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TUBERCULOSIS SOUTH AFRICA PROJECT

USAID Tuberculosis South Africa Project

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Quarterly Report
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USAID/Tuberculosis South Africa Project

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Contents

Acronyms

ACSM	Advocacy, Communication and Social Mobilization
AFB	Acid Fast Bacilli
AIDS	Acquired Immune Deficiency Syndrome
ART	Antiretroviral Therapy
BC	Bacteriological Coverage
CHW	Community Health Worker
CPT	*Cotrimoxazole* Preventative Therapy
CQI	Continuous Quality Improvement
DM	Diabetes Mellitus
DOT	Directly Observed Treatment
DOTS	Directly Observed Treatment, Short Course
DR-TB	Drug-Resistant Tuberculosis
DS-TB	Drug-Sensitive Tuberculosis
DVE	Data Verification Exercise
ETR	Electronic Tuberculosis Register
GXP	GeneXpert® MTB/RIF (Xpert)
HCT	HIV Counseling and Testing
HCW	Health Care Worker
HIV	Human Immunodeficiency Virus
ICSM	Integrated Clinical Services Management
IC	Infection Control
IEC	Information, Education and Communication
IPC	Infection Prevention and Control
IPCC	Interpersonal Communication and Counselling
IPT	*Isoniazid* Preventive Therapy
LDHF	Low-Dose High-Frequency
M&E	Monitoring and Evaluation
MDR-TB	Multi-Drug Resistant Tuberculosis
NDOH	National Department of Health
NGO	Non-Governmental Organization
NTP	National Tuberculosis Control Program

PEPFAR	United States President's Emergency Plan for AIDS Relief
PMDT	Programmatic Management of Drug-Resistant Tuberculosis
PPP	Public-Private Partnership
PTB	Pulmonary Tuberculosis
QI	Quality Improvement
QIP	Quality Improvement Plans
RTCs	Regional Training Centers
RR	*Rifampicin* Resistant
SCR	Smear Conversion Rate
SOP	Standard Operating Procedure
STI	Sexually Transmitted Infection
TAT	Turnaround Time
TB	Tuberculosis
TOT	Training of Trainers
TSR	Treatment Success Rate
URC	University Research Co. LLC
USAID	United States Agency for International Development
WBOT	Ward-Based Outreach Teams
WC PDC	Western Cape People Development Centre
WHO	World Health Organization
XDR-TB	Extensively Drug-Resistant Tuberculosis

List of Tables

List of Figures

EXECUTIVE SUMMARY

TB Infections Reduced

Increased Public Awareness of the TB Epidemic

During the reporting period, the USAID Tuberculosis South Africa Project significantly scaled up efforts to raise awareness and knowledge about TB across South Africa. These efforts will contribute to increasing demand for TB services and improvement in treatment adherence rates and retention, particularly in project-supported districts and sites. Strategic dissemination of TB information was done through radio, social media, documentary videos and community activations targeting a broad range of audiences and vulnerable populations. These populations include public transport users, school children, pregnant women, pediatric TB patients and farm workers. Through these efforts, more than 380,000 IEC materials were disseminated, with over 55,000 people reached through various social media platforms and TB messages communicated through radio platforms with listenership of approximately 172,000. Efforts were intensified to improve the quality of counselling provided to TB patients through the implementation of an interpersonal communication and counseling (IPCC) strategy. During the reporting period, a total of 206 community health workers (CHWs) were trained on IPCC, to strengthen their TB counselling knowledge and practice. This patient centered strategy will help lead to increased uptake of TB screening and testing services, and better support for patients to adhere to their treatment.

Effective Implementation of Infection Control (IPC)

Implementation of the FAST Approach gained momentum in the reporting quarter, culminating in a National FAST Workshop attended by over 150 managers from TB/HAST, infection control, quality assurance, hospital services, and occupational health units in all nine provinces of South Africa. The FAST Approach has been embraced as a key strategy to improve infection prevention and control (IPC) in health facilities in South Africa. At the time of reporting, the approach was being implemented in 15 hospitals in five provinces. Activities in the reporting quarter resulted in the active screening of 39,740 patients and the identification of 236 patients with TB by GeneXpert (234 drug susceptible TB (DS-TB) and two drug-resistant TB (DR-TB) cases) in FAST implementation sites. Patients were identified in both in- and out-patient departments. Furthermore, an additional 497 healthcare workers were screened for TB during the quarter under review, of which 179 were symptomatic, and two of these were positive for TB in one hospital. These early results from the implementation of the FAST strategy show the significant impact of facility level interventions focused on case finding and infection control in hospital settings. To ensure effective implementation of IPC at facility level, IPC risk assessments were conducted in 11 facilities, bringing the total number of facilities in which comprehensive risk assessments have been conducted to 56. The project also identified innovative technologies aimed at strengthening implementation of IPC, one of which has been the use of carbon dioxide (CO_2) monitors for environmental evaluations. To date 11 CO_2 monitors have been installed in health facilities in three provinces to evaluate environmental controls and ensure efficacy of infection control measures in supported facilities. It is anticipated that consistent use of these monitors will significantly reduce risks

of TB transmission due to poor ventilation in supported facilities. The launch of the IPConnect application during Quarter 4 further demonstrates how the project is introducing innovative electronic platforms to improve TB management in South Africa. IPConnect was launched to make electronic versions of multiple TB guidelines available to facilitate ease of access to TB management procedures for health care workers. The application is available for download on the Google Play Store.

