

TRACK TB – Annual Report – Project Year 2

Management Sciences for Health

October 2013 – September 2014

Development objective(s):

The goal of the TRACK TB project is to increase tuberculosis (TB) case detection and treatment success rates (TSR) to meet Uganda's national targets for reducing the burden of TB, multidrug-resistant TB (MDR-TB), and TB/HIV.

Key Word(s): Annual Report

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TRACK TB

Cooperative Agreement No: 623-A-13-00003



PROJECT YEAR II ANNUAL REPORT

October 2013 – September 2014

General Information

Project Title	TRACK TB
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Cover Photo: Project officers from the TRACK TB and USAID SUSTAIN projects mentor a front line provider on the use of MDR-TB recording and reporting tools, including the electronic TB register.

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Abbreviations and Acronym List

ACP	Aids Control Program
AIC	Aids Information Centre
AIDS	Acquired Immune Deficiency Syndrome
ART	Antiretroviral Therapy
ASSIST	Applying Science to Strengthen and Improve Systems
CB	Community-Based
CCM	Country Coordinating Mechanism
CLF	Community Linkage Facilitators
CME	Continuous Medical Education
CPT	Cotrimoxazole Preventive Therapy
CQI	Continuous Quality Improvement
DG	Director General of Health Services
DOT	Directly Observed Treatment
DOTS	Directly Observed Treatment Short course
DTFP	Divisional TB Focal Person
DTLS	District TB and Leprosy Supervisor
DTU	Diagnostic and Treatment Unit
EH	Ethambutol/ Isoniazid
EQA	External Quality Assurance
FCO	Focal Coordination Office
FIND	Foundation For Innovative New Diagnostics
GDF	Global Drug Facility
GF	Global Fund
GIS	Geographic Information System
HCT	HIV Counseling and Testing
HIV	Human Immunodeficiency Virus
HMIS	Health management information system
ICF	Intensified case finding
IDI	Infectious Diseases Institute
IEC	Information education and communication
IP	Implementing partner
IPT	Isoniazid Preventive Therapy
IR	Intermediate Result
KCCA	Kampala Capital City Authority
KCTF	Kampala City Tuberculosis Task Force
LTFU	Lost To Follow Up
M&E	Monitoring and Evaluation
MakSPH	Makerere University School of Public Health
MDR-TB	Multidrug-Resistant Tuberculosis
MOH	Ministry of Health
MOST	Management and Organizational Sustainability Tool
MSH	Management Sciences For Health
NCC	National Coordination Committee

NMS	National Medical Stores
NSP	National Strategic Plan
NTLP	National TB And Leprosy Program
NTRL	National Tb Reference Laboratory
NUHITES	Northern Uganda–Health Integration to Enhance Services
OPD	Outpatient Department
OR	Operations Research
P-BC	Pulmonary Bacteriologically Confirmed TB
PEPFAR	President’s Emergency Plan for AIDS Relief
PMDT	Programmatic Management of MDR-TB
PTP	Presumptive TB Patients
PUDR	Performance Update and Disbursement Request
PY	Project Year
QI	Quality Improvement
QPPU	Quantification Procurement and planning unit
RH	Rifampicin/ Isoniazid
RPMT	Regional Performance Monitoring Teams
RTLFP	Regional TB/Leprosy Focal Persons
SLD	Second line drug
SOP	Standard Operating Procedure
STAR-E	Strengthening Tuberculosis and HIV&AIDS Response in Eastern Uganda
STAR-EC	Strengthening Tuberculosis and HIV&AIDS Response in Eastern Central Uganda
STAR-SW	Strengthening Tuberculosis and HIV&AIDS Response in South Western Uganda
STTA	Short term technical assistance
TASO	The AIDS Support Organization
TB	Tuberculosis
TRACK-TB	Track Tuberculosis project
TSR	Treatment Success Rate
UCSF/CITC	University of California, San Francisco/ Curry International TB Centre
USAID	United States Agency for International Development
USTP	Uganda Stop Tuberculosis Partnership
VHT	Village Health Team
ZTLS	Zonal TB and Leprosy Supervisor

Executive Summary

This report covers the TRACK TB project activities implemented during project year two (PY2), from October, 2013 to September, 2014. TRACK TB is a five-year project funded by the United States Agency for International Development (USAID) and implemented by Management Sciences for Health (MSH) and its partners, including the acquired immune deficiency syndrome (AIDS) Information Centre in Uganda, the Makerere University School of Public Health, and the University of California, San Francisco, Curry International Tuberculosis Centre (UCSF/CITC). The project works to increase the tuberculosis (TB) case detection and treatment success rates in Kampala and 49 districts in Uganda to meet the national targets for reducing the burden of TB, multi-drug resistant TB (MDR-TB), and TB/HIV. The project has completed 21 out of its 60 months of implementation.

During PY 2, TRACK TB made further progress towards achievement of USAID's development hypothesis, which states that building National TB and Leprosy Program (NTLP) capacity for effective leadership and resource mobilization, support for improved TB activity implementation in Kampala and focus districts, and early detection and treatment of MDR-TB, if well coordinated, will lead to increased treatment success rates in selected districts and will result in reduced TB prevalence and mortality in these focus areas.

Under Result area 1, TRACK TB registered the following accomplishments towards enhancing the NTLP leadership and technical capacity for planning, monitoring, and implementing TB control activities:

- Completed the NTLP strategic plan for the next five years (FY2015/16-2019/20);
- Developed the NTLP quality improvement approach and pretested the mentorship tools during the joint TB/HIV supervisions.
- Improved coordination of TB commodities through improved information flow between NTLP, the pharmacy division of the Ministry of health (MOH), national medical stores (NMS), and the health facilities;
- Improved follow up and implementation of Global Fund supported activities and aligned the nine NTLP zones to the Ministry of Health's 12 regions.
- Improved planning, supervision, and monitoring and evaluation (M&E) following the use of the Management and Organizational Sustainability Tool (MOST) for TB.
- Developed an electronic TB database currently used at the central unit to capture district data;
- Developed and disseminated the NTLP annual operational plan (FY2014/15); and
- The publication of the first edition of the NTLP Annual Report FY2012/13 and revival of the NTLP newsletter to enable advocacy and sharing of experiences and best practices among stakeholders.

Under Result area 2, the project implemented an effective Urban Directly Observed Treatment Short course (DOTS) model in Kampala. The model involves; improved coordination of TB activities through the Kampala City Tuberculosis Task force (KCTF), provider skills strengthening through training mentorship and quality improvement (QI) coaching, engagement of private health facilities in TB service delivery, and strengthening patient referral and tracking through community linkage facilitators (CLFs), who also support contact tracing and community based DOT. TB service delivery greatly improved from these interventions, as shown by:

- Increased proportion of patients on DOT from 14% at end of PY 1 to 52% at end of PY2 and a steady improvement in treatment success rate (TSR) from 71% at the end of PY 1 to 78% by the end of PY 2.

- Progressive improvement in the cure rate from 33% at the end of PY 1 to 56% by the end of PY 2 (above the annual target of 50%). This result could have been much better, but performance was affected by a national shortage of laboratory commodities.
- Halving of the proportion of notified cases lost to follow-up during the course of treatment from 21% at baseline to 11% at the end of PY 2.
- Improvement in the proportion of new bacteriologically confirmed TB patients, from 45% in PY 1 (3,713/8,379) to 54.5% (4,293/7,935).
- Sustained improvement in the delivery of TB/HIV collaborative services, including 98% testing of TB patients, 97% coverage of co-trimoxazole preventive therapy (CPT) for TB/HIV co-infected patients, and 81% uptake of antiretroviral therapy (ART) for TB/HIV co-infected patients, up from 63% at the end of PY 1.

Under Result area 3, TRACK TB maintained support for NTLP to ensure a quality program for the management of drug-resistant TB (PMDT), which achieved the following:

- Strengthened the PMDT central unit team and MDR-TB coordination mechanisms and initiated review of national guidelines, standard operating procedures (SOPs), and PMDT training materials.
- Increased the number of treatment initiation facilities from 7 at end of PY 1 to 14 at end of PY 3 in collaboration with SUSTAIN and STAR EC and trained 100 health workers (49% female) in MDR-TB management.
- Enrolled 222 additional MDR-TB patients, bringing the cumulative total number of patients enrolled to 426 (67% of these are enrolled at TRACK TB directly supported facilities). There is over 97% coverage of HCT for all patients, and CPT and ART for HIV co-infected MDR-TB patients.
- Improved the model for MDR-TB care through the implementation of a satellite clinic, which is a monthly clinic to review all patients receiving ambulatory care and refer sputum samples for monthly cultures. This practice is expected to enhance the overall quality of patient care.
- Provided HMIS tools, including the establishment of the electronic register, to facilitate data management and reporting from all treatment initiation facilities.
- Coordinated the availability of second line medicines for MDR-TB at each of the 14 treatment facilities.
- Supported the implementation of two cohort review exercises to determine program performance. With TRACK TB and other partner support the NTLP has achieved 90 percent patient retention at six months of treatment as well as 71 percent negative sputum culture for the 69 patient cohort that had completed 6 months.
- Improved patient support with transport enablers, tracking, and contact investigation. There were three MDR-TB patients diagnosed out of 1,003 contacts traced and investigated.

Under Result area 4, TRACK TB continued to strengthen the mechanisms for partner engagement and coordination, including the national coordination committee meetings, partner coordination forum, and Gene Xpert and MDR-TB IP coordination.

- Supported the review, printing, and dissemination of TB/HIV guidelines, as well as the development of IPT guidelines.
- Joint NTLP mentorship and quality improvement activities for the nine TB zones in the country.

1. Introduction

The Track Tuberculosis Activity (TRACK TB) is a five-year project funded by the United States Agency for International Development (USAID) and implemented by Management Sciences for Health (MSH) and its partners, the AIDS Information Centre (AIC) in Uganda, the Makerere University School of Public Health (MakSPH), and the University of California, San Francisco/ Curry International Tuberculosis Center (UCSF/CITC).

This report summarizes TRACK TB's achievements, experiences, challenges, and lessons learned from October, 2013 through September, 2014. It is organized by the project's four intermediate results areas, which are outlined below.

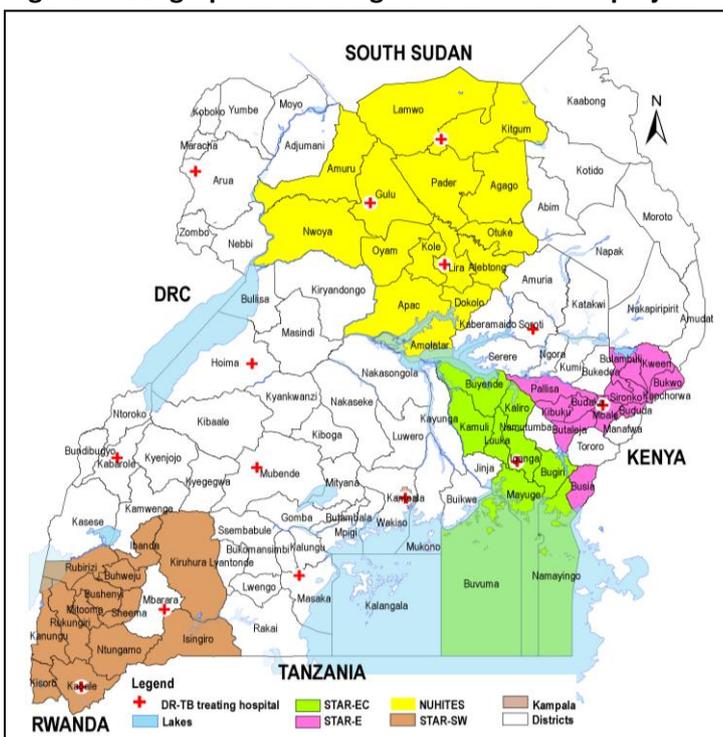
1.1. Overview of TRACK TB's project goal, coverage, and results framework

The goal of the TRACK TB project is to increase TB case detection and treatment success rates to meet Uganda's national targets for reducing the burden of TB, MDR-TB, and TB/HIV. The project seeks to achieve this goal by implementing interventions in four result areas:

- Result Area 1:* enhanced leadership and technical capacity of the National TB and Leprosy Program (NTP) for effective TB control;
- Result Area 2:* implementation of an effective DOTS model in Kampala;
- Result Area 3:* implementation of a high-quality program for the management of MDR-TB; and
- Result Area 4:* improved coordination and implementation of DOTS, TB/HIV, and community-based MDR-TB interventions.

The TRACK TB project works with the NTP central unit, Kampala Capital City Authority (KCCA) including 56 health facilities that provide TB services having increased from 38 at the start of the project, and at six MDR-TB treatment sites. The project also covers 49 districts where USAID's implementing partners are working.

Figure 1: Geographical coverage of the TRACK TB project



TRACK TB only provides technical assistance and not direct service delivery in the partner supported districts. They include

- The Strengthening TB and HIV & AIDS Response in Eastern Uganda (STAR-E) project, 12 districts.
- The STAR in Eastern Central Uganda (STAR-EC) project, 9 districts.
- The STAR in South Western Uganda (STAR-SW) project, 13 districts.
- The Northern Uganda–Health Integration to Enhance Services (NUHITES) project, 15 districts.

2. Summary of Results

2.1. Result Area 1: Enhanced NTLP leadership and technical capacity for effective TB control management

During PY2, TRACK TB continued to collaborate with key stakeholders to improve the leadership and management capacity of NTLP to effectively control tuberculosis in Uganda. The project set out to coordinate the review of the NTLP structure, strengthen annual planning and performance review activities of NTLP, support the timely implementation of Global Fund (GF) activities, application of QI approaches to TB care, and strengthen supervision, M&E, and operations research.

