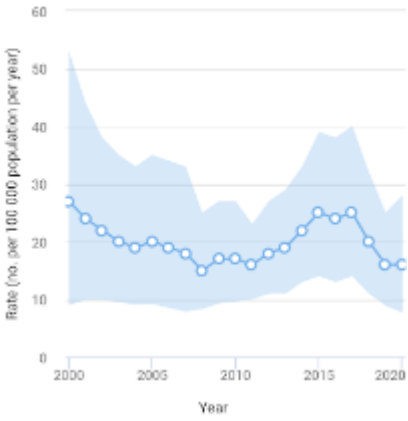
Total TB Incidence

Shaded areas represent uncertainty intervals around the best estimate

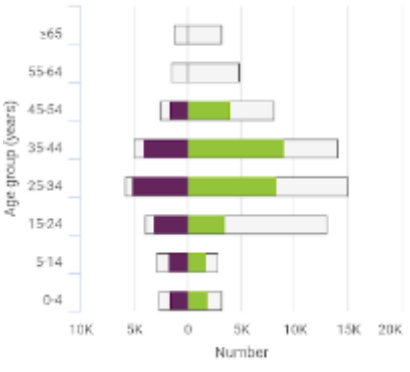


HIV-negative TB mortality

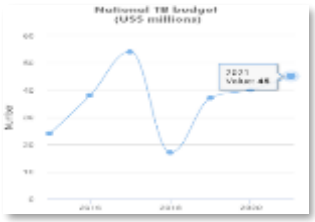
Shaded areas represent uncertainty intervals around the best estimate



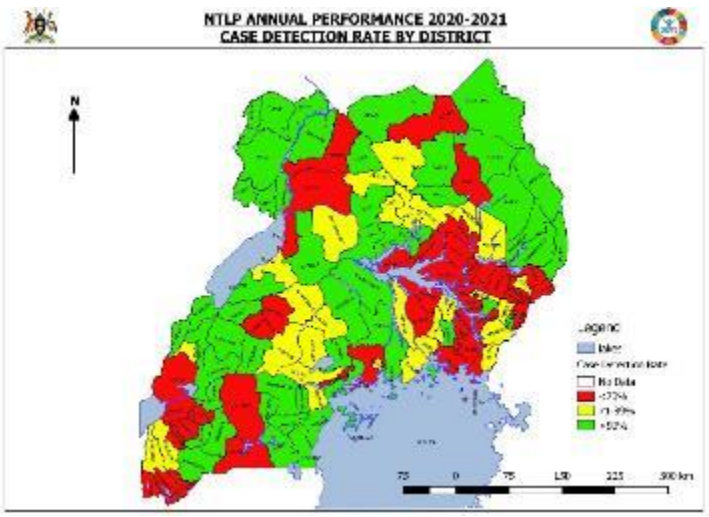
Estimated incidence and notified cases by age group and sex

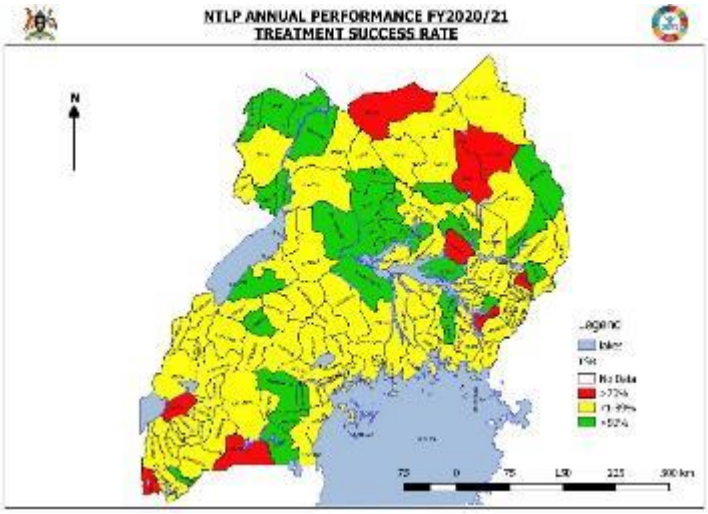


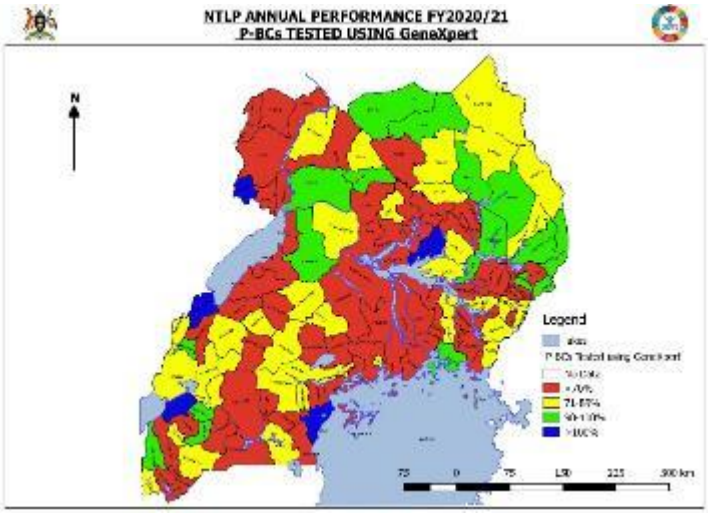
● Females notified ● Males notified

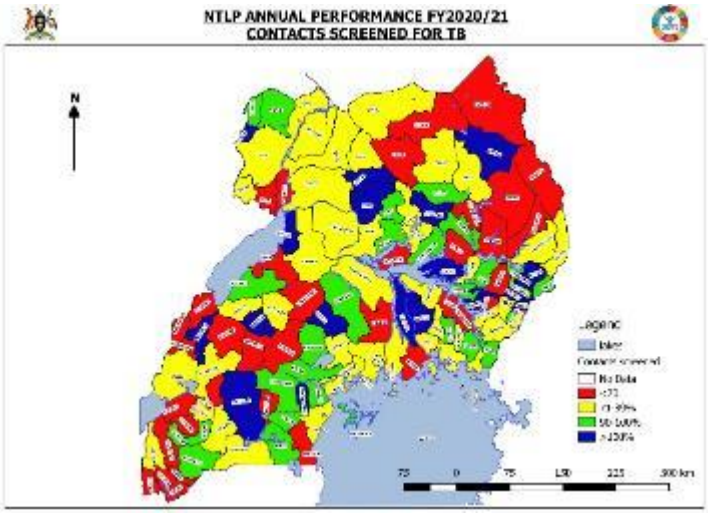


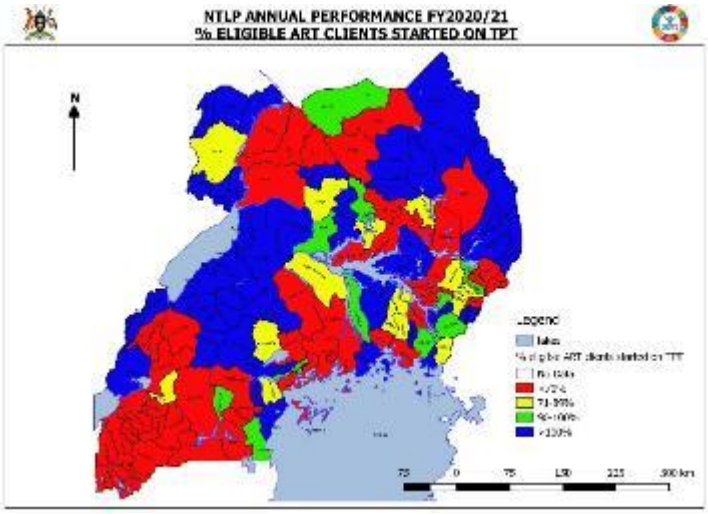
National performance by district in 5 indicators











- Data errors (in blue) across 3 indicators
- Case notification: over 50% achieved >90% of national target.
- Treatment success: only 20% achieved >90% TSR. Only 10 districts were below 70%.
- Most districts have <70 PBCs accessing GeneXpert.
- >50% districts achieved >70% of contacts; 30% achieved 70%. Almost 20% had data errors

Introduction

Tuberculosis (TB) is a communicable disease that is a major cause of ill health and one of the leading causes of death worldwide. Until the coronavirus (COVID-19) pandemic, TB was the leading cause of death from a single infectious agent, ranking above HIV/AIDS. TB is caused by the bacillus Mycobacterium tuberculosis, which is spread when people who are sick with TB expel bacteria into the air (e.g. by coughing). The disease typically affects the lungs (pulmonary TB) but can affect other sites. Most people (about 90%) who develop the disease are adults, with more cases among men than women. About a quarter of the world's population is infected with M. tuberculosis.

TB is curable and preventable. About 85% of people who develop TB disease can be successfully treated with a 6-month drug regimen and regimens of 1–6 months can be used to treat TB infection. Universal health coverage (UHC) is necessary to ensure that all those with disease or infection can access these treatments. The number of people acquiring infection and developing disease (and thus the number of deaths caused by TB) can also be reduced through multisectoral action to address TB determinants such as poverty, undernutrition, HIV infection, smoking and diabetes. Some countries have already reduced their burden of TB disease to fewer than 10 cases and less than 1 death per 100 000 population per year. Key requirements including research breakthroughs (e.g. a new vaccine, new drugs), provision of TB prevention, diagnostic and treatment services within the context of progress towards universal health coverage (UHC), multisectoral actions to address broader social and economic determinants of TB are needed to rapidly reduce the number of new cases each year (TB incidence) worldwide to the levels already achieved in these low-burden countries

The program has implemented the first year of the 2020/2021 to 2024/2025 national strategic plan (NSP)

This report presents progress against our implementation of annual operational and national strategic plan and highlights achievements of the Division and partners in TB and leprosy control. This is against the backdrop of global COVID-19 challenges that have disrupted service delivery, and the fact that we are now

recognized as a high TB burden country, which was not the case last year. This report equally highlights key activities implemented in the financial year and prioritized activities for the financial year 2021/2022 based on this strategic plan which is aligned to the National Development Plan III and Health Sector Strategic plan

The purpose of the report is to provide a comprehensive and up-to-date assessment of the status of the TB epidemic and progress in the response at global, regional, and national levels, in the context of global commitments, strategies and targets

Vision Mission and Mandate

The vision of the National TB and Leprosy Control Programme (NTLP) is a Uganda free of Tuberculosis and Leprosy and the mission is to provide quality, accessible and affordable TB and Leprosy prevention and care services to all people in Uganda. The National TB and Leprosy

Control Program is responsible for providing overall leadership in the coordination, management, resource mobilization, monitoring and evaluation, of the TB and Leprosy national response.
The overall goal of the National TB and Leprosy Strategic Plan 2020/21-2024/25 is to reduce the incidence of TB by 20% from 200/100,000 population in 2019/20 to 160/100,000 population, and the proportion of Leprosy notification that are children from 8% to less than 3% by 2024/25. The Program strives to: create awareness about TB and increase the proportion of people with TB symptoms that seek appropriate care from health facilities from 61% to 90% by 2024/25, increase TB preventive treatment coverage among eligible people to > 90% by 2024/25, increase TB treatment coverage from 76% to >90% by 2024/25, increase TB treatment success from 72% to >90% by 2024/25, and to reduce Leprosy notifications that are children from 8% to <3% by 2024/25, and to build effective and efficient systems that ensure quality, equitable and timely TB and Leprosy services.

Our key strategic interventions include;

1. Strengthen community systems.
2. Strengthen TB and Leprosy prevention, diagnostic and treatment services including adoption of new technologies, drugs and approaches for screening, diagnosis and treatment
3. Strengthen information management including digital technology
4. Strengthen supply chain management
5. Resource mobilization, leadership and accountability, and multi-sectoral collaboration
6. Strengthen the Public Private collaboration

Report Compilation process

The national TB leprosy program staff at MoH in collaboration with partners lead the report compilation. Each thematic area was led by a technical officer at the program who led the writing of the sections of the report. The draft report was shared with all the staff for review as individuals and as thematic team members. The final draft was shared with the program manager and senior advisors of the program for final review and commentary. The writing team finalized the report and submitted to Defeat TB for final design, edits, and printing.

The information used for the compilation of this report was obtained from the DHIS 2. Other data was obtained from WHO global TB report 2021 and progress report of the program during the financial year.

Challenges

- Disruption in service delivery due to COVID-19, COVID-19 related restrictions on mass gathering led to limited implementation of planned activities or reorganization of implementation approach and re. The stigma associated with COVID also further hampered TB services delivery at community and facility level. Patients conceal cough and HCWs fear to screen and test sputum samples.
- There is continued lack of data use at the facility and district level for quick reorientation of services to ensure universal access to quality TB services
- Limited understanding of the TB leprosy data indicators resulting in major errors
- Inadequate screening for TB at facility level
- Limited funding for critical interventions such as awareness and community engagement on tuberculosis and Leprosy
- Suboptimal sample referral and long turnaround time for TB diagnosis at Xpert site

Performance summary against key result areas using patient pathway analysis/cascade of tuberculosis of care.

People not accessing the health system				People with TB seeking care but either not diagnosed or notified			People notified as a TB case but not successfully treated		
People at high risk for TB infection	People with TB infection, high-risk for disease	Asymptomatic disease,not seeking care	Symptomatic disease,not seeking care	Presenting to health facilities, not diagnosed	Diagnosed by non-NTP not notified	Diagnosed by NTP not notified	Diagnosed, not started on treatment	Notified, not successfully treated	Successfully treated (not relapse free)
TPT unreached: PLHIV 40% <5s: 67% >5s: 94.1%	LTBI not treated among contacts 97.6% LTBI treatment not completed 18%	12,884 screened with Xray 41% suggestive of TB	11% Notified from community 1,511 from a 4-day-TB campaign in 50 districts	OPD not screened 53% Presumptives not accessing GeneXpert 42%	Private sector notifications 23%		Case notification 161 per 100,000 ppn (Target 192) Treatment coverage 84% (Target 88%)	Unfavorable treatment outcomes 16%	

2020/21 implementation in pictorials

4-day TB catchup campaign orientation of implementers at district and facility levels. 1500 New TB patients were started on TB treatment

Cross border TB Leprosy collaboration activities. Supervision at Malaba HCIII and Meeting between SS and Uganda program team in Adjumani-March 2021

Digital X-ray TB screening: Bacteriologically confirmed TB yield among presumptive with suggestive CXR 14% and 6.3% respectively at facility and community level screening, which is a higher yield than routine screening has achieved previously.

MOH trainer/ mentor orienting new clinician in Rwekubo HC IV to operate the digital X-ray machine, May 2021. This was after prolonged failure by the district to start use of the equipment.

Leprosy Survivors in Kibuku receive MCR sandals from the district supervisor

Hon Minister of Health – General Duties, Robinah Nabbanja, Permanent secretary, Dr Diana Atwine, during the handover of motorcycles to district officers for TB leprosy supervision

US Mission director at a community TB screening activity during the launch of the USAID funded PACT activity in Moroto district, 23-3-2021

Media TB screening at NTLP offices, part of World TB commemoration week

World TB Day commemoration 24-3-2021 at Booma grounds Moroto district

DHO Nabilatuk explaining to the central level supervision team how effective leadership resulted in attainment of >90% Treatment success among patients who completed treatment in Oct-Dec 2020. Mar 2021.

Program manager NTLP receiving Laptops and tablets from the Admin Baylor Uganda for pilot testing of the eCBSS

16 module GeneXpert machine installation at one of the 7 RRHs that received the machines.

Program outcomes for FY 2020 to 2021

TB screening among patients attending OPD

OPD screening for TB was 47% (23,852,046/50,404,944) against a target of 100%, among those screened, 2.4% (561,395) were identified as presumptive TB and 10% (57,737/561,395) were diagnosed with TB. The sub-optimal screening is a missed opportunity for TB diagnosis at health facilities. Fig. 1 and 2 below show monthly trends in TB screening among OPD attendees for period Jul 2020 to June 2021, and TB case finding among the presumptive.

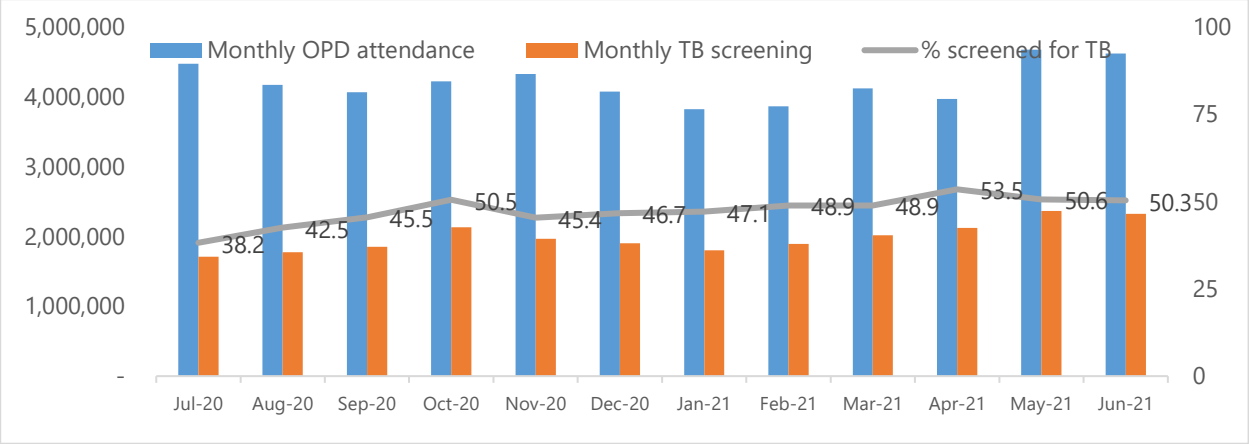


Figure 1: Monthly OPD screening for TB, Uganda, Jul 2020 to June 2021

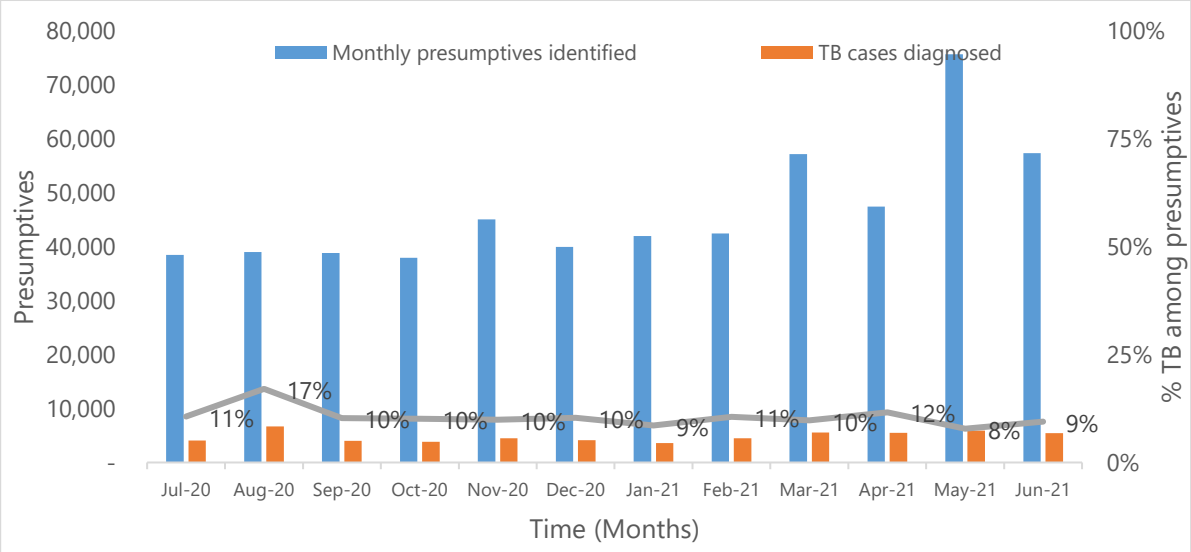


Figure 2: Monthly TB case finding among presumptive TB cases TB patients, Uganda, Jul 2020 to June 2021

TB diagnostics

TB testing among presumptive TB patients

During the financial year 327,224 presumptive TB patients were tested using GeneXpert, 133,667 were tested with microscopy, 27,662 were tested using TB LAM, 12,884 were tested using X-rays, and 3,824 were with other means of testing for TB among presumptive TB patients. Figure 3 shows TB testing among presumptive by means of testing and region.

Jul 2020 to Jun 2021					
Organisation unit / Data	106a-TB17a. Presumptive TB patients tested for case finding GeneXpert	106a-TB17a. Presumptive TB patients tested for case finding Chest X-Ray	106a-TB17a. Presumptive TB patients tested for case finding Other TB Testing	106a-TB17a. Presumptive TB patients tested for case finding Smear Microscopy	106a-TB17a. Presumptive TB patients tested for case finding TB LAM
Acholi	26 748	582	90	3 745	550
Ankole	27 165	872	542	10 035	2 031
Bugisu	10 791	1 737	153	6 909	1 860
Bukedi	10 299	308	301	6 060	966
Bunyoro	13 938	296	28	4 234	571
Busoga	24 212	1 697	428	18 209	1 748
Kampala	19 020	1 296	649	2 154	2 169
Karamoja	19 791	1 172	226	5 196	234
Kigezi	7 091	637	123	3 767	756
Lango	23 575	716	157	14 362	916
North Central	29 825	1 198	849	14 258	4 347
South Central	37 310	1 048	140	16 060	5 301
Teso	15 095	271	7	4 095	2 010
Tooro	19 702	160	47	9 721	2 268
West Nile	42 662	894	84	14 872	1 935
Total	327 224	12 884	3 824	133 677	27 662

Figure 3: Presumptive TB testing among presumptive identified in FY 20/21, Uganda

TB positivity rates among presumptive tested with the different testing methods differed across regions and across the different testing methods. Whereas the desired TB positivity among presumptive TB cases should be less than 5%, the national average is 7.4% among those tested with Xpert. Identification of more presumptive TB cases among those screened is likely to decrease positivity among presumptive TB cases but also increase the number of TB patients diagnosed with TB. We must systematically screen for TB all attendances within all health facilities. Figure 4 shows that different testing methods, and the positivity rates for the FY 2020/21

Table 2: TB positivity rates among presumptive tested with the different TB testing methods, Uganda FY 20/21

Region	Presumptive accessed Xpert	% Post on Xpert	Presumptive tested others	% Post others	Presumptive smear microscopy	% Post smear Microscopy	Presumptive TB LAM	% Post TB LAM
Acholi	26,748	6.3%	90	90%	3,745	7.4%	550	19%
Ankole	27,165	5.8%	542	27%	10,035	4.0%	2,031	28%
Bugisu	10,791	8.3%	153	43%	6,909	6.7%	1,860	13%
Bukedi	10,299	6.9%	301	38%	6,060	3.7%	966	27%
Bunyoro	13,938	9.8%	28	79%	4,234	9.3%	571	37%
Busoga	24,212	6.8%	428	11%	18,209	4.1%	1,748	46%
Kampala	19,020	12.0%	649	50%	2,154	7.0%	2,169	30%
Karamoja	19,791	8.5%	226	14%	5,196	6.5%	234	30%
Kigezi	7,091	6.7%	123	15%	3,767	3.3%	756	24%
Lango	23,575	8.2%	157	83%	14,362	5.6%	916	22%
North Central	29,825	7.0%	849	53%	14,258	5.7%	4,347	27%
South Central	37,310	7.3%	140	68%	16,060	5.1%	5,301	24%
Teso	15,095	3.6%	7	100%	4,095	3.0%	2,010	12%
Tooro	19,702	8.6%	47	2%	9,721	5.1%	2,268	20%
West Nile	42,662	4.8%	84	54%	14,872	4.7%	1,935	23%
Totals	327,224	7.4%	3,824	48%	133,677	5.4%	27,662	26%

Among presumptive TB patients that accessed X-ray, 41% (5326/12884) had films suggestive of TB. Table 3 presents X-ray use among presumptive TB cases by region and proportion suggestive of TB among those that accessed X-rays in Uganda for FY 2020/21.