Sustainability of effective TB response systems increased

Strengthened Management Capacity at all Levels

The Quality Improvement (QI) Approach implemented by the USAID TB South Africa Project is the cornerstone for ensuring the sustained impact of implemented interventions in supported sites. The USAID TB South Africa Project provides core support to implementation of the NDOH National Quality Improvement Initiative, which aims to strengthen management capacity at all levels. Through implementation of the quality improvement project, noticeable improvements were reported across supported Phase 1-pilot districts in the reporting quarter. For example, TB screening rates improved significantly (including improvements from a baseline of 16% in October 2016 to 55% in July 2017 in OR Tambo District, and improvements from 33% to 48% in Sub-district C in Nelson Mandela Bay Metro, Eastern Cape Province). Across the districts, improvements are also being documented on the other parts of the TB cascade, even though initial focus was on TB screening. For example, in Ehlanzeni district n Mpumalanga province initial loss to follow up dramatically fell from 9.3% in Q1 to 5.7% in Q2 as a direct result of the QI support provided by the project. These results demonstrate the effectiveness of the QI approach to improve key TB indicators. During Quarter 4, the project also facilitated quality improvement training for seven TB QI pilot sites and 44 district and sub-district managers from Eastern Cape, Gauteng and KwaZulu-Natal provinces as well as PEPFAR district support partners. It is expected that the cascading of the QI training across supported districts will facilitate achievement of similar results on a broader national scale.

Furthermore, during the period under review, 1,280 health care workers (HCW) were trained on various TB-related topics, including Basic TB Management & Interpersonal Communication and Counselling. In addition to the didactic trainings offered by the project, in-service trainings were conducted during the quarter as part of the low-dose high-frequency training approach, reaching 658 HCWs.

Improving the care and treatment of vulnerable populations

Comprehensive partnerships for care

The USAID TB South Africa project scaled up its support to farm workers and expanded provision of services to the Western Cape Province. As a direct result of the support provided to farm workers in Eastern Cape Province, approximately 2,346 farm workers were reached with TB messages, with 91% of them screened for TB. Of those screened, 23% (491) were presumptive and 91% (446) of presumptive cases were tested for TB. A total of 16 cases were diagnosed with TB and linked to care. Additionally, in September 2017, an end-of-season comprehensive health screening campaign was conducted in Western Cape, reaching 257 farm workers with information. A total of 198 people were screened for TB, finding 95

presumptive cases, and resulting in the diagnosis of three farm workers with TB and linking them to care. A total of 36 farms workers were diagnosed with TB and linked to care between the launch of the TB in Farms Initiative in May and September 2017. Support provided to farm workers brings much needed TB services to seasonal workers who are highly mobile and move in and out of the farms at the beginning and end of different farming seasons. Given the limited availability and access to health for this vulnerable population, the TB patients identified and linked to care will significantly reduce the risk of TB transmission to families and farming communities.

Small Grants

Finding missing cases and linking patients to care is a key USAID Tuberculosis South Africa Project strategy to reduce the transmission of TB. Project-funded non-governmental organisations (NGOs) at the local level play an important role in improving TB case-finding, particularly among vulnerable populations. Through door-to-door and community awareness campaigns, over 12,000 people were reached with TB messages with 88% of them being screened for TB. A total of 116 TB cases were diagnosed and linked to care through these efforts. In addition to this, funded NGOs conducted contact management reaching a total of 2,794 adult contacts, with 98% of them screened for TB. All presumptive cases were tested, and 64 people were diagnosed with TB and initiated on treatment. Furthermore, 386 children were also reached through the contact management and 93% of them were screened for TB. 69% of the children screened were presumptive for TB. Of the presumptive TB cases tested, 25 were confirmed to have TB and started on treatment. As these results show, contact management continues to be a high yield high intervention, particularly for child contacts. The TB cases found translate to a yield of 6,925 per 100,000 population among child contacts, and 2,313 per 100,000 population among adult contacts. Supported NGOs will continue to prioritize contact management as a key strategy to contribute towards find missing TB cases in South Africa. In the next quarter emphasis will be put on ensuring the sustainability and cost effectiveness of these interventions by piloting various elements through the Department of Health Ward Based Outreach Teams (WBOTs).

Implementation of the DR-TB service package in South Africa

In December 2015, the White House officially released a plan to address multidrug-resistant tuberculosis (MDR-TB) domestically and internationally through implementation of a National Action Plan (NAP) for Combating MDR-TB. The NAP builds on the World Health Organization's (WHO) END TB Strategy and the United States Government's (USG) domestic and global tuberculosis (TB) strategies. It will also contribute to the success of existing strategies to eliminate drug-resistant TB (DR-TB). South Africa is amongst four countries that have been identified to implement Phase I of NAP. Five sites in three provinces (Eastern Cape, Free State and Limpopo, were selected to implement the DR-TB service package to significantly enhance initiation of MDR-TB patients in care, support them, and improve clinical outcomes for DR-TB patients.

INTRODUCTION

The United States Agency for International Development's (USAID) Tuberculosis South Africa Project was awarded to University Research Co., LLC (URC) on March 17th, 2016, and has the primary objective of providing technical assistance to the Government of South Africa (GoSA) to reduce the burden of tuberculosis (TB) in the country. The project builds on the activities of the USAID TB Program South Africa (2009-2014) and the USAID TB Care II (2014-2015). The objectives of the project are to:

- Reduce TB infections;
- Increase sustainability of effective TB response systems; and
- Improve care and treatment of vulnerable populations.