The key project achievements during PY2 under Result Area 1 include:

- Completed the NTLP strategic plan for the next five years (FY2015/16-2019/20);
- Developed the NTLP quality improvement approach and pretested the mentorship tools during the joint TB/HIV supervisions.
- Improved coordination of TB commodities through improved information flow between NTLP, the pharmacy division of the Ministry of health (MOH), national medical stores (NMS), and the health facilities;
- Improved follow up and implementation of Global Fund supported activities and aligned the nine NTLP zones to the Ministry of Health's 12 regions.
- Improved planning, supervision, and monitoring and evaluation (M&E) following the use of the Management and Organizational Sustainability Tool (MOST) for TB.
- Developed an electronic TB database currently used at the central unit to capture district data;
- Developed and disseminated the NTLP annual operational plan (FY2014/15); and
- The publication of the first edition of the NTLP Annual Report FY2012/13 and revival of the NTLP newsletter to enable advocacy and sharing of experiences and best practices among stakeholders.

Strategies and approaches used to enhance the NTLP's leadership and technical capacity

Support for the development of the national TB strategic plan (FY2015/16-2019/20)

Following an orientation in the development of national TB strategic plans conducted in November of 2013, and supported by the World Health Organization Global TB Program, NTLP initiated the development of the National TB/Leprosy Strategic Plan for the period 2015/16-2019/20. Although the activity was led by an international consultant, TRACK TB coordinated the in-country National Strategic Plan (NSP) development processes, including improved follow-up on key tasks in line with agreed time lines until finalization. The NSP was completed with all of the core elements (core, technical assistance, M&E, operational, and budget plans).

TRACK TB also provided all the in-country logistical support and contributed to technical support in collaboration with key stakeholders. This NSP was a key requirement for the submission of the Joint TB/HIV Concept Note submitted in October of 2014.

Development of NTLP quality improvement approach

TRACK TB project continued to build the capacity of the NTLP to monitor TB control services and improve performance of health facilities by implementing the mentorship and continuous quality improvement approach for TB services. The following achievements were realized during PY2:

- The project supported the review of guidelines and tools for facility mentorship and continuous quality improvement in TB services, including indicators for monitoring performance. The review was done in collaboration with the implementing partners, particularly, the USAID Applying Science to Strengthen and Improve Systems (ASSIST) project, STAR E, STAR EC, STAR SW, and the SUSTAIN project.
- TRACK TB has adopted the mentorship and continuous quality improvement approach to support health facilities in Kampala to improve the quality of TB care. The details about the QI activities implemented in Kampala are provided under the implementation of the urban DOTS model.
- During PY2, TRACK TB supported KCCA to conduct quarterly mentorship and continuous quality improvement coaching using the approach at 20 high volume facilities. The focus of the mentorships is on TB diagnosis, case management, TB logistics, and information management.

TRACK TB will share the results from implementation of QI and lessons learnt with the NTLP, implementing partners, and other stakeholders so that identified best practices in TB care are scaled up to other regions, districts, and health facilities.

Joint support supervision

The NTLP has integrated the mentorship and continuous quality improvement approach in the supervision of TB services in the various zones/regions. During PY2, TRACK TB supported the NTLP to conduct two integrated joint TB/HIV support supervision and mentorship visits in the districts and health facilities, in collaboration with the implementing partners. A total of 67 districts and 128 health facilities were visited. During this exercise the supervision teams used and pretested on a wider scale the tools that will be adopted for QI for TB. The key issues noted included non-functioning quality improvement teams at health facilities and the inadequate infection control interventions at health facilities.

The project organized a post supervision debrief through the implementing partners' forum and provided capacity building opportunities for the regional TB/leprosy focal persons (RTLFPs) and DTLS, dissemination of information packages for TB, TB/HIV, and MDR-TB management, and routine coaching and mentoring of the facility teams in quality improvement. Action plans were developed to follow-up the recommendations, leverage resources from the partners, and ensure their participation in addressing the gaps.

Application of the MOST for TB tool to improve NTLP planning and implementation

During PY2, TRACK TB, in collaboration with NTLP central unit and other stakeholders conducted a workshop during which the MOST for TB action plan for the last year was reviewed and new priorities for the next one year identified. Following the review of the MOST for TB action plan, stakeholders identified priority management components to be addressed in the FY2014/15. These include strategic planning, monitoring and evaluation, supervision, human resource management, supply chain management and advocacy, and communication and social mobilization. Although M&E, supervision, and human resource management had improved from initial scores when the MOST for TB tool was introduced at NTLP, the levels that had been achieved by each of them needed to be improved further to adequately manage TB control initiatives in Uganda. The new priorities for the MOST for TB action plan are shown in Table 1.

The project will report about the midterm progress with the follow on action plan at the end of Quarter 1 of PY 3.

Table 1: New NTLP priority areas for action identified during the follow on MOST for TB workshop

Areas of Improvement as Indicated in the MOST for TB Action Plan	Baseline Score**	Score at End of PY3 (Target)	Improvement Required to Move from PY2 Score to PY3 Target
1. Strategic Planning	3/4	4/4	<ol style="list-style-type: none"> 1. Completion of NSP 2015/16–2019/20 development 2. Availability of printed copies of the NSP 3. Dissemination of the NSP to all stakeholders, including district health offices and IPs
2. M&E*	3/4	4/4	<ol style="list-style-type: none"> 1. Availability of an M&E plan for the NSP 2. Availability of data management SOPs 3. Orientation of stakeholders in the use of approved tools 4. Biannual data quality audits conducted 5. Improvement in completeness and accuracy of data submitted to the central unit
3. Supply Chain Management	2/4	3/4	<ol style="list-style-type: none"> 1. Availability of the revised facility order and report form 2. TB commodities at facility level (source: quarterly facility stock status reports) 3. Improved availability of TB commodities at national level (bi-monthly national status reports) 4. Availability of the monitoring plan for roll out of RH
4. Human Resources*	2/4	3/4	<ol style="list-style-type: none"> 1. Assignment of the 6 coordination roles in proposed NTLP structure to the staff 2. Number of NTLP central unit staff whose capacity has been assessed in relation to the assigned roles 3. Number of NTLP central unit staff that have received capacity building to address identified capacity gaps
5. Advocacy, Communication, and Social Mobilization	2/4	3/4	<ol style="list-style-type: none"> 1. ACSM focal person in place (designated by USTP) 2. The person agreed upon has a clearly defined role and responsibilities 3. Minutes of monthly ACSM Technical Working Group meetings 4. Report of the ACSM need assessment report 5. ACSM strategy revised and disseminated
6. Supervision*	3/4	4/4	<ol style="list-style-type: none"> 1. Training of DTLs in TB management and performance improvement 2. Orientation of district teams in management and performance improvement 3. Availability of the mentorship tools at all levels 4. Availability of a supervision and mentorship schedule for all levels 5. Supervision visits conducted for the various levels and findings shared at the respective fora

*These priority areas were carried forward from PY 2 but with new set of targets for improvement.

** These scores are based on the situation at the end of PY 2 for the priority areas carried forward and the baseline assessment conducted during the MOST for TB workshop for the new priorities areas that were not part of PY2.

TRACK TB, in collaboration with NTLP and USAID, prepared and submitted to the 45th Union World Conference on Lung Health an abstract titled “The Management and Organizational Sustainability Tool (MOST) contributes to improved management and technical capacity at Uganda’s National TB Program.” This abstract was accepted for oral presentation (OAP-310-31) during the conference due for October 28th-1st November, 2014, in Barcelona, Spain.

The TRACK TB team has supported the NTLF to develop the second annual operational plan during the current strategic period of 2010/11-2014/15. The NTLF plan FY2014/15 was developed in collaboration with the technical heads of the various areas within NTLF, and is aligned to the current strategic plan. With logistical and technical support from TRACK TB, this operational plan was disseminated to all implementing partners and regional supervisors and is currently used to guide regional plans and performance review activities.

Implementation of the Global Fund-supported activities

As part of the Ministry of Health-Health System Strengthening grant, an additional five staff were made available through the regional performance monitoring teams (RPMT) structure to support TB control in the various regions. In collaboration with the GF focal coordination office (FCO), TRACK TB provided technical support for NTLF to integrate the eight zonal TB and leprosy supervisors (ZTLS) into the RPMT structure and supported the harmonization of their roles to adequately support achievement of NTLF targets. In the same workshop, the nine NTLF zones were aligned to the 12 regions of the MOH and the title of the ZTLS changed to regional TB/leprosy focal persons (RTLFP). The RTLFPs provide useful opportunity for leveraging extra financial and human resources for TB control activities at regional and district level.

The TRACK TB team worked with NTLF, GF focal officers within NTLF, FCO within the Ministry of Health, and the Uganda Country Coordinating Mechanism (CCM) to adequately implement GF planned activities, submit timely updates to GF Geneva, and prepare the joint TB/HIV concept note.

TRACK TB supported the recruitment of the GF supported MDR-TB coordinator, advocated for replacement of the GF program officer, whose position fell vacant in PY2 Quarter1, participated in GF media events, technically supported the timely submission of bi-annual performance updates to GF, supported the NTLF team in responding to any queries raised, especially those related to TB commodities, and provided logistical and technical support to the Global Drug Facility Mission conducted in May of 2014.

The TRACK TB team has also been instrumental in the preparation and submission of the joint TB/HIV concept note that seeks financial support from the Global Fund. Resources from GF, if made available, will support key TB/HIV interventions, including TB care and prevention for key populations, MDR-TB, TB/HIV, and cross-cutting interventions of health information systems, community system strengthening, and program management. In addition to the project team's direct participation in the writing process, TRACK TB facilitated the preliminary stakeholders' consultations to identify priority TB and TB/HIV interventions for the joint concept note. In collaboration with CCM, National AIDS Control Program, and key stakeholders, the joint TB/HIV concept note was successfully submitted in time to the GF for financial support.

Improved NTLF organizational structure

Following the recommendation of the comprehensive external NTF review conducted in September of 2013, TRACK TB has worked with the Uganda Capacity Project and NTLF management to revise the NTLF organizational structure. During PY2, NTLF and stakeholders drafted job descriptions for the coordination positions within the revised NTLF structure, and supported its first review by the MOH-Asst. Commissioner Human Resources Management. The revised structure is shown in Annex 1.

During PY2, TRACK TB continued to support five additional technical officers to support capacity building in M&E, quality improvement, MDR-TB, commodity management, and annual and strategic planning for TB control in the Uganda. Following the emerging gaps in the management of TB commodities after closure of the SURE project, TRACK TB seconded a commodity security officer to coordinate TB medicines and supply management at NTLF central unit. This officer also acts as a link between NTLF and other key stakeholders in the health commodity security group.

As part of leadership capacity strengthening interventions, TRACK TB supported the NTLP manager to participate in the UNION management course held in Kuala Lumpur and the 44th UNION conference in Paris.

Facilitation of NTLP quarterly performance reviews

During PY2, TRACK TB has supported the NTLP central level to conduct the three planned quarterly performance review activities. The project supported the NTLP team to ensure data from the zones is received in a timely manner, analyzed and utilized to inform the performance reviews. Over PY2, the participation of various partners in the reviews has improved to include all USG funded partners, Stop TB Partnership-funded TB REACH projects, civil society organizations, and other key stakeholders. The project has also supported the central level teams to regularly participate in the regional quarterly performance reviews in which they provide guidance on key issues such as dissemination of the TB/HIV guidelines, the Gene Xpert algorithms, guidance on infection control, and dissemination of the revised recording and reporting tools, 2013 version.

In collaboration with the key stakeholders and the NTLP team at the central unit, TRACK TB supported the preparation and publication of the NTLP annual performance report FY2012/13, the first issue in over 10 years. It is currently in the final stages of compiling the second issue of the NTLP Annual Report 2013/14.

Strengthened the management of TB medicines and supplies

During the third quarter of PY 2, TRACK TB seconded a commodity security coordinator to NTLP to strengthen coordination and utilization of TB commodity information for the continuous availability of supplies. The following key achievements were realized within the last two quarters of PY 2:

- Improved information flow between NMS, NTLP and the pharmacy division. Information from NMS, including national stock status reports, is made available for use by the TB program, which enabled the utilization of Moxifloxacin, which was due to expire in December of 2014.
- Harmonized global drug facility (GDF) and NMS procurement plans, through quarterly meetings, are held with NMS. Pending receipt of GDF shipments, NMS is able to fill gaps in the availability of TB commodities (e.g., Pyrazinamide and Levofloxacin) to avoid or mitigate the impact of stock outs.
- Global Fund procurement and supply management plan revisions and queries have since been handled in a timely manner. There is better monitoring of the GDF shipments, and port clearance documents are availed to NMS timely. The TB medicines order form has been revised to include currently used medicines.
- The project supported NTLP to plan and implement the switch from ethambutol/ isoniazid (EH) to rifampicin/ isoniazid (RH) for the TB treatment continuation phase. An EH/RH switch plan was developed to guide program roll out and avoid wasting medicines. A circular communicating the changes and an SOP for the facility level staff have been developed and disseminated.
- Continuous communication with all MDR TB sites, which are reminded and guided in making accurate and timely orders, as well as sharing bimonthly facility stock status reports with NTLP. Bi-monthly stock status reporting has been institutionalized and the reports are being utilized to inform the re-distribution of commodities during national level stock outs. For example, Kanamycin was withdrawn from the Arua hospital with over 60 months of stock. As a result, despite the national-level stock out, facilities remain sufficiently stocked to avoid treatment interruption.
- Through regular communication with the ZTLS, facilities are reminded to place timely orders for first line TB medicines. Phone calls are made to DTLs before the NMS order deadline to support facilities in placing orders. Supply complaints are now solved in collaboration with NMS.

Support NTLP newsletter production and commemoration of the 2014 World TB Day

TRACK TB supported the NTLP to compile, review, and disseminate the first issue of its quarterly newsletter. The project facilitated the set up of an editorial team that solicited, contributed, and edited all the articles from stake holders, including implementing partners, before publication. The NTLP's newsletter provides a platform for TB control advocacy and allows stakeholders to share experiences and best practices. The NTLP shared an electronic version of the newsletter with their stakeholders.

Following the WHO recognition of Uganda as one of the seven countries that had achieved the Millennium Development Goals targets related to Tuberculosis before 2015, the TRACK TB project, in collaboration with USAID and NTLP, supported the preparation of a press release entitled 'Uganda meets the Millennium Development Goals targets on Tuberculosis,' which was published in print and electronic Uganda media and by the East African Newspaper. A story related to this article was also aired on TV.