Table 3: Xray findings for Uganda by region for FY 19/20, and FY20/21

Region	Presumptive tested X-rays	X-rays suggestive of TB	% X-rays suggestive of TB
Acholi	582	372	64%
Ankole	872	317	36%
Bugisu	1,737	316	18%
Bukedi	308	268	87%
Bunyoro	296	73	25%
Busoga	1,697	708	42%
Kampala	1,296	668	52%
Karamoja	1,172	308	26%
Kigezi	637	228	36%
Lango	716	265	37%
North Central	1,198	545	45%
South Central	1,048	539	51%
Teso	271	203	75%
Tooro	160	48	30%
West Nile	894	468	52%
Total	12,884	5,326	41%

TB case notification

TB notification for the period Jul 2020 to Jun 2021 was 69,162, this was 84% of the targeted 82,341 incident TB cases. 26,439 (38.3%) females were notified compared 42,645 TB cases among males. Based on UBOS projected population of 42,885,900 persons for 2021, the TB case notification rate for period Jul 2020 to June 2021 was 161 per 100,000 population. The TB case notification rate among males was 202 per 100,000 population and among females was 121 per 100,000. Children 0-14 years notified were 8,706, this was only 12% of the notified TB patients. The number of TB/HIV co-infected patients was 22,358. Drug resistant TB patients notified during the financial year were 558. Figure 4 below shows TB case notification per quarter for period July 2020 to June 2021, while Figure 6 shows TB case notification rate by district for the same period. Figure 5 shows TB case notification numbers for period FY 2018/2019 to FY 2020/2021, which shows a general increase in TB case finding over the last 3 years shown in the figure. The country continues to experience uneven distribution of TB (Figure 5) with some districts e.g., Moroto having case notification rates above 800 per 100,000 population, Obongi more than 614 per 100,000 population and Kalangala, Napak, and Nabilatuk having case notification rate of more than 420 per 100,000 population.

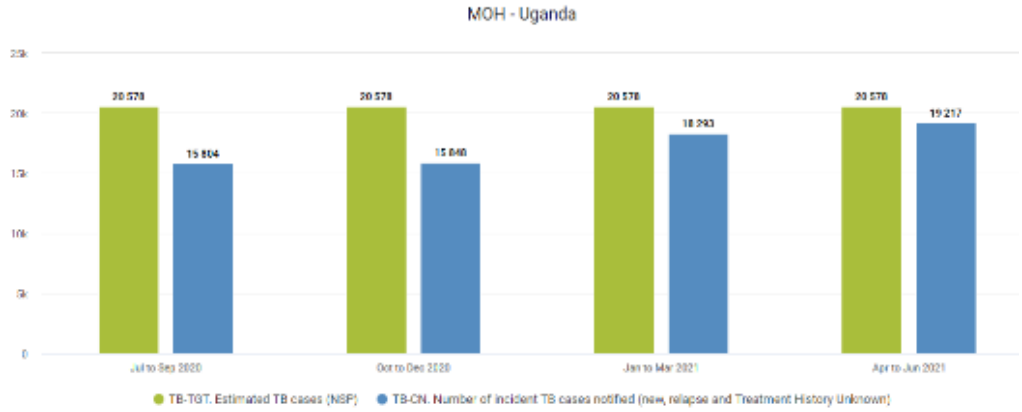


Figure 4: Quarterly TB case notifications Jul 2020 to June 2021 by quarter, Uganda

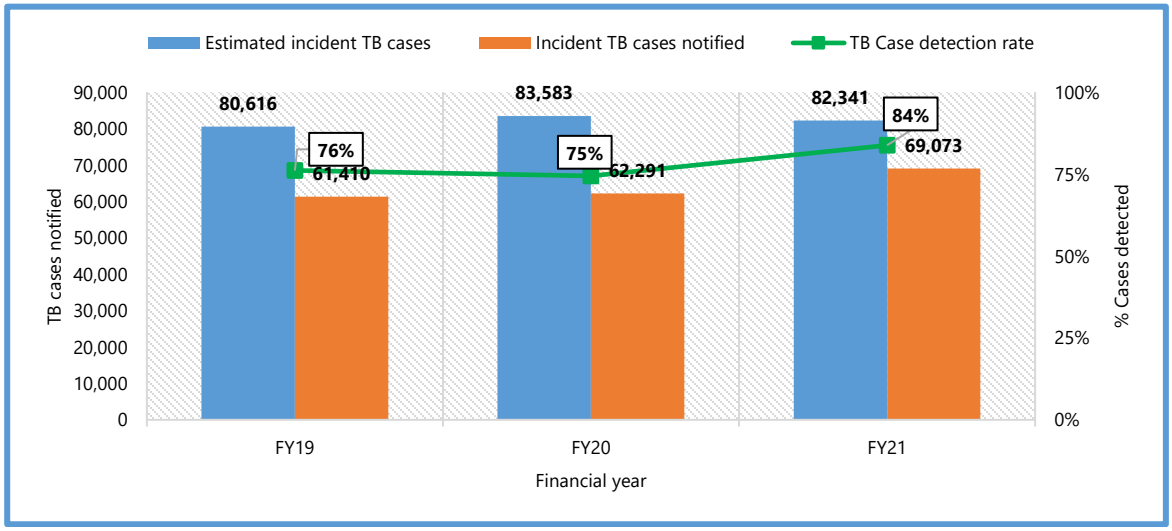


Figure 5: Trends in TB case notification numbers FY 2018/19 to FY 2020/2021, Uganda

TB case detection rate (CDR) for the country for the FY was 84% (69,073/82,341), this differed across regions. The case detection rate was highest for FY 20/21 in Karamoja at 131%, 123% in West Nile, Lango had 108%, and Tooro had CDR of 91%. Teso Region had the lowest CDR of 52% followed by Bukedi Region at 61%. Table 4 gives details of case detection rate for FY 19/20 and FY 20/21

Table 4: TB case detection rate by region, Uganda for FY 19/20, and FY20/21

	FY19/20			FY20/21		
Region	Estimated TB cases	Incident TB cases notified	TB Case detection rate	Estimated TB cases	Incident TB cases notified	TB Case detection rate
Karamoja	3,339	3,419	102.40%	3,289	4,322	131.4%
West Nile	6,004	6,202	103.30%	5,919	7,271	122.8%
Lango	5,323	5,226	98.20%	5,243	5,675	108.2%
Tooro	5,392	3,714	68.90%	5,299	4,829	91.1%
North Central	7,878	6,306	80.00%	7,720	6,923	89.68%
Bunyoro	4,647	4,071	87.60%	4,582	3,983	86.93%
Acholi	4,492	3,438	76.50%	4,429	3,833	86.54%
South Central	10,852	7,684	70.80%	10,678	8,818	82.58%
Ankole	5,899	3,680	62.40%	5,834	4,368	74.87%
Kampala	8,247	6,366	77.20%	8,124	5,832	71.79%
Busoga	7,885	4,575	58.00%	7,760	5,179	66.74%
Bugisu	3,801	2,391	62.90%	3,745	2,477	66.14%
Kigezi	2,540	1,620	63.80%	2,507	1,573	62.74%
Bukedi	3,671	1,770	48.20%	3,620	2,195	60.64%
Teso	3,640	1,829	50.20%	3,594	1,884	52.42%
MOH Uganda	**83,583**	**62,291**	**74.50%**	**82,341**	**69,162**	**84%**

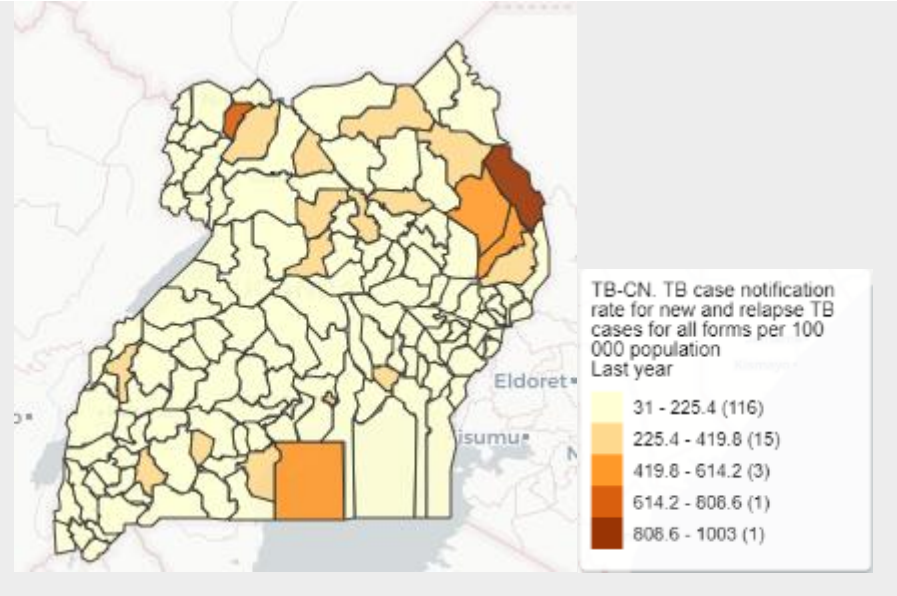


Figure 6: TB case notification rate per 100,000 by district, Uganda, Jul 2020 to June 2021

Among patients with known disease classification, 55% (37,996) were pulmonary bacteriologically confirmed, 41% (28,231) were clinically diagnosed while the rest had extra pulmonary TB.

Among all incident TB cases diagnosed, children aged 0-14 years were 12.6% (8,706/69,162). This was about 10.5% of the targeted incident TB cases (8,706/82,312) for the financial year, against a target of 15% (12,347). Figure 7 shows quarterly trends in pediatric TB case for period Jul 2019 to June 2021.

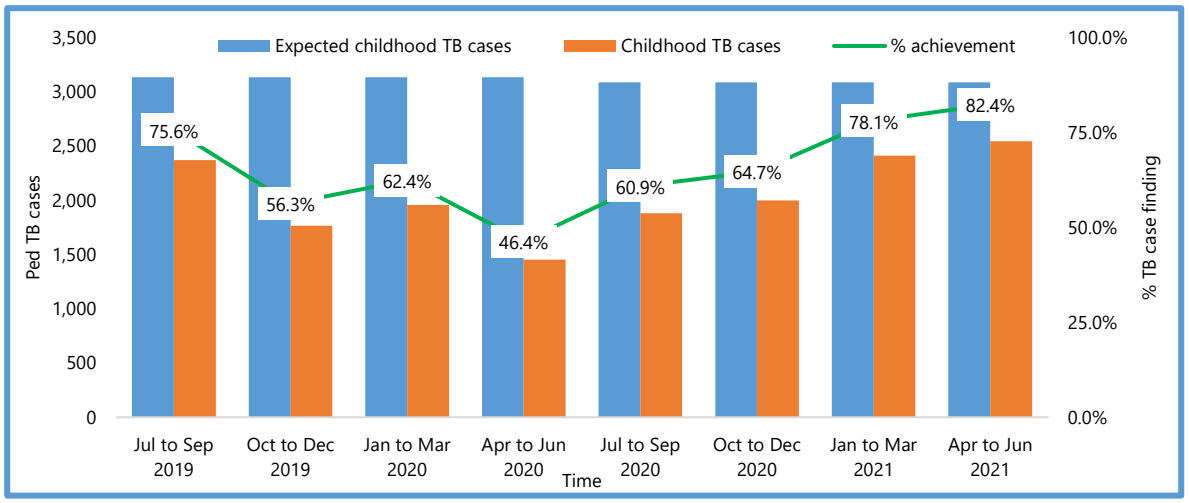


Figure 7: Childhood TB case finding against national TB case finding target, Uganda, July 2019 to June 2021

TB contact tracing cascade during the financial year

The exact number of bacteriologically confirmed TB patients whose contacts were traced is not known however, among the 218,552 contacts that were listed during the FY, 80.3% (175,606) were screened for TB (at least had symptom screen), 19.9% (34,932) presumptive TB were identified and 5,771 were diagnosed with TB. This represented a yield of 3.3% among presumptive contacts.

MOH - Uganda					
Data / Period	Jul to Sep 2020	Oct to Dec 2020	Jan to Mar 2021	Apr to Jun 2021	Total
TB-CM. Number of TB contacts linelisted	45 763	48 209	58 483	66 097	218 552
TB-CM. Number of contacts screened for TB	37 757	34 278	46 621	56 950	175 606
TB-CM. Percentage of contacts screened for TB	82.5	71.1	79.7	86.2	80.3
TB-CM. Number of presumptive TB cases identified out of contact tracing	9 067	5 790	7 873	12 202	34 932
TB-CM. Percentage of presumptive TB cases identified out of contact tracing	24	16.9	16.9	21.4	19.9
TB-CM. Number of contacts diagnosed with TB	1 390	1 017	1 437	1 927	5 771
TB-CM. Percentage of contacts diagnosed with TB	3.7	3	3.1	3.4	3.3

Figure 8: TB contact screening cascade by quarter FY 20/21, Uganda

Contact tracing was worst in Karamoja Region at 54.2% (9795/18079), compared to 90.1% (4225/4690) in Bugisu. Figure 9 presents details of contact tracing cascade by region for FY 20/21 in Uganda

Jul 2020 to Jun 2021							
Organisation unit / Data	TB-CM. Number of TB contacts linelisted	TB-CM. Number of contacts screened for TB	TB-CM. Percentage of contacts screened for TB	TB-CM. Number of presumptive TB cases identified out of contact tracing	TB-CM. Percentage of presumptive TB cases identified out of contact tracing	TB-CM. Number of contacts diagnosed with TB	TB-CM. Percentage of contacts diagnosed with TB
Acholi	10 212	7 471	73.2	2 058	27.5	71	0.95
Ankole	17 982	15 550	86.5	1 597	10.3	259	1.7
Bugisu	4 690	4 225	90.1	1 105	26.2	99	2.3
Bukedi	6 679	5 511	82.5	2 017	36.6	192	3.5
Bunyoro	8 909	7 645	85.8	845	11.1	224	2.9
Busoga	16 223	14 345	88.4	4 514	31.5	611	4.3
Kampala	26 086	23 309	89.4	2 362	10.1	577	2.5
Karamoja	18 079	9 795	54.2	2 811	28.7	575	5.9
Kigezi	2 588	1 774	68.5	493	27.8	44	2.5
Lango	18 994	16 353	86.1	6 074	37.1	1 387	8.5
North Central	13 443	10 356	77	1 011	9.8	225	2.2
South Central	37 112	30 421	82	5 200	17.1	728	2.4
Teso	7 774	6 778	87.2	1 977	29.2	103	1.5
Tooro	10 799	7 108	65.8	351	4.9	162	2.3
West Nile	18 982	14 965	78.8	2 517	16.8	514	3.4
Total	218 562	175 606	80.3	34 932	19.9	5 771	3.3

Figure 9: TB contact investigation cascade by region for the FY 20/21, Uganda

TB patients referred by community health workers and volunteers

The community continues to support efforts towards TB case finding, for the FY 20/21, 17% (11,961) TB patients were notified through community referrals to the health facilities. Figure 10 shows contribution of the community in TB case finding by region.

Jul 2020 to Jun 2021			
Organisation unit / Data	TB-CM. Number of TB patients registered referred by community health workers and volunteers	TB-CN. Total TB cases registered (all cases, all forms)	TB-CM. Percentage of TB patients registered referred by community health workers and volunteers
Busoga	482	5 226	9.2
Ankole	386	4 450	8.7
Teso	249	1 925	12.9
Bugisu	272	2 525	10.8
Lango	1 357	5 727	24.4
North Central	1 037	7 075	14.7
Acholi	489	3 948	12.4
Kampala	827	5 918	14
West Nile	1 889	7 388	25.6
Tooro	1 088	5 000	21.8
South Central	1 500	8 971	16.7
Bukedi	294	2 234	13.2
Karamoja	1 285	4 468	28.8
Kigezi	109	1 584	6.9
Bunyoro	657	4 070	16.1
Total	11 961	70 509	17

Figure 10: Contribution of the community in TB case finding, Uganda, FY 20/21

Note: 70,509 represents all cases and forms of TB, whereas 69,162 refers to new, relapse and treatment history unknown.

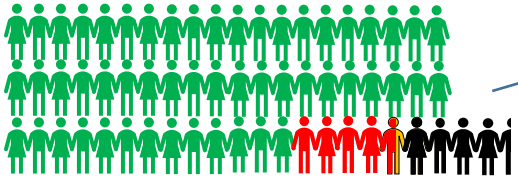
TB case finding cascade by health facility ownership

Majority of the TB cases are still diagnosed from the public sector (59,571) out of the 69,162 TB cases that were diagnosed in FY 20/21, followed by private not for profit (PNFP) health facilities. TB screening is still highest in PNFPs at 59.9%, followed by public sector 52.6%, while private for profit have the lowest TB screening rates at 19.5%. Initiatives to improve TB screening are recommended across all the health facilities. Figure 11 presents details of the TB case finding cascade by health facility ownership in Uganda.

MOH - Uganda						
Data	Ownership / Period	Jul to Sep 2020	Oct to Dec 2020	Jan to Mar 2021	Apr to Jun 2021	Total
TB-SN. Total Health facility attendance	PNFP	2 012 559	2 168 880	2 066 000	2 240 011	8 487 450
	GOV	10 934 183	10 667 972	9 975 902	11 158 086	42 736 143
	PFP	906 978	934 550	927 290	1 024 906	3 793 812
TB-SN. Number of people attending clinics screened for TB	PNFP	1 140 189	1 269 379	1 268 706	1 403 182	5 081 460
	GOV	5 135 257	5 668 219	5 422 877	6 287 761	22 494 114
	PFP	145 686	169 763	157 528	265 176	738 163
TB-SN. Percentage of people attending clinics at health facilities screened for TB	PNFP	56.7	58.5	61.4	62.6	59.9
	GOV	47	53.1	54.4	56.7	52.6
	PFP	16.1	18.2	17	25.9	19.5
TB-SN. Number of presumptive TB Cases identified at health facility	PNFP	27 832	28 150	38 930	43 314	138 226
	GOV	112 108	120 211	130 891	172 310	535 520
	PFP	1 990	1 819	2 450	5 035	11 110
Percentage of Presumptive TB cases identified out of persons screened at health facilities	PNFP	2.4	2.2	3.1	3.1	2.7
	GOV	2.2	2.1	2.4	2.7	2.4
	PFP	1.4	0.95	1.8	1.9	1.5
TB-SN. TB cases diagnosed at the facility	PNFP	3 865	3 734	4 484	4 672	16 755
	GOV	14 975	12 809	14 302	17 485	59 571
	PFP	330	275	266	266	1 137
TB-SN. Percentage of TB cases identified (TB Yield) at facility	PNFP	0.34	0.29	0.35	0.33	0.33
	GOV	0.29	0.23	0.26	0.28	0.26
	PFP	0.23	0.16	0.17	0.1	0.15

Figure 11: TB case finding cascade by health facility ownership, FY 20/21, Uganda

Treatment outcomes for the FY 20/21



Of **62,284** patients registered in the cohort **52,487 (84.3%) cured/completed treatment** **4533 (7.3%) died**, **395 (0.6%) Failed** and **4,354 (7%) were Lost to follow up**

The treatment success rate (TSR) for TB has continued to increase over the last couple of years, for FY 20/21 treatment success rate was at 84%, against a national target of 88%, up from 78% in FY 19/20. West Nile with TSR of 93% and Lango Regions with TSR of 88% attained the national TSR target of greater than or equal to 88%. The other regions had TSR below the national target. Table 5 below shows TSR by region and quarter for FY 2020/21. Details of district performance are shared in the league table.

Table 5: TSR by region and quarter for FY 2020/21, Uganda

Region	Jul-Sept 20	Oct-Dec 20	Jan-Mar 21	April-Jun 21	FY 20/21
West Nile	93.2	94.0	89.8	92.8	92.5
Lango	85.7	88.9	88.9	89.7	88.3
Bunyoro	85.6	84.8	89.0	88.2	86.9
North Central	74.5	78.5	84.1	87.7	81.2
Busoga	82.4	80.8	86.7	84.9	83.7
Bugisu	79.8	77.8	81.8	84.7	81.0
South Central	84.9	84.5	86.7	84.0	85.0
Tooro	84.3	84.2	83.7	82.9	83.8
Kampala	84.1	85.8	85.9	82.5	84.6
Ankole	77.8	77.3	82.8	82.3	80.1
Karamoja	76.9	81.7	84.0	82.0	81.2
Teso	78.5	80.9	81.5	82.0	80.7
Acholi	87.5	81.9	81.8	81.5	83.2
Kigezi	80.2	73.3	72.0	79.2	76.2
Bukedi	81.0	75.5	78.6	78.4	78.4
MoH totals	82.4	82.0	83.8	84.2	84.3
KEY		≥88%	87% - >72%	≤72%	

Treatment success rate for incident TB patients was 84.3%, females had a slightly higher TSR at 84.9% compared to males at 83.9%. TSR for HIV negative TB patients was 84.6%. Treatment success rate for children 0-14 years was 86.1%, while that for HIV negative adults was slightly lower at 76.7%, and TSR for TB/HIV co-infected children 0-14years was 79.7%. Figure 12 presents details of treatment success rate for selected patient groups by region for the FY 20/21. Annex 2 presents treatment outcomes by district.

Jul 2020 to Jun 2021							
Organisation unit / Data	TB TO. Percentage Treatment success rate for all DS TB cases	TB TO. TB treatment success rate for all cases all forms Females	TB TO. TB treatment success rate for all cases all forms Males	TB TO. TB treatment success rate for HIV negative TB cases	TB TO. TB treatment success rate for children (0 14Yrs)	TB TO. TB treatment success rate for adults (15+ Yrs)	TB TO. TB treatment success rate for HIV+ children (0 14Yrs)
Acholi	83.3	82.5	83.8	82	80.1	78.5	70.2
Ankole	80.3	80	80.4	80.7	89	72.1	80.9
Bugisu	81.1	82.5	80.2	81.1	92	73.2	84.8
Bukedi	78.5	81.2	78.8	80.2	80.6	74.2	67.6
Bunyoro	86.8	87.8	86.4	86.2	89.4	81.1	91.2
Busoga	83.7	83.7	83.6	83.6	76.1	75	78.2
Kampala	84.8	85.2	84.5	86.8	84.3	79.2	72.5
Karamoja	81	82.5	79.9	81.2	83.5	64.9	61.5
Kigezi	76.2	77.8	75.5	74.9	76.9	72.3	52.9
Lango	88	88.5	87.7	89.4	92.2	82.4	89.8
North Central	80.9	82.4	80	80.2	83.8	73.3	88.5
South Central	85.1	85.6	84.8	84	90.7	80.2	76.1
Teso	80.5	81.3	80	79.6	75.6	74.2	57.6
Toro	83.8	83.6	83.9	84.6	82.4	76.9	69.9
West Nile	92.5	93	92.2	93.6	95.9	78.8	90.8
Total	84.3	84.9	83.9	84.6	86.1	76.7	79.7

Figure 12: Treatment outcomes for the different treatment groups, Uganda FY 20/21

Treatment success rate by ownership

Treatment success rate (TSR) was 83.9% in the private not for profit, 84.4% in public and lowest in private for-profit health facilities at 79.9%.

