USAID ASSIST Project

Applying Science to Strengthen and Improve Systems

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Swaziland Country Report FY13

Cooperative Agreement Number:

AID-OAA-A-12-00101

Performance Period:

October 1, 2012 – September 30, 2013

DECEMBER 2013

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DISCLAIMER

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Abbreviations

AHF	AIDS Health Care Foundation
ART	Antiretroviral therapy
ASSIST	USAID Applying Science to Strengthen and Improve Systems Project
CBO	Community-based organization
CDC	U.S. Centers for Disease Control and Prevention

CHW	Community health worker
COE	Centre of Excellence
COHSASA	Council for Health Service Accreditation of Southern Africa
CPT	Co-trimoxazole preventive therapy
DOTS	Directly observed therapy, short course
EGPAF	Elizabeth Glaser Paediatric AIDS Foundation
EHCP	Essential Health Care Package
FBO	Faith-based organization
GIS	Geographic Information System
GPS	Global Positioning System
HCI	USAID Health Care Improvement Project
HCW	Health care workers
HIV/AIDS	Human immunodeficiency virus/Acquired immunodeficiency syndrome
HR	Human resources
HTC	HIV counselling and testing
ICAP	International Center for AIDS Care and Treatment Programs
IEC	Information, education, and communication
IP	Implementing partner
IPC	Infection prevention and control
IPT	Isoniazid preventive therapy
KM	Knowledge management
LPA	Line probe assay
MCH	Maternal and child health
MDR-TB	Multidrug-resistant tuberculosis
M&E	Monitoring and evaluation
MGH	Mbabane Government Hospital
MOH	Ministry of Health
MSF	Medecins Sans Frontieres
NCC	National Coordinating Committee
NCD	Non-communicable disease
NGO	Non-governmental organization
NSP	National Strategic Plan
NTCP	National TB Control Program
OVC	Orphans and vulnerable children
PEPFAR	U.S. President's Emergency Plan for AIDS Relief
PHC	Primary health care
PLWHA	Persons living with HIV and AIDS
PMTCT	Prevention of mother-to-child transmission of HIV
PSHCC	Public Sector HIV Coordinating Committee
QA	Quality assurance
QAP	Quality Assurance Programme
QI	Quality improvement
QMP	Quality Management Program
QRM	Quarterly Data Review Meeting
REPSSI	Regional Psychosocial Support Initiative
RFM	Raleigh Fitkin Memorial Hospital
RHMT	Regional Health Management Team
RESAR	Regional Semi Annual ART Review
SHLS	Swaziland National Heath Laboratory Services
SNAP	Swaziland National AIDS Program
TB	Tuberculosis
TWG	Technical working group
URC	University Research Co., LLC
USAID	United States Agency for International Development
WHO	World Health Organization

1 Introduction

Tuberculosis (TB) is one of the major public health problems currently confronting the Kingdom of Swaziland. Current the Ministry of Health (MOH) statistics show that TB accounts for approximately 10% of in-patient morbidity in the country and is responsible for 20% of in-patient deaths. To compound this, an estimated 80% of TB-infected patients are co-infected with the human immunodeficiency virus (HIV). The high TB/HIV co-infection rates adversely affect TB case detection as well as treatment outcomes.

The USAID Applying Science to Strengthen and Improve Systems (ASSIST) Project uses modern quality improvement (QI) approaches to: expand the coverage of integrated TB/HIV diagnostics and treatment services; improve TB treatment outcomes as well as the quality of TB, TB/HIV and MDR-TB services in Swaziland; strengthen health systems to better meet the needs of the underserved populations, especially women and children and the most-at-risk populations; institutionalize QI approaches in the health care system in order to improve efficiency and reduce costs of poor quality service delivery; and improve health worker capacity, motivation, and retention.

USAID ASSIST builds on the accomplishments of the USAID Health Care Improvement Project (HCI) (2008-2012), with support from the U.S. President's Emergency Plan for AIDS Relief (PEPFAR). HCI made significant progress in increasing TB treatment enrollment and treatment success through support for decentralization of TB services to primary health care (PHC) clinics, expanding linkages between communities and facilities, and providing technical expertise, assistance and financial resources to strengthen the integration and decentralization of TB, TB/HIV, and multidrug-resistant TB (MDR-TB) services. HCI also increased the quality of adult and pediatric HIV and AIDS treatment and antiretroviral (ARV) services for TB patients by introducing antiretroviral therapy (ART) in TB clinics. Throughout the years, HCI worked to improve programmatic and clinical MDR-TB case management and established and scaled up a community-based MDR-TB model of care in Manzini and Hhohho regions in order to increase coverage and reduce costs of MDR-TB care.

In FY13, ASSIST worked with the MOH through the National Tuberculosis Control Program (NTCP), the Swaziland National AIDS Program (SNAP), the Swaziland Health Laboratory Service (SHLS), and the Quality Assurance Program (QAP) to: apply lessons learned from established HIV/AIDS and TB quality improvement (QI) activities; adapt integrated service delivery models and algorithms for health facilities and providers in Swaziland; foster improvements in a range of health care processes through the application of modern improvement methods by providers and managers; improve treatment outcomes; expand coverage and quality of TB, TB/HIV and MDR-TB services; and strengthen health systems to better meet the needs of underserved populations, especially women, children and most at-risk populations.

2 Program Overview

What are we trying to accomplish?	How will we know?	At what scale?
1. Support MOH and implementing partners (IPs) to institutionalize modern QI approaches	• National QA/QI strategic plan and standards available • Number and % of health facilities with functional QI teams • Number and % of health care workers trained on QI and quality management	National, Regional, and Facility
2. Contribute to health system strengthening (HSS) through building capacity of model TB/HIV clinics and 2 Centers of Excellence (COE) for TB care and treatment	• Number of facilities receiving at least 80% of the planned joint clinical mentoring and support supervision visits • Number of facilities with standards of care and algorithms for referrals and linkages in place	2 out of 4 regions 3 primary health facilities 5 hospitals 2 specialized TB treatment centers

What are we trying to accomplish?	How will we know?	At what scale?
3. Strengthen TB DOTS: Pursue high quality DOTS expansion including MDR-TB	• Case finding for TB • TB Treatment success rate • Case detection and enrollment on MDR-TB treatment regimen • Six months treatment interim outcomes for MDR-TB • Treatment success rate for MDR-TB	National: support provided to the MOH-NTCP Regional: 2 regions out of 4 supporting 35 TB clinics
4. Strengthen MOH capacity and its partners to implement infection control	• # of facilities implementing the National Standards for infection prevention and control (IPC) • # of facilities with IPC plans • # of health care workers contracting TB	National: support provided to the MOH-NTCP Regional: 3 out of 4 regions Facility: 34 facilities
5. Implement integrated TB/HIV prevention, care, and treatment activities	• % of HIV-positive patients who have been screened for TB disaggregated by gender and age • %TB/HIV co-infected patients receiving co-trimoxazole (CPT) • Proportion of TB/HIV co-infected patients receiving ART	National Regional Facility
6. Enable and promote research to improve pediatric TB diagnosis		160 doctors 6300 nurses and midwives

3 Key Activities, Accomplishments, and Results

Activity 1. Support MOH and IPs to institutionalize modern QI approaches

Background

The USAID ASSIST Project has continued to strengthen and build the capacity of the Swaziland Ministry of Health to embed improvement methodologies and approaches in health care delivery. The project, in collaboration with the MOH Quality Assurance (QA) office and the country's health programs, has worked to improve health care delivery through strengthening and refining processes and systems, understanding health care processes, and changing them in ways to produce better results.

In FY13, the USAID ASSIST Project worked with teams and supervisors involved in coordinating and delivering health care at all levels of the health care system to institute changes and foster ownership of the changes to enhance sustainability. The project addressed gaps that were identified through quality assessments conducted in FY13. These included inadequate capacity for QI at the national level, inadequate engagement of health care workers (HCWs) for QI activities, inadequate use of data for improvement, and lack of training strategy and tools for QI at the national level.

Accomplishments and Results

- **Developed QI/QA strategic documents:** In FY13, ASSIST participated in the national QA/QI Technical Working Group. In collaboration with the national QA stakeholders, ASSIST participated in the development of the following QA strategic documents: National HIV QA/QI work plan; National QA/QI training manual**;** Customer Care Training Manual; and the incident management manual for the Nazarene health institution. In addition, the project assisted in the dissemination of the national QA/QI strategic plan, and QA standards documents for health facilities have been developed and printed.

Support MOH and IPs to Institutionalize Modern QI Approaches

Improvement Strategy

In order to institutionalize improvement approaches, activities were conducted to: improve capacity of the national QA program and other MOH public health programs; build the capacity of health care workers and mentors at all levels and improve performance measurement; and document and use data for improvement at national, regional, and health facility levels.