The TRACK TB project actively participated in the USTP-led preparatory activities for the commemoration of World TB Day 2014, which took place at the Iganga district on 25th March. The project worked closely with two popular media companies (NTV and NBS) to air TB-related stories as part of the media activities.

Finalize the NTLP operational research agenda

The TRACK TB project, in collaboration with its partner MakSPH, supported the NTLP to develop a research agenda, hold monthly operational research forums, and develop three OR protocols for a formative study on utilization of GeneXpert equipment in Ugandan health facilities; a case study of practices that led to improved treatment success rates at a Mulago TB treatment unit; and a formative study for implementation of IPT in Kampala. Implementation of these research projects will be undertaken during PY 3. Through the research forums, the NTLP staffs were mentored in conducting operational research

Strengthen NTRL oversight role for the laboratory network

During PY2, the project supported a sputum samples referral system among facilities and NTRL as well as the printing of the microscopy manuals. TRACK TB has also supported procurement of buffer supplies at NTRL.

Strengthen monitoring and evaluation and geographic information system (GIS) application

NTLP now has an up to date Microsoft© Access-based NTLP TB database developed through project support with complete district data from the past two completed years (2012 and 2013) for each of the 112 districts in the country. To ensure data quality, parallel data entry processes were instituted in which the NTLP data manager and TRACK TB data specialist entered the same district data, after which comparisons were made. The analyzed data has been used during performance reviews and also to calculate the indicators for the GF performance update and disbursement request (PUDR), drug quantification, and the NTLP annual report. The NTLP M&E team has improved capacity in data summarization enhancing evidence based decision making during performance reviews, annual planning, strategic planning, annual reporting, and MDR-TB cohort reviews, among others. The NTLP has registered improved timeliness of reporting from the districts from 87 percent to 97 percent (this was achieved in collaboration with other district based partners)

The TRACK TB M&E team also worked with the NTLP M&E team to plan for and collect MDR-TB treatment outcome and case notification data from MDR treatment sites using the interim electronic MDR TB register. National-level data for patients currently on treatment and outcomes with detailed analysis of key indicators has been provided to NTLP. Analysis of NTRL data was also performed and culture profiles of patients on DR-TB treatment was distributed to all sites. This has led to the following achievements:

- Cohort review process was successful because it was well supported with countrywide DR-TB data.
- Quarterly PDMT reporting was facilitated by data from the interim MDR-electronic register.

- The MDR-TB section of the PUDR reporting was facilitated using data provided.
- The DR-TB electronic registers of all sites have been updated with culture profiles of patients.

TRACK TB, in collaboration with the NTLT M&E team, conducted a desk review of the existing M&E gaps at the NTLT. The M&E support needs identified were categorized in 12 areas of a functional M&E system as guided by UNAIDS and the Global Fund. A scope of work to address the gaps was developed during the last quarter of the program year, but due to competing priorities for the NTLT team, final consensus building and interventions were postponed to program year 3.

Furthermore, TRACK TB M&E team participated in the review of the National DR-TB recording and reporting, including training materials. The team also supported the NTLT to prepare a presentation for the Regional Performance Monitoring teams (RPMT) meeting held the last week of August, 2014 at Jinja. The meeting deliberated on the proposal for the transition from the NTLT zonal structure to the MOH regional structure. The presentation prepared by the M&E team had performance graphs and data as well as GIS maps showing the NTLT zones and MoH regions.

The project also helped the NTLT geographic information system (GIS) task force hold one meeting in which they laid out strategies for using GIS technology to improve TB-control decision-making. TRACK TB and NTLT's teams agreed on making a baseline assessment of current GIS capacity at the NTLT and MDR-TB sites, having MDR-TB facilities collect geo-coordinates of all registered MDR-TB patients, and using GIS maps to enhance data visualization.

During the data quality assessment visit conducted by the learning project contract, TRACK TB project data on TB was found to be more reliable than all other IPs.

The performance data on TB and TB/HIV indicators at national level will be presented in a separate addendum to this report in view of the reporting deadline of 28th Day of the month following the end of the quarter. This makes it difficult to have this information entered into the data base, cleaned and analyzed and presented in this report that is submitted by 31st of October.

Lessons

- Capacity building for NTLT requires ongoing dialogue with the existing staff, and the secondment of experienced staff at the programme is strategic and has been a major success factor for the achievements above.
- Consistent mentorship and QI coaching of multi-disciplinary care teams at health facilities is critical for ongoing capacity building and maintenance of team motivation for improvement work in the quality of TB care.

Challenges

- The delay in approval and implementation of the revised NTLT structure has limited the implementation of program activities due to suboptimal utilization of the existing staff, as they all report to the program manager.
- The preparation of the national strategic plan and the joint TB/HIV concept note were both time consuming activities that affected the implementation and fast tracking of other, equally important activities, such as the approval of the proposed NTLT structure and its operationalization.
- The protracted procurement processes within the Ministry of Health affected not only MDR-TB patient access to food support and critical laboratory tests, but also overall absorption of GF resources.

- There is limited knowledge and skills of the health facility teams and TB supervision/ mentorship teams in QI and use of data for problem analysis and solving. There is also inadequate management support at the health facilities to reinforce implementation of QI activities.
- Unexplained NMS long lead times for requested procurements have led to stock out of MDR medicines, specifically Levofloxacin and Kanamycin. Despite the timely submission of the procurement request and active follow up through the DG, to date, NMS procurements have not been effected. High level engagement of this issue has not yielded a satisfactory response from NMS. The recently received Levofloxacin is from GDF, not NMS.
- The competing priorities at the NTLP affected implementation of planned activities.

Next steps

- Work with the Uganda Capacity Project to facilitate dialogue for the review, approval, and implementation of the proposed NTLP structure by the Ministry of Health human resources and top management.
- Maintain support for the implementation of GF activities to enhance NTLP access to resources. This will include fast tracking the pending procurements for the food voucher and laboratory tests for the MDR-TB patients.
- TRACK TB will also coordinate with other implementing partners to support the NTLP to roll out use of the mentorship and CQI tools by the various zonal and district supervision teams. This will serve as the basis for technical support to the implementing partners.
- Maintain support for coordination of TB commodities, including monitoring of pipeline, supply plan, and national stock status for TB medicines, monitor the roll out of the switch from EH to RH, and provide direct support to MDR-TB treatment sites to optimally manage the stocks of second line drugs.

2.2. Result Area 2: Implementation of an effective Urban DOTS model in Kampala

Under this result area, the TRACK TB project supported Kampala Capital City Authority to achieve 4 sub results: health system strengthening, improvement of TB/HIV collaborative services, strengthening of patient referral and tracking at the community level, and improvements in provider supervision, performance monitoring, and data management.

During PY2, TRACK TB, together with other partners under the Kampala City Tuberculosis Task Force (KCTF), have continued to work closely with KCCA to implement the urban DOTS model (illustrated in Annex 2), a strategic approach adopted to implement TB control services in all 5 municipalities that make up the city.

The project support under this result area was directed at 4 levels: the city coordination mechanism- KCTF, the divisional TB teams, diagnostic and treatment units (DTUs) (54 facilities inclusive of 28 private for profit health care facilities), and the community network (40 community supporters and six community supervisors), as illustrated in annex 3.

Coordination of TB control activities in KCCA during PY2

The Kampala City Tuberculosis Task Force (KCTF), under the stewardship of the Directorate of Public Health and Environment (DPH&E) KCCA, led the implementation of TB control services in KCCA. Partners in the task force included the TRACK TB, Infectious Diseases Institute (IDI), the Foundation for Innovative New Diagnostics, USAID-ASSIST project, AIDS information Center, The AIDS support Organization, The Uganda

Health Foundation, The Union, MakSPH, and the National TB Reference Laboratory (NTRL). The KCTF led implementation of TB control activities at all levels, from the district, divisions, health care facilities, and communities including the following

- Targeted support supervision to high volume health facilities and coordinated TB screening for targeted school populations within the city.
- Developed standard operating procedures for TB case detection, reviewed IEC materials for TB health education, and disseminated national guidelines for TB control, including TB/HIV guidelines and an updated TB diagnostic algorithm among HIV infected patients.
- Monitored stock levels of TB medicines in health care facilities to guide the technical teams in KCCA on re-distribution of available medicines and laboratory supplies and timely ordering for these items from NMS.
- The task force also played a role in the identification and support of the private health care facilities to provide TB services as a way of improving physical accessibility of TB services in the city. The KCTF supported implementation of an urban DOTS model at each level of the health care system that significantly contributed to the achievements made in PY2.

Strategies used to improve performance

Mentorship and QI coaching for health care workers

Through a partnership between KCCA, Track TB, and USAID-ASSIST, a team of mentors in continuous quality improvement (CQI) was established at the district level. This team was facilitated to carry out coaching sessions after two months at the six pilot health facilities, including Mengo hospital, Mulago hospital TB ward, and Kisenyi, Kiswa, Kisugu, and Kisenyi health centers.

This approach, which was rolled out to all 20 high volume DTUs towards the end of PY2, has contributed to improved records in the unit TB register, which facilitated recording and accurate reporting of TB treatment outcomes.

Example of a QI project to improve TB case finding at Komamboga HC

Problem: Low case detection, ICF tools were not used at the facility until May of 2014, when the team was sensitized by the QI coaches. The tool is not routinely used for patient screening, especially in the afternoons and weekends. There was also limited knowledge on filling the presumptive TB register and delays in releasing results of presumptive cases referred to the lab.

Problem analysis: Low case detection was attributed to low use of ICF tools, lack of provider awareness, a poor client flow system, and linkage of presumptive TB cases to the laboratory for evaluation. There was no baseline data on this process due to non use of the presumptive TB register.

Change package: A TB care flow chart was drawn, a volunteer assigned to apply the ICF daily at the patient waiting area and documentation on the TB presumptive register, physical referral of presumptive TB patients to the laboratory, and batching of samples to ensure same-day results.

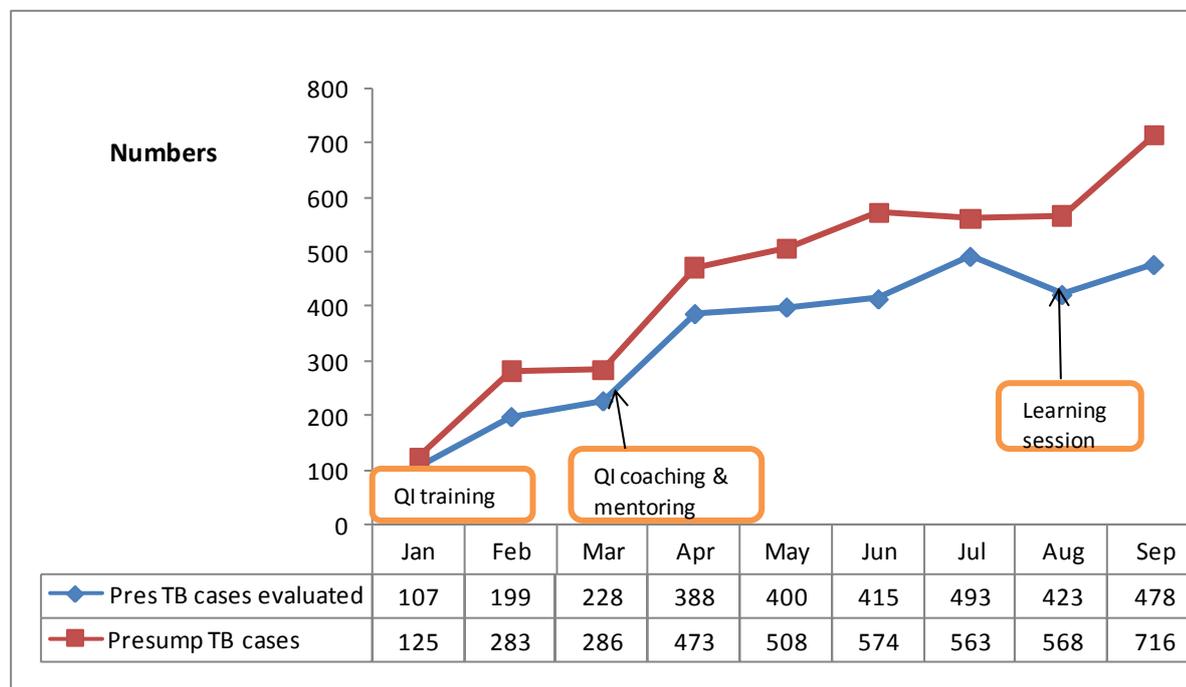
Preliminary results: A total of 173 presumptive cases were identified from May to September of 2014 in Komamboga HC, and 97 of them had a laboratory test done. A total of 24 new PBC cases were notified during PY 2 Q4, compared to 15 cases during the corresponding quarter of PY 1.

Similar projects were implemented at a total of six model QI health facilities. The QI projects focused on

intensified screening of active TB because it is a proven intervention that can contribute to case detection. The baseline information, however, indicates that none of the sites was using the ICF tools due to lack of availability and skills. There is also no clear guidance by the NTLP on how to use the ICF tools, particularly as a job aide or for filling patient records.

A learning session was organized in the last quarter of PY2 to share results in implementing quality improvement in TB care. There was a noticeable increase by six-fold in the proportion of presumptive TB cases identified at the outpatients and HIV clinics each month, as shown in Figure 2. The majority of the presumptive TB cases were also linked to the laboratory for diagnosis.

Figure 2: Presumptive TB cases identified and evaluated for in the laboratory



Data source: Documentation journals from six health facilities: Mengo Hospital, Mulago Ward 5 and 6, Kisumu HC, Kisumu HC, Kisumu HC, and Komamboga HC

The gap in the total number of presumptive cases identified and number of presumptive TB cases evaluated in the laboratory is because some of the presumptive cases are extrapulmonary while other cases were sent for Gene Xpert and there are delays in getting results back, and also the prolonged national stock out of laboratory commodities.