MOH - Uganda - TB-TO. Percentage Treatment success rate for all DS-TB cases	
Ownership / Period	Jul 2020 to Jun 2021
PNFP	83.9
GOV	84.4
PFP	79.7

Figure 13: TSR by ownership FY 20/21, Uganda

TB/HIV, advanced HIV and other commodities

Background

The TBHIV/ Advanced HIV disease unit falls under the broader Care and Treatment Coordination Sections of the National TB and Leprosy Program (NTLP) and the National AIDS Control Program (ACP) Departments of the Ministry of Health. The TBHIV/AHD unit specific mandate is fourfold including;

1. To establish and coordinate a mechanism of collaboration between the national AIDS Control Program and the National TB and Leprosy Program.
2. To decrease the burden of TB among People living with HIV
3. To decrease the burden of HIV among TB patients
4. To decrease the burden of advanced HIV disease among PLHIV in care.

In addition to the above unit specific mandate, the TBHIV/AHD unit also contributes to the broader MoH mandate that includes; Overall coordination of key TBHIV stakeholders, Development of policy and guidelines, conducting and or contributing to capacity building

efforts of health workers, ensuring quality assurance through conducting technical support supervision as well as program monitoring and evaluation, research and resource mobilization The TBHIV/AHD unit comprises of three staff including the unit head who is based at the AIDS control program and two officers from the National TB and Leprosy program. During the FY 2020/21, the TBHIV/AHD unit made great strides in implementing key activities under its mandate. The following is the detailed narrative of key achievements by the unit.

TB/HIV treatment cascade

During the FY 2020/21 all the diagnosed incident TB patients had known HIV status. The TB/HIV co-infection rate further reduced to 32% (22,358) from 39% the previous financial year, ninety seven percent (21,746) were on cotrimoxazole and 97% were on ART. Figure 14 shows the HIV testing cascade among TB patients for the FY 2020/21

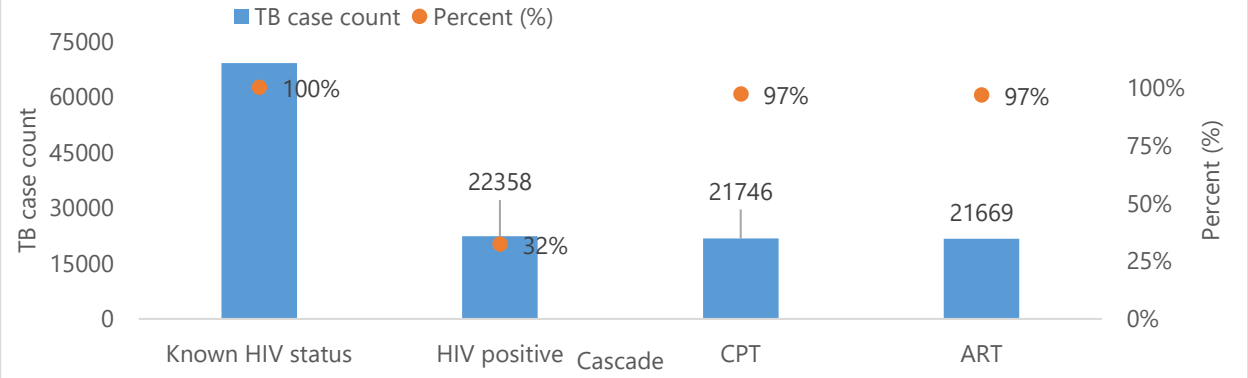


Figure 14: TB/HIV cascade for the FY 2020/21, Uganda

For FY 2020/21, there were 5,131,504 OPD visits among PLHIV and in 90.7% (4,653,748) visits, screening for TB was conducted. 2.8% (128,818) PLHIV were identified as presumptive and 19,913 were identified as HIV/TB co-infected. Figure 15 gives details on HIV/TB screening and diagnostic cascade by quarter.

Jul 2020 to Jun 2021							
Organisation unit / Data	TB-SN Number of people attending ART services	TB-SN Number of people attending ART services screened for TB	TB-SN Percentage of people attending ART and screened for TB	TB-SN Number of presumptive TB Cases identified in ART clinics	TB-SN Percentage of presumptive TB Cases identified in ART clinics	TB-SN TB cases diagnosed in ART	TB-SN Percentage of TB cases identified (TB Yield) at facility in ART
Acholi	283 513	280 538	98.8	5 710	2.2	836	0.30
Ankole	511 016	477 883	93.5	14 439	3	1 711	0.36
Bugisu	130 110	124 254	95.5	3 081	2.5	581	0.46
Bukedi	157 626	148 196	94	5 387	3.6	567	0.38
Bunyoro	263 481	228 774	86.8	8 380	3.7	1 056	0.46
Busoga	318 549	288 991	90.7	9 166	3.2	1 276	0.44
Kampala	685 910	560 124	81.7	9 513	1.7	2 140	0.38
Karamoja	26 301	24 326	92.5	766	3.1	203	0.83
Kigezi	181 703	159 274	87.7	2 460	1.5	512	0.32
Lango	357 271	337 909	94.6	8 862	2.6	1 451	0.43
North Central	607 410	575 265	94.7	14 391	2.5	2 787	0.48
South Central	848 904	799 027	94.1	25 845	3.3	3 707	0.46
Teso	187 314	156 531	83.6	4 821	3.1	668	0.43
Toro	384 805	361 014	93.8	11 809	3	1 393	0.39
West Nile	169 483	162 636	96	4 608	2.8	1 024	0.63
Total	5 131 504	4 653 738	90.7	128 818	2.8	19 913	0.43

Figure 15: HIV/TB cascade Jul 2020 to June 2021, Uganda

National TBHIV/AHD Coordination

TBHIV/AHD TWG meetings; During the year the unit held 4 out of 8 TBHIV technical working group meetings in which the following key recommendations were made. A brief description of progress made on each recommendation is also included.

1. Improve coverage of CD4 test kits by exploring feasibility of using semiquantitative CD4 test kits called Visitect. The VISITECT CD4 Advanced Disease Rapid Test is a manually operated semi-quantitative assay for the estimation of CD4 protein on the surface of CD4+ T cells in human whole blood (capillary or EDTA venous) to indicate whether the level is above or below 200 cells/µL within pre-diagnosed HIV patients. The VISITECT CD4 Advanced Disease in vitro diagnostic test is for use as an aid in the management of patients with advanced HIV disease (patients with CD4 count below 200 cells/µL). This visually read test is designed to be used at the point-of-care and therefore has utility in decentralized diagnostic settings.

   To date we have completed pilot testing the Visitect CD4 test kits and the results show concurrence with the existing CD4 platform in the country. We strongly recommend that this point of care test is scaled up to all ART clinics to detect advanced HIV disease early and start treatment for TB-HIV coinfection or preventive therapy in the absence of TB disease.
2. Improve coverage of TBLAM test kits. To date a lot of lobbying has been done with the manufacturer of TBLAM test kits to reduce the pack size from 100 to 25 test kits per pack. The 25-test kit pack will improve access to TBLAM in the facilities
3. Start conducting HIV related mortality audits; To date we are in the process of developing implementation guidelines for health workers for conducting HIV related mortality audits in health facilities.
4. Conduct TPT DQA; the TBHIV unit led a process of conducting national TPT enrollment census to determine the unmet need for TPT enrollment among PLHIV. This was after stagnation in numbers of PLHIV enrolled on TPT. Findings from the census differed from routinely collected data in the national database. A TPT DQA was recommended, and plans are underway to have this conducted.
5. Conduct national TBHIV quality improvement collaborative to improve on the poor treatment outcomes observed among TBHIV coinfected patients. To-date we have embarked on implementing the TBHIV collaborative for the next 12 months.

Development or review of Policies, guidelines and workplans;

The unit led the process of developing the following key MoH documents

1. Drafted Implementation guidelines for conducting HIV related mortality audits in health facilities. The M&E framework for conducting HIV related mortality audits is under development
2. Training materials for the management of cryptococcal meningitis using the currently recommended WHO treatment regimens that included the less toxic liposomal amphotericin B and the repurposed 5-flucytosine.

Support Supervision and mentorships.

During the year the TBHIV/AHD unit conducted 3 out of 4 support supervisions focusing on the following areas

1. Supporting poorly performing facilities on IPT enrollment in 14 regions of the country. The main barriers to uptake of IPT was non-alignment of ART and TPT refills, non-initiation of IPT among PLHIV on multi month dispensing of ART and in a few cases stock out of Isoniazid
2. Clinical audits on quality of care to TBHIV coinfected patients. The main findings here were efforts to rule out MDRTB among coinfected patients were low, TB treatment initiation among TBHIV cases found was low, treatment response monitoring at 2, 5 and 6 months was low and the proportion of coinfected TBHIV that died while on treatment was very high compared to the non-coinfected, this was attributed to the prior mentioned gaps in management.
3. Conducted post training mentorship and support supervision to the pilot sites that were using Visitect CD4 test kits. Key finding was that the Visitect was user friendly, and its performance was comparable to existing CD4 platforms

Monitoring and evaluation

1. Conducted a national TPT census to determine national TB preventive therapy unmet need. Results showed that by end of April 2021 the unmet need of TPT enrolment was 26% yet the national database reflected 29%. The observed discrepancy warranted us to conduct a data quality assessment to find and address the errors in data.
2. During the year the unit led efforts to start monitoring HIV related mortality as an initiative to start tracking progress towards HIV epidemic control. Analysis of program data shows that over 4500 PLHIV die every quarter and in 2020 alone about 2000 PLHIV died due to HIV related causes including TB

Capacity building and Trainings

1. The Unit coordinated capacity building efforts of training health workers in management of cryptococcal meningitis in 16 hospitals that were targeted for phase
2. These hospitals included 15 RRH and 1 district hospital at Tororo General Hospital to act as regional hubs for cryptococcal management.
3. Conducted 3 national and 16 regional trainings of the revised TB preventive therapy guidelines that recommend use of alternative TPT regimens.
4. Trained health-workers in 12 pilot facilities on use of device free AHD CD4 test kits

Resource mobilization

1. Led the grant writing process for the TBHIV program area under the Global fund application and won 90,986 USD for conducting biannual TBHIV supportive supervisions for next 3 years.
2. CDC Co Agreement continuous application, the TBHIV/AHD unit under my leadership, won 10,060 USD for conducting AHD support supervision.

Research/dissemination

Conducted a device free CD4 test feasibility study in 12 pilot sites and found that, the device free CD4 test kits (Visitect) were easy to use, their performance was in concurrence with the existing CD4 platforms, and it had a sensitivity of 91.0% (85.5-94.9) at 95% Confidence interval and a specificity 98.4% (91.3-100.0%) at 95% CI.

Gaps and challenges

Due to COVID-19 lockdown, all meetings were conducted over zoom, internet connectivity fluctuations affected attention. Implementation of some activities was delayed due to COVID-19 lockdown

Recommendations to the above challenges

The people need to follow COVID-19 national guidelines and get vaccinated

Priorities for the coming Financial Year

Implement a national TBHIV quality improvement collaborative in all 16 regions of the country that will focus on improving poorly performing aspects of the TBHIV care and treatment cascade in the region

1. Conduct supportive supervision to at least 100 poorly performing health facilities during the year.
2. Conduct TPT DQA to establishment the unmet need for TPT in the country
3. Roll out use of 3HP as one of the new recommended guidelines for TB prevention among PLHIV
4. Contribute to TB case finding among PLHIV by scaling up the use of device free CD4 test to be able to identify early PLHIV with active TB disease
5. Finalize the development of the HIV related mortality implementation guidelines and work towards strengthening quality improvement efforts for TBHIV service delivery by piloting TBHIV mortality reviews in selected facilities across the country.
6. Continue monitoring and reporting on the national TBHIV/AHD response

Two hundred eighteen thousand five hundred sixty-one thousand (218,561) contacts were identified, fifty-four thousand six hundred eighty-nine were children under five (54,689). Seventy five percent (163,826) were screened and evaluated for TB. Among under-fives, 70% (38,505) were screened and evaluated for TB. One thousand one hundred and ninety contacts (1,190) over 5 years, and 379 under 5-year contacts were diagnosed with TB. Preventive therapy was initiated in sixteen thousand nine hundred and sixty-seven contacts, among these children under five were twelve thousand eight hundred and sixteen.

MOH - Uganda	
Data / Period	Jul 2020 to Jun 2021
TB-TPT. Number of eligible ART clients	552 891
TB-TPT. Number of eligible ART clients started on TPT	332 327
TB-TPT. Percentage of eligible ART clients started on TPT	60.1
TB-TPT. Number of under 5 TB contacts eligible for TPT	32 355
TB-TPT. Number of under 5 TB contacts started on TPT	10 815
TB-TPT. Percentage of under 5 TB contacts started on TPT	33.4
TB-TPT. Number of eligible TB contacts (5+ years)	96 459
TB-TPT. Number of TB contacts (5+ years) started on TPT	5 647
TB-TPT. Percentage of eligible TB contacts (5+ years)started on TPT	5.9

Figure 16: IPT initiation cascade for FY 20/21, Uganda

Frequent engagement of districts and implementing partners (16) by the top leadership of the NTLP and ACP programs (including through 5 TPT national task force meetings) and consistent availability of TPT medicines led to marked increase in TPT enrolments among PLHIV in Q1 (128,004) of 2020/2021 FY (332,337).

NFM3 grant was awarded mid-2020/2021 FY and this was followed by procurement of sub-recipients to conduct contact investigation (the entry point for TPT among TB contacts). Thus, delayed initiation of contact investigation activities under NFM3, contributed to low TPT uptake among TB contacts under 5 years. NTLP will hold monthly virtual performance review meetings with global fund grant sub-recipients to increase accountability for contact investigation & TPT results to ensure optimum implementation in the next FY

We had low contact tracing coverage. (0-4yrs) Only 3,632 contacts identified as eligible. Low uptake of TPT only 33% (1,185/3632) were identified as eligible

2. We only realized 1,026/12,500 contacts 5yrs and above enrolled on TPT during the reporting period. The guidelines for TPT were updated to include all contacts without active TB disease to be enrolled but these have not been rolled out nationally. Latent TB infection tests

not available and these could be affecting access to TPT for contacts above 5 years. The program is considering implementation of an action plan of 3 by 1 to accelerate uptake of TPT among contacts of confirmed TB patients. This is in line with the WHO drive launched in 2021 to scale up TB preventive therapy among contacts.

The very low TPT coverage among TB contacts 5+years is attributable to the delayed roll out of the guidelines for programmatic management of latent TB infection that awaited procurement of shorter TPT regimens. The NTLP will monitor capacity building for TPT among 5+year-old contacts of PBCs and follow up with regional implementing mechanisms to address gaps.

Guidelines for the programmatic management of Latent TB infection (PMLTBI) were finalized and launched by the Minister of Health on World TB Day 2021. NTLP collaborated with AIDS Control Program to develop training materials for TPT. Thirty-four (34) national trainers for TPT were trained. Regional ToTs for TPT are to be held during 2021/2022 FY.

Contact investigation: The PR2 on behalf of NTLP procured CSOs (Cluster Baylor Uganda, PACE, UDHA, ICWEA, RSSH 1 & RSSH 2) to support 1,584 TB diagnostic units carry out contact investigation activities among communities in 130 districts. NTLP carried out two high-level orientation meetings for 6 sub-recipients on TB contact investigation and TB Preventive Treatment provision among eligible U5 & 5+ contacts of TB patients.

Home-delivery of TB preventive treatment (TPT) among 86 IGRA positive household contacts of PBC TB patients. TPT uptake was 94%, despite the challenges occasioned by the COVID-19 lockdown. Of those initiated on TPT 82% (67) completed.

Dissemination of NTLP IGRA study findings:

An abstract on use of home delivery of TPT approaches among under-5-year-old household contacts (U5 HHCs) in a high TB-HIV burden, low-resource setting: lessons from Northern Uganda accepted for oral presentation at the 52nd UNION conference on lung health.

Infection Prevention and Control

1. Completed measurement of dimensions of 400 prison wards for UV installation. This however did not include ventilation estimates. It would cost $600,000 to procure these devices.
2. Conducted pre-UV installation assessment in 5 National, 15 Regional, and 40 General Hospitals, and 12 hospitals were assessed to inform specification & quantification UV devices required

TB-HIV: we achieved the following:

1. Mentored 115 health workers at 22 hospitals & HC IVs in Ankole, Bukedi, Bugisu & Kigezi regions mentored on TB & TB/HIV clinical cascades

2. Additional TPT mentorship conducted in 34 health facilities: Karamoja (5), Kigezi (3), Mbarara (5), Bugisu (4), Bukedi (2), Acholi (5), Jinja (5) & Lango (5); others conducted in Ankole, Busoga, Mbale Region. Reviewed process for identifying eligible PLHIV and U5 children for IPT, initiating IPT, monitor and ensure treatment completion
3. Conducted QI projects to improve TB screening, linkage to treatment, treatment outcomes, treatment response monitoring, enrolment & completion of TPT and documentation of process TB & TPT care
4. Oriented 8 out of 10 TASO SRs on contact tracing and TPT. Orientation of the remaining 2 new CSO on contact tracing & TPT are in the plan for the next year

Challenges

Limited capacity to test for latent TB infection to inform management among 5+year contacts of PBC TB patients. This will be addressed through phased roll out of testing starting with HIV negative prison inmates in 2022. This will be done through procurement of 24,000 IGRA latent TB infection tests with support from CDC. In collaboration with QIAGEN, expand testing capacity from one (CPHL) to additional five laboratories (NTRL, Soroti, Arua, Mbarara, Hoima).

Outcomes of IPT for FY 20/21

90% of the 262,068 PLHIV on ART and who were expected to complete IPT completed successfully during the FY. Among 4,863 under-fives on IPT, 80.2% completed successfully compared to those above 5 years on IPT where 81% (7,150/8784) completed. Figures 17 and 18 present details of IPT completion rates and other outcomes for patients who were expected to complete IPT in FY 20/21 in Uganda. Figure 19 presents IPT completion rates by region.

MOH - Uganda	
Data / Period	Jul 2020 to Jun 2021
TB-TPT. Percentage of ART patients expected to complete TPT that completed	90
TB-TPT. % of TB contacts (Under 5 Years) expected to complete TPT that completed	80.2
TB-TPT. Percentage of TB contacts (5+ years) expected to complete TPT that completed	81

Figure 17: IPT completion rates, Uganda, FY 20/21

The consistent availability of TPT medicines at national level and redistribution of medicines at district level to address shortages, alignment of TPT to multi-month ARVs dispensing and TPT quality improvement mentorships contributed to the high TPT completion rates.

MOH - Uganda	
Data / Period	Jul 2020 to Jun 2021
TB-TPT. Percentage of ART patients expected to complete TPT that completed	90
TB-TPT. Percentage of ART patients on TPT lost to follow up	3.7
TB-TPT. Percentage of ART patients on TPT that died	0.22
TB-TPT. Percentage of ART patients on TPT that stopped	1.4
TB-TPT. Percentage of ART patients on TPT that stopped after developing TB	0.17
TB-TPT. % of TB contacts (Under 5 Years) expected to complete TPT that completed	80.2
TB-TPT. Percentage of TB contacts (Under 5 Years) on TPT lost to follow up	10.7
TB-TPT. Number of TB contacts (Under 5 Years) on TPT that stopped after developing TB	17
TB-TPT. Percentage of TB contacts (Under 5 Years) on TPT that died	0.12
TB-TPT. Percentage of TB contacts (Under 5 Years) on TPT that stopped	1.6
TB-TPT. Percentage of TB contacts (Under 5 Years) on TPT that stopped after developing TB	0.35
TB-TPT. Percentage of TB contacts (5+ years) expected to complete TPT that completed	81
TB-TPT. Percentage of TB contacts (5+ Years) on TPT lost to follow up	4.4
TB-TPT. Percentage of TB contacts (5+ Years) on TPT that died	0.13
TB-TPT. Percentage of TB contacts (5+ Years) on TPT that stopped	1.4
TB-TPT. Percentage of TB contacts (5+ Years) on TPT that stopped after developing TB	0.09

Figure 18: Details of IPT outcomes among those expected to complete, FY 20/21, Uganda

Jul 2020 to Jun 2021			
Organisation unit / Data	TB-TPT. Percentage of ART patients expected to complete TPT that completed	TB-TPT. % of TB contacts (Under 5 Years) expected to complete TPT that completed	TB-TPT. Percentage of TB contacts (5+ years) expected to complete TPT that completed
Busoga	90.4	89.3	91
Ankole	87.4	82.4	76.8
Teso	90.5	66.8	80.2
Bugisu	87	71.7	75.3
Lango	94.5	88.9	91.8
North Central	90	84.1	80
Acholi	85.3	86.3	80.4
Kampala	89.3	73.6	82.4
Tooro	92.9	94.2	92.3
West Nile	95.1	87	89.5
South Central	88.3	83	78.2
Bukedi	93.6	89.5	32
Kigezi	88.9	64.3	41
Karamoja	73	61.4	67.7
Bunyoro	92.2	90.3	90.8
Total	90	80.2	81

Figure 19: IPT completion rates by region for FY 20/21, Uganda

Planned activities for 2021/2022 FY

- Conduct study to estimate the prevalence of latent TB infection and active TB disease among prison inmates
- Carry out TB screening in prison wards where a TB patient was notified at 49 prisons
- Conduct community TB education & dialogue sessions in 28 prisons
- Install germicidal ultraviolet irradiation devices in selected in prison wards.
- Assess adherence to recommended TB Infection prevention practices in 59 hospitals
- Procure and install germicidal ultraviolet irradiation devices in 26 poorly ventilated TB wards
- Development of a 3 by 1 plan to accelerate achievement of the UNHLM targets

Active Case Finding (ACF):

Through support from the Global Fund, we were able to achieve the following:

1. Expanded the ACF approach to 41 additional districts bringing the total number of districts to 50 and facilities under direct support for implementation of ACF tool kit to 200. Health workers from service delivery points were trained on site in accordance with COVID 19 prevention SOPs. TB screening has increased since baseline to 67.6% with a 3% presumption.
2. Carried out 2 of 4 mentorships to support implementation of ACF toolkit at 200 health facilities from 50 districts. 80.2% (4,337/5,408) of target achieved in TB case detection in April-June 2021 quarter
3. Initiated Quality Improvement projects at health facilities to improve TB case finding and treatment outcomes and developed and shared TB dashboard to monitor performance in TB case finding and followed up action plans by district teams to address gaps in TB care
4. Held monthly ACF meetings and shared performance dashboards in TB case detection cascade with ACF districts
5. Conducted 2 mentorship visits to 27 health facilities to support utilization of X-ray services & interpretation of X-ray images for TB diagnosis; on-site training for clinicians in digital X-ray use in Kaabong and Katakwi hospitals and Rwekubo HC IV. A total of 2,922 individuals were screened with X-ray at health facilities. Of these, 450 had suggestive X-ray and 87 were diagnosed with TB (35 PBCs & 52 PCD)
6. Conducted community TB screening in prisons and hard to reach communities in Busoga, Karamoja regions and Nakivale refugee camp. A total of 1,403 individuals were screened for TB, 189 (10.5%) had abnormal X-ray suggestive of TB and 112 patients diagnosed with TB (19 PBC & 93 PCD).
7. With support from DELFT Universal Ltd Organized monthly virtual meetings with radiographers and clinicians at five digital X-ray sites to address operational challenges and ensure functionality of the equipment for TB screening and diagnosis. This has improved functionality of digital X-ray systems, capacity building of staff in X-ray use and utilization of X-ray services
8. Conducted joint coaching visits with IPs in East, Lango & SW regions to improve TB treatment outcomes as part of the TB/HIV cascade improvement initiatives at 33 health facilities.
9. Conducted a TSR improvement synthesis workshop and summarised the lessons from implementing changes for improving retention and sputum monitoring.