Spread Strategy

The USAID ASSIST Project helped stakeholders and facilities to incorporate QA/QI activities into their work plans and budgets were allocated to these activities. These activities included development of QA/QI work plans, roll-out of QI to sites, coaching and mentoring of facility QI teams, QI trainings, collaborative learning, tracking of key indicators, development of tools for QI team support and review, and development of strategic documents, strategies, and standards.

- **Built capacity of the national QA program:** The project provided technical assistance to the MOH public health programs to plan, lead, and manage the roll-out of QA/QI interventions. Through ASSIST's advocacy and lobbying, the MOH Directorate nominated the Deputy Director for Public Health Services to oversee the national QA/QI Program and provide guidance and oversight for the implementation of QA/QI from the national to facility levels as well as the engagement of Regional Health Management Teams (RHMTs) and regional QI specialists.

  105 RHMT members from Manzini (28), Hhohho (34), Lubombo (17), and Shiselweni (26) were oriented on the Hospital and Health Center Standards.

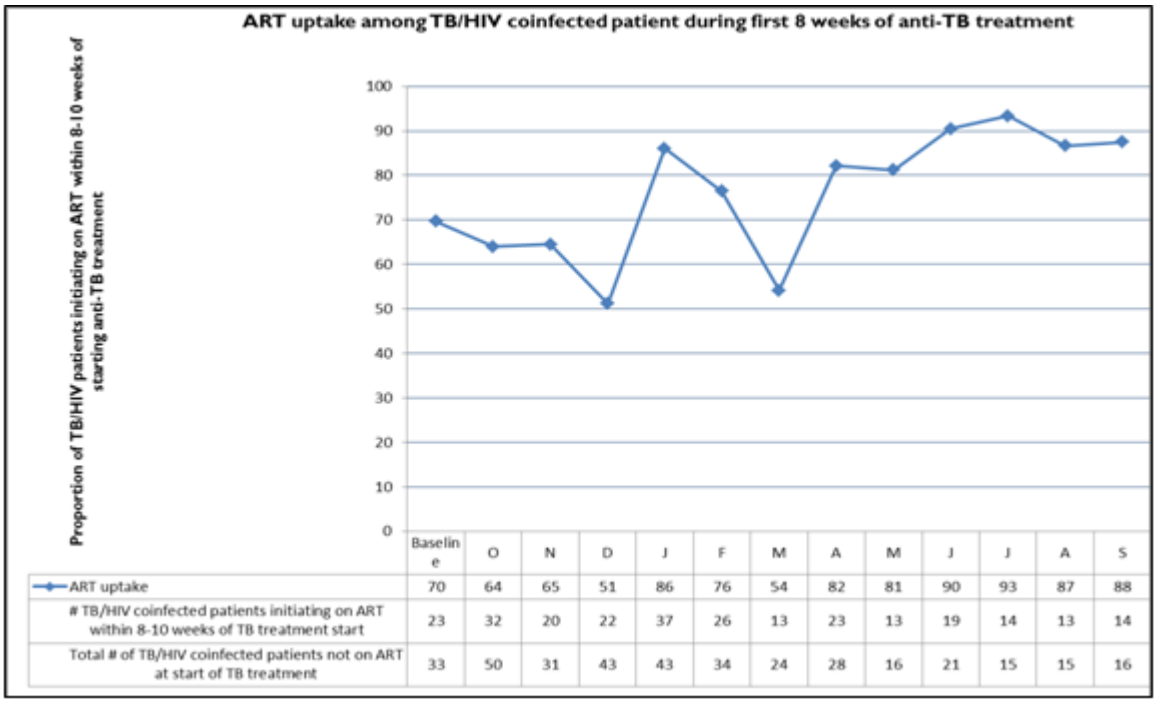
- **Built the capacity of health care workers and mentors:** Through collaborative learning sessions with facility-based QI teams and MOH officials, facility-level coaching, and clinical mentorship, the project supported efforts at all levels to improve the effectiveness, safety, accessibility, and equity of health service delivery and foster a patient-centered approach through the use of QI approaches.

- **Supported collaborative learning sessions:**
  - *MOH Quality Management Program (QMP) learning session pilot:*
    - ASSIST supported the Quality Management Program of the MOH to conduct two pilot learning sessions in June and September 2013. Ten facilities from all regions participated and shared progress on their quality improvement projects.
  - *Individual health facility QI sessions:* The project supported facility-based QI learning sessions where departments presented their QI projects. Facilities included:
    - Mbabane Government Hospital (June, September 2013)
    - RFM hospital and 17 Nazarene satellite clinics (November 2012, March, June, August 2013)
    - Piggs Peak Government Hospital (April, August 2013)
    - National TB hospital (June 2013)
  - *Wellness program QI collaborative learning sessions:*
    - In February 2013, the ASSIST project working with the Wellness Center conducted a collaborative session for health care workers wellness and TB screening for 13 health facilities wellness clinics (13 HCWs participated).
  - *National TB quarterly collaborative learning sessions (Quality data review, QI project actions & sharing):*
    - Supported three TB program quarterly review meetings for 60 facilities. A total of 210 HCWs participated in these review meetings.
    - MDR-TB collaborative learning session was supported for 10 TB diagnostic sites and 40 HCWs participated.

- *Facility QI coaching and learning sessions:* ASSIST supported new facility QI teams which include Peak Nazarene clinic, Emkhuzweni health center, Ndwabangeni clinic, and Mshingishingi clinic. QI team documentation and development of QI storyboards were finalized and shared facility by May 2013.
- *Manzini facility QI sessions:* During FY13 ASSIST conducted coaching for three facilities: TB hospital, TB center, and RFM. QI projects have been initiated and storyboards are being developed. The QI projects and story board development are at various stages of implementation.