To address this, facilities have instituted the following changes:

- Incorporated TB messages in the routine health education programs at the health facilities and triaging of the presumptive TB cases for laboratory evaluation.
- Promoted use of ICF tools at health facilities to identify presumptive TB cases through continuous medical education (CME) and use of the forms for internal referral of the patient to the next point of care.
- Display of client flow charts in outpatient departments (OPD) and HIV clinics to guide patient movement for services.



TRACK TB COP handing over motorcycles and laptop computers to KCCA ED Mrs. Jennifer Musisi

- Tracing of TB contacts of patients enrolled on treatment by community linkage facilitators and referral to the health unit for diagnosis.

Support supervision

TRACK TB facilitated district and divisional health teams to carry out support supervision to health facilities. These visits to each DTU were aimed at identifying good practices that can be used elsewhere in KCCA to improve performance and address gaps in TB screening, diagnosis, stock levels of TB drugs and laboratory requirements, patient follow up, and maintenance of complete records in the unit TB registers, and TB infection control, among others.

Collection of TB data on a monthly basis

Divisional TB/leprosy supervisors were provided with laptop computers to ease management of TB data. This intervention has simplified collation, analysis, and timely reporting during PY2. Data collected through this method is stratified by health facility (and aggregated for reporting), and facilitates easy identification of health facilities with gaps to guide implementation of focused interventions to improve their performance.

Quarterly performance reviews

During PY2, Track TB consistently supported quarterly performance reviews of TB control at the district, divisional, and health facility level. The project has collaborated with the city health team to bring together health facility managers, quality improvement teams and partners to share experiences, challenges, and lessons learnt that has resulted in progressive improvement in the cure rate and TSR.

Key achievements

Performance of TB control in KCCA during PY2 is summarized to cover key areas including case notification, DOT, TB/HIV collaborative services, and TB treatment outcomes.

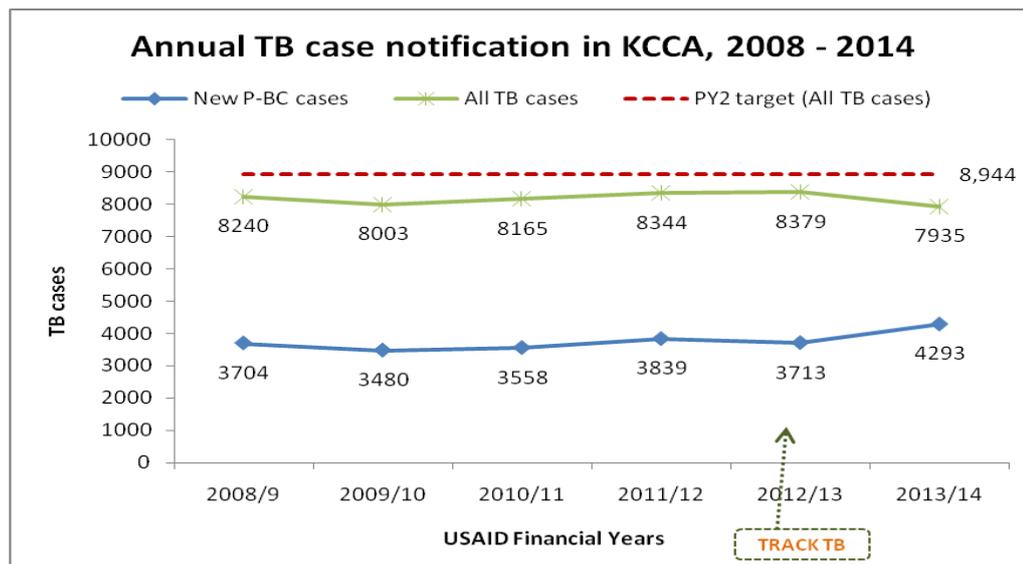
TB case notification

A total of 7,935 TB patients were notified (89% of the target), of which 6% were children under 15 years of age and 4,293 (54.5%) new P-BC. The new P-BC grew by 10% from the PY 1 performance of 44% (3,713/8,379). This improvement is attributed to enhanced capacity of the laboratories to examine the sputum from presumptive TB cases, either using sputum analysis or Gene Xpert technology. These results were achieved by 52 out of the 54 accredited DTUs in KCCA (Kawempe and Kiruddu Health Centers were closed for reconstruction), 14 of the reporting facilities (27%) are private for profit facilities supported by through The Union's TB REACH project.

As illustrated by the QI case study above, the main intervention was enhanced TB screening using ICF tools, tracking of patients in the presumptive TB registers, and strengthening the capacity of private health facilities to screen for TB and refer for laboratory investigations. During PY 2, with support from different partners, up to 20 health facilities in Kampala had operational GeneXpert machines (the distribution of the machines is illustrated in Annex 4).

One emerging challenge noted is the observed stagnation of TB case notification over the last couple of years and decline of this indicator in the reporting period as shown in Figure 3. This in spite of increased numbers of presumptive TB patients evaluated as described above. During PY 3 the project will focus on TB hot spots identified through the use of GIS maps (see annex 5) where community linkage facilitators (CLFs) will conduct contact investigation and sputum transport to laboratories to enhance diagnosis.

Figure 3: TB case notification for Kampala 2008/09-2013/2014



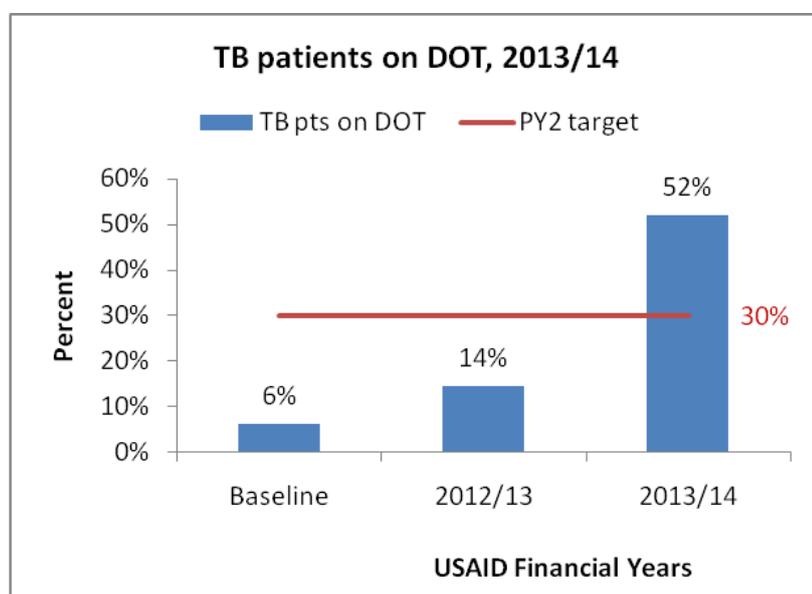
Implementation of DOT

At the health facility level

TRACK TB supported implementation of both health facility and community based DOT. At health facilities, the project provided regular supply of clean water and facilitated supervised swallowing of initial doses of TB drugs for outpatients by health workers, as well as daily doses for admitted patients.

Health workers received regular sensitization through the continuous medical education sessions and were provided with IEC materials, including posters and flip charts on TB treatment and patient follow up. An appointment book for TB patients on treatment was operationalized to easily identify missed appointments by patients and timely follow up through telephone calls. The project provided landline telephone sets and monthly air time, based on patient load, to facilitate this process.

Figure 4: Percentage of TB patients on DOT



At the community level

TRACK TB, in collaboration with AIC, implemented community-based DOT through CLFs. These comprised of VHTs, former TB patients and members of HIV post test clubs attached to some clinics empowered with knowledge and skills to support DOT implementation through close interactions with patients' families.

The project facilitated this team with monthly air time to remind patients or their treatment supporters (close relatives) through telephone calls to take their daily doses of TB medicines and fill the treatment card, as well as reminding them to attend their scheduled appointments/visits at the health facilities. This team was facilitated with recording and reporting tools, through which they reported data on implementation of community TB activities for easy monitoring and tracking of their work.



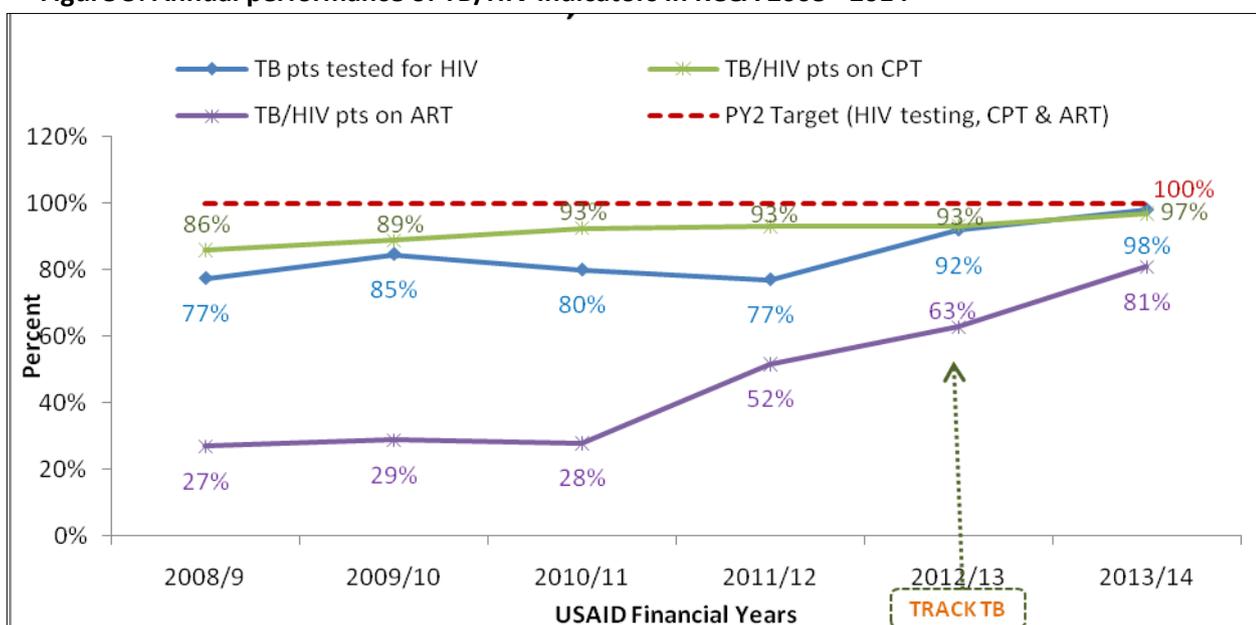
A CLF updating records during a patient follow up home visit

The community linkage facilitators were supported to hold review meetings at the divisional level on a weekly basis and a joint meeting convened by the community coordinator at AIC monthly to share experiences and adjust implementation modalities. CLFs facilitated dialogue sessions with targeted TB high burden communities, especially in the slums, where they conducted health education and referral of presumptive TB patients to health care facilities for investigation.

Integration of TB and HIV services in KCCA

During the reporting period, HIV testing among diagnosed TB patients improved to 97%, up from 91.6%, and CPT and ART for TB/HIV co-infected patients also improved to 98% and 81%, respectively, up from 93.3% and 63%, respectively, as shown in Figure 5.

Figure 5: Annual performance of TB/HIV indicators in KCCA 2008 - 2014



Duri

ng PY 3, the project will work to increase the ART uptake to 100% through increasing the facilities that implement the one stop shop model of TB/HIV integration coupled with strengthened intra-facility referral, weekly review and harmonization of data in the ART and TB registers, and the application of QI methods to improve care processes at the health facilities.

TB treatment outcomes

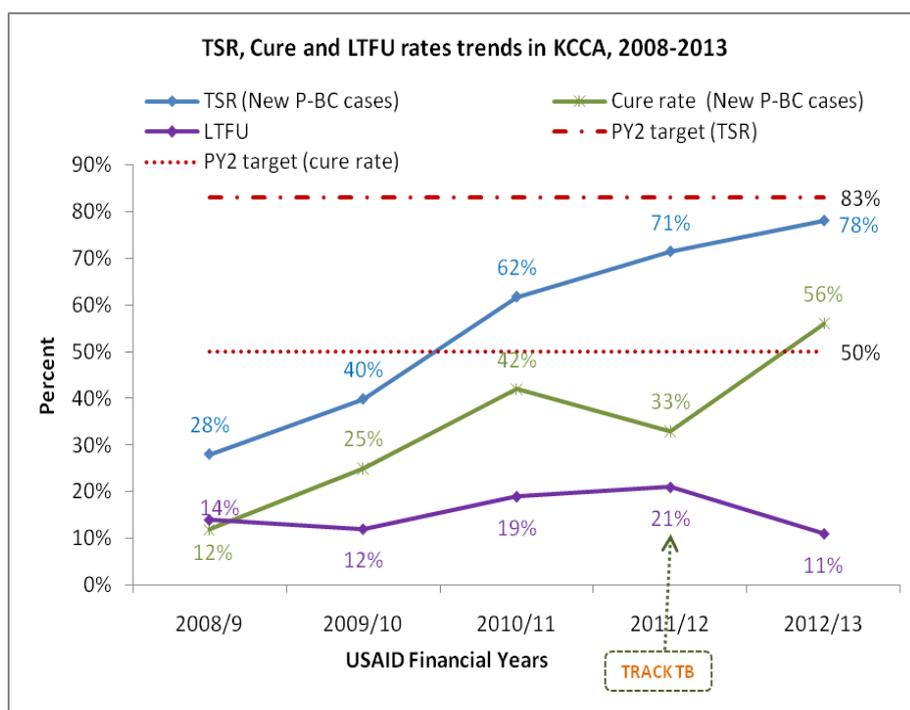
Out of the 3,713 P-BC patients registered and treated over the last one year, 3,709 (96%) were evaluated. Of these, 2,079 (56%) were cured, and 799 (22%) completed treatment. This gives a TSR of 78% for P-BC for PY2, compared with 71% in PY1. The loss-to-follow up rate was reduced by almost half from 21% in PY1 to 11% in PY2. The number of patients that are not evaluated for treatment outcomes has also reduced, however, a failure rate of 2% and death rate of 5 % were noted, as shown in Table 2.