Quality, TSR&TPT improvement collaboratives

10. Conducted virtual orientation and coaching activities for District based coaches in collaboration with resident IMs including LSDA, RHITES-N Acholi, Bunyoro ACE and USAID LPS project.

11. Site level corrective action plans for TSR and TPT improvement.

Challenges identified

1. TB screening still inadequate at health facilities. Need to strengthen TB screening at SDPs and reporting of weekly TB cascade using HMIS 033b
2. Ministry of Health will establish service contracts with suppliers of digital X-ray to ensure uninterrupted functionality
3. Lack of radiographer to support X-ray in Kaabong District
4. Low coverage of DTUs in the district (29 out of 64 health facilities and only two GeneXpert machines available, affecting access to TB services. Affected district TB performance. CDR in Jul-Sep 2020 was 15% (73/478) and TSR, 83%.
5. DTLS are not adequately supported to carry out support supervision, performance reviews and data collection/ reporting
6. The X-ray machine in Rwekubo HC IV not functional since installation in June 2020 due to lack of appropriate space and personnel to operate the equipment.

Programmatic management for Drug Resistant TB

Access to Xpert among PBCs

During the financial year, the proportion of bacteriologically confirmed TB that accessed GeneXpert was 73%. – 73% of New PBCs accessed GeneXpert testing. However only 64.4% of relapses (2,224/3,456) accessed the same which is a gap in ensuring resistance testing in this group. This was not stable across the 4 quarters,

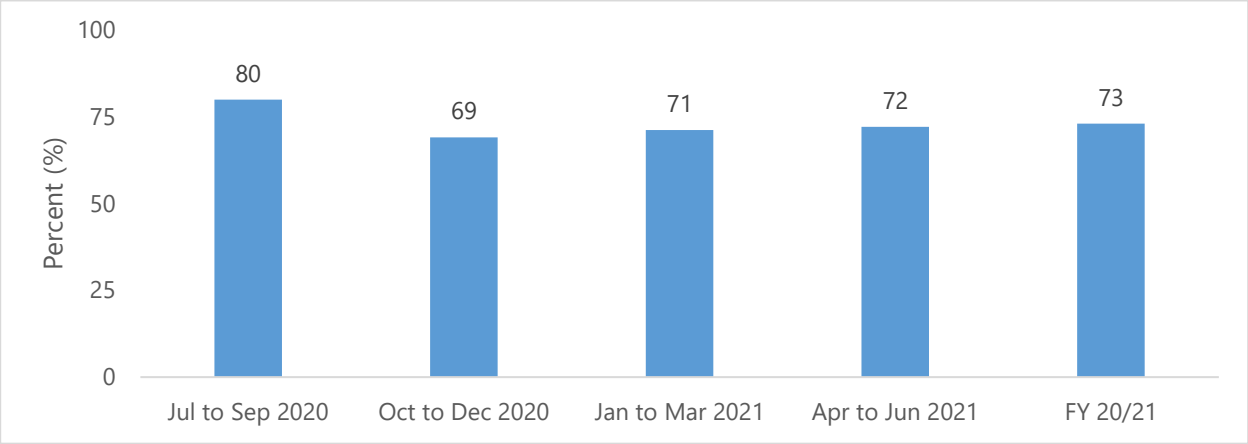


Figure 20: Access to GeneXpert among pulmonary bacteriologically confirmed TB by quarter in Uganda, FY 20/21

In looking at regional access to GeneXpert by region, most had less than 80% access. Bugisu, Lango and North Central had the lowest access.

TB-LAB. Percentage of P-BCs tested using GeneXpert					
Organisation unit / Period	Jul to Sep 2020	Oct to Dec 2020	Jan to Mar 2021	Apr to Jun 2021	Average
Acholi	85.9	94	81.2	94.2	88.8
Kampala	97.5	86.1	91.7	78.9	88.6
Karamoja	86.2	84.3	90.3	82.9	85.9
West Nile	85.4	52.9	50.2	133.6	80.5
Tooro	80.3	73.7	77.7	81.9	78.4
South Central	122	63.9	63.7	60.8	77.6
Ankole	76.6	66.4	73	74.1	72.5
Kigezi	73.7	67.8	63.5	73.5	69.6
Bukedi	60.9	64.6	77.2	75.4	69.5
Bunyoro	71.1	60.2	70.4	72.4	68.5
Teso	81.4	54.3	78.9	58.7	68.3
Busoga	77.2	74.2	57.5	63.3	68.1
North Central	68.7	63.3	64.9	67.2	66.0
Lango	64.5	67.3	54.2	63	62.3
Bugisu	66.5	62.6	72.5	0.5	50.5
Total	**79.9**	**69.0**	**71.1**	**72.0**	**73.0**

Figure 21: Access to GeneXpert by quarter and region, Uganda FY 20/21

Of the expected 1,441 MDR-TB patients, 558 were identified across the country, among these only 485 (87%) were started on MDR-TB treatment, 57% male and 43% female. Among these HIV testing was conducted in 99% (479), 41% (194) were found MDR-TB coinfected and 99% (193) of these were initiated on ART. Figure 22 shows HIV testing cascade among MDR-TB patients initiated on treatment in FY 2020/21

MOH - Uganda	
Data / Period	Jul 2020 to Jun 2021
TB-TGT. Estimated RR Cases (NSP)	1 441
TB-DR. Number of RR TB cases identified by diagnostic and treatment units	558
TB-DR. Number of cases with RR-TB and/or MDR-TB that began second-line treatment	474
TB-DR. Percentage of RR/MDR TB Cases identified by the DTUs	38.7
TB-DR. RR/MDR TB case detection rate	32.9

Figure 22: RR-TB case finding cascade, FY 20/21, Uganda

RR-TB case finding by region

The number of RR-TB patients identified and those initiated on second line treatment was slightly different across almost all regions. This could be attributable to some patients initiating treatment outside the region where they were diagnosed in addition to initial loss to follow up among these patients

	Jul 2020 to Jun 2021				
Organisation unit / Data	TB-TGT. Estimated RR Cases (NSP)	TB-DR. Number of RR TB cases identified by diagnostic and treatment units	TB-DR. Number of cases with RR-TB and/or MDR-TB that began second-line treatment	TB-DR. Percentage of RR/MDR TB Cases identified by the DTUs	TB-DR. RR/MDR TB case detection rate
Busoga	136	38	45	26.5	33.1
Ankole	102	30	25	29.4	24.5
Teso	63	15	17	23.8	27
Bugisu	66	18	24	27.5	36.6
Lango	92	58	78	63.2	85.1
North Central	135	60	21	44.4	15.5
Acholi	78	25	33	32.3	42.6
Kampala	142	43	95	30.2	66.8
Iooro	93	42	29	45.3	31.3
West Nile	104	44	32	42.5	30.9
South Central	187	114	16	61	8.6
Bukedi	63	23		36.3	
Karamoja	58	30	34	52.1	59
Kigezi	44	6	5	13.7	11.4
Bunyoro	80	14	20	17.5	24.9
Total	1 443	558	474	38.7	34.4

Figure 23: RR-TB case finding cascade by region, FY 20/21, Uganda

Table 6: HIV testing cascade among MDR-TB patients Jul 2020 to June 2020, Uganda

TB/HIV Cascade	Jul-Sept'20	Oct-Dec'20	Jan-Mar'21	Apr-Jun'21	FY 21
MDR TB Pts registered	114	107	131	133	485
MDR - TB Pts tested for HIV	114	104	131	130	479
% MDR - TB Pts tested for HIV	100%	97%	100%	98%	99%
MDR - TB/ HIV coinfected pts	41	42	58	53	194
% MDR - TB coinfected pts	36%	40%	44%	41%	41%
MDR - TB/HIV Pts on ART	40	42	58	53	193
% MDR – TB/HIV pts on ART	98%	100%	100%	100%	99%

RR/MDR-TB treatment outcomes

Among the 523 MDR-TB patients initiated on treatment 24 months prior (due for evaluation), treatment success rate was 80.7% (422), among TB/HIV co-infected MDR-TB patients, 75.5% (173/229) were treated successfully. Among children, all (15/15) were treated successfully.

Among the XDR-TB patients, 3 (42.9) of 7 were treated successfully. Figure 19 presents details of the RR/MDR-TB treatment outcome cascade.

MOH - Uganda	
Data / Period	Jul 2020 to Jun 2021
TB-DR. Number of RR/MDR TB patients registered 24 months ago	523
TB-DR. Number of RR/MDR TB patients registered 24 months ago that cured or completed treatment.	422
TB-DR. Percentage Treatment success rate for all RR/MDR-TB cases	80.7
TB-DR. Number of X-DR TB cases registered 24 months ago	7
TB-DR. Number of X-DR TB cases registered 24 months ago that cured or completed treatment.	3
TB-DR. Percentage Treatment success rate for all confirmed X-DR TB cases	42.9
TB-DR. Number of TB/HIV Co-infected RR/MDR TB cases registered 24 months ago	229
TB-DR. Number of TB/HIV Co-infected RR/MDR TB cases registered 24 months ago that cured or completed treatment.	173
TB-DR. Percentage Treatment success rate for all confirmed RR/MDR cases co-infected with HIV	75.5
TB-DR. Number ofconfirmed RR/MDR children (0-14 years) registered 24 months ago	15
TB-DR. Number of confirmed RR/MDR children (0-14 years) registered 24 months ago that cured or completed treatment.	1
TB-DR. Percentage Treatment success rate for all confirmed RR/MDR children (0-14 years)	100
TB-DR. Number of presumptive MDR-TB cases registered 24 months ago	13
TB-DR. Number of presumptive MDR-TB cases registered 24 months ago that cured or completed treatment.	1
TB-DR. Percentage Treatment success rate for presumptive MDR-TB cases	100

Figure 24: RR-MDR-TB treatment outcomes for patients starting treatment 24 months ago

We conducted the following activities during the year:

1. Follow up facility (FUF) mentorships conducted, 68 health care workers at 24 FUFs mentored in the 7 districts that make up Hoima region. This led to an increase in the number of adverse events reported by the health care workers
2. Contact tracing and transport for *Mulago enrolled patients: a total of 28 patients enrolled were transferred back to the community and their contacts were traced. FUFs staffs mentored on the management of these patients. The time taken to transfer patients back to the FUFs reduced from 7-14 days to 3-4 days
3. Through our coordination meetings we saw an improvement in patient drug refills during the lock down
4. Six hundred twenty-two patients received their enablers and no patient was reported to have missed drugs during this period
5. Support supervision conducted in all the 17 DR-TB initiation facilities. Health Care workers at these initiation facilities updated about the salvage regimen for MDR-TB, MDR-TB data management principles because of these and other efforts, we have been able to see an improvement in the TSR to over 80%.

Challenges

1. Lack of X-ray for Arua RRH, no clinical chemistry tests at Lira RRH
2. Some minor side effects not reported to NDA
3. Low HR for Arua RRH, recruiting an additional clinical officer recommended

Effect of COVID 19 on TB programming and mitigation measures

Since the emergence of COVID-19 outbreak in March 2020, Uganda has continued to report new cases of COVID-19 infections to-date, with two main surges of the infection occurring in April-May 2020 and June-July 2021. The government instituted a raft of preventive measures to contain the spread of COVID-19 infection in the population including restrictions in movement of people, causing significant interruptions in access and delivery of essential health services, including TB services. There was also stigma associated with falling ill with COVID-19 disease as people who had respiratory symptoms that could be due to TB feared to seek care at health facilities given the similarity in clinical presentation of the two conditions. Health workers also feared to attend to patients due to perceived risk of infection. This was complicated by the limited availability of personal protective equipment like face masks, gloves, gowns etc. The increasing infections and people falling sick from COVID-19 strained the health system through over-working of the available human resource, the limited diagnostic equipment like X-pert machines and critical spaces like DR-TB wards were converted to serve COVID-19 patients, depriving TB patients of critical services.

This resulted in a fall in TB case notification nationally, risk of treatment interruption as well as risk of disease transmission/incidence and death from TB disease. There was a drop in TB case notification from 16,403 (79%) in Jan-Mar 2020 to 12,871 (62%) of estimated TB cases in April-June 2020 quarter.

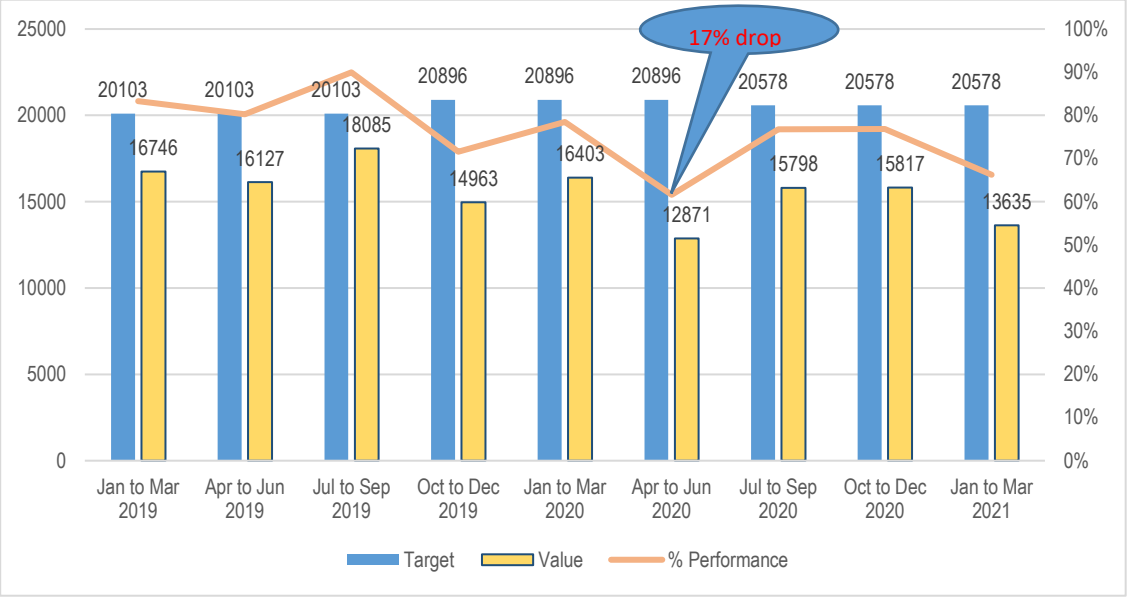
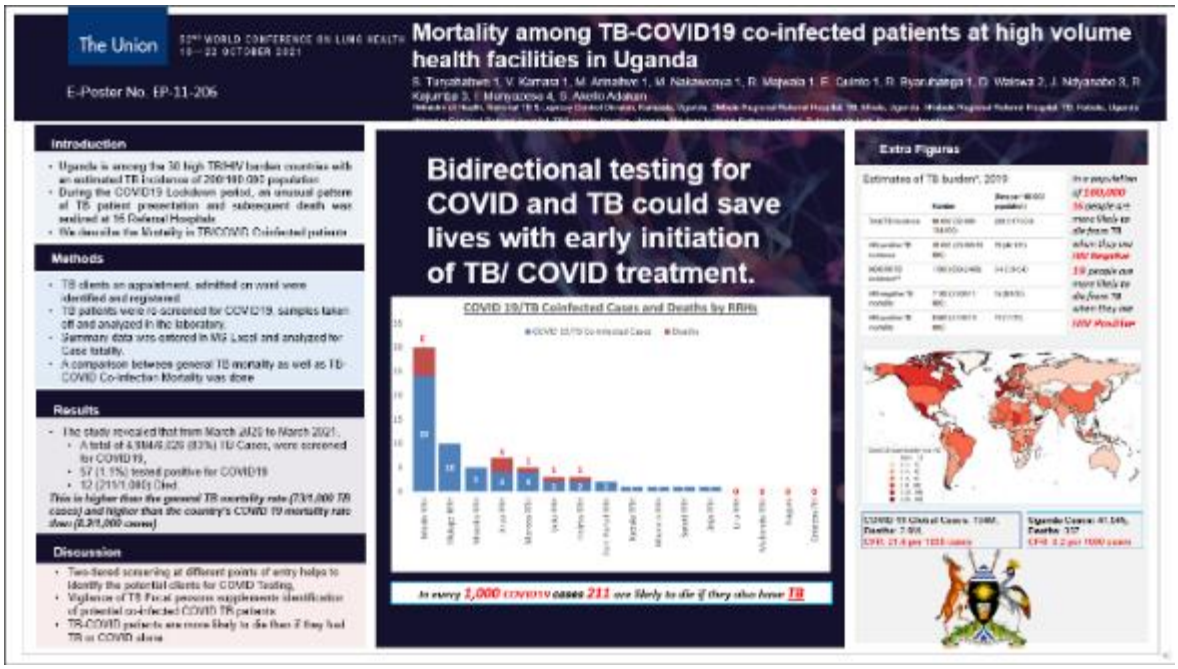


Figure 25: TB case notification trends

A rapid assessment of the effects of the COVID-19 pandemic on TB services delivery by Makerere University School of Public health conducted in the urban districts of Kampala, Mukono and Wakiso in September 2020 revealed a sharp decline in the rate of accessing TB services in urban health facilities



compared to rural facilities. Support from both health workers and family promoted adherence to treatment during the lockdown period and adherence levels to COVID 19 standard operating procedures were suboptimal in most health facilities.

Furthermore, an evaluation of mortality among TB-COVID-19 co-infected patients at high volume health facilities in Uganda between March 2020 and March 2021, revealed higher mortality of 211/1,000 deaths among TB-COVID-19 co-infected patients compared to 73/1,000 deaths in the general TB patients and 8.2/1,000 deaths among COVID-19 patients.

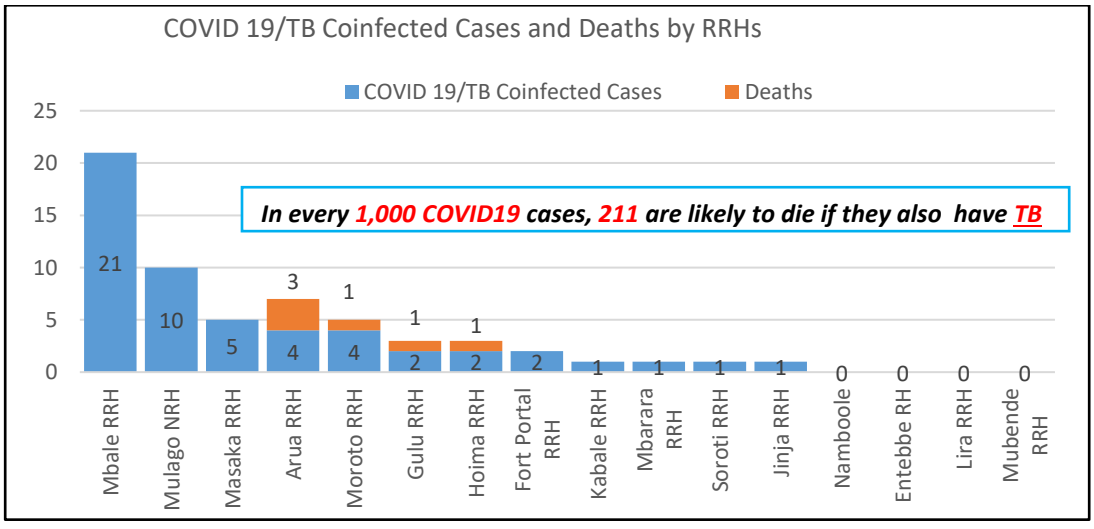
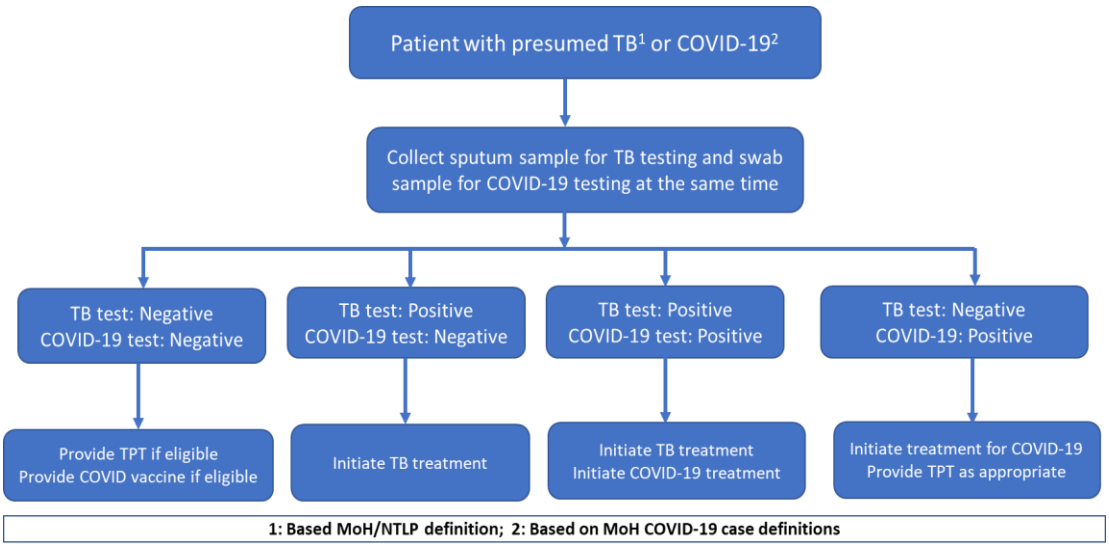


Figure 26: COVID-19/TB co-infected cases and deaths by RRH

Mitigation measures for COVID-19 and other Health Emergencies

The Ministry of Health - National TB and leprosy program (NTLP) implemented several interventions to mitigate the impact of COVID-19 on TB programming. The NTLP adapted technical guidance on Continuity of TB services during COVID response. In addition, the MOH-NTLP advocated and promoted availability of COVID 19 Infection Prevention and Control (IPC) measures, including provision of face masks, gloves etc.

Supported health facilities through mentorship to integrate TB and COVID-19 screening at all care entry points at health facilities, TB/COVID algorithms were disseminated at all facilities and promoted bi-directional screening and testing for both TB and COVID at all health facilities.



Recommended Bi-directional screening for TB and COVID-19 among Presumed TB and Suspected COVID 19 patients.

