Background

According to the Uganda National TB prevalence survey, the incidence of TB in the country is 234/100,000 population and the prevalence, 253/100,000 population. The survey also showed that approximately 24% of TB patients are HIV co-infected. Additionally, the mortality rate from TB (excluding those who are co-infected with TB and HIV) in 2014 was estimated at 12/100,000 population. Furthermore, multi-drug resistant TB is an emerging problem with more than 1,040 estimated cases every year and actual case finding estimated at 200 cases per year.

USAID Strengthening Uganda’s Systems for Treating AIDS Nationally (SUSTAIN) project works closely with the Ministry of Health’s, National TB and Leprosy Programme to strengthen the capacity of hospitals to effectively manage and prevent both susceptible and MDR TB in Uganda.

USAID/SUSTAIN Approach

In line with the support needs and gaps identified by the NTLP, the USAID/SUSTAIN project uses three strategic approaches to strengthening capacity of supported regional referral hospitals for TB and MDR TB management including;

- Strengthening service provider knowledge and skills to provide TB, TB/HIV and MDR TB prevention, treatment, care and support
- Improving physical infrastructure for MDR TB patient isolation and optimum TB infection control practice; and
- Support logistics and supply chain management for TB management.
TB/HIV Interventions

Support for TB/ HIV services started at project inception in 2010. Over the years, TB services have evolved from enhancing case detection, optimizing TB/HIV collaborative activities and TB treatment success through quality improvement initiatives. In 2012, the scope of SUSTAIN’s mandate was broadened to cover implementation of DR TB care. In a phased approach, DR TB treatment was initiated at three RRH’s (Mbale, Gulu and Fortportal), then rolled out to cover Masaka, Mubende and Kabale RRH’s. Arua DR TB treatment site – previously supported by Medicines San Frontiers – was handed over to SUSTAIN in 2014.

Strengthening health provider skills: In collaboration with NTLRP, the project facilitated the training of TB care teams at SUSTAIN supported facilities on TB/HIV and DR-TB clinical case management, TB/HIV collaborative activities, TB infection control and health management information system (HMIS) development and utilization. After the trainings, both virtual (telephone) and on-site mentorships and coaching were conducted quarterly to further address knowledge and skills gaps. SUSTAIN also supported the dissemination of national guidelines, job aides and standard operating procedures to all health facilities.

Applying quality improvement (QI) approaches to TB care processes: The project supported the formation of TB care work improvement teams. Team members were trained to identify gaps and initiate QI projects, such as the linkage of TB/HIV co-infected patients on ART and follow-up for missed appointments and clients lost to follow-up.

Enhancing TB case detection and notification: The project supports the implementation of active and passive TB case finding, use of presumptive TB registers and GeneXpert for TB screening among all presumptive patients, pediatric TB diagnostic algorithm and TB index client contact tracing and home based HTS for household contacts.

Establishing inter- and intra-facility linkages for patient care and support: In order to minimize patient loss between points of care and improve treatment success rates (TSR), the project is strengthening referral networks and collaboration between supported hospitals and lower health facilities in their catchment by supporting hospital care teams to organize inter-facility review meetings and quarterly performance review meetings. In addition, the project works with the respective regional TB focal persons and District TB and Leprosy Supervisors. Other activities include strengthening the use of appointment books, involving sub-county health workers in supporting community-based directly observed treatment (DOT), using community linkages coordinators in community engagement and supporting home visits for patients who miss appointments and cannot be reached by phone.

Implementing infection control activities: Hospital TB teams are supported to design and implement TB infection control plans aimed at enhancing the implementation of administrative TB infection control measures (triage, fast tracking, patient separation and patient education) at patient care points. The project has established hospital TB infection committees and provided TB care teams with personal protective equipment (N95 respirators and masks) to enhance TB infection control measures.

Reducing TB burden in HIV settings: The project is strengthening the implementation of infection control practices, intensified TB case finding and isoniazid preventive treatment. USAID/SUSTAIN further supports the utilization of Gene Xpert among all presumptive TB patients, including HIV clients by sensitizing community health workers and institutionalizing intensified case finding in all supported hospitals. These activities—coupled with the institutionalization of HIV testing and counseling among TB patients, the initiation of all co-infected patients on Cotrimoxazole preventive therapy (CPT) and the timely linkage to ART—have significantly reduced the burden of TB in HIV settings.