Table 2: Treatment outcomes for new P-BC cases in KCCA by year, 2008/2009 - 2012/2013

USAID Financial Years	2008/9	2009/10	2010/11	2011/12	2012/13
Number of new P-BC cases	3,704	3,480	3,558	3,839	3,713
Cured n (%)	429 (12)	858 (25)	1,477 (42)	1,255 (33)	2,079 (56)
Treatment completion n (%)	608 (16)	527 (15)	720 (20)	1,408 (37)	799 (22)
Lost-to-follow-up n (%)	523 (14)	420 (12)	676 (19)	798 (21)	398 (11)
Death n (%)	76 (2)	68 (2)	115 (3)	157 (4)	199 (5)
Treatment failure n (%)	21 (1)	18 (1)	31 (1)	34 (1)	77 (2)
Unevaluated n (%)	2,047 (55)	1,589 (46)	539 (15)	187 (5)	161 (4)
Treatment success rate n (%)	1,037 (28)	1,385 (40)	2,197 (62)	2,663 (69)	2,878 (78)

Considering trends over the last five years, this year (2013/2014) presents the best performance in terms of treatment outcomes in KCCA. In addition, TRACK TB surpassed the target for cure rate and fell short of achieving the target for TSR by 5% for PY2. The death and failure rates remained below 5%.

Figure 6: Treatment outcomes of patients in Kampala 2008 -2013



Overall performance analysis

Compared to PY1, the project has registered marked improvement in the cure rate, from 33% to 56%, and treatment success rates, from 71% to 78%, among the new P-BC TB patients. The number of patients lost to follow up during treatment has continued to decline, from 21% in PY1 to 11% in PY2. Integration of TB and HIV services has been enhanced, leading to sustained high HIV testing rates among diagnosed TB patients, at 98%, as well as high CPT coverage among TB patients co infected with HIV, at 97%. Although ART coverage among the co infected patients is still below the national target, this indicator has improved to 81% in PY2 as compared to 63% in PY1. However, there was a marked decline in the total number of TB cases notified, from 8,373 in PY1 to 7,935 TB cases in PY2, despite the increase in the number of new bacteriologically confirmed TB patients.

Lessons learned

- Strengthened community linkages has led to improved patient monitoring and follow up TB resulting in improvement in DOT, Cure rate, TSR for P-BC and ART uptake among TB/HIV co-infected patients
- Electronic management of TB data in KCCA is feasible and has led to timely and complete reports
- Regular mentorship to health facility and community TB teams using a quality improvement approach improves health workers' technical capacity and changes their attitude towards TB patients.

Challenges

- Irregular supply of laboratory requirements for TB diagnosis, especially sputum containers, during the reporting period affected bacteriological monitoring of TB patients on treatment and therefore affected cure rates.
- Limited health worker skills and lack of equipment to help in sputum production among children affect TB diagnosis in children. This will constitute a priority focus for PY 3 implementation.
- An insufficient supply of anti-TB medicines, especially pediatric formulations, affected management of children diagnosed with TB. This negatively impacted the number of children registered and reported during the reporting period.
- A lack of service contracts in the district to repair broken equipment, such as microscopes, has caused interruption of services and patient care, especially in Mulago hospital. The cost of laboratory investigations in some facilities for TB diagnosis and patient follow up during treatment is commonly prohibitive and impacts negatively on the proportion of P-BC cases notified and cure rates.
- Frequent transfers (internal and external) of health care workers in DTUs affect continuity of services and require frequent trainings, which adds unnecessary costs. Community awareness about TB remains low, which contributes to the stigma of diagnosed TB patients, delayed disclosure of their status, limits social support, and affects treatment adherence.

Next steps

- During PY 3, TRACK TB will continue to implement the urban DOTS model to further strengthen coordination of TB control services through the KCTF with emphasis on engagement of the division teams led by medical officers.
- The KCTF will, among other things, support improved physical accessibility of TB services through expansion of TB services to more private health facilities and engage high volume private/NGO DTUs to reduce the cost of laboratory investigations for TB diagnosis.

- The project will support activities to improve TB case notification prioritizing children and women including contact investigation, sputum sample collection at the community level (focusing on TB hot spots in Kampala) and strengthening of the specimen referral system in KCCA.
- The quality improvement approach will be strengthened with improved documentation and sustained improvement of practices among health workers and best performing facilities will be supported to act as model/learning centers. QI dash boards will be implemented in DTUs to allow for regular monitoring of QI indicators and progress towards the required performance.

2.3. Result Area 3: Quality program for the management of MDR-TB implemented

Under this result area, the TRACK TB project provided technical support to the NTLP to achieve the four sub-results, including improved programmatic management of MDR-TB (PMDT), development of a Uganda-specific model for MDR-TB, increased access to MDR-TB diagnosis, treatment, and care, and improved MDR-TB patient tracking and contact investigation. The key strategies, interventions, and results are described accordingly below.

Improved programmatic management of MDR-TB

Strengthening the NTLP central unit and MDR-TB coordination mechanisms

- During PY 2, TRACK TB prioritized the strengthening of the NTLP capacity to manage PMDT and supported the recruitment and orientation of the national MDR-TB coordinator.
- The project also provided support for the national PMDT core team (the program manager, the national MDR-TB coordinator, USAID technical advisor on MDR-TB, NTLP data manager, NTRL laboratory technologist, and project MDR-TB and logistics advisors) to meet regularly to plan and review implementation and to conduct targeted visits to MDR-TB treatment sites.
- The project has assisted the NTLP to finalize and pilot the MDR-TB standard operating procedures, and the reviews after the pilot will be finalized and disseminated widely during PY 3.
- During PY 2, TRACK TB provided three UCSF/CITC missions to Uganda to strengthen MDR-TB care. This was done through mentoring the core committee, bedside mentorship to front line health workers, training of peer to peer mentors, guiding the cohort review process, review of the national guidelines for PMDT in order to align them with WHO and other international guidelines and with the prevailing context in the country, development of standard training materials, and giving online technical support in management of difficult cases.
- TRACK TB, working with UCSF/CITC to review the national guidelines for PMDT to incorporate the latest WHO guidance and implementation experiences. This activity is still ongoing with online (virtual) discussions and in country workshops involving MOH NTLP, IPs, physicians from the national referral hospital, and front line health care workers. Similarly, the project is working with NTLP to revise the MDR-TB training materials, which will be completed after the guidelines are finalized.
- TRACK TB conducted national level coordination meetings of implementing partners to synchronize the support given to the treatment sites.
- In order to improve office space, TRACK TB has also drawn plans to remodel a former store for the NTLP offices. This has been delayed by the lack of storage for lab equipment meant for Regional referral hospitals procured through the East African Public Health Laboratory Network project .

Implementation of National MDR-TB Steering committee meetings

With project support to the NTLP, the National MDR-TB steering committee of the Ministry of Health, which provides oversight for PMDT, was reactivated and held a meeting, during which the senior MOH leadership, USAID, CDC, GF, implementing partners, NMS, and KCCA were engaged for support on the emerging implementation issues. The issues that were to be fast tracked following the meeting included the shortage of second line drugs in the country, the delays in procurement and utilization of resources from GF, including food support for MDR-TB patients, increasing coverage of pediatric MDR-TB care, patient consenting process for treatment, and considerations for home-based care for MDR-TB patients in Kampala. During PY 3, the project will maintain support for the program to ensure that these meetings are conducted on a quarterly basis.

A Uganda-specific model of care for MDR-TB is developed

Uganda has continued to implement the mixed ambulatory and inpatient model of care for DR TB patients. This is necessitated by the inadequate bed capacity, limited human resources, and need to treat the patient in the community to reduce stigma and other social disadvantages of admission. Each patient on ambulatory care is attached to a follow up facility near his/her home for daily administration of treatment (DOT).

TRACK TB has developed procedures for transferring the patient, mentoring the follow up facility, and home visiting to conduct contact tracing, home assessments, health education on TB infection control, and holistic patient support within the community. TRACK TB and other partners (USAID SUSTAIN, STAR-EC, STAR-SW, and NU-HITES) support patients to meet the daily transport costs for DOT at the peripheral follow up facility or treatment initiation facility.

To ensure quality care, all patients receive DOT from a peripheral facility. They attend the clinic at the treatment initiation facility for a monthly clinical review and laboratory and dosing monitoring. This has also made it easier to transport sputum samples to the National Tuberculosis Reference Laboratory (NTRL) and close the gaps in patient monitoring.

In the Uganda specific model, the treatment initiating facilities are facilitated to identify appropriate follow up facilities for the patients, orient the care teams on MDR-TB DOT, second line drugs, dosing, storage and side effects, recording and reporting, and TB infection control. The follow up facilities are mentored at least once every two months, provided with supplies (SLDs, personal protective equipment, and recording and reporting tools) from the initiating facility and called on a telephone on a weekly basis by the regional panel to establish the status of patients under their care.

Increased access to MDR-TB diagnosis, treatment, and care: key strategies implemented

Increasing MDR-TB treatment initiation sites

During the year, TRACK TB supported the establishment of MDR-TB care at three additional regional referral hospitals (Lira, Soroti, and Hoima) and an additional two (Kabale and Mubende) were supported by the USAID SUSTAIN Project to provide care. This brought the total number of MDR-TB treatment sites in the country to 14, six of which directly supported by TRACK TB project, one supported by STAR-EC project, and seven by the USAID SUSTAIN project. The start up support included the initial assessment visits, training of multidisciplinary health workers, including DTLs and ZTLs, to work as regional teams for the management of drug resistant TB, post training mentorship, provision of operational and coordination of support.

Provider skills strengthening and support with additional Human resources at MDR-TB care sites

A total of 100 health care workers (51% male) from TRACK TB directly supported regions (Lira, Soroti, and Hoima) were newly trained and mentored on programmatic management of drug resistant TB. The project has engaged regional MDR-TB coordinators to provide direct support for the regional care teams and to coordinate the mentorship of the peripheral follow up facilities.

TRACK TB also facilitated volunteers at Mulago, Kitgum, and Mbarara treatment initiation facilities to provide support to the few existing MOH health care workers, however, these efforts have been affected by the high staff attrition and turn over. The project will be hiring a human resource management agency to manage these health workers on a more formal basis, to replace the health care workers, and to recruit additional providers by the end of PY 3 quarter one.

MDR-TB surveillance

During the year, TRACK TB has continued to support the NTL to ensure that patients newly diagnosed using Gene Xpert and those diagnosed by drug susceptibility testing at the National Tuberculosis Reference Laboratory are linked to an appropriate treatment center and following up to ensure that they are started on treatment. This has helped to minimize the delay in enrollment. In addition, TRACK TB is updating a database

of the contact information for Gene Xpert focal persons and treatment center MDR focal persons. Sharing this information will facilitate communication between the two levels, which will reduce the number of Rif resistant patients that do not reach the treatment center.

TRACK TB explored the effects of raising awareness in high volume health facilities by conducting continuing medical education sessions in hospitals and health centre IVs. It focused on introduction to DR-TB, TB infection control, and use of Gene Xpert in diagnosis of Rifampicin Resistant TB. This resulted in increased referral of specimens to Gene Xpert centers and detection of new cases. The project will continue to encourage the regional implementing partners to continue this activity.

TRACK TB played a coordination as well as technical assistance role in collaboration with NTRL/NTLP and the partners in the collection of one year data from Gene Xpert sites during the recently concluded joint support supervision exercise. Data from 35 out of the 42 functional Gene Xpert machines for the period (July 2013 to June 2014) showed a ten-fold increase in monthly utilization of Gene Xpert services from 520 tests in July of 2013 to 5,036 tests in June of 2014. A total of 29,832 tests were performed during this period, out of which 3,706 Mycobacterium tuberculosis cases were detected, and 309 were Rifampicin resistant. TRACK TB also worked with NTRL to pay for courier services for sputum sample referral from the health facilities to NTRL.

The project provided technical support in the revision of the algorithm for Gene Xpert; the revised algorithm has been disseminated to the IPs and health facilities. During PY 3, the project will continue to support NTLP to ensure that the revised tools are utilized by DTLS and RTLPs to report the coverage of Gene Xpert tests for all high risk TB patients for MDR-TB.

Provision of support to facilitate MDR-TB treatment adherence

TRACK TB continued to provide patient support in the form of food (instant porridge) and transport facilitation to support patients' treatment enrollment and continuity (at project supported hospitals). The transport support provided was meant to facilitate daily travel to the follow up facility for DOT and monthly visits to the treatment center or satellite clinic for review. The project has collaborated with the other MDR-TB implementing partners to ensure that patients attending non-project supported facilities access transport support to avoid treatment interruptions due to transport constraints.

Ensuring availability of MDR-TB medicines

At the beginning of the year, TRACK TB participated in the training in QUAN TB, a software for management of anti-TB drugs. This software was used in the quantification process for anti-TB drugs in which TRACK TB participated. During the period, the country experienced stock outs of some of the second line anti-TB drugs resulting from delayed procurement processes and deliveries by the NMS. TRACK TB facilitated the re-distribution of drugs between health facilities, substitution of agents, where feasible, and advocacy with MOH senior leadership for emergency procurements in order to alleviate the shortages.

TRACK TB also worked with the NTLP and pharmacy division of the Ministry of Health to keep track of the importation process for the drugs by designing a stock reporting tool. By the end of the 4th quarter a consignment had arrived in the country and was awaiting customs clearance.

The project is also supporting the availability of agents at the facility level through monitoring of stock status reports, and timely and accurate bi-monthly ordering.

Recording and reporting of MDR-TB patients

During PY 2, TRACK TB provided recording and reporting tools for PMDT to all treatment initiation sites in collaboration with NTLP and other implementing partners. However, following several reviews of the paper tools and the guidelines for PMDT, new versions have been created and will be printed during year 3.

The project rolled out an electronic DR-TB register to all 14 treatment initiation sites. Both the paper based and electronic copy of the national register are now with the data manager at the NTLP. However, TRACK TB continues to give technical assistance in management of the register, updating it according to changes in the register design, and in generating reports from the register.