To achieve these objectives, the project:

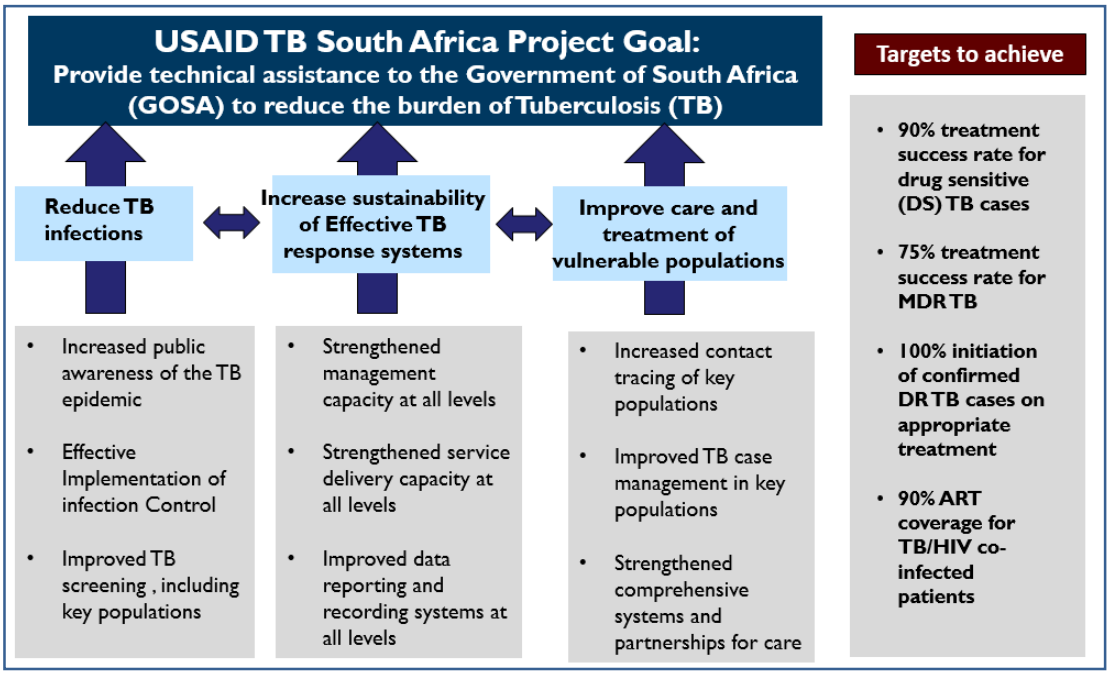
- Promotes the World Health Organization (WHO) End TB Strategy;
- Promotes an effective multi-sectorial approach to TB and strengthening of health systems to improve the quality of TB care in South Africa; and
- Expands patient-centered care as guided by the national Integrated Clinical Services Management (ICSM) model of care.

The project expands access of TB services to key populations, using the non-governmental organization (NGO) Network Model to strengthen links between NGOs and health facilities to increase patients' access to TB services and the scaling up of innovative mobile health (mHealth)-based systems for patient retention. It also works to leverage existing resources from the National Department of Health (NDOH) and other partners. By implementing the above strategies, the project aims to assist the NDOH to achieve the following targets:

- 90% treatment success rate for drug-sensitive TB (DS-TB) cases;
- 75% treatment success rate for multidrug-resistant (MDR-TB) cases;
- 100% initiation of confirmed DR-TB cases on appropriate treatment; and
- 90% antiretroviral therapy (ART) coverage for TB/HIV co-infected patients.

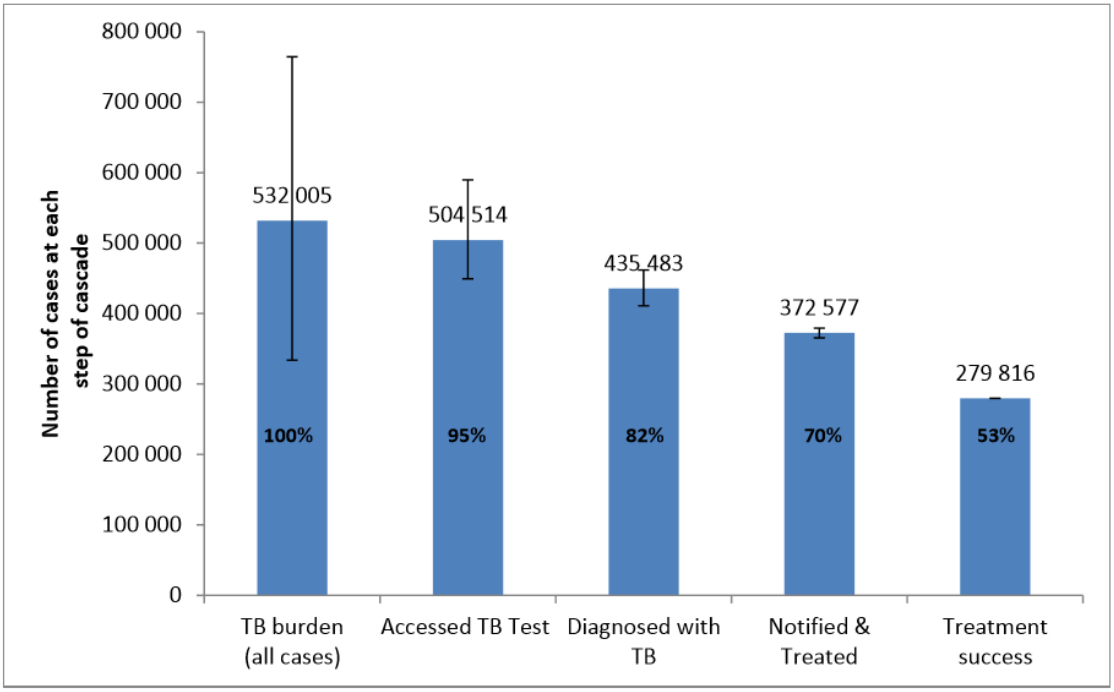
These targets are aligned to the 90/90/90 targets for TB and HIV, and project activities are aligned to district-level implementation plans. Figure 1 below shows the project results framework.