Engaged implementing partners to support continuation of TB activities including, delivery of drugs to patient homes, support report compilation, provision of airtime to health facilities to aid in client follow up, drug refills and empowered community volunteers to provide homebased care in observance of COVID-19 SOPs. Multi-month dispensing of drugs to stable patients was practiced.

Promoted community level active TB case finding by integrating TB-COVID contact screening and investigation in community screening activities. Also organized a community TB catch-up campaign in May 2021 in which community sensitization on TB, community TB screening and contact tracing was carried out in 50 high burden districts. Through this intervention, an additional 1,500 TB cases were notified, significantly improving performance in TB case notification in April-June 2021.

Engaged district leaders in TB control through the COVID-19 taskforce and in addition, instituted weekly incident management team meetings using virtual platforms, involving district

teams, implementing partners and other stakeholders from emergency TB response regions of Acholi, Lango, Karamoja, Bugisu, Bukedi and Teso to strengthen district leadership, supervise and monitoring of TB services.

A. TB catch up campaign

With support from Global Fund, during the financial year, the Program implemented a TB catch-up campaign to mitigate the impact of COVID-19 disruptions on TB case finding. MoH NTLP and partners planned and conducted a TB catch up campaign in 50 poorly performing districts of the country. This helped in finding additional TB cases that could have been missed during the disruptions caused by COVID-19 pandemic on TB case finding efforts in the country. The objectives of the TB catch up campaign were as follows:

Objectives of the TB catch up campaign

- To strengthen community systems for TB service delivery.
- To build capacity of service providers in TB care and prevention.
- To increase case detection and Treatment success rates (reduce the number of missing people with TB in the community, keep all TB patients on treatment)

Results of the campaign

A total of 125,781 community members were screened for TB of which 39,067 people with presumptive TB were identified from the communities. However, 90% of the presumptive cases were evaluated for TB, 1,511 TB cases were confirmed and 1,156 (77%) initiated on treatment at the end of the campaign. This high rate of initial loss to follow up warranted a robust linkage and follow up system in addition to the required contact tracing. Meanwhile, Busoga region performed well in community screening with 34,045 members screened though with fewer numbers of presumptive cases tested for TB. Relatively Acholi performed well with 14,884 community embers screened and 96.4 of their presumptive tested. Table 7 presents details of the TB case finding cascade during the TB catch up campaign in Uganda.

Table 7: TB cascade during the TB catch up campaign in May-June 2021, Uganda

Data / Organisation unit	Acholi	Bugisu	Bukedi	Busoga	KCCA	Lango	North Central	South Central	Teso	Tooro	Total
No. screened for TB	14,884	13,894	13,534	34,045	104	8,629	7,470	13,704	9,778	9,739	125,781
No. Presumptive identified	5,028	3,716	6,405	8,591	27	3,752	2,462	2,695	2,938	3,453	39,067
# Presumptive evaluated for TB	4,848	3,324	6,024	7,133	27	3,488	2,136	2,286	2,676	3,226	35,168
% of presumptive evaluated for TB	96.4	89.5	94.1	83	100	93	86.8	84.8	91.1	93.4	90
No. diagnosed with Confirmed TB	192	109	119	451		124	165	80	35	239	1,511
No. initiated on Tx	189	69	82	309		121	88	71	32	192	1,156
% TB initiated on Tx	98.4	63.3	68.9	68.5		97.6	53.3	88.8	91.4	80.3	77%

Implementation challenges

- Limited publicity for the campaign to mobilize the communities in time and shortage of IEC materials for community mobilization and sensitization about the TB campaign
- Delays in processing facilitation for health workers and VHTs have led to decreased morale for their participation in similar activities.
- Delayed initiation of confirmed TB cases onto treatment (23%) leaving the community with high transmission rates.
- Late provision of tools for use during the campaign delayed the start of community activities in some districts hence loss of time, trust and turnover of VHTS due to conflicting activities.
- Some laboratories lacked capacity to store the excess sputum samples due to high volumes from the communities.
- Limited funding to engage all the required community actors

The future of TB and Leprosy campaigns: "CAST TB!"

Lessons learnt from the campaign efforts to continue service delivery amidst the COVID-19 challenges led the NTLP to an ambitious and out of the ordinary intervention code named CAST-TB (**C**ommunity **A**wareness, **S**creening, **T**esting and **T**reatment to end TB in Uganda) to find the missed TB patients at community level using VHTs and HCWs.

The main objective is to find all missing people with TB and Leprosy by a 6 monthly campaign and strengthening program implementation. The campaign shall comprise of the following activities conducted in 5 days in all villages and all health facilities:

- Community mobilization and sensitization,
- House to house visitation (sensitization, symptom screening, sample collection and identification of persons with abnormal skin lesions,
- Delivery of drugs to the TB patients where needed,
- Radio/TV talk shows and jingles

- Facility teams conduct Community dialogue meetings and outreaches for screening, testing and initiation of confirmed TB cases and presumptive onto treatment in hot spot mobile communities and villages.

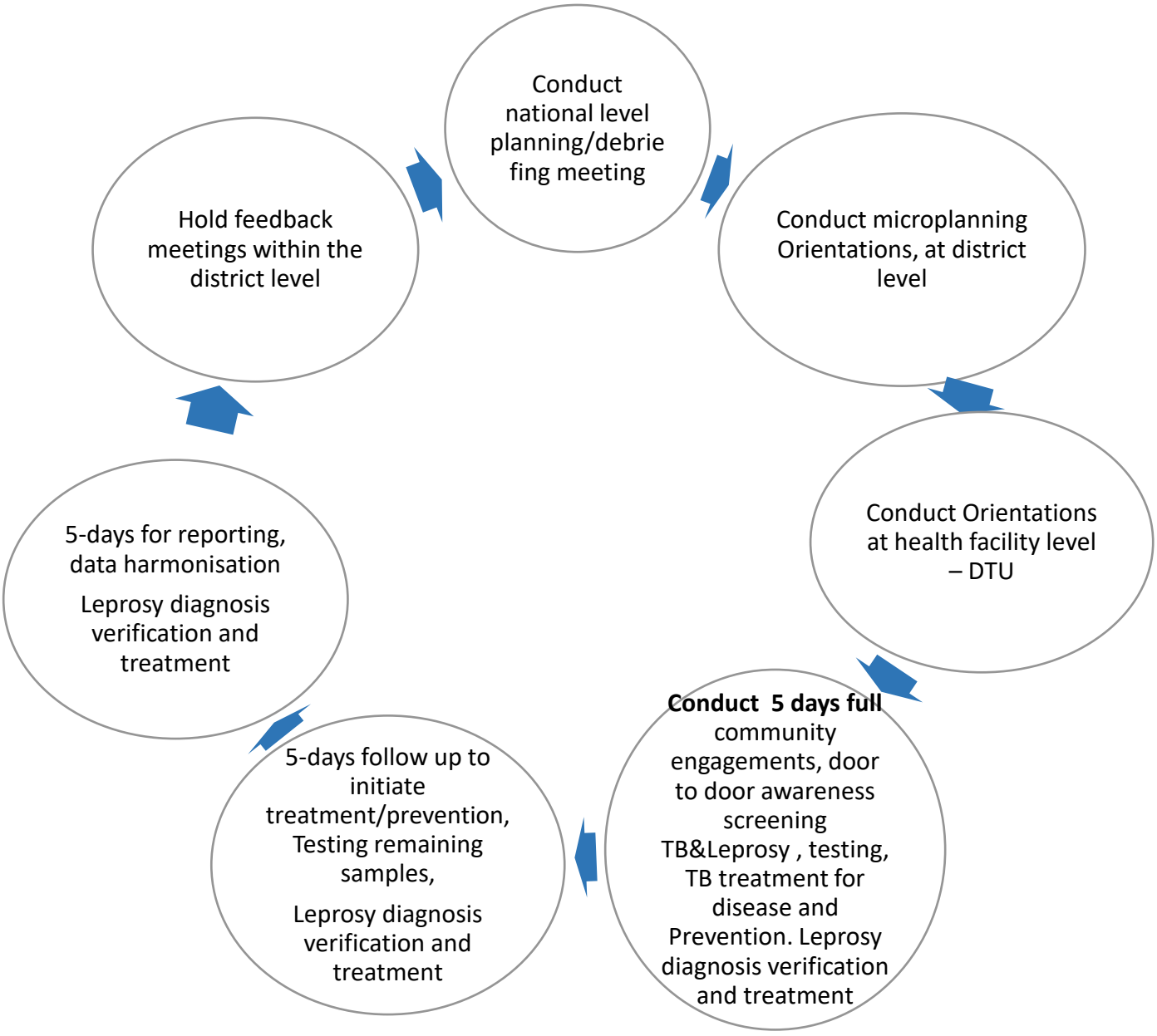


Figure 27: Activity cycle for CAST-TB campaign

Coordination of Pediatric TB and other related initiatives

Achievements in pediatric TB control:

1. Four Quarterly Paediatric TB meetings conducted online
    - Paediatric TB mentorship tool reviewed and finalized for dissemination/ use as a standardized tool
    - TOR for the committee reviewed and updated
    - Review of regional quarterly paediatric TB performance and implementation of strategic interventions
2. DETECT child TB mentorship was conducted in all the 10 districts (Hoima, Iganga, Kakumiro, Kamuli, Kamwenge, Kasese, Lira, Luwero, Mubende, Oyam) with support from GF. A total of 179 facilities (facility teams) were mentored and facility specific QI projects implemented. The total cost was 71,038,000 Ugx
   This effort has realised an improvement from 60% to 82%. We still need to find the missing children with TB.

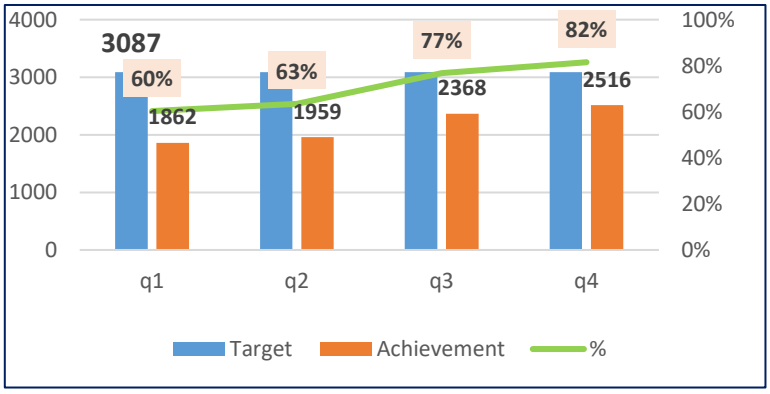


Figure 26: Trends in childhood TB case notifications

3. With support from CDC, the NTLP is developing Differentiated Service Delivery (DSD) models of management to mitigate COVID-19 effects and prepare for other health emergencies
4. Coordination meetings and stakeholder consultation were conducted, operational guidelines were drafted.
5. Updated guidance on TB in the context of COVID-19 was disseminated in Q1 2021/22
6. Paediatrician led mentorship was conducted in 28 poorly performing sites with sub-optimal performance including 26 hospitals and 2 high volume HC IVs in 26 districts with support from UNICEF. QI projects were initiated
7. Guidance on TB in pregnancy and newborn developed and included in the updated manual on Providing Antenatal Care for Positive Pregnancy Experience
8. The First edition of orientation package developed and 133 participants (including DHOs, DMOs, MMOs were oriented on TB and Leprosy Control. Region/ District TB specific priorities (focusing on TB preventive treatment, TB treatment coverage, TB case holding) were identified

Challenges to childhood TB program implementation:

1. Limited health worker confidence for clinical diagnosis has contributed to sub-optimal performance

2. Limited access to CXR to aid paediatric TB diagnosis

3. Sub-optimal implementation contact investigation significantly contributes to sub-optimal performance for TPT coverage among under five contacts

4. DHOs, DMOs and MMOs from newly created districts and cities need TB and Leprosy orientation

TB community activities

In addition to the CAST-TB campaign described above, the ministry commemorated World TB and Leprosy Day in Karamoja on the 24th of March 2021. The commemoration was attended by selected dignitaries including US Mission Director, CDC country director, MoH staff. The guest of honour was the Hon. Minister of Health: **Madi-Okollo** district emerged as the best district and was recognized. The event was hosted by Moroto District local government supported by USAID PACT Karamoja CUAMM and other partners. Activities included:

1. 1. Enhanced TB screening at 13 Health facilities where 384 people were screened and 23 tested positives for TB (2HWs, 1 MDR)
2. Kaabong mines: 471 screened, 5 positives (TB), 1,240 households, 4,139 screened, 41 positives (TB)
3. With support from CUAMM, community screening in Moroto District by VHTs was done; 7704 households reached, 19,047 screened, 39 positive (TB), 1 MDR
4. Community outreaches, 1,792 screened (8 sub counties), 14 positive (TB)
5. Moroto DHT District LG, HF outreaches, 785 screened (12 HFS), 16 positive (TB)
6. Door to door screening in Kampala City with CSOs, 563 screened, 5 positives
7. Murchison Bay Prisons, 554 screened, 3 positives (TB), 1 MDR
8. Community screening Katanga & Wandegeya, 74 screened, 3 positives (TB)
9. Engaged the media fraternity for increased publicity and advocacy for the uptake of TB services with over 20 media platforms reached; 95 screened, Media team/NTLP screened and obtained their status. 1 MDR case

Electronic case-based Surveillance System(eCBSS)

In May 2020, the Uganda Ministry of Health National TB and Leprosy Program (MOH-NTLP) in partnership with stakeholders, launched the development of a national electronic case-based surveillance system (eCBSS) for TB and Leprosy. The system development process started as a collaborative effort with partners in TB and Leprosy case management led by the MOH-NTLP, Division of Health Information (MOH-DHI), USAID/Defeat TB Project, US CDC/Baylor-Uganda, Makerere University School of Public Health, the Monitoring Evaluation Technical Support Program (MakSPH/METS), WHO and Health Information Support Program (HISP) Uganda as a technical and implementing entities. The development of the eCBSS has since then been focused on achieving the 3 core objectives

Objectives;

1. Real time, integral, individual level data collection systems for reporting
2. Track patient progress along the care continuum including transfer of services, keeping of appointments, contact tracing and treatment outcomes
3. Quicker, better tailored response of the program to challenges reported though data systems

TB and Leprosy eCBSS development - the process

Following the completion of the core components of the system, testing was conducted in 7 Health facilities in Kampala, Mukono and Wakiso. Having successfully completed the testing and incorporated the feedback, a national Training of Trainers (ToT) was held between December 2020, where 70 participants including regional TB and Leprosy supervisors, representatives of regional partners and MOH were trained. The ToT was followed by end-user training in 15 regions (Acholi, Ankole, West Nile, Bugisu, Busoga, Karamoja, Kampala Wakiso Mukono (KWM), Kigezi, Lira, Masaka, Mubende, Teso, Bukedi, Hoima and Tooro) across the country.

The end-user training involved District Health Officers (DHOs), biostatisticians, regional TB and Leprosy supervisors, district TB and Leprosy supervisors (DTLSs), and 2 participants from each of the health facilities where the system was tested. Additionally, participants were from each of the 15 regions including districts hosting regional referral hospitals. Other participants came from HC IVs, and HC IIIs, PNFPs, Prisons and Military.

Overall, 15 regions, 27 districts, 107 health facilities and over 869 health care workers directly or indirectly involved in provision of care for TB and Leprosy patients were trained. The trainings marked a key milestone in the development and implementation of the system. Below is a summary of the development roadmap and key milestones.

Figure 27: eCBSS development roadmap with key milestones

To ensure sustainability, trainings were conducted at national and subnational Level to build the capacities of various teams to support the implementation and use of the eCBSS system. Below is a summary of trainings and participants trained on the use and general data management for the eCBSS

Summary of trainings conducted to support eCBSS implementation

1. National training of 10 facilitators from MOH NTLP, DHIM and MakSPH/METS
2. 21 personnel from test health facilities testing of the eCBSS ahead of the pilot
3. Training of 70 Trainers (ToT)
4. 480 end-users trained
5. Technical training of 22 MOH staff to prepare them for support
6. Onsite mentorship and orientation to 125 pilot sites
7. Onboarding 40 Uganda Prisons facilities on to the eCBSS system

Following the training, all facilities were engaged to enter the 2020 TB patients from the registers. The electronic case-based surveillance system for TB and Leprosy is currently live with over 107 facilities reporting daily case records online, automatic classification of TB (DS-TB, MDR-TB) and leprosy cases based on TB and leprosy case definitions standards. There is also a total of 287 users distributed at facility for TB focal persons, DTLSs, regional TB/L supervisors and national teams at MOH.

Of the 107 facilities, 17 facilities are fully reporting MDR-TB cases following the migration of the meta-data and records for rifampicin resistant TB from the drug resistant TB management information system (over 2500 records) into the new case-based surveillance system.

Currently, reporting for DS-TB and MDR-TB has significantly improved coupled with the retrospective entry of backlog data for 2020 (January -to December) at 92.4% reporting rate. This is reflected on live system dashboards created as part of a comprehensive mechanism to visualize system data and reports (Figure 32). Following the Support supervision visits conducted from May 28th – June 8th 2021, emphasis was put on clearing backlog for FY 2020, and ensuring that quarter 1 2021 are completed. Both the reporting rates significantly improved

with backlog completeness Jumping from 65% - 92.4% currently and Q1 completeness from 45% – 74.3% respectively.

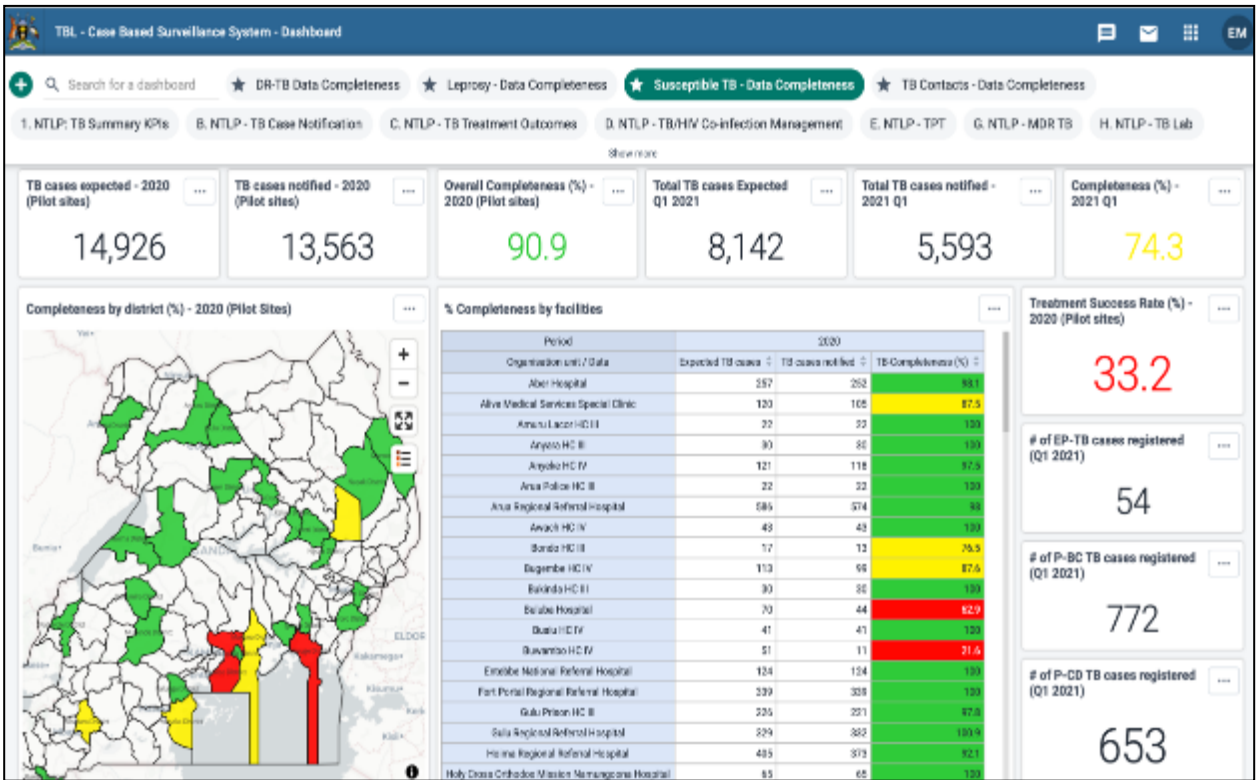


Figure 28: eCBSS dashboard showing summary backlog data & Q1 2021 Completeness

As part of data migration process, data on contact tracing from studies conducted by both Baylor-Uganda in Kyegegwa and Defeat TB in Kampala was moved into the surveillance system. However, daily and routine reporting on contact tracing data is still low for both backlogs (7%), quarter 1 (Q1) and quarter 2 (Q2) reports. There are 10 accredited facilities for treatment and management of Leprosy cases, however, reporting on data collected and reported on these cases is still very low.

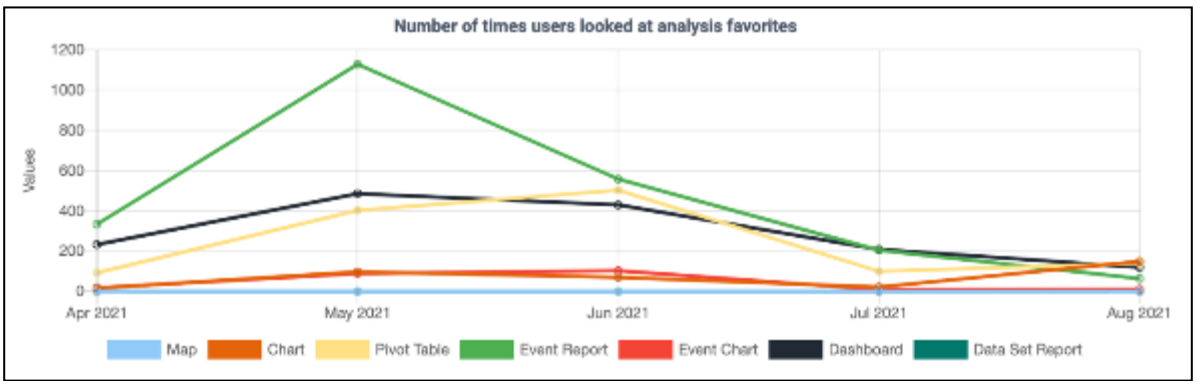


Figure 29: eCBSS user interaction with system features

Daily Interaction of users with the system arising from data analysis also significantly improved despite covid-19 restrictions that have seen most service providers locked at home and unable to continue with activities related to the system (Figure 33).

Challenges to the development of eCBSS

The development and piloting of the eCBSS has been successful needless to highlight some areas that still need focus and continued support.