The project supported the collection of GIS data for patients' homes, follow up facilities, and for treatment centers throughout the year. This is an ongoing exercise. The data has been used to generate useful maps for planning service delivery.

TB Infection control

During the year, TRACK TB ensured that all treatment initiation and follow up facilities were oriented on TB infection control activities as part of the training and mentorship on the management of MDR-TB. The project also provided personal protective equipment (respirators for health care workers and masks for the patients) to facilitate implementation of that measure. Ongoing support will be provided to functionalize the TB infection control committees to coordinate the implementation of TB infection control plans.

The project provided for STTA to assess eight MDR-TB treatment sites (five supported by the TRACK TB project and three supported by the USAID SUSTAIN project) for TB transmission risk and recommend remodeling plans to enhance the implementation of TB infection control measures. For the project supported facilities, the consultant recommended re-modeling for Hoima, Mbarara, and Kitgum wards, and reconstruction for Lira and Soroti RRH wards. In consultation with MOH, USAID, hospital management, and local authorities, the drawn plans were approved and works commenced at Hoima and Mbarara RRHs. Plans for reconstruction of Lira and Soroti sites await approval by USAID.

DR-TB treatment enrollment

- During PY 2 Q 1, enrollment rose to its highest rate so far (77) as a result of an active search for MDR-TB patients that were diagnosed during the previous years but had never accessed treatment, as shown in Table 3. The following drop in enrollment is as a result of clearance of the waiting list.
- TRACK TB, in collaboration with NTLP and NTRL, worked with the regional implementing partners, including SUSTAIN, STAR SW, STAR EC, NUHITES, MJAP, BAYLOR, and others to strengthen DR-TB surveillance activities and link diagnosed patients to treatment facilities (including the newly established five treatment sites supported by TRACK TB and the USAID SUSTAIN projects).
- The other interventions included facilitation of a laboratory technologist from NTRL to repair the GeneXpert machine at Lira RRH and to train the users, which resulted in increased utilization, sharing of contacts of regional DR-TB focal persons to facilitate linkage of newly diagnosed patients, coordination of transport for newly diagnosed patients to the treatment facilities, and engagement of DTLS and TB focal persons in Kampala to trace diagnosed patients and link them to treatment facilities and appropriate follow up DOT sites. As shown in Figure 9, the quarterly enrollment is steadily improving.
- Towards the end of PY2 the enrollment was affected by a national stock out of second line medicines; however, following implementation of measures described under the section on availability of second line medicines, these patients were initiated on treatment at the beginning of the subsequent quarter.

Table 3: MDR-TB patients enrolled by treatment facility during PY2

MDR-Treatment Site	Q1	Q2	Q3	Q4	PY2 Total
1. Mulago NRH	34	10	15	30	89
2. Mbarara RRH	2	9	3	2	16
3. Gulu RRH	7	1	4	2	14
4. Fort portal RRH	5	2	4	1	12
5. Kitgum GH	13	4	2	8	27
6. Arua RRH	6	1	3	2	12
7. Masaka RRH	0	2	1	3	6
8. Mbale RRH	2	3	5	0	10
9. Iganga GH	8	2	3	2	15
10. Hoima RRH	0	2	0	0	2
11. Lira RRH	0	6	1	4	11
12. Soroti RRH	0	0	0	1	1
13. Kabale RRH	0	0	1	1	2
14. Mubende RRH	0	1	3	1	5
Total	77	43	45	57	222

TRACK TB supports the sites with the largest proportion of MDR-TB patients (67%). Mulago hospital handles almost 40% of the national burden (see Figure 7) due to its broad catchment as a national referral hospital and the fact that it serves a population in Kampala with a high TB burden.

Figure 7: MDR-TB patients ever enrolled by health facility 2009 -2014 (N=426)

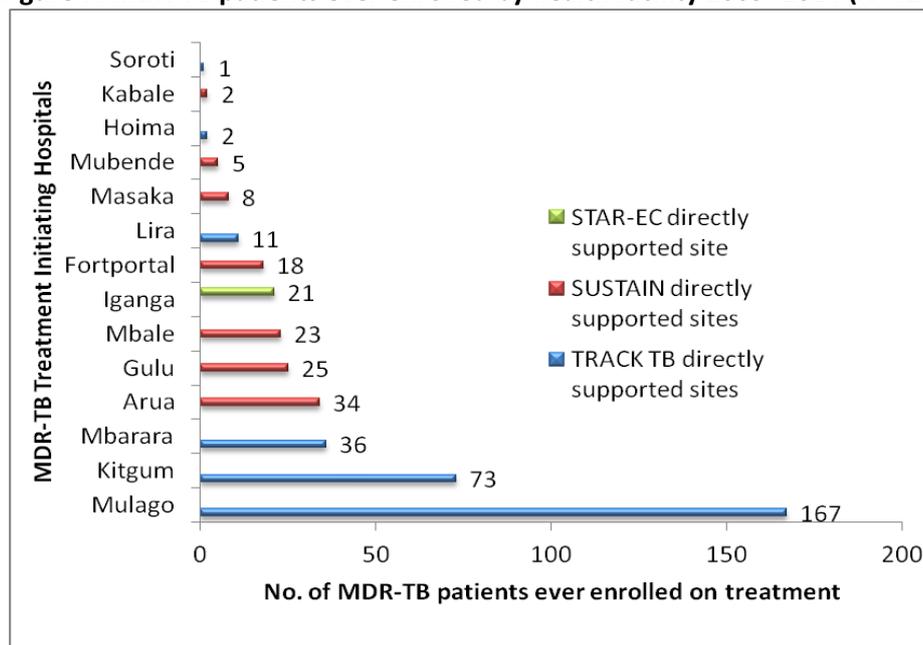


Figure 8 shows the cumulative enrollment since 2009 as being 426 (90%) of the planned target of 470. Out of these, 318 are still active on treatment, and the 109 are accounted for as follows: 46 completed treatment (21 cured), four returned to category 1 treatment, two returned to category 2 treatment, seven were lost to follow up, and 49 have died since 2009.

Nearly 65% of patients enrolled are male, and only 1% are children, indicating the need to strengthen contact tracing and case finding among children. The project will work closely with NTLN to fast track

improvement efforts in MDR-TB surveillance using GeneXpert tests, linkage to treatment sites, and the availability of second line drugs moving forward to ensure that all diagnosed patients are initiated onto treatment. The trend of enrollment over the years is also illustrated in Figure 9, which shows that the highest number of enrollments have occurred during the reporting period.

Figure 8: Cumulative MDR-TB patients enrolled on treatment by year against PY 2

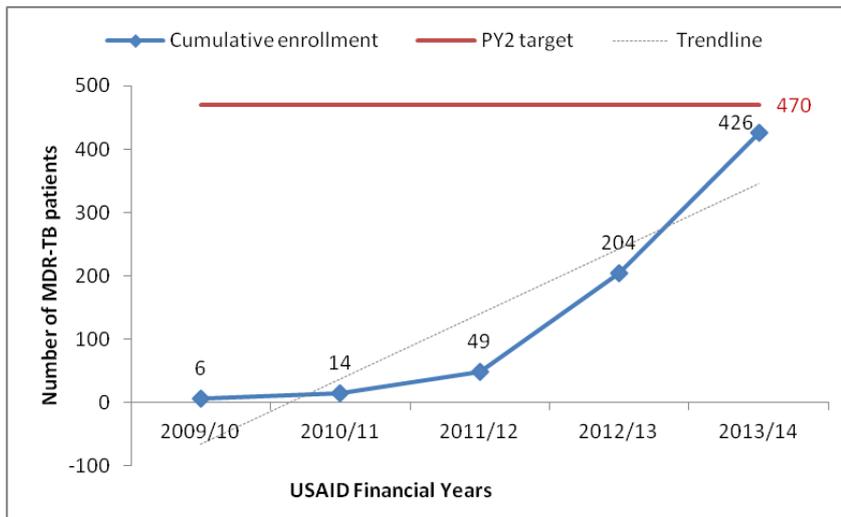
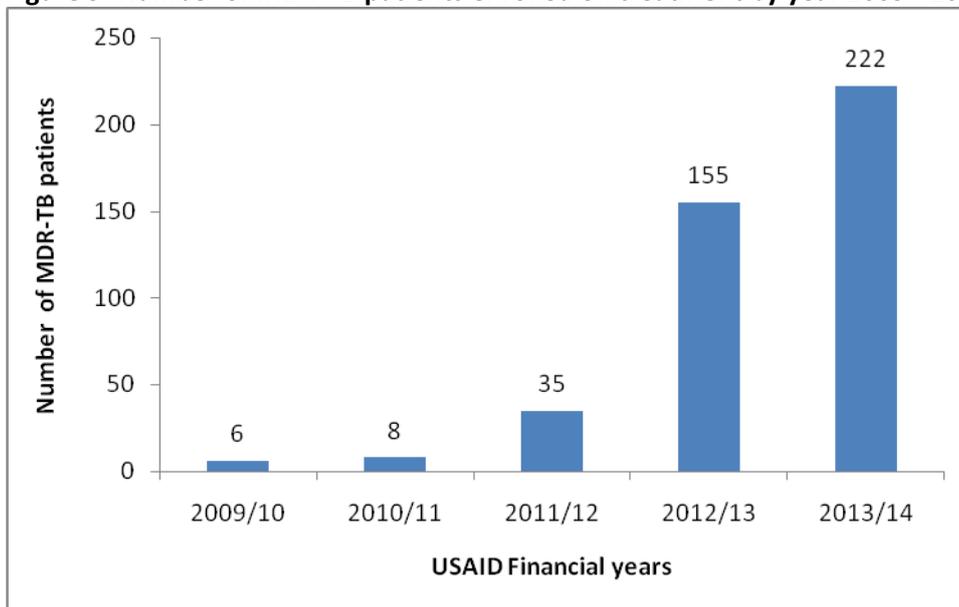


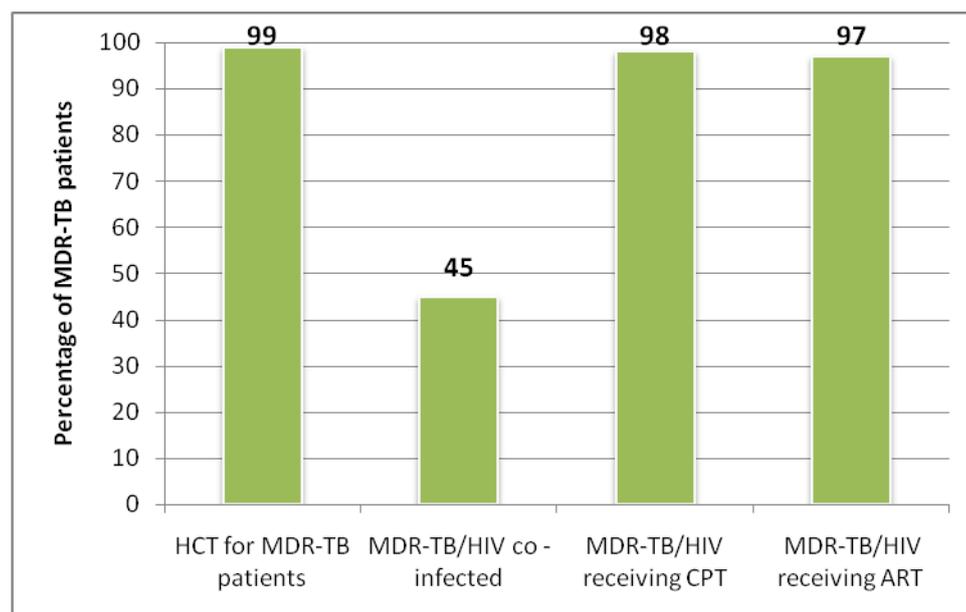
Figure 9: Number of MDR-TB patients enrolled on treatment by year 2009 - 2014



DR-TB/ HIV integration

TRACK TB maintained technical assistance for integration of DR-TB care into the routine TB/HIV collaborative services. 99% of active MDR-TB patients (n=313) were tested for HIV, 45% (n= 141) were found to be HIV positive, 98% of the co-infected patients received CPT, while 97% received ART (See Figure 10). The observed gaps were attributed to incomplete documentation of these parameters.

Figure 10: MDR-TB/HIV collaborative services for active MDR-TB patients (Oct 2012 - Sept 2014, n=313)



MDR-TB treatment outcomes

Cohort review process

The interim and final outcomes of MDR-TB treatment are determined through a systematic monitoring and evaluation process through which every patient in a particular cohort is reviewed for the entire treatment period to determine outcomes at different points in the course of treatment.

TRACK TB supported the NTLF to conduct two cohort reviews in April and August of 2014. Participants were invited from all treatment centers and from key implementing, technical, and funding partner agencies. The objectives were to review the interim and final treatment outcomes of patients on treatment, to be a training forum especially for frontline health workers, and to identify key challenges and propose solutions. In the first cohort review, 60 patients were evaluated, and in the second review, 101 were evaluated. A wide range of programmatic challenges were identified and discussed with the Ministry of Health, partners, and health workers, and suggestions were proposed. The health workers also listed a number of learning points through the process.

With this experience in mind, the project, in collaboration with NTLF, will support implementation of the next cohort reviews at the regional level so as to give more health workers and other key stakeholders a chance to participate. Imelda, a 70 year old described in the success story on Annex 6, is among the patients in the cohort to be evaluated for final treatment outcomes during the next cohort review exercise.

The findings of the two cohort review exercises conducted so far are summarized in the Tables 4,5 and 6 below.

Table 4: 6 Month interim status for patients enrolled in the quarter July - September 2013

Percent of patients on treatment			Percent of patients not on treatment		
62/69 = 90%			7/69 = 10%		
Culture negative	Culture positive	Culture unknown	Died	Lost to follow-up	Not evaluated
49/69 = 71%	0/69 = 0%	13/69 = 19%	5/69 = 7%	2/69 = 3%	0/69 = 0%

Whereas the percentage of patients with negative cultures is high, at 71%, there is an unacceptably high proportion of patients who lacked culture results. This was largely a result of weaknesses in the specimen referral system. TRACK TB will work with the NLP and regional partners to address the challenges of the sample referral mechanisms, but in the short term, the project and other supporting partners have rolled out the monthly review clinics at treatment initiation facilities to ensure that all patients are thoroughly evaluated. Moving forward, treatment facilities will be supported to apply CQI approaches to track patient monitoring and documentation of results.