Figure 1: USAID TB South Africa Project Results Framework



The South African NDOH remains committed to addressing the gaps in the TB Care Cascade to achieve the global 90-90-90 targets. In a presentation addressing the importance of new and improved TB diagnostics by NDOH Deputy Director General, Dr Yogan Pillay, emphasized the importance of 'leaving no one behind' and finding the missing TB cases; with DS- or DR-TB.

Figure 2: Estimated burden for all types of TB



The care cascade for all tuberculosis (TB) cases includes cases with drug-susceptible TB and with all types of rifampicin-resistant TB. The wide confidence interval for the TB burden reflects the World Health Organisation incidence estimates for South Africa, which are based on case notification data and expert opinion on case detection gaps.

The USAID TB South Africa Project, a technical partner of the NDOH, has identified and developed several strategies to address gaps in the TB Care Cascade.

During the period under review, the project participated in the third Project Steering Committee meeting, with representatives from the NDOH and USAID. The meeting was chaired by Dr. Yogan Pillay and the Steering Committee members were generally pleased with progress to date and encouraged scale-up and wider use of specific project-developed tools. The meeting recommended that data reported be presented by district to allow for better analysis. This will be implemented in preparations for the next meeting.

The NDOH acknowledged progress made and achievements in USAID TB South Africa-supported districts. In particular, the impact of the ConnecTB application in improving TB treatment adherence was noted. The project was asked to produce a write-up on the ConnecTB application, and its use with both DS and DR-TB patients receiving care and support from community healthcare workers (CHWs) attached to NGOs funded by the project. This was duly developed and submitted to members of the Project Steering Committee for review. The project was also asked to pilot the use of ConnecTB with the ward based outreach teams (WBOTs) to ensure sustainability of the innovation. Discussions were entered into with the Eastern Cape and North West provinces in this regard.

This quarterly report outlines key activities and achievements undertaken by the USAID TB South Africa Project during the period July 1st to September 30th, 2017.

1. ACCOMPLISHMENTS BY RESULTS

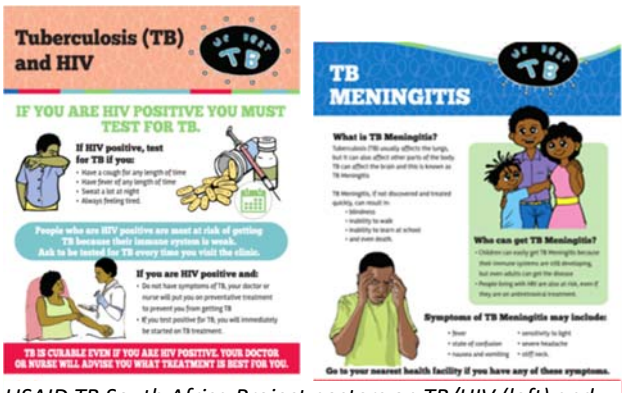
IR1: TB Infections Reduced

1.1.1 Increased public awareness of the TB epidemic

The project continued to raise awareness and knowledge about TB, to increase demand for TB services, and improve treatment adherence rates and retention in care generally, and more specifically target project-supported districts. This was mainly done through building the communication and patient education capacities of health care workers (HCWs) at various levels; carrying out community outreach and education activities; the development and distribution of information, education and communication (IEC) materials; and the use of social and mass media to disseminate messages to wider audiences. The efforts of the project achieved some gains in reaching people with targeted information about TB as outlined in Table 1 below.

Table 1: Summary of public awareness activities (April to June 2017)

South Africa	Data element/indicator	Totals
STRAT COMM	Number of people reached by type of TB messaging (social and mass media)	228,747
	Number reached through community outreach activities	2,814
	Number of IEC materials produced	16,084
	Number of IEC materials distributed	383,299
	Number trained in interpersonal communication and counselling	206
TB CASCADE	Number of people screened for TB	254
	Number of people symptomatic	28
	Number of people referred for further investigation	28
	Number of people tested at site of activation/community engagement	-
	Number of people put on treatment	-



USAID TB South Africa Project posters on TB/HIV (left) and TB meningitis (right) are available in 11 South African languages

In addition to distributing more than 380, 000 IEC materials, the project developed two posters on TB meningitis and TB/HIV. The posters were also translated into 10 languages and will be distributed to all facilities to create and raise awareness of the co-morbidities.