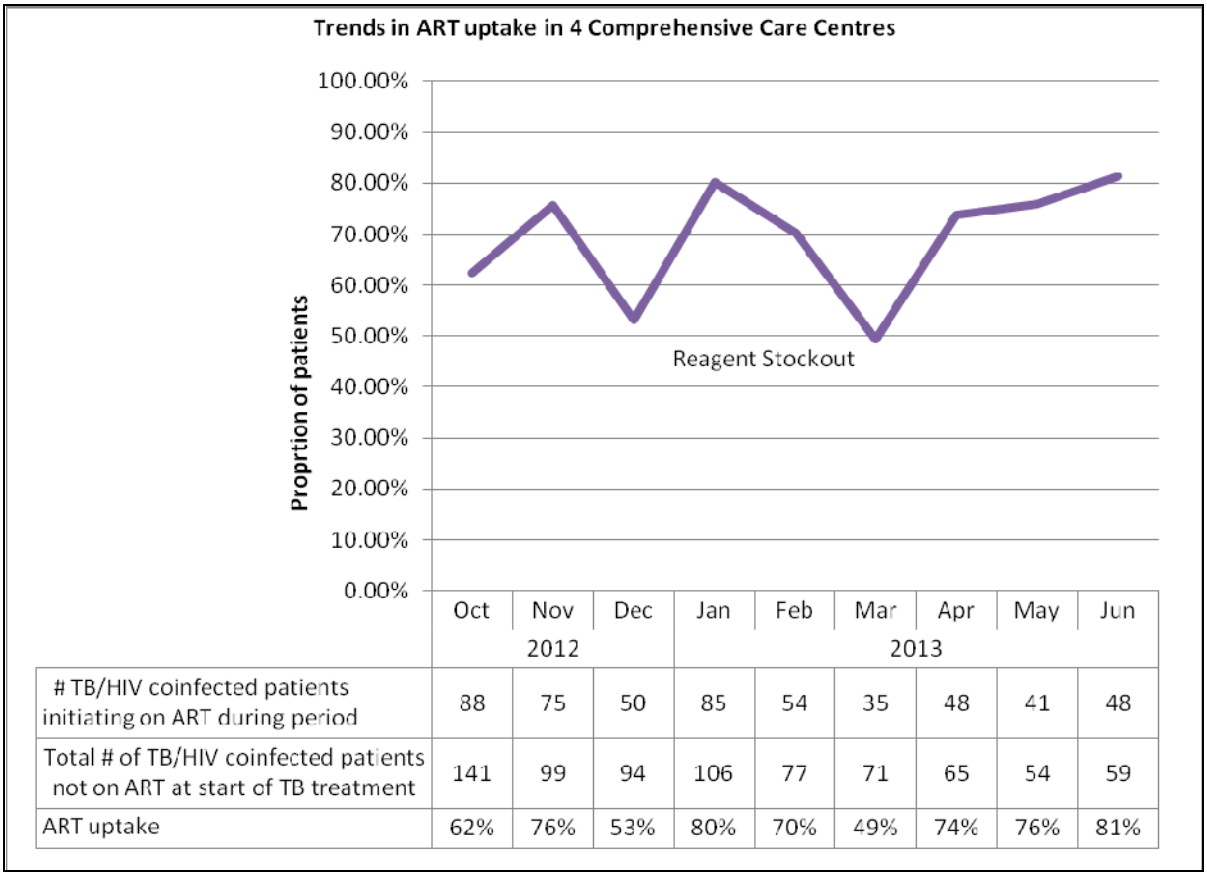
- **Conducted QA/QI Trainings**
  - ASSIST conducted formal off-site trainings on QI concepts and methodologies for 101 HCWs, of whom 30 were nurse managers/matrons and 44 were senior nurses.
  - The ASSIST project working with the National Quality Management Program, conducted QA/QI training for Shiselweni Region for 12 clinics and two hospitals (Mankayane and Hlatikulu government hospitals).
  - ASSIST conducted three on-site customer care trainings for RFM staff and 90 (63 females and 27 males) staff attended (August and September 2013).
- **Conducted clients' satisfaction survey.** Conducted a client satisfaction survey at Mbabane Government Hospital where 234 patients were interviewed. This survey revealed that most of Mbabane Government Hospital's (MGH) customers wait between 30 minutes and 1 hour before consultation but wait less than 15 minutes to receive their drugs. The survey also showed that MGH customers acknowledge that the staff is customer-care-driven: Customers are addressed properly, given information about their conditions and treatment plans, given time to ask or voice concerns, and given privacy, although staff attitudes were not that friendly: doctors were rated at 53% to 60%, nurses 37% to 49%, and security 44%. The majority of the staff assessed were able to explain the condition and treatment plan (85%) as well as pharmacy instructions (94%) to their customers. The clients also noted that many MGH staff did not wear their name tags as they render their services. Only 39% of the participants saw name tags worn by the staff. This client satisfaction survey led to the review and harmonization of all facility-based client satisfaction tools and development of a national client satisfaction tool.
- **Facilitated Regional Collaboration:** As the regional coordinating agency for PEPFAR efforts in the Hhohho Region, ASSIST's responsibility is to coordinate joint clinical mentoring, provide logistics (i.e., airtime and cell phones) for the facilities, as well as support the organizational development of the Regional Health Management Team.
  - In February 2013, an orientation of the joint clinical mentoring team to the new approach was conducted followed by a comprehensive training in all the areas of mentoring (PMTCT, HTC, HIV care and treatment and TB care and treatment).
  - Fifty-eight (58) joint clinical mentoring visits were conducted by the teams comprising MOH, ASSIST, ICAP and EGPAF mentors. A total of 40 facilities were visited during the reporting period from October 2012 to July 2013.
  - During the mentoring visits, training needs assessments and onsite trainings were conducted to meet the needs of the HCWs at the facilities. Onsite trainings were conducted at 10 facilities on Isoniazid preventive therapy (IPT) implementation and management of drug sensitive TB and 7 facilities on TB screening algorithm, IPT implementation and TB diagnosis.
  - Seven feedback meetings for the regional clinical mentoring team were held to review the team performance as well as progress of the clinical mentoring activity.
- **Improved performance measurement, documentation and use of data for improvement at national, regional and health facility:** Improvements were noted in clinical service provision at several facilities implementing QI projects. Four of the TB/HIV comprehensive centers of care showed a remarkable increase in ART uptake – from 70% to 88% from baseline (September 2012) to September 2013 at the Raleigh Fitkin Memorial Hospital (Figure 1); and from 62% to 81% in four supported TB/HIV comprehensive care centers (Figure 2).

Figure 1: ART uptake in Raleigh Fitkin Memorial Hospital (September 2012-September 2013)



	Baseline	O	N	D	J	F	M	A	M	J	J	A	S
ART uptake	70	64	65	51	86	76	54	82	81	90	93	87	88
# TB/HIV coinfected patients initiating on ART within 8-10 weeks of TB treatment start	23	32	20	22	37	26	13	23	13	19	14	13	14
Total # of TB/HIV coinfected patients not on ART at start of TB treatment	33	50	31	43	43	34	24	28	16	21	15	15	16

Figure 2: Swaziland: ART uptake in four TB/HIV comprehensive care centers (Piggs Peak Hospital, Dvokowako Health Center, Mbabane Hospital, and Emkhuzweni Health Center) (Oct. 2012-June 2013)



	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun
	2012			2013					
# TB/HIV coinfected patients initiating on ART during period	88	75	50	85	54	35	48	41	48
Total # of TB/HIV coinfected patients not on ART at start of TB treatment	141	99	94	106	77	71	65	54	59
ART uptake	62%	76%	53%	80%	70%	49%	74%	76%	81%

Improvement in key indicators related to Activity 1 is shown in Table 1.

Table 1: Improvement in key QI institutionalization indicators

Activity	Indicators	Baseline (September 2012)	Q4 (July – September 2013)
1. Support MOH and IPs to institutionalize modern QI approaches	Number of health facilities participating in collaborative and feedback meetings	40	68
	Number of health care workers trained on QI and quality management	40	65
	Number of health facilities documenting performance of key QI indicators supported by QA program	7	25

What Are We Learning?

- **What factors contribute to the sustainability of quality improvement projects at health facilities?**
    - On-site trainings are very instrumental in ensuring sustained improved QI projects.
    - Team work is an important ingredient for success in quality service delivery and in improving health outcomes.
    - Attending the facility multi-disciplinary team meetings helps improve the planning for prompt on-site trainings for new nurses in the TB/HIV units.
    - Motivated staff can help sustain improvements gained in a unit even when they are moved from the unit.
    - Regular data reviews and involvement of all regional and clinic staff improves key performance indicators, sustainability of the QI projects, and processes and health systems.
    - Engagement of the facility management is crucial in ensuring that during change-over/staff rotations, not all the nurses are moved from the unit.
    - Leadership in QA/QI is a critical factor for improved service provision, creating enabling environment and support for sustained implementation.

Activity 2. Contribute to health systems strengthening through building capacity of demonstration sites

Background

The USAID ASSIST Project, in an effort to strengthen health systems in Swaziland, supported the Ministry of Health to develop and implement the Essential Health Care Package (EHCP). This package includes high-impact interventions and fosters an environment conducive to the delivery of equitable, standardized essential services of acceptable quality at all tiers of the health system. The regional strategic information unit was supported with staff and technical assistance to provide guidance and oversight for the implementation of the EHCP.

With the support from ASSIST, the Hhohho Region conducted the regional semi-annual review of performance (RESAR) for TB, HIV and maternal, neonatal, and child health. The seconded health information officers assisted with the data collection and verification and development of the various data presentations from the facilities participating in the RESAR.

Capacity Building of Demonstration Sites

Improvement Strategy

The RHMTs and the national Essential Health Care Package (EHCP) coordinator are taking the stewardship roll in planning and oversight in implementation of developing demonstration sites through capacity building involving competency needs assessments, training, supportive supervision, and clinical mentoring. The implementation is tracked through regular review of the developed implementation plans.

Spread Strategy

Through ASSIST's advocacy, the regions have included the scale-up of the Essential Health Care Package to primary health clinics in the regional work plans and have allocated clinic supervisors to oversee the scale-up strategy. The project has continued to support the orientation, training, and mentoring of the RHMTs and facilities on the EHCP. Facility-specific work plans were developed in five facilities in the Hhohho Region, and implementation and monitoring of facility-specific work plans is ongoing.

Accomplishments and Results

- **Increased universal access and availability of comprehensive, quality TB/HIV, MDR-TB, infection control at regional and PHC clinics in line with the Swaziland EHCP.**

Model clinics:

- Worked with the Hhohho RHMT to select and support three primary health clinics to serve as models for the implementation of the EHCP. The clinics were selected after a joint assessment of select facilities in the region was conducted. The assessment reviewed the structural conditions of the facilities, capacity of the existing health care workers to provide essential services, available resource levels, and availability of recording and reporting tools and job aids as well as existing monitoring mechanisms.
- Developed work plans for all the model clinics by each facility staff and assigned ASSIST team. Work plans included the integration of TB, TB/HIV, MDR-TB, IPC and QI activities in the clinics' service delivery package. The service delivery at the clinics will be implemented to the level recommended by the Essential Health Care Package.

Comprehensive TB/HIV care clinics:

- Five TB clinics at hospitals and health centers (Mbabane Government Hspital, Raleigh Fitkin Memorial, Pigg's Peak Hospital, Emkhuzweni Health Center, and Dvokolwako Health Center) provide comprehensive and integrated TB/HIV care and treatment. QI team journals and databases are being used to track interventions like directly observed treatment, short course (DOTS) and early ART initiation.