Table 5: 12 Month interim status for patients enrolled in the period January - March 2013

Percent of patients on treatment			Percent of patients not on treatment		
16/21 = 76%			5/21 = 24%		
Culture negative	Culture positive	Culture unknown	Died	Lost to follow-up	Not evaluated
11/21 = 52%	0%	5/21 = 24%	5/21 = 24%	0%	0%

The major findings from the 12 month review were the high percentage of patients without culture results (24%) and the high proportion of deaths (24%).

Table 6: Review of patients enrolled during Q1 2012

Percent of patients with successful outcome		Percent of patients with unsuccessful outcome			Other	
50% (2/4)		25% (1/4)			25% (1/4)	
Cured	Rx Complete	Rx failure	Died	Lost to F/U	Not evaluated	Still on Rx
50%	0%	0%	0%	25%	25%	0%

For this particular cohort the cure rate was 50%, however the number in the sample was too small to enable meaningful statistical interpretation of program performance. These were the patients that started treatment before the national PMDT was rolled out.

Improved MDR-TB patient tracking and contact investigation

Contact tracing by MDR-TB sites

TRACK TB has supported the initiating treatment sites to conduct contact tracing. A total number of 1,003 contacts of MDR-TB patients at project supported hospitals were traced and screened. Of those screened for TB, two rifampicin resistant TB cases and one rifampicin sensitive patient were identified.

Strategies used in tracing these patients include engagement of community linkage facilitators in Kampala, working in close collaboration with other USAID implementing partners, like STAR-SW, and home visits by treatment site staff. In addition, the project supported three MDR-TB sites (Mbarara, Kitgum and Mulago) to use GIS technology in identifying the locations of the MDR-TB patients. The data collected will be used to inform future planning and decision making in management and follow-up of these patients.

Partner collaboration

During the quarter, TRACK TB held meetings with partners at Mulago, Mbarara, Kitgum, and Lira to synchronize support to the sites. These meetings have enabled better coordination of service delivery. In particular, it has resulted in better tracking of patients to start treatment, and improved the tracing and screening of patients for TB.

As highlighted above, the project in collaboration with NTLP also coordinated with other MDR-TB implementing partners to harmonize the implementation approaches and cross cutting elements, such as provider skills strengthening and management of second line drugs.

Overall performance analysis

During PY 2 the project was able to establish DR-TB care services to the set target of additional treatment facilities (three), and achieved a 90% target of enrollment, despite challenges with the availability of second line drugs in the country. A cure rate of 50% was realised from the cohort of patients that were enrolled before 2012, although this was a small number of patients (n=4). It is noteworthy that the country PMDT program has attained a retention rate of 90% of patients by six months of treatment with 71% sputum conversion and 76% retention on treatment by 12 months of treatment. The project will continue to support efforts to improve monthly sputum culture monitoring through the monthly clinics, strengthening of sputum referral mechanisms, and use of CQI approaches to improve care processes.

Challenges and next steps

During the year the project faced a number of challenges.

- There is a high turnover of staff at the treatment sites. At Mulago, the staffs have been getting better jobs after acquiring skills at the MDR unit. For other sites, there is the routine rotation of the staff to other units. This will demand for continuous training program and will also call for innovative training methods that will supplement didactic training.
- The supply of food to patients was expected to come from the Global Fund budget. However, this has been delayed. Similarly, delayed support by the Global Fund for laboratory investigations has meant that key investigations, such as thyroid function tests, are not done. The steering committee has resolved to take the matter up at the top ministerial level. The team will continue to follow up the matter with the program manager.
- Gene Xpert sites do not have standard reporting tools and as such cannot provide regular reports as expected. Worse still the machines need regular servicing and calibration that NTRL did not originally plan for. TRACK TB will advocate for the commitment of funds by the Ministry and partners.
- There was a delay in the approval of plans for remodeling the wards and offices at the NTLP. However, work is now progressing at Hoima, Mbarara, and the NTLP. As soon as approval for other sites is secured the contracting procedures will start.
- Repeated revision of data tools has resulted in delays in printing. A final version is now ready for printing.
- The new Gene Xpert machines took a long time to be installed at Kitgum and Hoima.
- The Hub system for transporting sputum samples is not working well, nor is the TB Specimen Referral System provided by postal services. As a result, many samples do not reach the laboratory in time and this compromises the quality of the results. TRACK TB will follow up the matter in stakeholder meetings.

- Home-based care, though promising to improve treatment success rate, is expensive. It needs a more careful introduction to make it sustainable. TRACK TB will follow up to ensure that a workable program is developed and piloted.
- The patient numbers at Mulago are overwhelming, and so social workers (counselors) are needed to improve in the provision of patient centered service and to follow up patients at home to do contact tracing and education of the family and community. We shall also advocate for the creation of another treatment center in Kampala.
- The capacity to diagnose children remains low, resulting in a limited number of children getting diagnosed and put on treatment. We shall work with the pediatric team to improve pediatric TB care.
- Prisoners are difficult to manage, as they just go home when they are released by court or run away from the ward if not strictly monitored by prison warders. TRACK TB will support the NTLP to hold discussions with the prisons department to set up a treatment unit for DR TB within the prisons.
- Soldiers also need special arrangements since they do not always disclose their health status and can be deployed any time. TRACK TB will support the NTLP to hold discussions with the army to set up a treatment unit for DR TB at one of the army hospitals.
- Most district TB and leprosy supervisors do not play a full role in PMDT. They will be involved in training and cohort review meetings so that they are stimulated to participate.

Lessons learnt

- The use of private health providers as follow up facilities is possible and inevitable, but they need proper guidance and continuous supervision.
- The involvement of community structures, such as village councils and village health teams, will be critical in managing patients.
- Peer to peer mentorship is a good training method and will be continued throughout the year.
- Coordination of partners at the national and lower levels is vital for optimization of resources.
- There is a need to design special programs for drug resistant TB management for security forces, especially in the army and prisons.

2.4. Result Area 4: Improved coordination and implementation of DOTS, TB/HIV, and MDR-TB interventions

During the reporting period, the TRACK TB project supported NTLP to strengthen the coordination of implementing partners to harmonize and optimize high impact interventions through the National Coordination Committee (NCC), implementing partners' forums, and intervention specific coordination meetings, such as the GeneXpert implementers meeting. TRACK TB also provided technical support for the development of guidelines for TB/HIV collaborative activities and Isoniazid preventive therapy (IPT) for Uganda as well as dissemination of TB/HIV guidelines.

The project also coordinated technical support to the implementing partners to improve performance in provision of TB, TB/HIV, and MDR-TB interventions.

Strategic approaches and activities

Strengthened mechanisms for partner engagement and coordination

Conduct quarterly National Coordination Committee (NCC) meetings

During this project year, TRACK TB coordinated NCC meetings that involved the MOH/AIDS Control Program (ACP), NTLP, and IP representatives to finalize the guideline for IPT for people living with HIV. The same forum was used to provide updates on the programmatic management of MDR-TB (PMDT) and GeneXpert implementation in the country.

Partner coordination forum

The NTLP, with technical support from TRACK TB, organized an implementing partners forum targeting all the USG funded partners and other stakeholders. This enabled partner engagement, better planning, and coordination of activities. For instance, dissemination of the revised TB/HIV guidelines was integrated with the dissemination of revised ART guidelines through mentorships at the health facilities.

Coordination of GeneExpert implementation

During this project year, the NTLP with technical support from TRACK TB, organized two quarterly meetings for GeneXpert implementers to discuss GeneXpert utilization and challenges, including reporting to the NTLP. To address reporting challenges, participants developed a GeneXpert data collection plan and tools. TRACK TB coordinated the data collection process during the joint TB/HIV support supervision, targeting all the GeneXpert sites in the country as described under IR3 above.

The main challenges observed were inadequate awareness of clinicians on the GeneXpert algorithm and lack of standard tools for recording and reporting data. Lack of mechanisms to confirm linkage of all newly detected TB cases, especially the Rifampicin resistant cases, were successfully linked to MDR treatment centers. The findings were shared with the NTLP and partners during the supervision debrief. TRACK TB will work with the NTLP to produce and distribute standard registers for GeneXpert data recording and also support the weekly reporting and transmission of GeneXpert data to the NTRL/NTLP as part of MDR TB surveillance.

Supported the review, printing, and dissemination of TB/HIV and development of IPT guidelines

Dissemination of TB/HIV guidelines

During PY2, TRACK TB supported the finalization and printing of the revised TB/HIV guidelines for dissemination at the national, district, and facility levels. Through collaboration with the implementing partners in the region, a total of 3,600 copies have so far been disseminated in 49 districts and 382 health facilities. TRACK TB will continue to monitor the dissemination process and ensure availability of the guidelines in all the districts and health facilities.

Development of IPT guidelines

The NTLP, in collaboration with the ACP and with technical support from TRACK TB, finalized Uganda's IPT guidelines. The document was taken through the various approval processes, including review by the TB/HIV national coordination committee (NCC) and MOH's communicable disease control technical working group, which endorsed the guidelines, and final approval by the MOH's senior management team.

TRACK TB project supported the printing of 5,000 copies of the guidelines, including registers for HIV negative children under five years and standard operating procedures or initiating IPT. These will be disseminated to the health facilities to facilitate the provision of IPT.

A roll out plan for IPT has been developed by the ACP MOH, in collaboration with the NTLP. During PY 3, TRACK TB will support the implementation of this plan, together with the implementing partners, and ensure

capacity is built at both the national and district levels to provide and monitor the implementation of IPT.

Provide technical support to improve performance of partner supported districts

Joint NTLP mentorships and quality improvement activities

During PY 2, TRACK TB coordinated bi-annual joint TB and TB/HIV supervision and mentorships by the NTLP to the zones/ regions, in collaboration with the implementing partners, with the view of providing on-site technical support and to improve performance of the partners.

The implementing partners were oriented in use of the TB routine mentorship and continuous quality improvement tools. Gaps in performance were addressed on site and a feedback report was provided to the partner to follow up. Debrief meetings were also organized after each mentorship visit and actions were agreed upon to harmonize practices. Individual reports from each mentorship team were further analyzed, and the feedback will be provided to the respective partners to inform additional technical support to the partner sites.

Challenges, lessons learned, and next steps

There is still inadequate engagement of the implementing partners in the planning and coordination of priority interventions. Although TRACK TB has strived to functionalize the coordination mechanisms at the national level, the perceived leadership of NTLP is still inadequate. As a result, consensus is often not reached on a number of important issues and there is difficulty in establishing priority interventions, for instance, the dissemination of guidelines, implementation of TB/HIV collaborative activities, GeneXpert implementation, etc.

Open channels of communication with the implementing partners, being responsive to their needs, and regularly sharing performance reports ensures greater partner engagement and leverage of the available resources from them.

During PY 3, TRACK TB will focus on improving information sharing and communication with the partners, dissemination of resolutions and recommendations, and ensuring that the relevant partners participate in decisions. This will also include improving mechanisms for obtaining feedback and providing targeted technical assistance by the TRACK TB project.

TB and TB/HIV performance in TRACK TB's partner-supported districts

This data will be reported when the full NTLP data is available as described under IR 1 above

Other activities

Technical Assistance

During PY2 TRACK TB received several Short-Term Technical Assistance (STTA) visit. Below is the summary of the STTAs.

1. Pedro G. Suarez, MSH Global TB Technical Lead, conducted one STTA to support the TRACK TB project country team.
 - a. May14th - 23rd. 2014 to support the MSH country team during the TRACK TB project work plan review and development process and review of the implementation of the MOST for TB activities by the NTLP.
2. UCSF team—Ann Raftery and Randall Reves 9th - 13th December 2013, to conduct bedside mentoring for the health workers; Lisa Chen and Gayle Schack - March 31st - April 5th 2014, to provide technical support to the national MDR TBB program to conduct cohort reviews; Lisa Chen, Anne Raftery, Randall

Reves—August 10 -22, 2014 to provide technical support to the national MDR-TB program to follow up on cohort reviews and review of training materials and guidelines.

3. TB Infection control consultant -Taye Tibebe 19th may - 4th June 2014, to conduct assessment of infrastructure for MDR-TB care and propose designs for re-modeling at 8 regional referral hospitals (including 3 hospitals supported by the USAID SUSTAIN project)

Environmental Compliance

The project conducted environmental assessments and developed an environmental mitigation and monitoring plan prior to initiation of renovation works at Hoima and Mbarara RRH MDR-TB wards. The project works with the District environmental officers to ensure compliance with environmental standard requirements during the construction process.