Implementation of patient-centered, interpersonal communications and counselling (Inter-PC/C).

The project continued conducting training on interpersonal communication to improve the quality of counselling provided to patients by CHWs working for project-funded NGOs. The training aims to strengthen TB counselling knowledge among CHWs to increase uptake of screening and testing services, better support patients to adhere to their treatment, and encourage family and communities to apply TB risk reduction strategies. During the reporting period, a total of 206 CHWs were trained on interpersonal communication and counselling.

Social mobilization activities in supported provinces

Eastern Cape Province – In Nelson Mandela Bay Health District (NMBHD), an activation was held at Mbizweni Square on 27 August. The event was a build-up activity to a door-to-door campaign that was subsequently held. The areas was targeted because of the high number of DR-TB patients in the area.

Mpumalanga – The project participated in radio interviews on Bushbuckridge and Nkomazi community radio stations, both with a combined listenership of 172,800. Topics discussed include TB signs and symptoms, and the importance of early diagnosis and treatment of TB.

Limpopo Province – Project staff in Limpopo Province participated in an HIV/TB and drug awareness campaign in Masakaneng Village, Groblersdal on 18 July where a total of 347 people were reached. The event included a health talk by a local TB ambassador and drug awareness activist

Strategic dissemination of information

Health talks on TB among pregnant women.

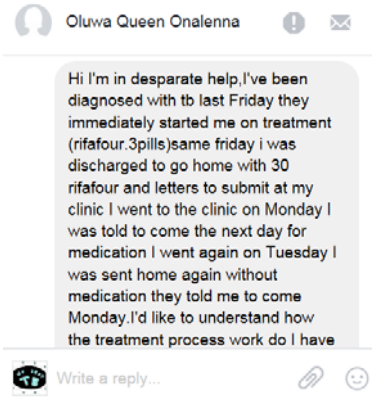
The project held health talks in Gauteng Province (Bheki Mlangeni Hospital), Western Cape Province (Wellington CDC), and North West Province in August. The talks were implemented as part of the project's contribution to South Africa Women's Month commemorative events, with specific focus on highlighting the topic of TB in pregnancy and TB in women. Female patients in the antenatal departments in participating hospitals received information on TB in pregnancy, breastfeeding, attachment, adoption, stress management and audiology services from project and hospital staff. Health education was also provided on TB infection control measures patients can apply at home, including wearing masks, cough hygiene and opening of windows.

The project facilitated health talks on TB with pregnant women in antenatal clinics in Gauteng (above) and Western Cape (below) provinces

Individual sessions were also held with some pregnant women to support and encourage them to attend/visit health facilities. A total of 97 women were screened for TB; none were found to be presumptive for TB.

Social media

The team continued to use the project's social media sites to create awareness not only about TB but also to showcase project activities, reaching a total of 55,947 people. In August alone (when South Africa commemorated the national Women's Month) an impressive 51,368 people were reached, with 40,768 of them reached via the We Beat TB South Africa Facebook page. The Twitter platform @WeBeatTB reached 10,600 people. Activities showcased on the platforms during the period under review include proceedings of the FAST National Workshop, the NGO Capacity Building Workshop and a facility-based campaign targeting pregnant women in antenatal clinics as part of Women's Month celebration.



TB patient seeking information and support via social media

The quality of interactions of Facebook users with the project also showed a marked increase, with people more likely to contact the project for practical information and help with TB treatment, side effects and related information. Care was taken to respond individually to each query, and to connect them to the USAID TB South Africa provincial manager or district coordinator in their area for practical help and to ensure adequate follow up.

The project will continue to use the platforms to create awareness, and increase efforts to link uploads and posts to the national health calendar. Showcasing project activities via these methods will remain a priority in the next reporting period.

Buddy package for pediatric support of children on treatment for MDR-TB

The USAID TB South Africa project continues to provide support to provinces implementing the Buddy Beat TB pediatric TB support campaign. During the period under review, the team supported preparations for the official Western Cape provincial launch of the Buddy Beat TB campaign on September 15th. Buddy Beat TB branded and promotional materials, including Buddy branded t-shirts, Buddy comic books and Buddy pull-up banners were provided for the event. Pull-up banners were presented to the province for use in the facilities to create awareness about the campaign among out-patient clients in waiting areas.

MDR-TB patients at Brewelskloof Hospital during the launch of Buddy in the Western Cape province.

At the request of Sizwe Hospital management (Gauteng Province) in August 2017 the project facilitated a briefing session to orientate all staff that engage with pediatric patients on the Buddy package and its use in providing better support to child patients. The session was attended by HCWs working in the pediatric ward, including nurses, doctors, allied professionals and staff at the hospital school.

To support the continuation of the campaign the project has started working on the translation and printing of the Buddy comic book into isiXhosa, Afrikaans, isiZulu and Sesotho. This, it is anticipated, will enhance efforts to impart information to caregivers and patients who are not fluent in English. Additionally, at the time of reporting, the team was in the process of finalizing the Buddy play therapy guide, Buddy introduction to hospital personnel guide and the Buddy implementation plan and procedures document. Use of these will go a long way towards ensuring that the Buddy intervention package is used in a standardized way across supported hospitals.

The team also produced a project success story detailing the importance of the Buddy Beat TB concept and intervention in supporting pediatric MDR-TB patients through their treatment journeys.