Centers of Excellence (CoE):

- In conjunction with the facility administration, ASSIST supported the creation of centers of excellence for TB, TB/HIV, and MDR-TB to support communities of practice for TB/HIV and MDR-TB management at two facilities (National TB Hospital and the TB Centre in Manzini Region). At the TB hospital there was a shift towards outcome-based practice and quality improvement which sought to define standard operating procedures (SOPs), reduce medical errors, focus on patient safety, and improve MDR-TB treatment outcomes. A series of improvement events were conducted including: the development of a CoE concept note; facility meeting schedules; restructuring of different improvement committees; clinical grand rounds; and coaching and mentoring. Facility staff (63 nurses and five doctors) were provided with technical support to develop standard operating procedures for service delivery, TB drug management, TB data management, outreach visits, and contact tracing in the community. As part of the QI projects for the centers of excellence, an Audiology Department was established to monitor ototoxicity among MDR-TB patients. The Audiology Department is now fully functional with standard operating procedures in place for referral of patients and their follow-up. Pamphlets and brochures were developed to provide information for both patients and health care workers and how they can access the services.

Improvement in targeted indicators for Activity 2 is presented in Table 2.

Table 2: Improvement in key capacity building indicators

Activity	Indicators	Baseline (September 2012)	Q4 (July – September 2013)
Contribute to health systems strengthening through building capacity of three model clinics, five demonstration clinics, and two centers of excellence for TB care and treatment in Hhohho and Manzini regions	Number of facilities providing comprehensive TB/HIV care and treatment	69	74
	Number and proportion of facilities receiving at least 80% of the planned joint clinical mentoring and support supervision visits in Hhohho and Manzini (33 facilities)	NA	15 (45%)
	Number of facilities with standards of care and algorithms for referrals and linkages in place	NA	8

What Are We Learning?

- **Does engagement of regional health management teams and facility staff provide a platform for delivering standardized quality health services?**
    - The development of the model clinics and the centers of excellence with the involvement of the facility staff and respective RHMTs has ensured that the activity is owned by the MOH. There has been acceptance of the EHCP as the minimum standard for health care delivery, and the various RHMTs have provided the support needed for the clinics to draw up work plans and begin to provide services as outlined in the EHCP.

Activity 3. Strengthen TB DOTS: Pursue High Quality DOTS Expansion for TB and MDR-TB

Background

A decline in TB case finding over the last three years has been noted despite the introduction of activities and technologies to increase case finding (ICF) and diagnosis (i.e., through Xpert MTB/RIF [GXP] and Line Probe Assay [LPA]). The TB case finding for FY12 was 7,878 while for FY13 was 7,050 TB cases. There is a huge disparity between the WHO estimates of 13,000 TB cases and the actual case finding. The MOH and partners are optimistic that these statistics herald a true reduction in incidence due to all the interventions that have been instituted.

Additionally, prior to the introduction of the rapid diagnostic methods for multi-drug-resistant TB (MDR-TB), pre-treatment loss to follow-up was high, as was early mortality. Delayed treatment initiation and early loss to follow-up also contributed to ongoing transmission of MDR-TB in the community. In FY13, the USAID ASSIST Project worked to improve MDR-TB treatment enrollment, MDR-TB sputum conversion rates at six months, and MDR-TB treatment success rates.

TB and MDR-TB

Improvement Strategy

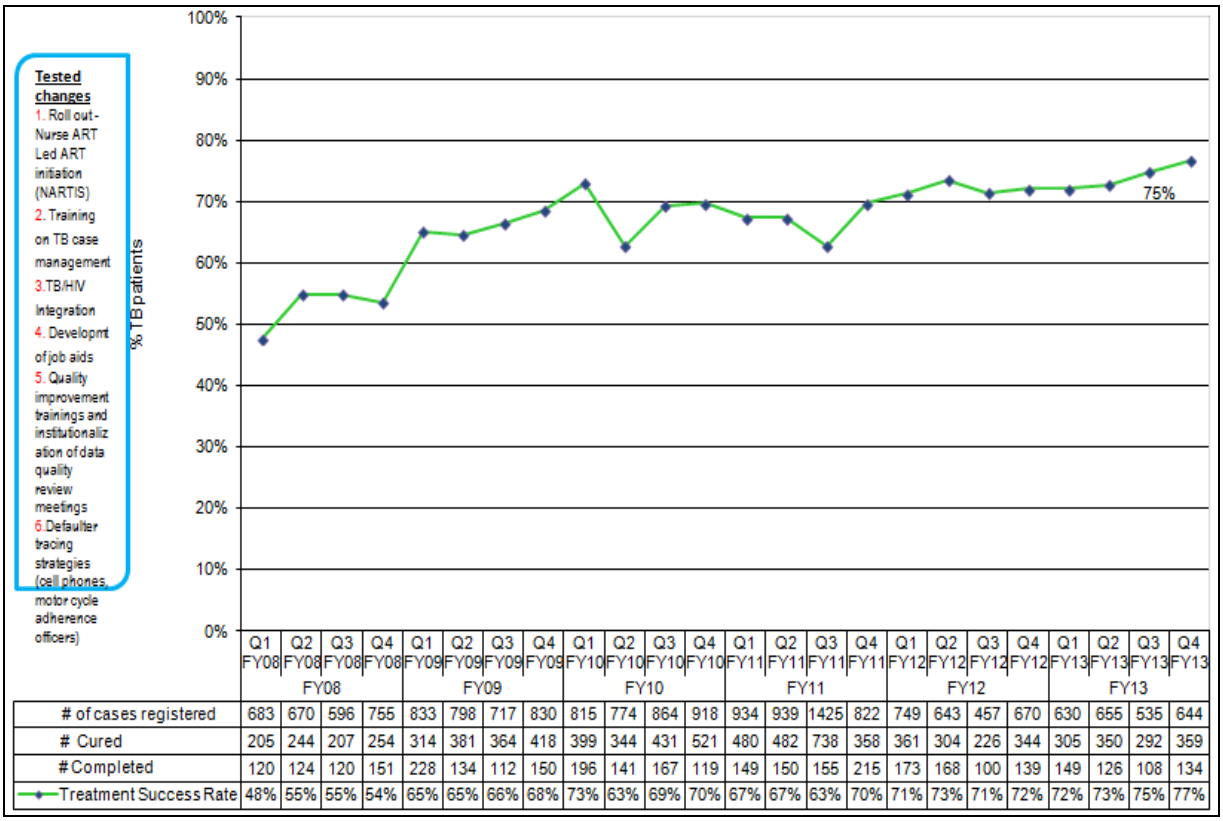
The improvement strategy included reviewing of the TB guidelines, building capacity of the NTCP to lead and manage, training of health care workers, providing supportive supervision, clinical mentoring, and conducting regional collaborative quarterly review meetings and sharing of best practices between the facilities to ensure sustained improvement and spread of tested changes to other health facilities.

Accomplishments and Results

- **Scaled up TB and MDR-TB case finding in 74 health facilities:**
    - During FY13, 7,050 patients were registered for TB care and treatment. Pediatric cases accounted for 668 (9.4%). Sputum smear-positive cases accounted for 3,057 (44%) while Extra Pulmonary TB cases accounted for 15% (996).

- The TB treatment success rates noted over FY13 has improved in the general TB population from 72% to 77% (see Figure 3) and in the TB/HIV population from 72% to 74%. The default rates in the general population and in the TB/HIV population is at 6%. The failure rates in the general population are 5% compared to 6% in the TB/HIV population.

Figure 3: National TB treatment success rates (FY8-FY13)



	Q1 FY08	Q2 FY08	Q3 FY08	Q4 FY08	Q1 FY09	Q2 FY09	Q3 FY09	Q4 FY09	Q1 FY10	Q2 FY10	Q3 FY10	Q4 FY10	Q1 FY11	Q2 FY11	Q3 FY11	Q4 FY11	Q1 FY12	Q2 FY12	Q3 FY12	Q4 FY12	Q1 FY13	Q2 FY13	Q3 FY13	Q4 FY13
	FY08				FY09				FY10				FY11				FY12				FY13			
# of cases registered	683	670	596	755	833	798	717	830	815	774	864	918	934	939	1425	822	749	643	457	670	630	655	535	644
# Cured	205	244	207	254	314	381	364	418	399	344	431	521	480	482	738	358	361	304	226	344	305	350	292	359
# Completed	120	124	120	151	228	134	112	150	196	141	167	119	149	150	155	215	173	168	100	139	149	126	108	134
Treatment Success Rate	48%	55%	55%	54%	65%	65%	66%	68%	73%	63%	69%	70%	67%	67%	63%	70%	71%	73%	71%	72%	72%	73%	75%	77%

- Over the reporting period, the MDR-TB suspects screened by culture and drug susceptibility testing were 3,884, of which a total of 184 were diagnosed with MDR-TB. Of those diagnosed, 126 (69%) were enrolled for treatment. To improve treatment enrollment, patients who are not yet initiated on treatment are traced using the adherence officers and during the mapping process once the results are available.