1. The team lost time due to country lockdowns as a result of COVID-19 pandemic. This affected delivery and completion of some activities including testing the integration with EMRs.
2. Competing priorities for the MOH team, leading to shifting of activities and sometimes key personnel missed participating in some the system processes.
3. Backlog data was set to begin with January 2020, however not all facilities have been able to fully enter their backlog. Additionally, we focused on 2020 data and by the end of Q2 (April June 2020), some facilities still had pending backlog for both from January to June 2020.
4. Some of the participants who attended the end-user trainings were computer illiterate especially community linkage facilitators.
5. The M&E team within the MoH, especially at the NTLP is lean and therefore sometimes unable to fully support facilities currently reporting data through the eCBSS.
6. Some facilities are constrained with infrastructure necessary to support eCBSS reporting. In some cases, there no computers, laptops or tablets dedicated to TB leprosy data management.
7. Some facilities have no internet and data bundles to report identified cases.
8. Some facilities also reported stock out of essential tools for data collection and reporting including registers, cards, and summary reporting forms
9. Some of the data being reported has some quality issues in form of missing registration dates, stages incomplete stages

eCBSS scale up plan

In response to the above gaps, the national core team on development and implementation of the eCBSS has developed a scale-up strategy that mainly addresses some of the issues identified. Below are the focus areas;

i. Scale up to and onboard 800 TB/L facilities across the country between July 2021 and June 2022, and a further 800 between July 2022 and June 2023. The will ensure that all the 1700 TB diagnostic and treatment units are reached with eCBSS in the next 2-years.
ii. At least 70 Laptops, 70 internet routers, for DTLS procured
iii. 8 Laptops procured to facilitate regional TB/L supervisors
iv. Capacity building through training and onsite mentorship visits for 3,280 health care providers
v. Support critical human resource capacity at the MoH targeting the NTLP; i.e. Data officer (15); 1 per region, 1 M&E specialist, IT specialist, and a senior epidemiologist.

vi. Support procurement of 200 tablets (Chrome books) for DTLSs, and selected facilities, in addition to a further 200 tablets for android App to be used in places with no internet coverage

vii. Urgently support procurement and distribution or essential data collection and reporting tools for TB and Leprosy, especially the TB and Leprosy health facility cards.

Table 8: eCBSS scale up timelines

Coverage	Year 1	Year 2	Year 3
Pilot Phase (~100 HFs, Nationally)	Dev't & Piloting		
Phase I (~ 700 HFs, Nationally)		Scale up & Rollout	
Phase II (~800 HFs, Nationally)			Scale up & Rollout

Development and piloting of the electronic case-based surveillance system for TB/L has been largely successfully with core elements of the system functional, national, and sub-national level teams trained, data entry for backlog 2020 significantly improved and currently on track for Scale up and national rollout. The eCBSS is the first of its kind as far as MOH surveillance systems are concerned. There are some identified challenges, however mitigation strategies through trained facilities, district managers and partner engagements have been identified and will be implemented

Operations Research:

1. Eleven (11) institutions presented study protocols and research findings. These were: NTLP/GRLA, MakCHS School of Biomedical Sciences, MakCHS school of Internal Medicine, Uganda TB Implementation Research Consortium, Makerere Lung Institute, Design without Borders Africa, Makerere University Department of Paediatrics, USAID/Defeat TB project and MJAP.
2. 8 abstract ideas and drafts were written, five were accepted for presentation at the 52nd TB Union conference on lung health 2 oral and 3 e-poster presentations.

Leprosy

Leprosy cases have dropped in the FY 2020/21 to 202 from 332 cases in FY 2019/20, with 53% males and 12% children (triple the previous year). The treatment completion was 75%, a significant drop from last year's 84% for multibacillary (MB) and 55% paucibacillary (PB). Majority of the cases are reported from West Nile, Lango and Toro Regions. Table 9 below shows leprosy cases by region and quarter for period July 2020 and June 2021.

Table 9: Leprosy cases by region and quarter, FY 2020/21, Uganda

Region	Leprosy cases
Acholi	2
Ankole	2
Bunyoro	28
Busoga	10
Lango	22
North Central	4
South Central	2
Teso	0
Tooro	2
West Nile	130
Grand Total	**202**

Activities Implemented

- Developed terms of Reference and budget for the Leprosy program review.
- Delivered Leprosy registers and cards and conducted mentorship at Kagadi hospital on filling the Leprosy tools.
- 18 VHTs of Mugarama subcounty oriented on how to suspect and refer suspected leprosy cases and 26 HCW at Kibaale HCIV about leprosy management
- Launched the single dose Rifampicin for Leprosy post exposure prophylaxis to prevent leprosy in patient contacts in Arua and Koboko Districts. Oriented 15 District team officials including the CAO, DHO, DHE, Religious leaders, CDO, People Affected by leprosy (PALS) DTLS AND DLFP in Koboko. Conducted support supervision and mentorship in Kibale, Kasese, Kalangala, Arua and Mayuge district. Kagando hospital (13 Health care workers) and Buluba hospital (7 health workers) respectively. 48 blisters of MDT delivered at Kagando, and its orthopedic workshop was inspected. Contact tracing conducted and 2 new leprosy cases diagnosed and linked to care in Kibale district.

Challenges:

- Limited awareness in the population;
- knowledge, and skills for Leprosy diagnosis among health workers

With support from Uganda Stop TB Partnership, we realized the following:

74 (92%) Private health facilities were mentored on TB care and prevention from 11 districts. Kabale (3), Mbarara (8), Masaka (6), Jinja (3), Iganga (5), Mbale (4) and Tororo (5) private facilities visited. 40 Private Health Facilities (PHFs) mentored in 3 districts of Kampala Wakiso and Mukono. More than 200 HCWs were mentored in TB screening using ICF guide. We provided TB presumptive registers, ICF guides, Pead and Adult TB diagnostic algorithms to 10 PHFs in Mukono district.
As a result, TB screening in these facilities improved from 24% in the previous quarter to 40 although the proportion of total cases notified remained at 2%
The TWC meetings recommended development of a road map for roll out of eCBSS for the private sector
Development of criteria for selection of intermediary organisation that will work with the TB program to roll out modified ACF in PHF in 17 municipalities

USTP coordinated the workshop for developing the training materials for TB survivors, TB champions and CSO representatives. This activity aimed at ensuring that the modular training materials including Modules on topical introduction, TB, Social Protections, Income Generating Activities-IGA, Human Right/Gender and strategy sustainability.

USTP Secretariat was able to get positive feedback from Stop TB Geneva on one of the Grants that was submitted in the quarter. USTP was awarded the grant totalling $55000 to support TB/Covid-19 related advocacy activities from July 2021 to March 2022 Most

Challenges in PPM

- Inadequate tools
- High turnover of HCWs in the sector.

Cross border TB programming

Uganda and its neighbors have continued to implement cross border TB prevention and control activities. The increased mobility of people across our borders requires that an effective and sustainable mechanism to coordinate interventions ensuring quality TB prevention and care including early diagnosis, uninterrupted treatment, and patient support hence the formation of cross border TB management unit at NTLP.

The cross-border TB management unit ensures that these TB services are tailored for those individuals who face increased risk of getting infected with TB and developing active TB, and for those with higher risk of defaulting treatment as well as having challenges of accessing and fully utilizing TB services including refugees, asylum seekers, migrants, travelers and nomads.

We have done collaborative activities with some of our neighboring countries including Kenya and South Sudan. Inter-Governmental Authority on Development (IGAD) an organization involving eight countries including Uganda, Kenya, South Sudan, Sudan, Djibouti, Ethiopia, Somalia and Eritrea has been very instrumental in supporting cross border TB management activities in Uganda. This unit is also supported by Global Fund and the Government of Uganda. The unit also works closely with some humanitarian agencies like United Nations High Commission for Refugees (UNHCR), International Refugee Council (IRC) and others. Because of the nature of the target population handled by this unit other agencies such as security particularly the police, immigration and even the respective local leaders are involved in some of the activities implemented by the unit.

Successes/Achievements

- Formation of an inter country cross border TB management coordination committee. This was formed between Uganda and our neighbor South Sudan with Uganda taking on the chairmanship. This has greatly improved communication between the two programs regarding provision of TB services to our mobile populations.
- Exchange of contacts and formation sharing via WhatsApp group to ease communication between different members involved in cross border TB management activities.
- Relatedly we line listed patients lost to follow but whose origin is South Sudan. This list was handed over to our Sudanese counterparts so that they could follow them up.
- Several inter country meetings with Kenya as well as South Sudan were conducted, and joint planning done to improve cross border TB services.
- We also had other international engagements involving other IGAD member states in Ethiopia discussing and planning ways of improving cross border TB management.
- Collaborative activities such as joint support supervision between Moroto (Uganda) and Turkana (Kenyan)
- Raising awareness about the cross-border TB services among the different stake holders particularly local leaders in the border district including the district council members, the

police, resident district commissioners and even immigration officers. These are very crucial in the provision of TB services to this group of mobile population.

- We Integrated Comprehensive TB /Leprosy management trainings for health workers from the border districts of Amudat, Arua and Yumbe.
- Introduction of formal referral of TB patients between some of the neighboring cross border districts from each country. This is done by using inter country referral forms and is has contributed to the reduction of the high number of TB patients lost to follow up
- We carried out cross border TB, HIV and malaria service availability and readiness assessment in 16 health facilities in Yumbe, Moyo and Adjumani. The results of this assessment will help us to improve referral between these cross-border health facilities.
- The unit got a budget line from the Global Fund. This has improved service delivery

Planned Activities for 2021/22

- Support supervision to border districts and Points of Entry
- TB screening at all points of entry (POE) to ensure early case detection among the travelers. It will also ensure continuity of TB treatment by linking those already on TB treatment to the nearest health facilities in their residencies.
- Inter country meetings between Uganda and South Sudan to jointly plan different activities to provide better TB services to our mobile populations.
- Intra country meeting involving different border districts.
- Data exchange with our neighbors as well as data validation.
- Joint training of our health workers from the border health facilities to improve capacity in TB management.
- Joint support supervision with our neighboring countries to identify the gaps in cross border TB service delivery and find solutions to fill up such gaps.
- Orientation of different stake holders at Points of Entry in TB services especially screening and referral.
- Conduct a sensitization drive on the dangers of MDR-TB at all levels in the border areas.

The National TB and Reference Laboratory

The National TB and reference laboratory (NTRL) continues to play a significant role in TB programming in the country as part of the national laboratory network. During the financial year the NTRL supported external quality assurance for microscopy. Figure 34 gives the EQA performance by quarter for the FY 20/21 and table 10 gives EQA participation rates by region and DTU in Uganda.

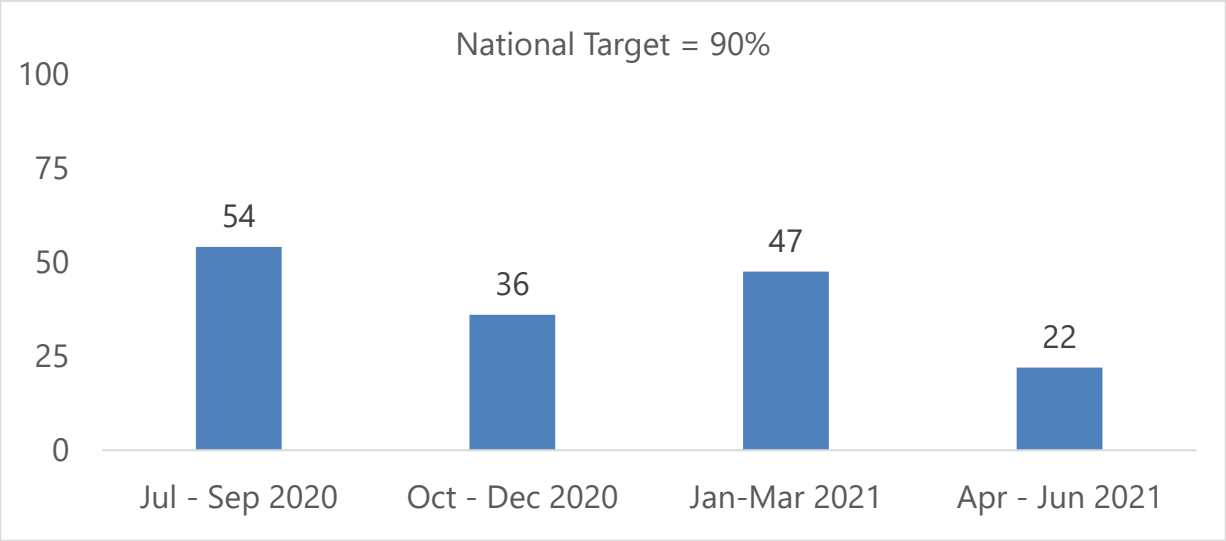


Figure 28: National EQA rates by quarter, Uganda, Jul 20 to Jun 21

By the end of the FY 2020/2021, there were 1701 TB laboratories expected to participate in microscopy blinded rechecking on a quarterly basis. However, EQA participation for these laboratories has remained far below the national target of 90%.

In Karamoja, West Nile and Bunyoro where IP is actively supporting EQA activities performed better than the rest of the regions throughout the FY 2020/21 as shown in graph above. Deliberate efforts are therefore needed to improve microscopy EQA performance in all underperforming regions.

Table 10: Details for EQA participation by region and exact number of DTUs that participated FY 20/21, Uganda

Regions	No. of Districts	Total No of DTUs	% of DTUs that submitted slides to NTRL for blinded rechecking			
			Jul-Sep 2020	Oct-Dec 2020	Jan-Mar 2021	Apr-Jun 2021
Kampala	5	65	63	72	68	60
North Central	12	179	53	17	57	0
Bukedi	6	70	56	26	1	19
Bugisu	9	116	43	68	8	41
Karamoja	9	60	88	97	90	97
Teso	10	87	38	63	69	61
Acholi	8	93	76	76	78	0
Lango	9	72	68	44	53	7
West Nile	12	167	88	0	86	0
Kigezi	6	103	27	26	31	16
Ankole	12	170	42	13	21	8
Tooro	9	107	48	42	82	42
Bunyoro	8	87	83	0	85	87
South Central	13	187	43	47	12	0
Busoga	12	138	31	29	22	5
Total	**140**	**1701**	**54**	**36**	**47**	**22**

Summary of key highlights from laboratory during the FY:

1. (EQA) improves quality of GeneXpert testing services and providing confidence of results provided to clinicians and patients. It also supports laboratories to achieve accreditation. Feedback reports and summary reports were processed and sent to all GeneXpert sites that participated in Round 1-2021: GeneXpert Proficiency Testing (PT) 276 of which 248 (89.9%) were local and 28(10.8%) Supranational Reference Laboratory. All the 248/276(89.9%) returned results/responded. 28 (10.1%) never responded. All the 248 that returned results were sent feedback with the set timelines.

   There is need to improve on the results response rate and TAT of results and initiate online reporting of results for all GeneXpert PT participants for Round II 2021 after a parallel entry in Round I by NTRL (Supra national Reference Laboratory - SRL) Uganda.
2. We applied for International Association for Continuing Education and Training (IACET) accreditation which runs from 1/6/2021 to 31/5/2026. This will enable provision of accredited TB Laboratory courses to its customers both locally and internationally.
3. With support from Korea Foundation for International Healthcare of the Republic of Korea (KOFIH), we conducted two bio safety trainings in Masaka and Bukomansibi. where 20

peripheral laboratory staff from 14 public and 3 private facilities. Support supervision to 30 facilities in the same districts were also conducted.

4. SRL/ NTRL with support from KOFIH conduct a SPLITA training, is aimed at providing mentorship on Laboratory Quality Management Systems (LQMS) using the ISO15189:2012 and WHO SLIPTA checklist
5. We were able to retain our ISO 15189: (2012) – South African National Accreditation System (SANAS) accreditation standards
6. Seven (07) 16-module GeneXpert machines installed in Jinja, Mbarara, Fort portal, Arua, Lira, Moroto, Gulu RRHs. Nine out of eleven 4-module GeneXpert machines re-allocated to Ishaka Adventist Hospital, Kiruhura HCIV, Bujubuli HCIV, Maracha HCIV, Buyinja HCIV, TASO-Gulu, Akokoro HCIII, Aduku HCIV & Busia HCIV. Two machines (Moroto and Fort portal RRHs) are not re-allocated pending approval from Hospital Directors.
7. The GeneXpert machines will support increase testing for HPV, EID and COVID. A total of 66 Health care workers were trained on use of GeneXpert in the 16 Health facilities.
8. The GeneXpert AccessCare maintenance contract is aimed at providing comprehensive maintenance, service and repair of all GeneXpert machines and thus minimize service interruption at testing laboratories. The performance report was finalised and shared with key stakeholders. The Ministry of Health and Cepheid Inc. negotiated and agreed on new surcharge of $0.92 per GeneXpert cartridge. The surcharge will apply on TB, HPV, HIV-EID, HIV-VL but not COVID-19 cartridges. Cepheid Inc. is to share amended contract with Ministry of Health for review and approval.
9. Piloted use of private motorcycle riders in specimen referral to assess feasibility and cost effectiveness of using private motorcycle riders in sample referral system.
10. Data collection tools were developed (Baseline assessment, Baseline Data Sheet, Routine Data Collection Sheet, Biker payment tracking log, Facility Referral Mapping Matrix, Terms of References (TORs)A total of 08 data collectors were trained and we initiated process of hiring service providers (e-riders)
11. UNCST approved protocol for conducting in-country evaluation of the Truenat assay in 4 health facilities. A total of 38 pilot health facilities shall be supported under the new tools project funded by USAID. We also drafted the Truenat early implementation plan. Currently the study is pending delivery of Truenat machines and the procurement process for the 38 Truenat devices is ongoing
12. Laboratory support supervision was conducted in 4/8 regions, covered 8/16 districts and 26/64 Health facilities. Support supervision activities in Bunyoro, Mbale, Teso and Jinja regions were interrupted by the COVID-19 lockdown.
13. Implementation of TB Echo_CLICQ (Clinical Laboratory Interface Continuous Quality Improvement) – project was started. A list of 12 project sites was approved, the project

steering committee was selected and oriented on the Diagnostic Cascade Evaluation (DiCE) assessment tool. Training of Baseline data collectors shall follow finalization of the DiCE tool. We have proposed that the Project lead should consider revising DiCE tool to capture LF-LAM cascade and customize tool from Xpert MTB/Rif to Xpert MTB/Rif Ultra

14. Conducted TB laboratory diagnostic optimization project with support from WHO and the report will guide optimisation of specimen referral and placement of diagnostic tools such as GeneXpert
15. Drafted national consolidated change package to improve Xpert utilisation
16. Finalized TB-LAMP pilot report. There is ongoing procurement of additional TB-LAMP machines (to a total of 16) and reagents with support from Global fund. LF-Urine LAM testing is currently happening at 585 health facilities nationally
17. An implementation plan was finalized to scale up LF-Urine LAM to additional health facilities including all ACF and CD4 testing sites
18. Microscopy EQA slides were received at NTRL from 34% (48/140) of the expected districts; overall, interim participation rate across 1,691 DTUs during the quarter was at 28.2% (477/1,691); Jan-Mar 2021 quarterly EQA participation rate was far lower than the average EQA participation rate for the CY 2020 (50%) and the national target (90%). GeneXpert EQA was conducted, and 90% (248/276) sites returned results/responded. All returned results had feedback sent back within set timelines

Table 11: Incident TB case finding by quarter and district, and TB treatment coverage, Uganda, Jul 2020 to June 2021

The list is in descending order per region, from highest treatment coverage to lowest within the region.

Region	District	Quarterly new and relapse TB case finding				Total case finding FY 20/21	Incidence FY 20/21	Treatment coverage (%)
		Jul-Sep 20	Oct-Dec 20	Jan-Mar 21	Apr-Jun 21			
Acholi	Agago	121	99	107	145	472	416	113%
Acholi	Gulu	385	342	338	329	1,394	1,272	110%
Acholi	Lamwo	42	61	61	68	232	236	98%
Acholi	Omoro	74	64	61	58	257	332	77%
Acholi	Pader	85	89	69	62	305	456	67%
Acholi	Amuru	71	55	49	63	238	360	66%
Acholi	Nwoya	51	66	79	74	270	424	64%
Acholi	Kitgum	175	197	147	146	665	1,148	58%
Ankole	Rwampara	70	72	100	80	322	240	134%
Ankole	Sheema	80	100	119	100	399	388	103%
Ankole	Ntungamo	146	221	256	239	862	896	96%
Ankole	Ibanda	78	122	113	110	423	460	92%
Ankole	Mbarara	253	232	312	263	1,060	1,188	89%
Ankole	Rubirizi	27	24	32	53	136	240	57%
Ankole	Bushenyi	60	47	61	54	222	456	49%
Ankole	Kiruhura	24	28	52	43	147	312	47%
Ankole	Isingiro	83	78	160	152	473	1,004	47%
Ankole	Buhweju	30	8	33	29	100	240	42%
Ankole	Mitooma	19	23	23	41	106	320	33%
Ankole	Kazo	14	14	32	58	118	368	32%
Bugisu	Manafwa	73	65	100	96	334	292	114%
Bugisu	Kapchorwa	41	43	39	47	170	208	82%
Bugisu	Mbale	230	242	252	269	993	1,344	74%
Bugisu	Bulambuli	58	73	43	56	230	392	59%
Bugisu	Kween	20	25	31	17	93	184	51%
Bugisu	Bududa	46	51	65	61	223	460	48%
Bugisu	Sironko	43	48	56	58	205	456	45%
Bugisu	Namisindwa	37	31	45	39	152	384	40%
Bugisu	Bukwo	12	20	10	35	77	204	38%
Bukedi	Budaka	96	64	91	118	369	424	87%
Bukedi	Busia	130	137	133	118	518	644	80%
Bukedi	Tororo	164	127	194	232	717	996	72%
Bukedi	Butebo	26	27	35	50	138	200	69%

Region	District	Quarterly new and relapse TB case finding				Total case finding FY 20/21	Incidence FY 20/21	Treatment coverage (%)
		Jul-Sep 20	Oct-Dec 20	Jan-Mar 21	Apr-Jun 21			
Bukedi	Kibuku	31	29	29	54	143	424	34%
Bukedi	Butaleja	39	35	29	48	151	504	30%
Bukedi	Pallisa	27	41	36	55	159	600	27%
Bunyoro	Kikuube	149	156	249	299	853	612	139%
Bunyoro	Kagadi	121	175	162	242	700	772	91%
Bunyoro	Masindi	95	93	166	151	505	568	89%
Bunyoro	Hoima	162	156	192	261	771	892	86%
Bunyoro	Kiryandongo	77	110	127	122	436	524	83%
Bunyoro	Buliisa	17	12	64	66	159	256	62%
Bunyoro	Kakumiro	98	89	112	100	399	836	48%
Bunyoro	Kibaale	49	31	36	44	160	340	47%
Busoga	Iganga	170	169	200	177	716	672	107%
Busoga	Jinja	341	383	360	440	1,524	1,908	80%
Busoga	Kaliro	65	66	61	184	376	484	78%
Busoga	Luuka	61	55	76	108	300	444	68%
Busoga	Namayingo	45	52	60	68	225	392	57%
Busoga	Bugweri	31	32	36	82	181	320	57%
Busoga	Kamuli	122	91	140	143	496	928	53%
Busoga	Mayuge	96	121	108	145	470	948	50%
Busoga	Buyende	84	90	83	90	347	704	49%
Busoga	Bugiri	89	86	110	76	361	812	44%
Busoga	Namutumba	50	43	45	45	183	516	35%
Kampala	Kampala	1,472	1,389	1,550	1,421	5,832	8,504	69%
Karamoja	Kotido	177	143	155	120	595	344	173%
Karamoja	Nakapiripirit	148	113	115	104	480	288	167%
Karamoja	Nabilatuk	123	151	82	66	422	268	157%
Karamoja	Moroto	238	330	221	301	1,090	796	137%
Karamoja	Kaabong	89	77	69	80	315	236	133%
Karamoja	Amudat	63	54	75	77	269	228	118%
Karamoja	Karenga	20	30	28	32	110	112	98%
Karamoja	Napak	242	169	231	224	866	908	95%
Karamoja	Abim	36	24	61	54	175	264	66%
Kigezi	Rukungiri	129	113	132	121	495	652	76%
Kigezi	Kanungu	79	77	82	108	346	480	72%
Kigezi	Kabale	61	65	69	76	271	408	66%
Kigezi	Rukiga	26	22	32	53	133	216	62%
Kigezi	Kisoro	53	36	69	60	218	524	42%
Kigezi	Rubanda	18	19	43	30	110	344	32%