Tackling TB in Schools Initiative

Creating awareness about TB among learners in primary and high school, and in tertiary institutions of learning remains a useful strategy to disseminate TB information widely, and contribute to combating TB in communities.

TB awareness at a primary school

In Fezile Dabi District, Free State Province, the project convened and held four dialogue sessions, in collaboration with the Provincial Department of Health and Department of Basic Education. Twelve schools participated. The dialogues primarily targeted educators, though some pupils participated. They aimed to address identified challenges experienced by the district, such as high loss-to-follow-up rates. Targeting educators was done to equip them with tools on how to deal with suspected TB cases in their schools.

In Eastern Cape Province, the project also conducted Tackling TB in School activities at a school where TB cases had been reported. A TB screening and education session was held to create awareness about the disease and address concerns about TB stigma among pupils and educators. A total 220 pupils were reached with TB information, 202 were screened, and 28 were found to be presumptive for TB and refereed for further investigations. A total of 180 'Tackling TB in Schools' branded backpacks were given to learners during the information sharing sessions.

Due to the success of the campaign that was piloted in KwaZulu-Natal Province in 2015, a national roll-out of the initiative by the National Department of Basic Education in collaboration with the USAID TB South Africa Project will be planned. Although planning and discussions are in the early stages, the project has been asked to work on rebranding Tackling TB in Schools IEC materials to include the national department logo.

Communications and visibility/raising products/outputs

In August 2017, the project received USAID approval to run a national mass media campaign using national radio and television and strategically positioned billboards to enhance awareness of TB prevention, diagnostics and treatment services. The media campaign, which contributes to USAID TB South Africa Project activities around World Diabetes Day (14 November) and World AIDS Day (1 December) commemorations, will launch on 5 November 2017 and run until 24 December 2017. Plans are in place to implement other communication-focused and social mobilization activities during the same period, to achieve a multiplier effect from the campaign, by providing additional information via other mediums in the districts and provinces where we work.

TB educational videos

Five branded human-interest documentary videos were produced during the period under review. The videos communicate information on basic TB signs and symptoms; preventing TB in children; MDR-TB treatment; contact tracing and management; and stigma prevention and reduction. Another video based on the personal experience of a patient dealing with TB was developed. The videos were submitted to USAID for review and approval to disseminate in late September. All five videos can be accessed by following the link: https://drive.google.com/open?id=0B7AF51nfiBgEdkVzblFtTVdXYnM

In addition, team members began experimenting with developing human-interest video stories based on the experiences of South Africans dealing with TB. An example of the first video in this planned series can be found here. At the time of reporting, the video had been submitted to USAID for approval to disseminate.

Therefore, a total of six videos were produced and finalized during the reporting period, and will be ready for dissemination and use by project members once they are approved.

1.1.2 Effective Implementation of Infection Control

Poor infection control in facilities increases risk of TB transmission. To address infection control in supported facilities, the project supports facilities in conducting annual risk assessments. During the reporting period, risk assessments were conducted in 11 facilities, bringing the total number of comprehensive risk assessments conducted to 56. Gaps noted during the assessments include:

- No infection prevention and control (IPC) plans in some facilities
- Occupational health services not in place in some facilities, thus staff not routinely screened for TB
- TB screening not done routinely in all units in the facilities
- Poor implementation of IPC plans

- No records in place for regular checking of environmental mechanical devices

The facilities were supported to develop IPC plans. In addition, the project supported the procurement stamps to improve TB screening and recording. Training was provided to staff to improve implementation of IPC plans. Facilities were encouraged to develop staff screening programs.

The project has identified specific technologies to strengthen implementation of IPC, which include the use of Carbon Dioxide (CO_2) monitors for environmental evaluations. To date, 11 CO_2 monitors have been installed across three provinces KwaZulu-Natal (three), Eastern Cape (one) and Western Cape (seven) provinces to evaluate environmental controls in place, and to ensure efficacy of infection control measures in supported facilities. CO_2 level in a room is used as a proxy for levels of ventilation. Poorly ventilated rooms will have higher CO_2 levels. The CO_2 monitors work by sounding warning alarms when a set threshold of 5,000 ppm CO_2 level has been reached. This then triggers HCWs to open windows and or decongest waiting rooms in health facilities. The devices have been successfully used in two facilities Western Cape Province. The readings are as below.

Table 2: Ventilation status in four areas in two clinics in Western Cape Province

Name of clinic	**CO_2 monitor position**	**CO_2 monitor data (ppm)**						
		Baseline reading	**April 2017**	**May 2017**	**June 2017**	**July 2017**	**Aug 2017**	**Sep 2017**
De Doorns	TB/ARV corridor	620	416	513	464	583	557	614
	Next to pharmacy	422	385	464	466	474	586	434
	Waiting room	423	353	480	493	389	459	477
Worcester CDC	Waiting room	540	877	765	853	820	730	739
	Sr Botha corridor	638	508	604	573	684	618	665
	Doctors' corridor	627	1012	1055	1125	1249	1116	1046
	Mother / Baby room	*602 ppm*	*Not on wall-lost*	*Not on wall-lost*	*Not on wall-lost*	*Not on wall-lost*	*Not on wall-lost*	*Not on wall-lost*

Literature suggests that several factors affect TB transmission, including occupancy and size of room, thus a CO_2 range less than 1,000 ppm is probably more suitable to preventing TB, particularly in high TB incidence areas. In collaboration with the Centre for Scientific and Industrial Research (CSIR), the project developed CO_2 l monitors with a reduced threshold of 1,200ppm. These will be installed in supported facilities.