- **Provided resources to support the printing of the national TB and MDR-TB treatment guidelines**. Job aids were developed and printed for the health care workers to ensure rapid reference to the new guidelines (see Appendices A, B, F, and G). Through ongoing support for cough monitors/officers and the printing of the revised TB screening tool, the national TB screening efforts continue to improve. The TB screening occurs at all entry points in the health facilities but is not disaggregated by HIV status.

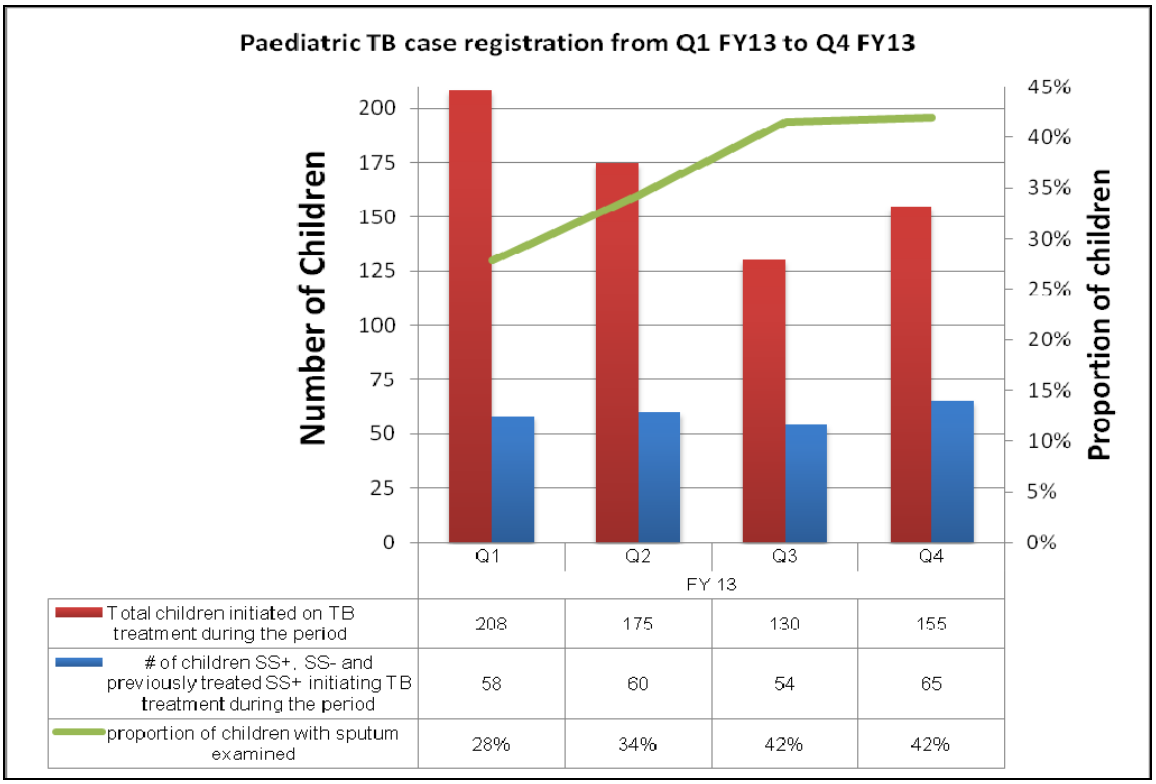
- **In collaboration with the Swaziland Health Laboratory Service, supported the introduction of rapid diagnostics – the GeneXpert MTB and Line Probe Assay.** As of the fourth quarter in FY13, 22 GeneXpert machines have been installed in country—all facilities have access to them either onsite or by sputum referral. Efforts have been made to reduce the turnaround times, and majority of patients receive the results of their sputum within seven days if the Xpert MTB/RIF is off-site, and if it is on-site, within 24 hours. Job aids were developed for facilities to increase utility of the GeneXpert.

- **Strengthen TB case detection among key groups including vulnerable populations (i.e., children and health care workers).**

Pediatric TB:

- Supported the formation of the pediatric TB TWG and provided resources for the first working group meeting to be held. Terms of reference for the TWG members have been circulated. A pediatric TB and MDR-TB situational analysis has been conducted, and the data is currently being analyzed. An analysis of availability of pediatric friendly MDR-TB drugs was also conducted, and the report shared amongst the TWG members. Pediatric case registration increased in FY13 (Figure 4).

Figure 4: Trends in pediatric TB case registration (FY13)



Prisons:

- TB screening was conducted in eight of the 12 prisons, and anti-TB treatment provided at the nearest health facility for those diagnosed with tuberculosis. A TB clinic at Matsapha correctional services is receiving ongoing support and resources to become the main TB referral clinic for all the prisons.

Miners:

- TB screening among the miners was conducted during health awareness days in the mining communities. Ongoing efforts are in place to ensure all mining communities are mapped so that interventions can be put in place to address the high TB rates. Currently a total of 109 miners have been mapped.

Health care workers:

- Through technical and financial assistance to the Wellness centre (a non-profit, non-governmental organization providing wellness services for health care workers), a pilot project on TB screening, diagnosis, and linkage to care for health care workers in 16 health facilities was conducted from October 2012 to September 2013. The pilot project is part of a prospective TB surveillance program within the MOH run by the Wellness Center. Between October 2012 and June 2013, out of 5,992 health care workers in 14 health facilities, 2,984 received TB screening (50%), and 22 were diagnosed with tuberculosis and put on treatment.

- **Improved case holding and treatment outcomes for TB and MDR-TB:** ASSIST supported the National TB Control Program to adapt and implement the community TB DOTS strategy. During January to March 2013 the community treatment supporter DOTS card was revised, printed and distributed to all TB diagnostic sites. All hospitals and health center TB adherence officers are supported with cell phones and airtime to provide facility-based patient follow-up. The officers are equipped with motor-bikes, and in the event that a patient fails to return to the clinic after the phone call, the adherence officer will do a home follow-up. This has helped reduce the defaulter rates in the hospital and health center TB clinics. ASSIST has continued to support mapping of MDR-TB patients. ASSIST staff provided technical assistance to and trained 18 TB adherence officers on how to conduct mapping of MDR-TB patients and TB treatment supporters using GIS equipment (the four GPS receivers procured by HCI and 10 GPS receivers procured through the World Health organization) for use during the mapping exercises.
- **Conducted community follow-up of MDR-TB patients:** To improve retention on treatment, the USAID ASSIST project provided support to the community MDR-TB units at both Pigg's Peak Hospital and the National TB Hospital at the start of FY13 (October 2012). A vehicle and driver have been seconded to the unit to assist with follow-up of patients in the community as well as conduct home assessments.
- **Strengthened TB/HIV and MDR-TB referral systems and bridged the continuum of care between community and primary, secondary and tertiary levels of care**: Ongoing collaboration with the Luke Commission, a community-based organization to facilitate community-based TB screening and linkage to TB care and treatment services. During the reporting period, ASSIST trained 16 cough monitors on TB susceptibility, TB/HIV co-infection, and MDR TB. ASSIST facilitated the Luke Commission to provide referrals for TB treatment at health facilities. Referral tools from the community to the facilities have been provided for their use. As a result, dramatic increases have been seen between 2010 and 2013 in the numbers of patients screened for TB in the community (from 4,567 to 23,229), and tracked for TB-HIV referrals (from 892 to 4,187).
- **Conducted advocacy, communication and social mobilization activities:**
    - **Community engagement:** Following a four-day workshop on TB held for community leaders in Hhohho Region, community sensitization meetings on TB have been conducted in seven communities, aimed at empowering community leaders on TB, TB/HIV and MDR-TB and their role in TB community care and assisting TB patients in their catchment areas.
    - **Health education:** TB health education was conducted at one pre-school for 15 children and one primary school for 840 children. Child-friendly information, education and counseling materials were also disseminated on TB disease/facts with an emphasis on identification of symptoms and preventive measures.

Improvement in key indicators for Activity 3 is shown in Table 3.

Table 3: Improvement in key TB and MDR-TB indicators

Activity	Indicators	Baseline FY12	Oct to Sept 2013
Strengthen TB DOTS: Pursue High quality DOTS Expansion including MDR-TB.	TB case finding	7864	7050
	MDR-TB case finding	224	184
	MDR-TB treatment enrolment	161 (71.8%)	126 (68.5%)
	MDR-TB six-month interim outcomes	54.2%	68%
	TB treatment success rates	72%	76%

What Are We Learning?