Region	District	Quarterly new and relapse TB case finding				Total case finding FY 20/21	Incidence FY 20/21	Treatment coverage (%)
		Jul-Sep 20	Oct-Dec 20	Jan-Mar 21	Apr-Jun 21			
Lango	Oyam	322	308	305	345	1,280	760	168%
Lango	Otuke	150	127	174	174	625	476	131%
Lango	Apac	193	249	197	116	755	580	130%
Lango	Kwania	93	142	134	119	488	428	114%
Lango	Dokolo	59	80	75	109	323	360	90%
Lango	Lira	317	283	348	372	1,320	1,652	80%
Lango	Alebtong	86	84	95	101	366	476	77%
Lango	Kole	61	87	111	86	345	476	72%
Lango	Amolatar	32	43	49	49	173	284	61%
North Central	Buvuma	44	48	59	151	302	224	135%
North Central	Nakaseke	71	88	149	102	410	392	105%
North Central	Luwero	237	224	253	258	972	988	98%
North Central	Mityana	115	122	188	248	673	712	95%
North Central	Nakasongola	80	56	128	140	404	448	90%
North Central	Mukono	299	312	352	305	1,268	1,448	88%
North Central	Buikwe	167	182	171	210	730	864	84%
North Central	Kyankwanzi	74	79	95	113	361	480	75%
North Central	Kayunga	117	101	136	142	496	676	73%
North Central	Kiboga	63	52	85	78	278	384	72%
North Central	Kassanda	67	73	75	156	371	520	71%
North Central	Mubende	138	131	197	192	658	948	69%
South Central	Kalangala	101	111	122	119	453	324	140%
South Central	Lwengo	113	106	154	162	535	476	112%
South Central	Bukomansimbi	61	70	77	62	270	256	105%
South Central	Sembabule	100	116	130	124	470	496	95%
South Central	Rakai	109	107	126	143	485	528	92%
South Central	Mpigi	116	153	153	166	588	648	91%
South Central	Kyotera	147	145	144	165	601	664	91%
South Central	Lyantonde	66	59	99	92	316	364	87%
South Central	Masaka	201	242	286	329	1,058	1,228	86%
South Central	Kalungu	87	99	104	112	402	492	82%
South Central	Gomba	39	52	85	57	233	288	81%
South Central	Butambala	49	51	68	69	237	364	65%
South Central	Wakiso	702	805	819	844	3,170	5,052	63%
Teso	Kapelebyong	26	18	47	52	143	188	76%
Teso	Katakwi	58	33	36	100	227	324	70%
Teso	Soroti	127	92	92	96	407	612	67%
Teso	Kalaki	41	31	37	23	132	236	56%

Region	District	Quarterly new and relapse TB case finding				Total case finding FY 20/21	Incidence FY 20/21	Treatment coverage (%)
		Jul-Sep 20	Oct-Dec 20	Jan-Mar 21	Apr-Jun 21			
Teso	Amuria	44	30	51	83	208	380	55%
Teso	Kumi	51	58	32	76	217	476	46%
Teso	Serere	67	53	55	84	259	608	43%
Teso	Kaberamaido	18	26	22	27	93	224	42%
Teso	Ngora	34	15	27	35	111	276	40%
Teso	Bukedea	24	19	18	26	87	440	20%
Tooro	Kabarole	211	183	245	217	856	780	110%
Tooro	Bundibugyo	95	97	140	158	490	448	109%
Tooro	Ntoroko	19	30	34	64	147	152	97%
Tooro	Kamwenge	106	90	157	191	544	564	96%
Tooro	Kyegegwa	148	129	215	237	729	772	94%
Tooro	Kyenjojo	148	154	294	225	821	888	92%
Tooro	Bunyangabu	49	51	97	78	275	324	85%
Tooro	Kitagwenda	41	30	60	73	204	300	68%
Tooro	Kasese	162	176	220	205	763	1,320	58%
West Nile	Obongi	85	93	63	65	306	140	219%
West Nile	Zombo	165	150	168	201	684	472	145%
West Nile	Terego	113	129	133	189	564	396	142%
West Nile	Madi-Okollo	92	56	112	117	377	272	139%
West Nile	Adjumani	236	267	245	191	939	732	128%
West Nile	Yumbe	399	334	283	300	1,316	1,136	116%
West Nile	Maracha	69	86	114	109	378	344	110%
West Nile	Pakwach	78	89	90	99	356	332	107%
West Nile	Arua	270	267	326	317	1,180	1,124	105%
West Nile	Nebbi	134	101	135	122	492	488	101%
West Nile	Moyo	81	74	82	52	289	320	90%
West Nile	Koboko	80	78	127	105	390	436	89%
Total		**15,804**	**15,848**	**18,293**	**19,217**	**69,162**	**86,232**	**80%**

KEY

>70%	70% - 99%	>99%

Table 12: Treatment outcome by district, Uganda, FY 20/21

Region	District/City	Cohort Size	%TSR	% Died	% Lost TFU	% Failed	% Not evaluated
National	**All**	**62,284**	**84.3%**	**7.3%**	**7.0%**	**0.6%**	**0.8%**
Acholi	Agago	475	84.4	9.5	4.6	1.1	0.42
Acholi	Amuru	174	78.2	8	13.2	0	0.57
Acholi	Gulu City	881	90.5	11.4	8.5	0.91	-11.2
Acholi	Gulu	127	74	3.9	10.2	0	11.8
Acholi	Kitgum	759	81.8	9.6	8.4	0.4	-0.26
Acholi	Lamwo	145	66.9	9	15.9	1.4	6.9
Acholi	Nwoya	267	82.4	7.9	8.2	0.75	0.75
Acholi	Omoro	216	93.5	3.2	3.7	0	-0.46
Acholi	Pader	264	71.6	6.4	15.9	2.7	3.4
Ankole	Buhweju	88	78.4	6.8	8	1.1	5.7
Ankole	Bushenyi	267	79	13.9	4.5	0.75	1.9
Ankole	Ibanda	395	82.3	10.6	5.3	0.76	1
Ankole	Isingiro	306	65.4	8.8	23.2	0.98	1.6
Ankole	Kazo	86	70.9	4.7	19.8		4.7
Ankole	Kiruhura	120	83.3	3.3	10.8	0	2.5
Ankole	Mbarara City	888	84.1	10	5.7	0.34	-0.23
Ankole	Mbarara	152	80.9	9.9	7.9	0.66	0.66
Ankole	Mitooma	91	89	4.4	5.5	0	1.1
Ankole	Ntungamo	703	82.1	7.7	8.5	0.85	0.85
Ankole	Rubirizi	138	63.8	5.1	21.7	0.72	8.7
Ankole	Rwampara	126	86.5	8.7	3.2		1.6
Ankole	Sheema	365	81.9	13.4	4.9	0	-0.27
Bugisu	Bududa	182	74.7	13.7	7.1	1.6	2.7
Bugisu	Bukwo	54	72.2	1.9	22.2	3.7	0
Bugisu	Bulambuli	189	78.8	3.7	22.2	0.53	-5.3
Bugisu	Kapchorwa	144	63.9	4.9	21.5		9.7
Bugisu	Kween	45	91.1		6.7		2.2
Bugisu	Manafwa	233	85.8	2.1	0.43	0.43	11.2
Bugisu	Mbale City	976	84.7	9.9	4.1	0.51	0.72
Bugisu	Mbale	105	78.1	9.5	9.5	2.9	0
Bugisu	Namisindwa	133	81.2	3	12.8	0	3
Bugisu	Sironko	188	79.8	7.4	11.2	1.6	0
Bukedi	Budaka	216	90.7	6	3.2		0

Region	District/City	Cohort Size	%TSR	% Died	% Lost TFU	% Failed	% Not evaluated
Bukedi	Busia	463	83.8	8	7.6	0.43	0.22
Bukedi	Butaleja	140	66.4	7.9	11.4	0.71	13.6
Bukedi	Butebo	38	78.9	13.2	5.3		2.6
Bukedi	Kibuku	130	70.8	11.5	16.9	0	0.77
Bukedi	Pallisa	144	79.9	11.1	5.6		3.5
Bukedi	Tororo	635	74.5	9.8	12	1.1	2.7
Bunyoro	Buliisa	194	86.6	5.7	7.7	0.52	-0.52
Bunyoro	Hoima City	519	91.7	6	2.3	0.19	-0.19
Bunyoro	Hoima	298	81.9	5.4	12.1	0	0.67
Bunyoro	Kagadi	719	87.9	7.4	3.1	0.7	0.97
Bunyoro	Kakumiro	585	78.5	7.4	10.1	1.4	2.7
Bunyoro	Kibaale	223	92.4	4	2.7		0.9
Bunyoro	Kikuube	646	89.5	3.6	6.5	0.77	-0.31
Bunyoro	Kiryandongo	438	89.3	3.9	5.5	0.68	0.68
Bunyoro	Masindi	476	85.1	9.7	5.9	0.21	-0.84
Busoga	Bugiri	333	88.6	7.2	4.2		0
Busoga	Bugweri	133	87.2	4.5	6.8	1.5	0
Busoga	Buyende	245	78	6.5	10.6	1.2	3.7
Busoga	Iganga	604	94	7.6	6.1	0.66	-8.4
Busoga	Jinja City	1062	82.2	7.5	7.6	0.47	2.2
Busoga	Jinja	104	85.6	6.7	10.6	3.8	-6.7
Busoga	Kaliro	292	90.8	2.7	1.4	1.7	3.4
Busoga	Kamuli	529	77.9	8.3	7.4	0.19	6.2
Busoga	Luuka	212	71.7	6.6	7.5	0.47	13.7
Busoga	Mayuge	447	80.1	6.7	6.7	0.22	6.3
Busoga	Namayingo	203	79.8	11.3	6.4	2	0.49
Busoga	Namutumba	149	85.2	9.4	3.4	1.3	0.67
Kampala	Kampala	6344	84.8	7.5	7.4	0.47	-0.14
Karamoja	Abim	133	63.9	10.5	20.3	1.5	3.8
Karamoja	Amudat	211	82.9	5.2	10	0.47	1.4
Karamoja	Kaabong	220	75	3.2	20.9	0.91	0
Karamoja	Karenga	71	52.1	8.5	38	1.4	0
Karamoja	Kotido	404	67.6	3.2	27	0.99	1.2
Karamoja	Moroto	989	90.4	4.7	3.8	0.81	0.3
Karamoja	Nabilatuk	270	89.6	2.2	5.9	3.3	-1.1
Karamoja	Nakapiripirit	387	83.2	4.7	11.9	0.78	-0.52

Region	District/City	Cohort Size	%TSR	% Died	% Lost TFU	% Failed	% Not evaluated
Karamoja	Napak	875	79.1	7	12	1.1	0.8
Kigezi	Kabale	258	77.5	12.8	6.6	0.78	2.3
Kigezi	Kanungu	313	87.2	5.8	6.1	1.3	-0.32
Kigezi	Kisoro	304	50.7	16.4	21.4	0.99	10.5
Kigezi	Rubanda	97	85.6	6.2	9.3		-1
Kigezi	Rukiga	154	94.8	4.5	0.65		0
Kigezi	Rukungiri	396	76.8	12.1	9.1	0.25	1.8
Lango	Alebtong	376	84	7.7	5.9	0.53	1.9
Lango	Amolatar	222	82.9	9.9	8.1	0	-0.9
Lango	Apac	696	90.7	5.2	4.5	0.14	-0.43
Lango	Dokolo	310	90	8.7	0.65	1.6	-0.97
Lango	Kole	367	89.6	4.4	2.5	1.4	2.2
Lango	Kwania	447	94.6	3.1	2.9		-0.67
Lango	Lira City	978	73.8	12.9	8.5	1.1	3.7
Lango	Lira	355	89.6	5.4	3.4	1.1	0.56
Lango	Otuke	521	93.9	4.2	1.3	0.38	0.19
Lango	Oyam	923	95.4	2.4	1.2	0.65	0.33
North Central	Buikwe	690	71.2	14.9	12.3	0.14	1.4
North Central	Buvuma	285	82.1	2.8	14.7	0.35	0
North Central	Kassanda	252	82.9	7.5	7.9	1.2	0.4
North Central	Kayunga	485	75.3	13	8.9	1.9	1
North Central	Kiboga	322	86	7.1	4.3	0.31	2.2
North Central	Kyankwanzi	384	88.5	4.9	5.5	0	1
North Central	Luwero	856	78.3	7	7.8	0.58	6.3
North Central	Mityana	548	80.5	10	9.1	0.18	0.18
North Central	Mubende	590	73.6	7.6	14.2	0.34	4.2
North Central	Mukono	1215	84.9	7	6	0.99	1.2
North Central	Nakaseke	358	79.9	11.5	6.4	0.28	2
North Central	Nakasongola	353	99.4	4.5	3.1	0.28	-7.4
South Central	Bukomansimbi	197	89.3	6.6	1.5	0.51	2
South Central	Butambala	299	79.6	13.7	6	1.7	-1
South Central	Gomba	191	71.7	9.9	14.1		4.2
South Central	Kalangala	323	83	3.4	12.7	0	0.93
South Central	Kalungu	436	82.8	10.1	4.8	0.46	1.8
South Central	Kyotera	526	85.2	9.1	8.2		-2.5
South Central	Lwengo	465	97.2	1.9	0.65	0.22	0

Region	District/City	Cohort Size	%TSR	% Died	% Lost TFU	% Failed	% Not evaluated
South Central	Lyantonde	315	87.3	7.3	4.4		0.95
South Central	Masaka City	814	76.9	12	9.8	0.37	0.86
South Central	Masaka	111	81.1	7.2	7.2	0.9	3.6
South Central	Mpigi	498	79.9	7.4	11.2	0.6	0.8
South Central	Rakai	414	90.8	7.5	1.2	0.48	0
South Central	Sembabule	416	96.6	2.9	0.48	0	0
South Central	Wakiso	3004	85.5	8.1	4.6	0.83	1
Teso	Amuria	177	91.5	4.5	4	0	0
Teso	Bukedea	102	74.5	5.9	15.7	2	2
Teso	Kaberamaido	115	73	7	14.8	2.6	2.6
Teso	Kalaki	91	86.8	12.1	8.8	1.1	-8.8
Teso	Kapelebyong	157	77.7	7.6	7	0.64	7
Teso	Katakwi	204	77.9	5.9	9.3	1.5	5.4
Teso	Kumi	270	84.8	4.4	9.3		1.5
Teso	Ngora	106	76.4	20.8	2.8		0
Teso	Serere	201	97	3			0
Teso	Soroti City	391	71.9	8.7	8.4	0.51	10.5
Teso	Soroti	32	56.3	12.5	9.4	0	21.9
Tooro	Bundibugyo	431	85.6	3.2	10.4	0.46	0.23
Tooro	Bunyangabu	250	88.4	4	4.4	0	3.2
Tooro	Fort Portal City	608	83.6	13.7	2	0.99	-0.16
Tooro	Kabarole	145	82.8	4.8	9		3.4
Tooro	Kamwenge	353	81.3	5.7	11.6	1.4	0
Tooro	Kasese	572	72.4	11.4	13.8	1.4	1
Tooro	Kitagwenda	149	97.3	0.67	1.3		0.67
Tooro	Kyegegwa	459	86.3	5	8.5	2	-1.7
Tooro	Kyenjojo	615	87.6	7.2	4.9	0.33	0
Tooro	Ntoroko	125	85.6	7.2	6.4	0.8	0
West Nile	Adjumani	785	95.4	1.9	1.4	0.76	0.51
West Nile	Arua City	1070	86.4	10.7	2.3	0.37	0.19
West Nile	Arua	153	73.9	7.2	18.3	1.3	-0.65
West Nile	Koboko	391	98	1.5	0.51		0
West Nile	Madi-Okollo	214	99.5				0.47
West Nile	Maracha	238	92	6.3	0.84	0.42	0.42
West Nile	Moyo	242	94.2	5	0.41	0	0.41
West Nile	Nebbi	545	92.8	3.5	3.9	0.37	-0.55

Region	District/City	Cohort Size	%TSR	% Died	% Lost TFU	% Failed	% Not evaluated
West Nile	Obongi	239	98.7	0.42	1.3	0	-0.42
West Nile	Pakwach	423	91	2.4	5.7	0.71	0.24
West Nile	Terego	481	96	1.5	2.9	0	-0.42
West Nile	Yumbe	1016	95.4	2.7	1.9	0.1	0
West Nile	Zombo	507	87.4	4.5	6.7	0.79	0.59

KEY

TSR	**>88%**	**73-88%**	**<73%**
Died	**<5%**	**5-10%**	**>10%**
LTFU	**<5%**	**5-10%**	**>10%**
Not evaluated	Negative, more evaluated than patients initiated on treatment (Cohort size)	**<2%**	**>2%**

NTLP Annual performance 2020-2021 District League Table based on 2 traditional indicator version (Case detection and TSR)

Methodology: Each % of target achievement receives an aggregate score: >90%=1, 80-90%=2, 70-80%=3, 60-70%=4, 50-60%=5, <50%=6. Data issue generates aggregate 99

Key: ≥90% | 70-<90% | <70%

If you have an equal aggregate score, the value of average determines the rank.

Table 13: NTLP Annual performance 2020-2021 by district

District	Estimated TB cases	Number of incident TB cases notified	TB Case detection rate	Treatment success rate	TB Case detection rate	Treatment success rate	Aggregate score	Rank	AVERAGE
Obongi District	132	306	231%	99%	1	1	2	**1**	165%
Oyam District	723	1280	177%	96%	1	1	2	**2**	136%
Madi-Okollo District	258	377	146%	100%	1	1	2	**3**	123%
Terego District	377	564	150%	96%	1	1	2	**4**	123%
Moroto District	760	1090	143%	90%	1	1	2	**5**	117%
Otuke District	454	625	138%	94%	1	1	2	**6**	116%
Adjumani District	700	939	134%	95%	1	1	2	**7**	115%
Apac District	553	755	136%	91%	1	1	2	**8**	114%
Yumbe District	1087	1316	121%	96%	1	1	2	**9**	108%
Lwengo District	455	535	118%	97%	1	1	2	**10**	107%
Kwania District	409	488	119%	95%	1	1	2	**11**	107%
Maracha District	330	378	115%	92%	1	1	2	**12**	104%
Iganga District	643	716	111%	94%	1	1	2	**13**	103%
Pakwach District	317	356	112%	91%	1	1	2	**14**	102%
Nebbi District	468	492	105%	93%	1	1	2	**15**	99%
Gulu City	1037	1095	106%	91%	1	1	2	**16**	98%
Sembabule District	472	470	100%	97%	1	1	2	**17**	98%
Koboko District	416	390	94%	98%	1	1	2	**18**	96%
Nakasongola District	428	404	95%	95%	1	1	2	**19**	95%
Moyo District	305	289	95%	94%	1	1	2	**20**	94%
Rakai District	505	485	96%	91%	1	1	2	**21**	93%
Dokolo District	344	323	94%	90%	1	1	2	**22**	92%
Hoima City	585	542	93%	92%	1	1	2	**23**	92%
Budaka District	406	369	91%	91%	1	1	2	**24**	91%
Nabilatuk District	252	422	168%	89.6%	1	2	3	**25**	129%
Nakapiripirit District	277	480	174%	83%	1	2	3	**26**	128%

District	Estimated TB cases	Number of incident TB cases notified	TB Case detection rate	Treatment success rate	TB Case detection rate	Treatment success rate	Aggregate score	Rank	AVERAGE
Zombo District	452	684	151%	88%	1	2	3	**27**	119%
Kikuube District	585	853	146%	89.5%	1	2	3	**28**	118%
Kalangala District	308	453	147%	84%	1	2	3	**29**	115%
Rwampara District	229	322	141%	88%	1	2	3	**30**	114%
Buvuma District	211	302	143%	82%	1	2	3	**31**	113%
Amudat District	218	269	123%	83%	1	2	3	**32**	103%
Manafwa District	278	334	120%	86%	1	2	3	**33**	103%
Agago District	396	472	119%	86%	1	2	3	**34**	103%
Fort Portal City	570	672	118%	84%	1	2	3	**35**	101%
Bundibugyo District	426	490	115%	86%	1	2	3	**36**	101%
Bukomansimbi District	244	270	111%	89.7%	1	2	3	**37**	100%
Arua City	905	1024	113%	86%	1	2	3	**38**	100%
Kabarole District	166	184	111%	84%	1	2	3	**39**	97%
Masaka District	216	242	112%	81%	1	2	3	**40**	96%
Sheema District	372	399	107%	82%	1	2	3	**41**	95%
Ntoroko District	147	147	100%	86%	1	2	3	**42**	93%
Kyegegwa District	739	729	99%	86%	1	2	3	**43**	92%
Kyenjojo District	847	821	97%	88%	1	2	3	**44**	92%
Kagadi District	736	700	95%	88%	1	2	3	**45**	92%
Ntungamo District	855	862	101%	82%	1	2	3	**46**	92%
Kamwenge District	540	544	101%	81%	1	2	3	**47**	91%
Mbarara District	198	200	101%	81%	1	2	3	**48**	91%
Kyotera District	633	601	95%	85%	1	2	3	**49**	90%
Mityana District	678	673	99%	80%	1	2	3	**50**	90%
Ibanda District	438	423	97%	82%	1	2	3	**51**	90%
Masindi District	543	505	93%	86%	1	2	3	**52**	89%
Lyantonde District	348	316	91%	87%	1	2	3	**53**	89%
Kiryandongo District	501	436	87%	90%	2	1	3	**54**	89%
Mukono District	1383	1268	92%	85%	1	2	3	**55**	89%
Mbarara City	937	860	92%	85%	1	2	3	**56**	88%
Omoro District	315	257	82%	94%	2	1	3	**57**	88%
Kaliro District	463	376	81%	91%	2	1	3	**58**	86%
Gulu District	176	299	170%	74%	1	3	4	**59**	122%
Kaabong District	220	315	144%	76%	1	3	4	**60**	110%
Nakaseke District	375	410	109%	80%	1	3	4	**61**	95%
Luwero District	944	972	103%	79%	1	3	4	**62**	91%
Napak District	866	866	100%	79%	1	3	4	**63**	90%
Bunyangabu District	310	275	89%	88%	2	2	4	**64**	88%