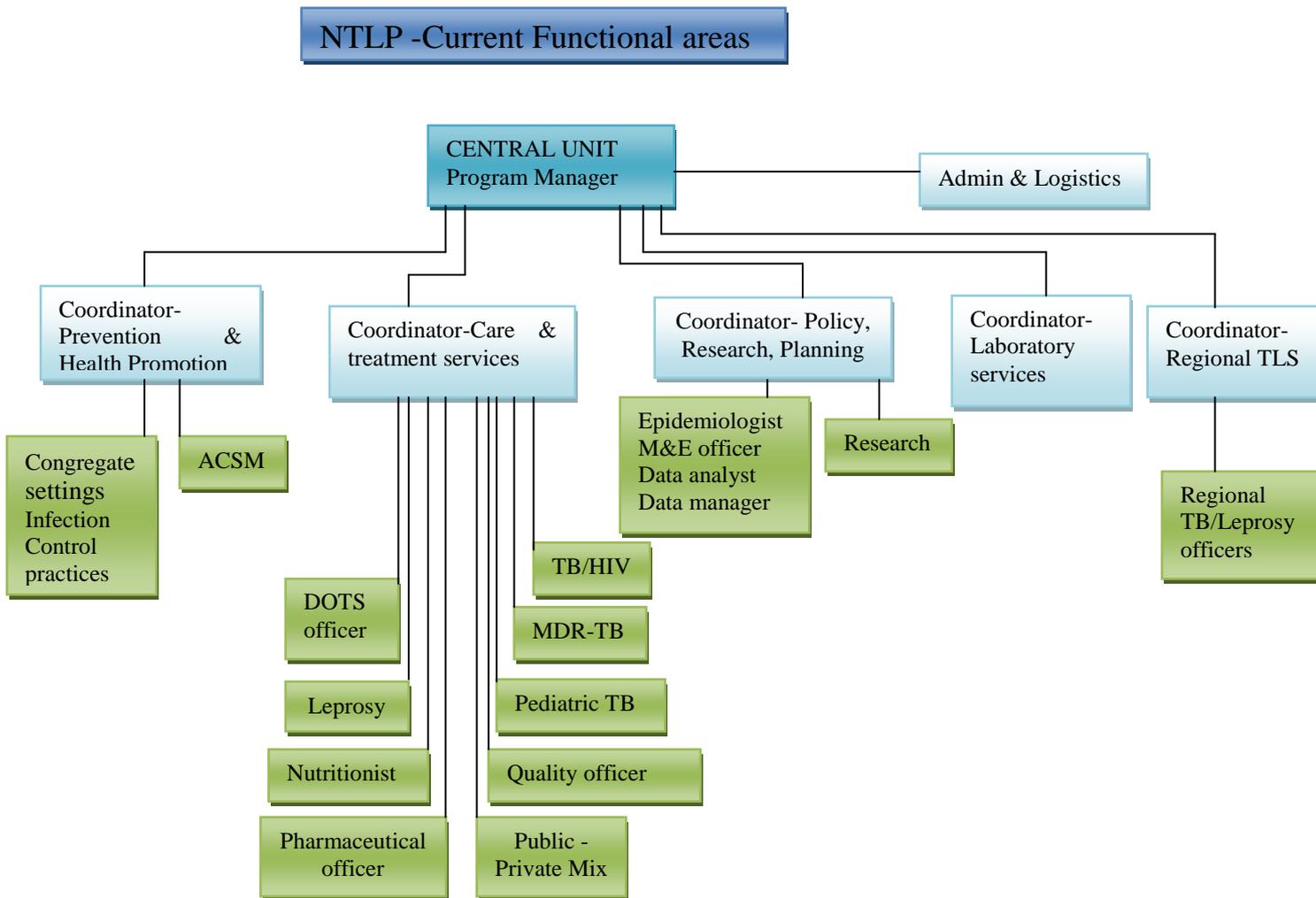
As part of PY 3 work plan the project has developed an environmental management and monitoring plan and will work with all the supported health facilities to implement it.

Financial Accomplishment

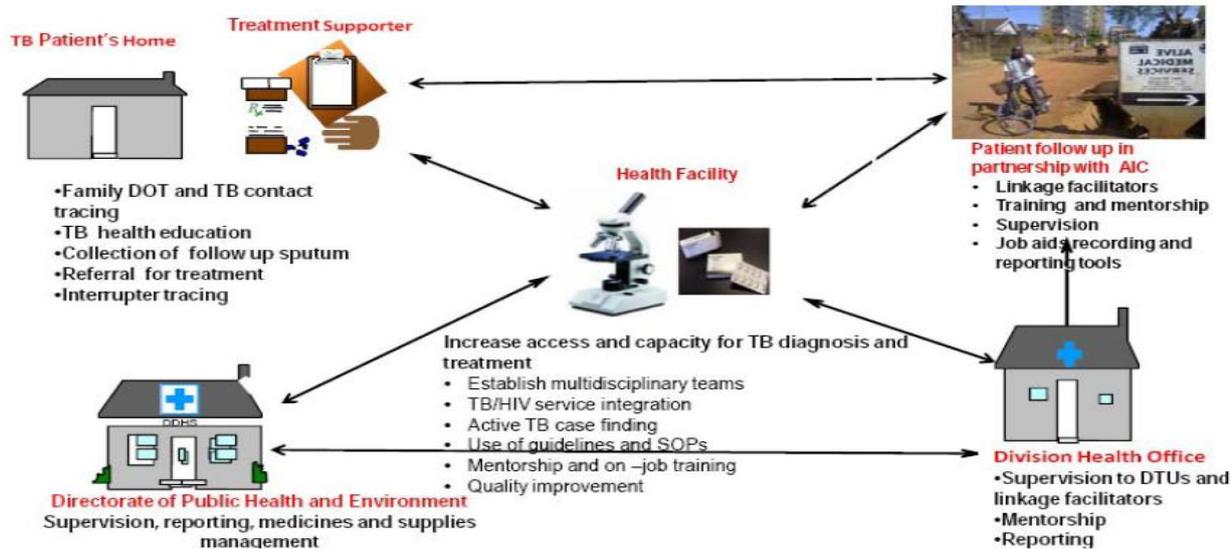
During PY2, TRACK TB spent US\$ 3,138,000 (Including accruals/commitments).This represents 85% of the total PY 2 budget. The unspent budget is largely for construction of MDR TB wards at Soroti and Lira hospitals whose approval is awaited. The PY 2 and PY 1 expenditure together represent 77% of the total obligated amount and 34% of the entire project budget during the 33% project time spent.

3. Annexes

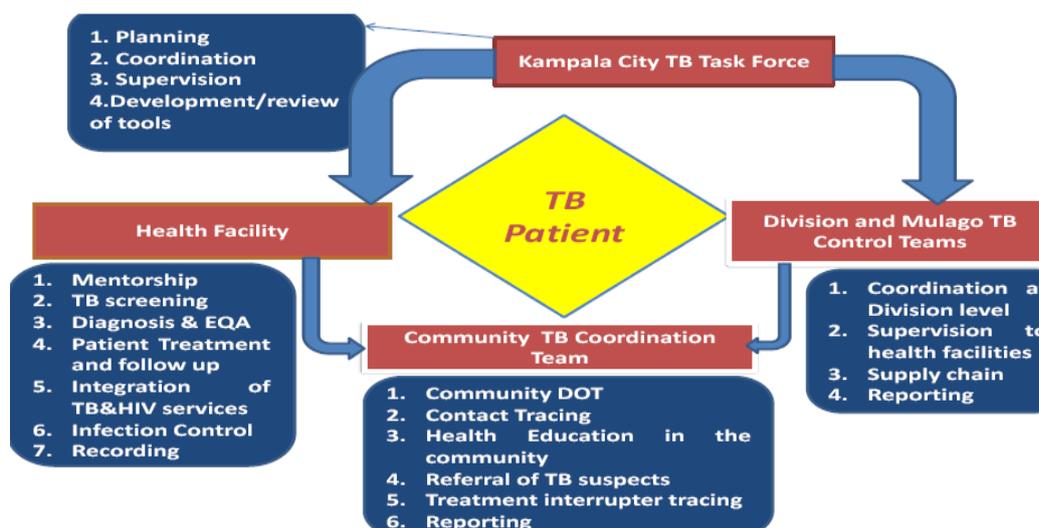
Annex 1: Revised NTLP Structure



Annex 2: Urban DOTS model



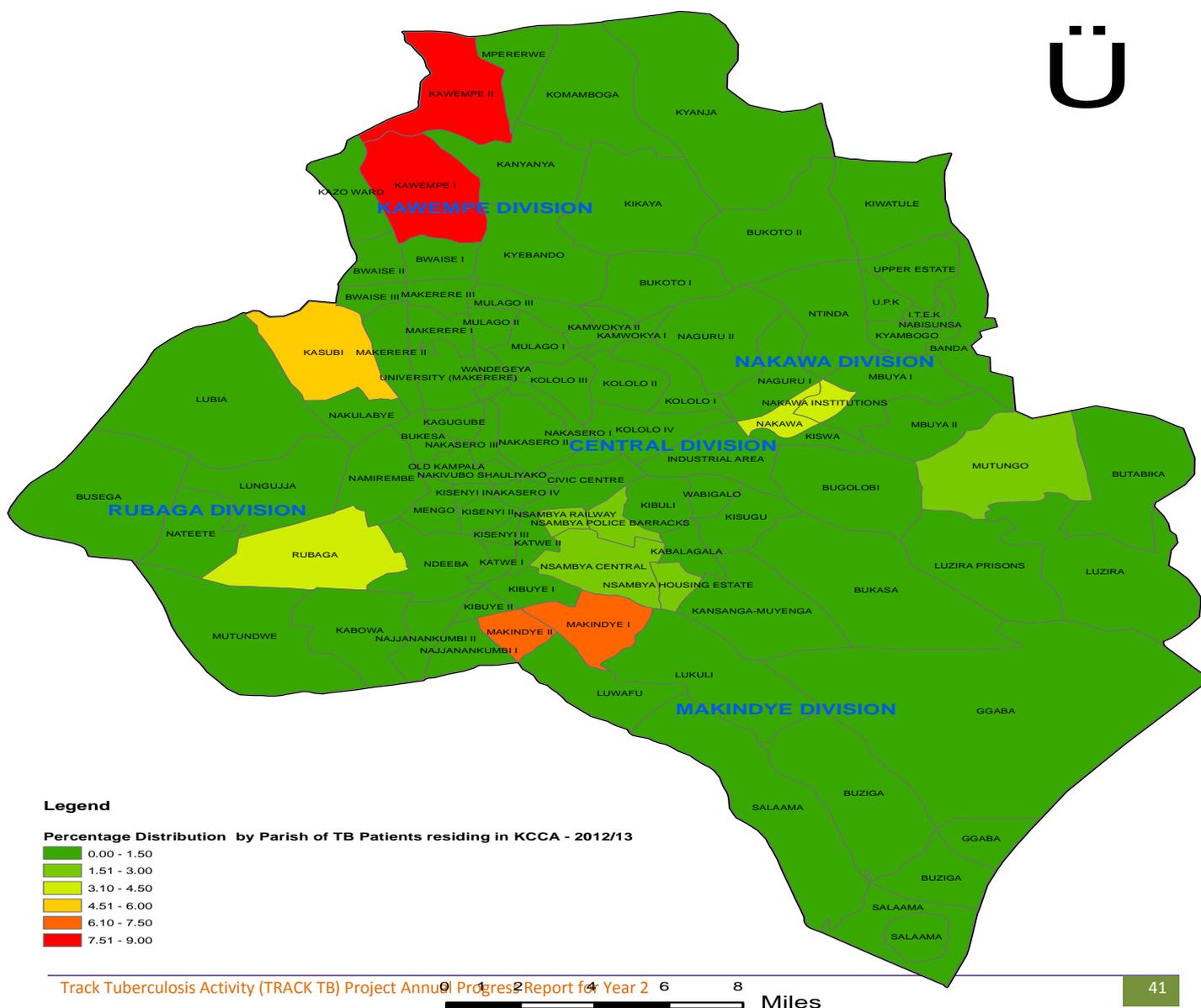
Annex 3: Levels of support for TB control in Kampala



Annex 4: List of Health Facilities in KCCA equipped with Gene Xpert machines

Division	Health facility	Number of GeneXpert Machines
Nakawa	Kiswa Health Centre	1
	Luzira Prisons	1
	Nagguru Health Centre	1
Makindye	Kisugu Health Centre	1
	Alive Medical Center	1
	Nsambya Hospital	1
Lubaga	Lubaga Hospital	1
	Kawaala Health Center	1
	Mengo Hospital	1
Kawempe	Microbiology 3rd flow (Mulago)	2
	Mycobatreriology lab (Mulago)	2
	IDI (Mulago)	1
	Ward 5& 6 (Mulago)	2
	Microbiology ward 4C	2
	NTRL	1
Central	Kisenyi Health Center	1

Annex 5: TB Hotspots based on annual patient distribution data by parish (Jul - Jun 2013)



Annex 6: Success stories: 70 year old beats MDR-TB with support through TRACK TB project



Imelda Nankumba with her Son Lawrence Kassujja

Her smile could as well pass for another feature on her face. Since completing her MDR-TB treatment in July of 2014, 70 year old Imelda Nankumba from Mpigi district is blissful and energetic like never before. A feeling she was nearly robbed of during her battle with MDR –TB.

It all begun in 2001 when Imelda was diagnosed with TB. She visited the nearby Kibanga Health centre where she was diagnosed and started treatment. She faithfully adhered to and completed treatment.

11 years later, Imelda developed a persistently disturbing cough. She took an assortment of antibiotics in vain. Her son, Lawrence Kassujja, was a nurse at Kibanga health centre IV who also served as her treatment supporter. He advised that they have the sputum test done at Mulago National Referral Hospital since she had a medical history of TB. In December of 2012, she tested positive for MDR-TB. At the time of her diagnosis, there was scanty knowledge and resources to manage MDR-TB. Admission of MDR patients at Mulago hospital was not possible as the ward was under renovation. This meant that Imelda had to travel from Mpigi district to Mulago hospital quite often for drug refills and medical attention. Given her advanced age and the severe side effects from the MDR medication, Imelda could barely eat as she had completely lost appetite. She nearly lost hope.

Fortunately the USAID funded, MSH managed TRACK TB project under the mixed model approach to MDR care provided an intervention for drug delivery. Imelda was asked to identify a health facility near her home where her drugs would be delivered and DOTS would be carried at the health facility. Kibanga Health centre is the nearest health centre to Imelda’s home, so her drugs were delivered to the facility on a monthly basis. This then saved Imelda the need to travel to Mulago for drugs. All she was tasked to do was visit Mulago for a review of the medicine side effects and a sputum culture test once a month. For such visits Imelda would receive a transport refund, which made her life much easier.

TRACK TB provides MDR-TB patients under their care with porridge and milk as part of nutritional support to counter the effects of the MDR drugs. On a monthly basis Imelda received 15 liters of UHT milk and eight packets of instant porridge. Even though the specifics of the source of her help escape her memory, she is grateful to “the American people” who helped Mulago to facilitate her treatment. She has since become a self appointed ambassador in preaching about the improved health care at Mulago Hospital. Imelda Nankumba completed 24 months treatment on MDR TB and was declared cured in July of 2014. She is among the first MDR patients to be discharged under TRACK TB care.