- **Does providing interventions to improve TB case finding in the community improve health care delivery?**
    - Using a community-based approach to scale up TB case finding through TB screening using a five- question symptom checklist administered by lay personnel (who received a two-day

training), in collaboration with the Luke Commission, the numbers screened in the Manzini sub-region outside of the city and outlying suburbs increased from 4,569 to 23,000 over the course of the year, and referrals for TB/HIV care went up from 800 to 4000 people.

- **Does active engagement of the NTCP provide better performance at a facility level?**
  - Conducting joint clinical mentoring and supportive supervision with the National TB Control Program regional TB coordinators and co-facilitating at regional TB clinical management trainings has improved the provision of support to the facilities and also ensures that the NTCP has ownership of the process. Conducting regional collaborative quarterly review meetings and sharing of best practices between the facilities has ensured that TB diagnostic clinics are implementing QI plans using their own initiative.

Activity 4. Strengthen MOH capacity and partners to implement infection control

Background

In FY13 the USAID ASSIST Project supported the validation of the National IPC guidelines, development and printing of a national infection prevention and control (IPC) training curriculum, training of HCWs on IPC and health facility IPC assessments. USAID ASSIST also championed the formation and continued activities of the national IPC TWG.

Strengthening MOH Capacity for Infection Control

Improvement Strategy

Worked in collaboration with MOH counterparts and NGOs to ensure skills transfer and improved coordination for the infection control activities for sustainability and ownership by the MOH.

Spread Strategy

The project advocated for the development of a national infection control work plan and establishment of an IPC TWG. Regions were supported to include infection control activities in their work plans to ensure that facilities are implementing infection control.

Accomplishments and Results

- **Provided support to IPC TWG:** ASSIST provided support for the IPC TWG to conduct their quarterly meetings. The IPC TWG completed the development of annual work plans. In July 2013 the project provided technical assistance and resources for a three-day workshop to review, adapt, and finalize the national IPC curriculum and training manual; the documents will be used to standardize IPC training and implementation at all levels. Using the new curriculum, 32 HCWs have been trained.

- **Conducted TB infection control risk assessments:** Between October and December 2012, eight TB infection control facility assessments were conducted; gaps that were identified are being addressed. Thirteen health facility IPC focal points were trained and supported. IPC committees were re-established in two facilities (TB Hospital and Piggs Peak Hospital). IPC plans have been developed for two facilities (Good Shepherd Hospital and Raleigh Fitkin Memorial Hospital). The FAST (**F**inding cases quickly, **A**ctive case finding, **S**eparating Safely, and effective **T**reatment) strategy which aims to reduce TB transmission in facilities has been adapted and supported in three facilities (TB Center, Pigg's Peak Hospital, and Raleigh Fitkin Memorial Hospital). IEC materials and job aids were developed and disseminated to health care workers in these facilities.

- **Developed IPC curriculum and training:** In March 2013, the ASSIST team held a three-day workshop to review and adapt the national IPC curriculum and training manual for standardization of IPC training and implementation at all levels. In the fourth quarter of FY13, the ASSIST team supported the completion of the IPC training manual for HCWs. Job aids were also developed for this purpose (see Appendix D).

- **Strengthened infection prevention and control practices in model clinics in areas of high risk for TB transmission:**

- Conducted N95 Respirator fit testing exercise at the National TB Hospital; 85 health care workers participated in this exercise. The exercise helped to establish the proportions of mask sizes needed. These proportions are being used to inform the procurement of the N95 masks.
- TB risk assessments were conducted in two facilities (Horo Clinic and Maloma Colliery Clinic). The gaps identified were: lack of IPC structure/protocols, poor triage of TB patients and suspects, and compromised ventilation.
- Follow-up mentoring on developing a TB infection control plan to address gaps identified during the TB risk assessments.

Activity 5. TB/HIV Integration: coordination, decrease burden of TB in HIV patients, decrease burden of HIV in TB patients

Background

In Swaziland TB/HIV collaborative activities have been implemented since 2007 when Swaziland developed the TB/HIV policy guidelines and formed a National Coordinating Committee (NCC). At the end of FY12, HTC uptake was 91% versus the recommended 100%, there was a high HIV positivity rate of 78% among TB patients, CPT uptake was 99%, and ART uptake was 69% versus the recommended 100%. In FY13 ASSIST set out to increase uptake of adult HIV care and treatment services for TB/HIV co-infected patients focusing on improving gender equity and access to care and treatment services, engage the community to increase awareness, as well as build capacity for treatment support within the community.

TB-HIV Integration

Improvement Strategy

In conjunction with the National AIDS Program, USAID ASSIST developed the IPT implementation plan and started the revision of the policy on TB/HIV collaborative activities. The Swaziland National AIDS Program and the NTCP are providing oversight for the implementation of the TB/HIV collaborative activities and this ensures sustainability and ownership for the improvement strategy.

Spread Strategy

ASSIST provided technical assistance to the TB/HIV NCC to develop the decentralization plan for integration of TB/HIV activities as well as provide assistance in monitoring the decentralization plan. The implementation of the decentralization plan ensures that the facilities are strengthened to provide integrated TB/HIV services in order to roll out these services.

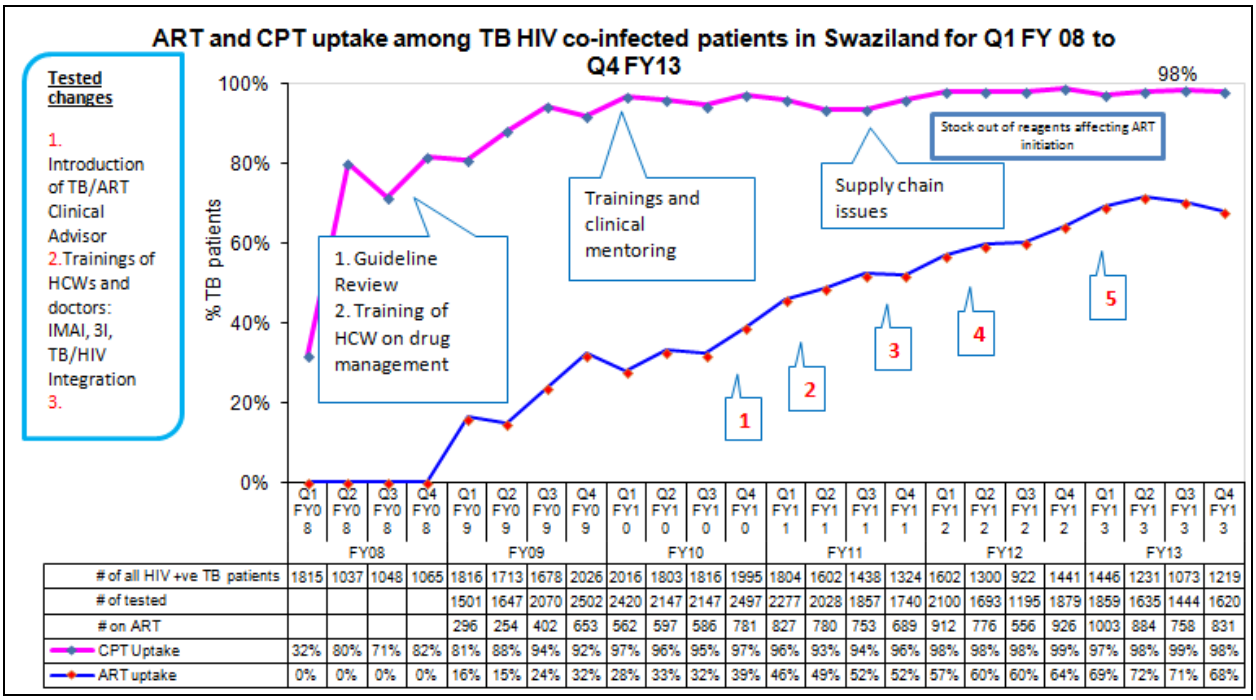
Accomplishments and Results

- **Supported the MOH TB and AIDS programs to coordinate and oversee implementation of the TB/HIV collaborative activities:** Supported the National TB/HIV coordinating committee (TB/HIV NCC) to hold the quarterly working group meetings. The main themes of the meetings were integration of TB/HIV activities in facilities and the implementation of isoniazid preventive therapy (IPT).
- **Conducted clinical mentoring and supportive supervision to TB/HIV clinics** to increase HTC, CPT, and ART uptake among adult and pediatric populations in TB clinical settings.
- **The project supported HIV testing in 74 TB clinical settings.** A total of 7,050 TB cases, of which 4,969 (70.4%) were HIV-positive patients, were recorded in the reporting period, and 4,866 (98%) were initiated on CPT (Figure 5). Facilities received clinical mentorship and supportive supervision to ensure that all TB/HIV co-infected patients received CPT.
- **TB screening is being conducted in HIV clinics as well as the outpatient departments and inpatient wards.** The data from the ART clinics shows that in the reporting period, 51,703 (64%) of 81,000 registered patients had a documented TB screening at least once during the reporting period.
- **Isoniazid preventive therapy has been rolled out** to seven hospitals (Pigg's Peak, Mbabane Government, Raleigh Fitkin Memorial, Good Shepherd, Hlatikhulu, Mankayane and National Psychiatric Hospital); five health centres (Dvokolwako, Emkhuzweni, Sithobela, Nhlangano and

Matsanjeni); 23 primary health clinics in Shiselweni region and two NGOs (AHF Lamvelase and Cabrini Ministries). All of these facilities have received formal off-site training and follow-up on-site training.