District	Estimated TB cases	Number of incident TB cases notified	TB Case detection rate	Treatment success rate	TB Case detection rate	Treatment success rate	Aggregate score	Rank	AVERAGE
Lira District	468	407	87%	90%	2	2	4	**65**	88%
Mpigi District	617	588	95%	80%	1	3	4	**66**	88%
Hoima District	266	229	86%	83%	2	2	4	**67**	85%
Kalungu District	471	402	85%	83%	2	2	4	**68**	84%
Kitagwenda District	287	204	71%	97%	3	1	4	**69**	84%
Busia District	614	518	84%	84%	2	2	4	**70**	84%
Jinja City	1664	1408	85%	82%	2	2	4	**71**	83%
Kole District	455	345	76%	90%	3	1	4	**72**	83%
Arua District	170	156	92%	74%	1	3	4	**73**	83%
Alebtong District	456	366	80%	84%	2	2	4	**74**	82%
Kotido District	326	595	183%	68%	1	4	5	**75**	125%
Lamwo District	226	232	103%	69%	1	4	5	**76**	86%
Kyankwanzi District	460	361	79%	89%	3	2	5	**77**	84%
Kanungu District	460	346	75%	88%	3	2	5	**78**	81%
Mbale City	1090	839	77%	86%	3	2	5	**79**	81%
Kiboga District	366	278	76%	86%	3	2	5	**80**	81%
Masaka City	958	816	85%	77%	2	3	5	**81**	81%
Buikwe District	827	730	88%	71%	2	3	5	**82**	80%
Rukiga District	207	133	64%	95%	4	1	5	**83**	80%
Jinja District	159	116	73%	86%	3	2	5	**84**	79%
Kassanda District	497	371	75%	83%	3	2	5	**85**	79%
Kampala District	8124	5832	72%	85%	3	2	5	**86**	78%
Gomba District	274	233	85%	71%	2	3	5	**87**	78%
Lira City	1110	913	82%	74%	2	3	5	**88**	78%
Kapelebyong District	181	143	79%	78%	3	3	6	**89**	79%
Rukungiri District	623	495	80%	77%	3	3	6	**90**	78%
Mbale District	193	154	80%	75%	3	3	6	**91**	77%
Buliisa District	243	159	65%	88%	4	2	6	**92**	76%
Kayunga District	644	496	77%	76%	3	3	6	**93**	76%
Wakiso District	4825	3170	66%	86%	4	2	6	**94**	76%
Katakwi District	310	227	73%	78%	3	3	6	**95**	76%
Butebo District	191	138	72%	79%	3	3	6	**96**	76%
Kapchorwa District	198	170	86%	64%	2	4	6	**97**	75%
Karenga District	109	110	101%	49%	1	5	6	**98**	75%
Tororo District	950	717	75%	75%	3	3	6	**99**	75%
Nwoya District	404	270	67%	82%	4	2	6	**100**	75%
Amuria District	362	208	58%	92%	5	1	6	**101**	75%
Amolatar District	270	173	64%	83%	4	2	6	**102**	73%

District	Estimated TB cases	Number of incident TB cases notified	TB Case detection rate	Treatment success rate	TB Case detection rate	Treatment success rate	Aggregate score	Rank	AVERAGE
Mubende District	906	658	73%	74%	3	3	6	**103**	73%
Kween District	175	93	53%	91%	5	1	6	**104**	72%
Luuka District	423	300	71%	73%	3	3	6	**105**	72%
Pader District	434	305	70%	73%	3	3	6	**106**	72%
Soroti City	519	370	71%	71%	3	3	6	**107**	71%
Kibaale District	326	160	49%	93%	5	1	6	**108**	71%
Serere District	580	259	45%	97%	5	1	6	**109**	71%
Kitgum District	1096	665	61%	80%	4	2	6	**110**	71%
Namayingo District	374	225	60%	81%	4	2	6	**111**	70%
Amuru District	345	238	69%	80%	4	3	7	**112**	74%
Bugweri District	305	181	59%	89%	5	2	7	**113**	74%
Butambala District	349	237	68%	80%	4	3	7	**114**	74%
Kabale District	391	271	69%	78%	4	3	7	**115**	73%
Kalaki District	224	132	59%	88%	5	2	7	**116**	73%
Bulambuli District	375	230	61%	80%	4	3	7	**117**	70%
Bugiri District	775	361	47%	89%	5	2	7	**118**	68%
Kumi District	455	217	48%	86%	5	2	7	**119**	67%
Kiruhura District	299	147	49%	84%	5	2	7	**120**	67%
Mayuge District	904	470	52%	80%	5	2	7	**121**	66%
Kasese District	1259	763	61%	71%	4	3	7	**122**	66%
Sironko District	435	205	47%	80%	5	2	7	**123**	64%
Mitooma District	304	106	35%	89%	5	2	7	**124**	62%
Namisindwa District	368	152	41%	81%	5	2	7	**125**	61%
Namutumba District	492	183	37%	85%	5	2	7	**126**	61%
Rubanda District	327	110	34%	87%	5	2	7	**127**	60%
Pallisa District	572	159	28%	81%	5	2	7	**128**	54%
Abim District	253	175	69%	65%	4	4	8	**129**	67%
Kamuli District	888	496	56%	78%	5	3	8	**130**	67%
Bushenyi District	435	222	51%	79%	5	3	8	**131**	65%
Buyende District	671	347	52%	78%	5	3	8	**132**	65%
Kakumiro District	797	399	50%	79%	5	3	8	**133**	64%
Bududa District	440	223	51%	76%	5	3	8	**134**	63%
Buhweju District	230	100	43%	79%	5	3	8	**135**	61%
Ngora District	264	111	42%	77%	5	3	8	**136**	60%
Kaberamaido District	214	93	43%	72%	5	3	8	**137**	58%
Bukwo District	194	77	40%	72%	5	3	8	**138**	56%
Kibuku District	403	143	36%	71%	5	3	8	**139**	53%
Kazo District	350	118	34%	71%	5	3	8	**140**	52%

District	Estimated TB cases	Number of incident TB cases notified	TB Case detection rate	Treatment success rate	TB Case detection rate	Treatment success rate	Aggregate score	Rank	AVERAGE
Bukedea District	419	87	21%	77%	5	3	8	**141**	49%
Rubirizi District	228	136	60%	63%	5	4	9	**142**	61%
Isingiro District	958	473	49%	65%	5	4	9	**143**	57%
Butaleja District	483	151	31%	67%	5	4	9	**144**	49%
Soroti District	65	37	57%	55%	5	5	10	**145**	56%
Kisoro District	499	218	44%	51%	5	5	10	**146**	47%

NTLP Annual performance 2020-2021 League Table

Methodology: Each % of target achievement receives an aggregate score: >90%=1, 80-90%=2, 70-80%=3, 60-70%=4, 50-60%=5, <50%=6. Data issue generates aggregate 99. If you have an equal aggregate score, the value of average determines the rank

≥90%	70-<90%	<70%	>100%	Key

Blue indicates a data quality issue for 3 indicators, Contacts screened for TB, PBCs tested using GeneXpert and ART clients started on TPT. These were left unranked.

Table 14: NTLP annual performance 2020-2021 League table

District	Estimated TB cases	incident TB cases notified	TB Case detection rate	Contacts screened for TB	P-BCs tested using GeneXpert	Treatment success rate	% eligible ART clients started on TPT	TB Case detection rate	Contacts screened for TB	P-BCs tested using Gene Xpert	Treatment success rate	% eligible ART clients started on TPT	Aggregate score	Rank	AVERAGE
Iganga	643	716	111%	91%	79%	94%	81%	1	1	3	1	2	8	**1**	91%
Apac	553	755	136%	85%	69%	91%	95%	1	2	4	1	1	9	**2**	95%
Sembabule	472	470	100%	95%	83%	97%	66%	1	1	2	1	4	9	**3**	88%
Nakasongola	428	404	95%	87%	68%	95%	84%	1	2	4	1	2	10	**4**	86%
Busia	614	518	84%	99%	81%	84%	72%	2	1	2	2	3	10	**5**	84%
Budaka	406	369	91%	66%	76%	91%	90%	1	4	3	1	1	10	**6**	83%
Lamwo	226	232	103%	78%	99%	69%	90%	1	3	1	4	2	11	**7**	88%
Fort Portal City	570	672	118%	98%	84%	84%	51%	1	1	2	2	5	11	**8**	87%
Arua City	905	1024	113%	87%	62%	86%	81%	1	2	4	2	2	11	**9**	86%
Dokolo	344	323	94%	88%	59%	90%	81%	1	2	5	1	2	11	**10**	82%
Rakai	505	485	96%	92%	78%	91%	51%	1	1	3	1	5	11	**11**	81%
Sheema	372	399	107%	91%	92%	82%	23%	1	1	1	2	6	11	**12**	79%
Mbale City	1090	839	77%	85%	66%	86%	94%	3	2	4	2	1	12	**13**	82%
Gulu City	1037	1095	106%	72%	97%	91%	35%	1	3	1	1	6	12	**14**	80%
Ntungamo	855	862	101%	98%	82%	82%	30%	1	1	2	2	6	12	**15**	79%
Adjumani	700	939	134%	89%	71%	95%	41%	1	2	3	1	6	13	**16**	86%
Kampala	8124	5832	72%	89%	88%	85%	67%	3	2	2	2	4	13	**17**	80%
Butambala	349	237	68%	79%	80%	80%	90%	4	3	2	3	1	13	**18**	79%
Rwampara	229	322	141%	91%	56%	88%	52%	1	1	5	2	5	14	**19**	86%
Lwengo	455	535	118%	98%	52%	97%	40%	1	1	5	1	6	14	**20**	81%
Kanungu	460	346	75%	87%	99%	88%	48%	3	2	1	2	6	14	**21**	79%
Mpigi	617	588	95%	85%	68%	80%	67%	1	2	4	3	4	14	**22**	79%

District	Estimated TB cases	incident TB cases notified	TB Case detection rate	Contacts screened for TB	P-BCs tested using GeneXpert	Treatment success rate	% eligible ART clients started on TPT	TB Case detection rate	Contacts screened for TB	P-BCs tested using Gene Xpert	Treatment success rate	% eligible ART clients started on TPT	Aggregate score	Rank	AVERAGE
Tororo	950	717	75%	79%	70%	75%	92%	3	3	4	3	1	14	**23**	78%
Ibanda	438	423	97%	48%	89%	82%	71%	1	6	2	2	3	14	**24**	77%
Kalungu	471	402	85%	95%	45%	83%	77%	2	1	6	2	3	14	**25**	77%
Kyenjojo	847	821	97%	51%	85%	88%	61%	1	5	2	2	4	14	**26**	76%
Kassanda	497	371	75%	91%	53%	83%	78%	3	1	5	2	3	14	**27**	76%
Kaliro	463	376	81%	31%	75%	91%	89%	2	6	3	1	2	14	**28**	73%
Bukwo	194	77	40%	97%	93%	72%	61%	5	1	1	3	4	14	**29**	73%
Gulu	176	299	170%	80%	78%	74%	36%	1	2	3	3	6	15	**30**	87%
Madi-Okollo	258	377	146%	95%	38%	100%	49%	1	1	6	1	6	15	**31**	86%
Kalangala	308	453	147%	98%	37%	84%	55%	1	1	6	2	5	15	**32**	84%
Nakaseke	375	410	109%	99%	68%	80%	28%	1	1	4	3	6	15	**33**	77%
Napak	866	866	100%	42%	96%	79%	65%	1	6	1	3	4	15	**34**	76%
Bugiri	775	361	47%	99%	44%	89%	99%	5	1	6	2	1	15	**35**	76%
Mityana	678	673	99%	78%	53%	80%	67%	1	3	5	2	4	15	**36**	75%
Bulambuli	375	230	61%	91%	49%	80%	97%	4	1	6	3	1	15	**37**	75%
Mukono	1383	1268	92%	80%	64%	85%	47%	1	2	4	2	6	15	**38**	74%
Jinja City	1664	1408	85%	97%	66%	82%	36%	2	1	4	2	6	15	**39**	73%
Luuka	423	300	71%	71%	65%	73%	85%	3	3	4	3	2	15	**40**	73%
Mayuge	904	470	52%	89%	90%	80%	50%	5	2	1	2	5	15	**41**	72%
Arua	170	156	92%	67%	33%	74%	95%	1	4	6	3	1	15	**42**	72%
Kamwenge	540	544	101%	72%	78%	81%	20%	1	3	3	2	6	15	**43**	70%
Luwero	944	972	103%	63%	64%	79%	63%	1	4	4	3	4	16	**44**	74%
Nwoya	404	270	67%	73%	97%	82%	17%	4	3	1	2	6	16	**45**	67%
Bunyangabu	310	275	89%	57%	91%	88%	45%	2	5	1	2	6	16	**46**	74%
Lyantonde	348	316	91%	46%	38%	87%	90%	1	6	6	2	1	16	**47**	70%
Kyotera	633	601	95%	38%	48%	85%	92%	1	6	6	2	1	16	**48**	71%
Katakwi	310	227	73%	70%	91%	78%	41%	3	4	1	3	6	17	**49**	71%
Mbarara City	937	860	92%	61%	67%	85%	36%	1	4	4	2	6	17	**50**	68%
Mitooma	304	106	35%	91%	79%	89%	20%	5	1	3	2	6	17	**51**	63%
Buhweju	230	100	43%	86%	91%	79%	14%	5	2	1	3	6	17	**52**	63%
Mbale	193	154	80%	69%	89%	75%	50%	3	4	2	3	6	18	**53**	72%
Kalaki	224	132	59%	100%	56%	88%	58%	5	1	5	2	5	18	**54**	72%
Amuria	362	208	58%	94%	43%	92%	57%	5	1	6	1	5	18	**55**	69%
Wakiso	4825	3170	66%	87%	68%	86%	30%	4	2	4	2	6	18	**56**	67%

District	Estimated TB cases	incident TB cases notified	TB Case detection rate	Contacts screened for TB	P-BCs tested using GeneXpert	Treatment success rate	% eligible ART clients started on TPT	TB Case detection rate	Contacts screened for TB	P-BCs tested using Gene Xpert	Treatment success rate	% eligible ART clients started on TPT	Aggregate score	Rank	AVERAGE
Kitgum	1096	665	61%	59%	90%	80%	34%	4	5	1	2	6	18	**57**	65%
Kazo	350	118	34%	94%	78%	71%	24%	5	1	3	3	6	18	**58**	60%
Kapelebyong	181	143	79%	58%	41%	78%	81%	3	5	6	3	2	19	**59**	67%
Pader	434	305	70%	65%	52%	73%	66%	3	4	5	3	4	19	**60**	65%
Kumi	455	217	48%	99%	56%	86%	36%	5	1	5	2	6	19	**61**	65%
Pallisa	572	159	28%	91%	40%	81%	55%	5	1	6	2	5	19	**62**	59%
Lira City	1110	913	82%	59%	55%	74%	54%	2	5	5	3	5	20	**63**	65%
Amuru	345	238	69%	76%	62%	80%	30%	4	3	4	3	6	20	**64**	63%
Rukungiri	623	495	80%	68%	62%	77%	27%	3	4	4	3	6	20	**65**	63%
Jinja	159	116	73%	46%	67%	86%	22%	3	6	4	2	6	21	**66**	59%
Namutumba	492	183	37%	50%	55%	85%	63%	5	5	5	2	4	21	**67**	58%
Bukedea	419	87	21%	70%	39%	77%	78%	5	4	6	3	3	21	**68**	57%
Amolatar	270	173	64%	46%	65%	83%	43%	4	6	4	2	6	22	**69**	60%
Rukiga	207	133	64%	32%	55%	95%	20%	4	6	5	1	6	22	**70**	53%
Kabale	391	271	69%	67%	47%	78%	23%	4	4	6	3	6	23	**71**	57%
Rubanda	327	110	34%	67%	49%	87%	16%	5	4	6	2	6	23	**72**	50%
Isingiro	958	473	49%	74%	49%	65%	33%	5	3	6	4	6	24	**73**	54%
Bushenyi	435	222	51%	61%	30%	79%	46%	5	4	6	3	6	24	**74**	53%
Kisoro	499	218	44%	27%	86%	51%	46%	5	6	2	5	6	24	**75**	51%

The following were left unranked due to the data errors in the indicators shaded blue. They thus could not be objectively ranked using the data.

District	Estimated TB cases	incident TB cases notified	TB Case detection rate	Contacts screened for TB	P-BCs tested using GeneXpert	Treatment success rate	% eligible ART clients started on TPT	TB Case detection rate	Contacts screened for TB	P-BCs tested using GeneXpert	Treatment success rate	% eligible ART clients started on TPT	Aggregate score	AVERAGE
Otuke	454	625	138%	96%	77%	94%	139%	1	1	3	1	99	105	109%
Amudat	218	269	123%	82%	95%	83%	128%	1	2	1	2	99	105	102%
Masindi	543	505	93%	84%	96%	86%	105%	1	2	1	2	99	105	93%
Koboko	416	390	94%	91%	66%	98%	239%	1	1	4	1	99	106	118%
Kiryandongo	501	436	87%	87%	80%	90%	500%	2	2	2	1	99	106	169%
Buvuma	211	302	143%	84%	90%	82%	127%	1	2	2	2	99	106	105%
Nakapiripirit	277	480	174%	71%	91%	83%	113%	1	3	1	2	99	106	106%
Kole	455	345	76%	99%	76%	90%	719%	3	1	3	1	99	107	212%
Yumbe	1087	1316	121%	99%	54%	96%	209%	1	1	5	1	99	107	116%
Kwania	409	488	119%	97%	57%	95%	164%	1	1	5	1	99	107	106%
Kikuube	585	853	146%	99%	68%	90%	202%	1	1	4	2	99	107	121%
Agago	396	472	119%	77%	81%	86%	318%	1	3	2	2	99	107	136%
Gomba	274	233	85%	99%	75%	71%	152%	2	1	3	3	99	108	97%
Lira	468	407	87%	98%	69%	90%	133%	2	1	4	2	99	108	95%
Moroto	760	1090	143%	57%	88%	90%	103%	1	5	2	1	99	108	96%
Hoima City	585	542	93%	77%	69%	92%	223%	1	3	4	1	99	108	111%
Manafwa	278	334	120%	94%	0%	86%	130%	1	1	6	2	99	109	86%
Moyo	305	289	95%	82%	47%	94%	728%	1	2	6	1	99	109	209%
Kayunga	644	496	77%	112%	62%	76%	91%	3	99	4	3	1	110	83%
Kyankwanzi	460	361	79%	60%	87%	89%	137%	3	4	2	2	99	110	90%
Soroti City	519	370	71%	85%	76%	71%	147%	3	2	3	3	99	110	90%
Bundibugyo	426	490	115%	62%	70%	86%	219%	1	4	4	2	99	110	110%
Oyam	723	1280	177%	104%	48%	96%	80%	1	99	6	1	3	110	101%
Nabilatuk	252	422	168%	31%	87%	90%	113%	1	6	2	2	99	110	98%
Kagadi	736	700	95%	87%	31%	88%	101%	1	2	6	2	99	110	80%
Kasese	1259	763	61%	77%	82%	71%	247%	4	3	2	3	99	111	108%
Namayingo	374	225	60%	81%	66%	81%	303%	4	2	4	2	99	111	118%
Abim	253	175	69%	73%	91%	65%	165%	4	3	1	4	99	111	93%
Ngora	264	111	42%	78%	92%	77%	652%	5	3	1	3	99	111	188%
Namisindwa	368	152	41%	84%	76%	81%	134%	5	2	3	2	99	111	83%
Pakwach	317	356	112%	65%	37%	91%	212%	1	4	6	1	99	111	103%

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Kaabong	220	315	144%	43%	85%	76%	323%	1	6	2	3	99	111	134%
Mbarara	198	200	101%	113%	72%	81%	34%	1	99	3	2	6	111	80%
Bugweri	305	181	59%	87%	64%	89%	114%	5	2	4	2	99	112	83%
Hoima	266	229	86%	64%	53%	83%	140%	2	4	5	2	99	112	85%
Kapchorwa	198	170	86%	105%	94%	64%	20%	2	99	1	4	6	112	74%
Nebbi	468	492	105%	40%	53%	93%	506%	1	6	5	1	99	112	160%
Obongi	132	306	231%	57%	39%	99%	192%	1	5	6	1	99	112	124%
Kakumiro	797	399	50%	80%	68%	79%	264%	5	2	4	3	99	113	108%
Kaberamaido	214	93	43%	97%	112%	72%	53%	5	1	99	3	5	113	75%
Mubende	906	658	73%	44%	86%	74%	174%	3	6	2	3	99	113	90%
Alebtong	456	366	80%	115%	64%	84%	39%	2	99	4	2	6	113	76%
Sironko	435	205	47%	112%	56%	80%	72%	5	99	5	2	3	114	73%
Kibuku	403	143	36%	105%	76%	71%	64%	5	99	3	3	4	114	70%
Kabarole	166	184	111%	107%	31%	84%	43%	1	99	6	2	6	114	75%
Kyegegwa	739	729	99%	50%	49%	86%	839%	1	6	6	2	99	114	224%
Butaleja	483	151	31%	82%	58%	67%	102%	5	2	5	4	99	115	68%
Buyende	671	347	52%	86%	45%	78%	241%	5	2	6	3	99	115	100%
Bududa	440	223	51%	132%	87%	76%	37%	5	99	2	3	6	115	77%
Buikwe	827	730	88%	50%	48%	71%	111%	2	5	6	3	99	115	74%
Karenga	109	110	101%	66%	13%	49%	169%	1	4	6	5	99	115	80%
Kitagwenda	287	204	71%	117%	43%	97%	41%	3	99	6	1	6	115	74%
Butebo	191	138	72%	103%	59%	79%	35%	3	99	5	3	6	116	70%
Soroti	65	37	57%	33%	83%	55%	193%	5	6	2	5	99	117	84%
Kween	175	93	53%	102%	43%	91%	15%	5	99	6	1	6	117	61%
Rubirizi	228	136	60%	43%	102%	63%	67%	5	6	99	4	4	118	67%
Kiruhura	299	147	49%	112%	13%	84%	44%	5	99	6	2	6	118	60%
Omoro	315	257	82%	146%	100%	94%	109%	2	99	1	1	99	202	106%
Zombo	452	684	151%	83%	158%	88%	1518%	1	2	99	2	99	203	399%
Bukomansimbi	244	270	111%	104%	76%	90%	121%	1	99	3	2	99	204	100%
Kiboga	366	278	76%	119%	81%	86%	131%	3	99	2	2	99	205	99%
Ntoroko	147	147	100%	65%	378%	86%	284%	1	4	99	2	99	205	183%
Maracha	330	378	115%	122%	50%	92%	124%	1	99	5	1	99	205	101%
Terego	377	564	150%	113%	60%	96%	107%	1	99	5	1	99	205	105%

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Masaka	216	242	112%	100%	65%	81%	168%	1	99	4	2	99	205	105%
Masaka City	958	816	85%	76%	933%	77%	163%	2	3	99	3	99	206	267%
Kotido	326	595	183%	107%	72%	68%	193%	1	99	3	4	99	206	124%
Kibaale	326	160	49%	104%	74%	93%	290%	5	99	3	1	99	207	122%
Buliisa	243	159	65%	101%	69%	88%	223%	4	99	4	2	99	208	109%
Serere	580	259	45%	123%	70%	97%	326%	5	99	4	1	99	208	132%
Kamuli	888	496	56%	103%	44%	78%	179%	5	99	6	3	99	212	92%