A CO_2 monitor developed by the project

Implementation of the FAST Approach in health facilities

To successfully implement the FAST Approach, multiple trainings and orientation workshops were conducted for HCWs during the reporting period. An implementation guide booklet with basic information on resources, processes, and procedures needed for the successful rollout of the FAST Approach in health settings was developed. To share lessons learnt and review the guideline, discuss barriers and challenges of implementing infection control measures in health facilities, the USAID TB South Africa Project organized a National FAST Workshop on August 17th and 18th 2017 in Johannesburg, Gauteng Province. The meeting was attended by 150 managers from TB/HAST, infection control, quality assurance, hospital services, and occupational health units in all nine provinces of South Africa.

The project continued to implement the FAST Approach in 15 hospitals in five provinces (Eastern Cape, Gauteng, KwaZulu-Natal, Limpopo and Free State). During the reporting period, the active screening of 39,740 patients resulted in the identification of 236 patients with TB by GeneXpert (234 DS-TB and two DR-TB cases). These patients were identified in both in- and out-patient departments, as shown in table below (Q4 not including September). Although, at 22, the overall number of patients tested positive in the wards during this period is small, these results provided evidence to hospital staff and management that the FAST Approach has potential to make a significant difference in the detection of unsuspected DS and DR-TB cases in health facility settings.

Through implementation of the FAST Approach, the project achieved TB surveillance screening of HCWs. Among 497 HCWs screened for TB during the quarter under review, 179 were symptomatic, and two of these were positive for TB in one hospital (one each with DS-TB and *Rifampicin* Resistant *(RR)* TB).

Table 3: Number of patients screened and presumptive TB cases identified in outpatient and casualty departments in July and August 2017

Out-patient department	July	August	Total
Facility head count	52,491	64,381	116,872
Patients screened for TB	13,552	23,281	36,833
Presumptive cases identified	706	1017	1,723
Patients tested	587	828	1,415
Diagnosed with DS-TB	124	95	219
Started on DS-TB treatment	123	86	209
Diagnosed with DR-TB	1	8	9
Started on DR-TB treatment	1	6	7
Number DS-TB initial lost to follow-up	0	0	0
Number DS-TB died before treatment started	0	0	0
Number RR-TB started on treatment	1	0	1
Number RR-TB lost to follow up before treatment started	0	0	0

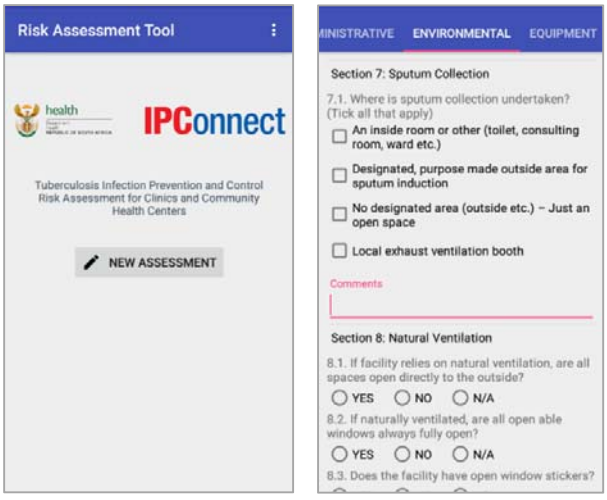
Table 4: Number of patients screened and presumptive TB cases identified in wards in July and August 2017

In-patient department	July	August	Total
Facility head count	3,257	7,481	10,738
Patients screened for TB	593	2,314	2,907
Presumptive cases identified	211	140	351
Patients tested	15	84	99
Patients tested positive	15	7	22
Diagnosed with DS-TB	1	5	6
Number started on DS-TB treatment	0	1	1
Diagnosed with RR-TB	2	0	2
Number DS-TB initial lost to follow-up	0	0	0
Number DS-TB died before treatment started	0	0	0
Number started on RR-TB treatment	0	0	0
Number RR-TB initial lost to follow-up	0	0	0

IPConnect application

The NDOH recommends conducting risk assessments twice a year, as the process can be quite detailed and time-consuming. High TB transmission rates in South African health facilities has prompted the USAID TB South Africa Project to develop an application-based risk assessment, with scoring for ease of monitoring. The guidelines and frequently asked TB infection prevention and control questions are also accessible on the project developed application, IPConnect, which is also available on the web platform (www.ip-connect.org.za).

In the previous quarter, the project launched the IPConnect application to make electronic versions of multiple guidelines available. During the reporting period, the risk assessment module was finalized and tested in September 2017. The application is now available to download on Google Play Store. Access is restricted, only the administrator can register users, facilities and other information. The tool will enable risk assessments to be done electronically and scoring to be automated. Once uploaded, the information will be available in real-time and reports can be generated.