- In the reporting period, 659 eligible HIV-positive patients were initiated on IPT. During the same period, 165 patients completed their IPT regimen. However, the initiation of patients on IPT has been interrupted due to irregular supplies of isoniazid and weak data collection systems.

Figure 5: National trends in ART and CPT uptake among TB/HIV co-infected patients (FY08-FY13)



	Q1 FY08	Q2 FY08	Q3 FY08	Q4 FY08	Q1 FY09	Q2 FY09	Q3 FY09	Q4 FY09	Q1 FY10	Q2 FY10	Q3 FY10	Q4 FY10	Q1 FY11	Q2 FY11	Q3 FY11	Q4 FY11	Q1 FY12	Q2 FY12	Q3 FY12	Q4 FY12	Q1 FY13	Q2 FY13	Q3 FY13	Q4 FY13
# of all HIV +ve TB patients	1815	1037	1048	1065	1816	1713	1678	2026	2016	1803	1816	1995	1804	1602	1438	1324	1602	1300	922	1441	1446	1231	1073	1219
# of tested					1501	1647	2070	2502	2420	2147	2147	2497	2277	2028	1857	1740	2100	1693	1195	1879	1859	1635	1444	1620
# on ART					296	254	402	653	562	597	586	781	827	780	753	689	912	776	556	926	1003	884	758	831
CPT Uptake	32%	80%	71%	82%	81%	88%	94%	92%	97%	96%	95%	97%	96%	93%	94%	96%	98%	98%	98%	99%	97%	98%	99%	98%
ART uptake	0%	0%	0%	0%	16%	15%	24%	32%	28%	33%	32%	39%	46%	49%	52%	52%	57%	60%	60%	64%	69%	72%	71%	68%

- To address these challenges, an implementation framework has been developed, and the HIV and TB recording and reporting tools have been revised to capture IPT data at the facility level.
- An "IPT indaba" was held, all stakeholders were invited to deliberate on way forward as well as get buy-in from the stakeholders to strengthen the implementation of IPT.
- Strengthened ART uptake among the TB/HIV co-infected adults and children in accordance with the national treatment guidelines.
- **National**: All ASSIST supported facilities received clinical mentoring and support for their QI plans to ensure all TB/HIV co-infected patients are initiated on ART. There has been a steady increase in the ART uptake among TB/HIV clinics. Over the reporting period, 3,476 (70%) of TB/HIV co-infected patients received ART. Of these, 2,236 were previously on ART, while 1,240 TB/HIV co-infected patients were started on ART during the reporting period. However at the end of the last quarter in FY13, the ART uptake declined to 68% due to recurrent shortages of creatinine reagents that affect the ART initiation rate, especially in sites that have a NARTIS trained nurse with no doctor support. However at supported sites, the health care workers were encouraged to initiate ART despite the absence of creatinine reagent as this is not a prohibiting factor to initiate a tenofovir-based regimen. A review of the data in five comprehensive TB/HIV care centers showed that within the first eight weeks of anti-tuberculosis treatment initiation, 81% of those who were not on ART had been initiated on ART.

What Are We Learning?

- **What affects the initiation of IPT among eligible populations?**

- Following the development and dissemination of the guidelines on IPT, the uptake has been rather slow and irregular. On-site facility trainings, engagement of facility staff, and the regional mentoring teams and production of job aids have assisted in the scaling up of IPT services in facilities. However, the scale-up needs to be accompanied by adequate reporting and recording tools and community sensitization.

Activity 6. Enable and promote research to improve pediatric TB diagnosis

Background

While adult TB cases are often easily recognizable due to typical symptoms (radiological features and positive sputum smear), bacteriological confirmation of pulmonary tuberculosis is difficult in infants and young children, and there is no reliable, noninvasive method for obtaining sputum samples in very young non-expectorating children for bacteriological confirmation. Childhood tuberculosis is commonly extra-pulmonary, disseminated, and severe. It is associated with high morbidity and mortality. Most TB control programs place emphasis on adult TB diagnosis, and diagnostic approaches in children remain a neglected area of research despite the considerable morbidity and mortality. In FY13, USAID ASSIST worked with local staff in research activities in order to ensure institutionalization of processes as well as building research capacity. Trainings were conducted to capacitate staff who participated continuously in the study processes. Staff were involved in the development of study protocols, analysis, and report writing, and staff were encouraged and supported to present articles and abstracts in local and international forums.

Accomplishments and Results

- **Conducted priority operational research studies for TB including MDR-TB, TB/HIV**
  - From May to July 2013, a protocol on improving pediatric TB diagnosis using various sputum retrieval methods and diagnostics has been developed. Institutional Review Board (IRB) approval has been obtained, and the study is being piloted in one facility prior to full implementation.
  - A pediatric TB and MDR-TB situational analysis was conducted in August 2013. A total of 16 facilities participated in the situational analysis. The data has been analyzed, and the final report is being written.

4 Sustainability and Institutionalization

National

- **Policy, guidelines, and strategic document development to guide and standardize implementation of improvement activities strategic documents:** USAID ASSIST supported the development of the NTCP strategic plan, TB, MDR-TB and infection control guidelines and standard of care for TB and supported training of managers and health care workers on these documents
- **Stakeholder and staff involvement:** ASSIST established technical working groups, national TB/HIV collaborative learning sessions, and a 'twinning' system of URC and MOH staff ensures URC staff work with counterpart national staff to encourage knowledge and skills transfer. Twinning has enhanced the skills of the cadres within the national program.
- **Program results documentation and sharing:** Documentation of results to support the sustainability of the QI projects. For health financing, ASSIST worked with the MOH and NTCP to support implementation of externally financed projectsresource funded by the World Bank, Global Fund, and TB Reach.
- **Leadership and capacity development of RHMTs, health facility managers, and clinic supervisors:** ASSIST ensured development of regional action plans that are customized for improved service delivery of targeted interventions prioritized by regional teams and provided capacity for a strategic approach for joint supportive supervision and clinical mentoring to ensure ownership, knowledge and skills transfer, and sustainability of health interventions. ASSIST also built capacity of CBOs to ensure transfer of knowledge and skills to enable them deliver community services.

Facility

- At the facility level, the project has developed structures and systems for institutionalization of QI interventions, to improve health care delivery and health outcomes through establishment of QI teams. QI teams have been supported by ASSIST in the identification of quality gaps and development of QI plans, and through on-site training, coaching, mentoring, supportive supervision, resource mobilization, and monthly data review meetings.

5 Knowledge Management Products and Activities

Facility

- QI project identification, implementation and documentation of QI projects and use of QI storyboards for presentation of QI projects.
- Tracking of key performance indicators and data review and lessons learnt from interventions.
- Standard operating procedures and job aid development, training, and dissemination (see Appendices A-D, F, and G).
- Case study and chart review meetings.

At national and regional levels

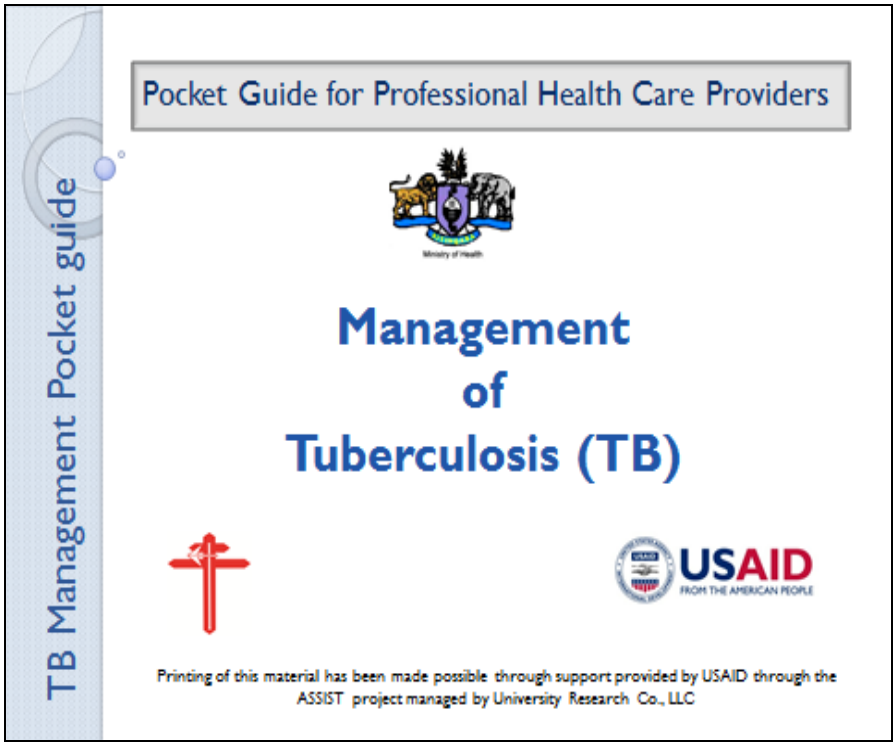
- Community of practice: MDR-TB monthly clinical expert meeting.
- Sharing of best practices; success stories, storyboards, and reports.
- Abstract development and sharing at the International TB Union Conference.