Establishing TB/HIV one stop services: Utilizing the national guidelines and strategy for TB/HIV ‘one stop’ care model developed by MOH/NTLP, the project has supported the establishment of one stop TB care model at six hospitals (Arua, Fort Portal, Hoima, Kabale, Mbale, Lira, Gulu and Mubende). USAID/SUSTAIN is using the best practices collected from these sites to roll out the model to other facilities.

Managing documentation/records of routine TB care activities: The project conducts mentorships on proper records management and using data to improve care outcomes at facilities. USAID/SUSTAIN ensures availability and use of the MOH’s HMIS by providing the required tools and registers when needed and by working with and supporting care teams to improve the recording, reporting in DHIS2 and routine utilization of data.

Strengthening supply chain management systems: Through on-site trainings, the project enhances provider skills in TB logistics management, including use of MOH’s supply chain management information systems, to ensure availability of both susceptible and DR-TB related medicines and supplies.

Providing TB/HIV laboratory-related services: The project facilitates the procurement and installation of new equipment—including fluorescent microscopes and their spare parts and safety hoods for TB microscopy—and the improvement of human resource capacity (skills and quantity) for laboratory services.

Providing logistical and technical support for the coordination of ambulatory and hospitalization models of DR-TB care: The project provides DR-TB expert panel members for each treatment hospital with facilitation to conduct activities, including home assessment and contact tracing, support supervision at lower health facilities where patients receive DOT and panel meetings where decisions to start DR-TB treatment and patient follow-up management are reached.

Strengthening DR-TB patient adherence: The project supports patient adherences by providing enabling incentives like monthly stipends to cater for transportation costs to the treatment centers.

Key Achievements and Progress To-date

Improved TB/HIV collaborative activities: USAID/SUSTAIN has experienced sustained improvement in TB/HIV collaborative activities, including: a 13% increase (85% to 98%) for HIV testing and counseling for TB patients; a 16% increase (82% to 99%) for CPT for TB/HIV co-infected patients; and a 41% increase (50% to 91%) in initiation onto ART for co-infected patients between 2011 and 2017 (Figure 1).
Improved space and infrastructure for DR-TB activities:
In collaboration with MOH Infrastructure Division and USAID approval, the project remodeled six TB wards (Kabale, Masaka, Mubende, Gulu, Arua, Mbale and Fort Portal RRHs) to create appropriate isolation units for DR-TB case management and optimal TB infection control practices.

Delivered quality laboratory services for TB patients: USAID/SUSTAIN has supported the MOH to renovate and equip 17 hospital laboratories. Additionally, the project supports these and other hospital labs to:

- Participate in a National TB Reference Laboratory External Quality Assurance scheme for TB microscopy;
- Conduct monitoring for DR-TB patients (clinical chemistry, hematology and thyroid stimulating hormone assays) and enhance established sample referral networks for transportation of sputum samples for culture and drug sensitivity testing;
- Utilize Gene Xpert equipment and manage consumables for Xpert testing; and
- Effectively quantify, order for, report and manage laboratory reagents.

As a result, the project has enhanced case detection and TB sputum monitoring at supported hospitals. The proportion of TB sputum results that have been conducted in the appropriate turnaround time has increased from 63% in December 2014 to 75% by June 2016.

Improve documentation and data management for TB and DR-TB services: USAID/SUSTAIN supported the transition of DR-TB data management systems from paper based to electronic based systems. The transition supports the generation of complete and timely DR-TB reports and provides access to web based DR-TB data to guide clinical decision making and program management of drug-resistant TB at all the seven DR-TB sites.

Spotlight: Quality Improvement in TB Care
USAID/SUSTAIN has supported hospitals to conduct QI interventions to close gaps in the various elements of TB care including: linkage of TB-HIV co-infected patients to ART services; follow-up for missed appointments; and sputum follow-up for pulmonary TB patients.

Limitations
- Frequent staff change overs or hospital rotations affect continuity of TB/HIV service delivery.
- Frequent stock-outs of some of the TB management commodities and supplies—such as microscopy slides (affecting diagnosis and monitoring of drug-sensitive TB) and selected second line TB medicines—prolong the time between diagnosis and initiation of treatment.
- Patient food packages and the medicines for management of second line TB medicines side effects are frequently out of stock.

Lessons Learned
- Use of continuous quality improvement approaches within the public health system is feasible and improves linkage of TB/HIV co-infected patients on ART.
- The management of drug-resistant TB using the ambulatory model of care yields optimal outcomes.
- Integration of DR-TB and TB/HIV support to hospital teams through mentorship remains the most effective way of transferring skills for the entire cascade of TB services according to international standards for TB care, including integration of nutrition services and logistics management.