6 Directions for FY14

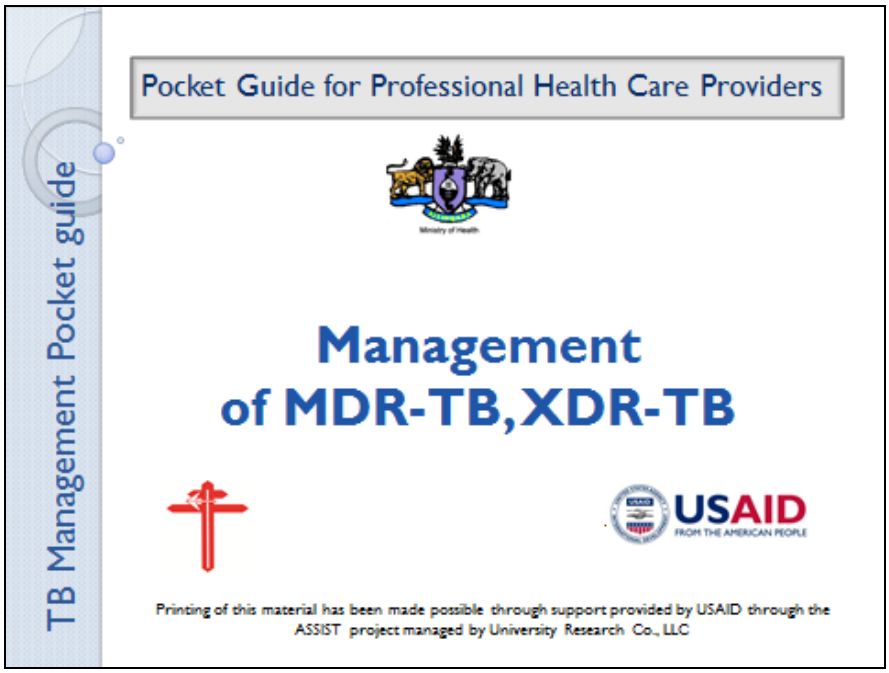
- Structured and integrated coaching and mentorship.
- In-service training, development and dissemination of QI job aids, standards of care, and standard. operating procedures for health care workers.
- Integration of non-communicable disease management and sexual and reproductive health in TB/HIV collaborative policy guidelines Contribute to health systems strengthening and improvements by integrating leadership and governance structures at hospital and of regional health management teams, community health systems linkages and referrals and strengthening commodity and supply systems.
- Universal and decentralized access to quality TB, MDR-TB, and TB/HIV diagnosis, prevention, treatment and care services including TB infection control, vulnerable populations like miners and mining communities, children, and health care workers.
- Strengthen advocacy, communication, and social mobilization for TB/HIV at all levels and promotion of the patients' charter (see Appendix E).
- Introduce and scale-up utilization of mhealth interventions for health.

7 Appendices

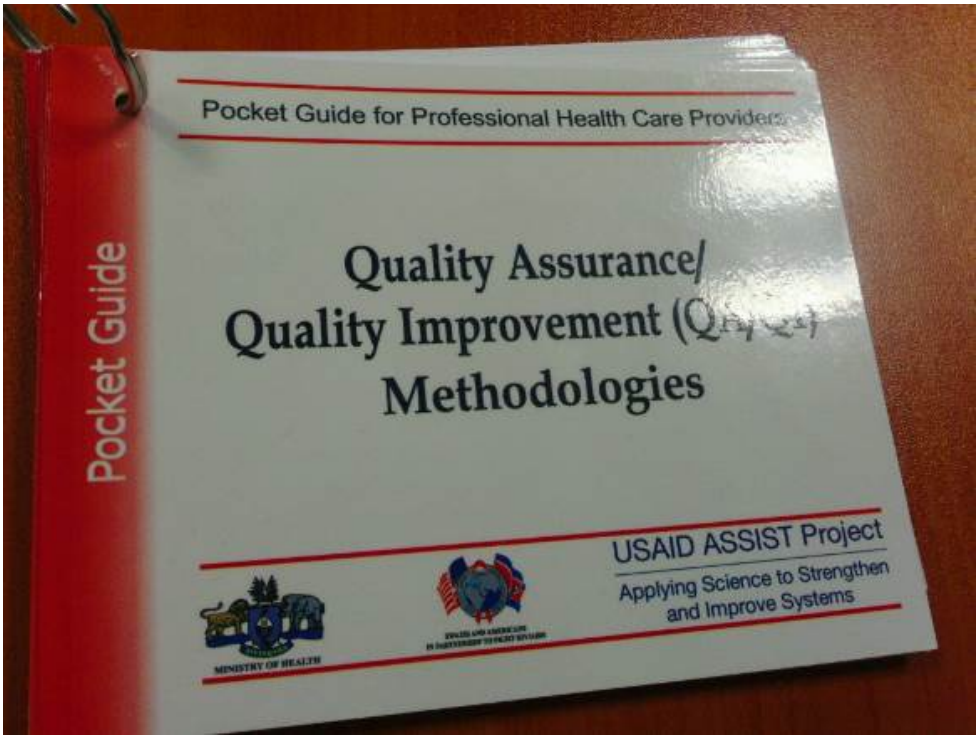
A. Management of TB pocket guide



B. Management of MDR-TB pocket guide



C. QA/QI methodology pocket guide

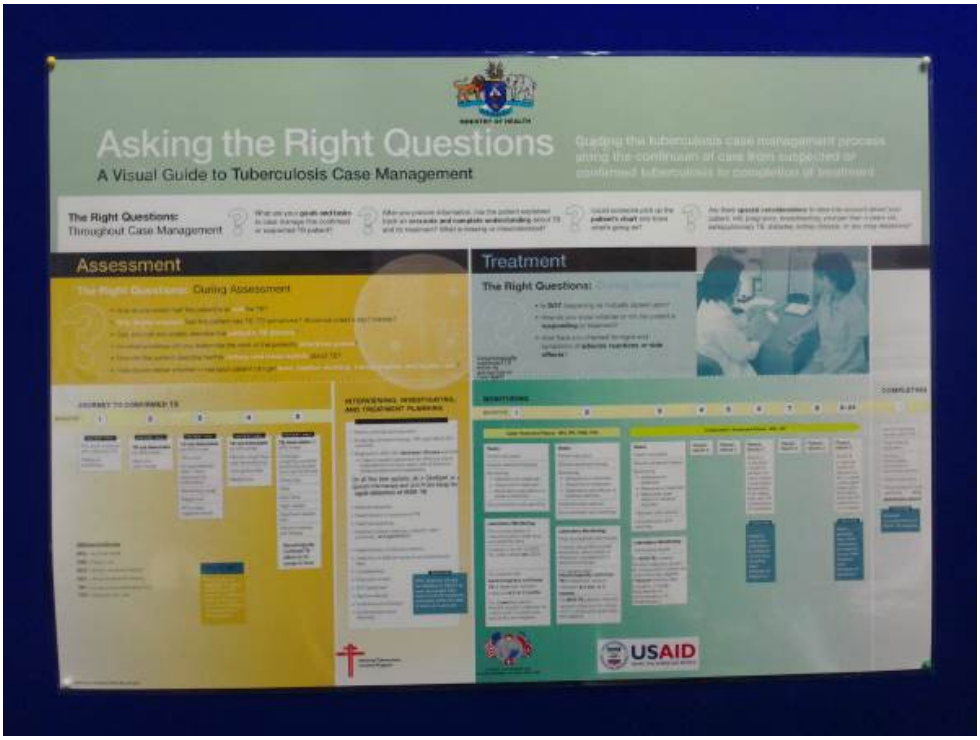


D. Infection control – STOP THE SPREAD OF TB stickers

E. Patient's Rights Charter found in all health facilities

F. TB infection control job aid

G. TB case management job aid



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