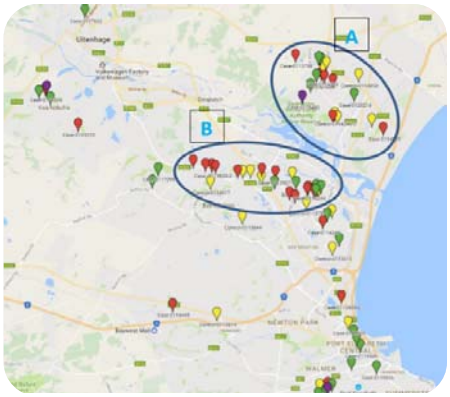
Left: IPConnect Risk Assessment module splash screen and screenshot of the environmental form on IPConnect Risk Assessment module

Infection control in homes

A CHW from a funded NGO stands with a patient receiving individualized treatment support. Both wear masks to prevent the further spread of the TB bacterium from one to the other.

To ensure effective implementation of infection control at household level, a standard operating procedure (SOP) and training module on sputum collection and contact management was developed. In Quarter 2, staff of 13 funded NGOs were trained on safe sputum collection. The training emphasized precautions to be taken at household level to prevent TB transmission and the process to be followed when collecting sputum samples from TB patients. As a direct result of the sputum collection training, all grantees currently collect sputum on the spot during awareness campaigns as well as during household visits. This has significantly increased the proportion of presumptive TB cases tested during door-to-door campaigns from 38% in Q2 (January-March) to 95% by the end of quarter 4 (July-September) 2017.

Expanding strategies: Reach, screen and evaluate individuals with high risk



Studies by the USAID TB South Africa Project (map above) and NICD (map below) indicated the same high-burden clusters of TB in Nelson Mandela Bay Metro.

Eastern Cape Province has high transmission of XDR-TB cases, as evidenced by increasing numbers of XDR-TB patients in the province (264 cases annually, 40% of national burden). Given the risk of community level transmission of XDR-TB, the USAID TB South Africa Project undertook geospatial mapping to identify and cluster the geographical areas in which XDR-TB patients reside. The Jose Pearson Hospital catchment area was selected as the project site. The hospital has been identified as a center of excellence in Nelson Mandela Bay Metro for the management of all RR TB cases, including XDR-, pre XDR- and MDR-TB cases. Seventy-two index TB patients were evaluated with 164 contacts identified. The map to the left shows where XDR-TB patients reside in Nelson Mandela Bay Metro, with areas of clustering being the areas targeted for contact management.

The National Institute of Communicable Disease (NICD) conducted a study in the same area to identify risk factors and possible transmission opportunities in health centers and the community among patients diagnosed with geno-typically identical RR-TB cases

and their contacts, and to inform TB control strategies. A similar clustering pattern was noted.

The high detection rate of RR TB in the course of contact management, and the exceptionally high DS-TB detection amongst contacts of TB cases can be explained by the high genotypic diversity in this group. There is probably a mixture of transmission and resistance acquisition that could explain the very high rates of resistance in this region, requiring combination interventions that address household infection and quality of patient management. The project, through funded NGOs in Nelson Mandela Bay Metro, distributed infection control packs (with IEC materials included) to address the high transmission risk. A household risk assessment tool was also finalized for field testing in this area.

1.1.3 Improved TB screening, including key populations

TB awareness campaigns by funded NGOs

The USAID TB South Africa Project-funded NGO grantees play an important role in improving TB case-finding, particularly among vulnerable populations. In the period under review, door-to-door visits and community awareness campaigns reached over 12,000 people with TB messages, and 88% of them were screened for TB. Of those screened, 10% were presumptive for TB and 91% were tested for the disease, with a total of 116 TB cases diagnosed and linked to care.

USAID TB South Africa Project-funded NGOs use various strategies to disseminate information about TB in the communities where they work

Table 5: Results of awareness-raising and door-to-door campaigns for Quarter 4 (July and August)

Indicator	Awareness	Door-to door	Total
No. of people reached	4769	8,008	12,777
No. of people screened	3,505 (73%)	7,806 (97%)	11,311(88%)
No. of people TB presumptive	388 (11%)	740 (9.4%)	1,128 (10%)
No. of people tested	216 (55%)	562 (75.9%)	778 (69.0%)
No. of people confirmed TB	46 (21%)	70 (13%)	116 (15%)
No. of people started on treatment	46 (100%)	70 (100%)	116 (100%)

Finding TB cases in farming communities

Eastern Cape: The USAID TB South Africa Project continues to provide services to farm workers in Sarah Baartman District. As a direct result of the support provided, over 2,346 farm workers were reached with TB messages, and 2,134 (91%) of them were screened for TB. Of those screened, 23% (491) were presumptive and 91% (446) of the presumptive cases were tested for TB. From this number, 16 people were diagnosed with TB and linked to care. In addition to the routine support provided, a two-week (18 to 21 and 26 to 28 in September 2017) end-of-season health screening campaign was conducted in the larger farming communities surrounding the farms in the Kirkwood/Addo and Gamtoos area. The campaign was made successful by the high level of community participation, and the endorsement of political and community leadership. Health services provided include HIV testing services (HTS), screening for diabetes, examinations for minor ailments, as well as health education and distribution of IEC materials and condoms. Results of the two-week campaign were not available at the time of reporting, and will be reported in the next quarter report.

Western Cape: The TB in Farms Initiative was expanded to Cape Winelands District in September. An end-of-season health screening campaign was launched and conducted at Mouton Citrus Farm, located in Citrusdal. The campaign targeted seasonal farm workers getting ready to travel back home to neighboring towns, provinces and countries at the end of the farming season in the area in September 2017. The campaign created a platform to identify TB cases, diagnose and link patients to care for treatment initiation and continuation of care, and to provide referrals to seasonal workers moving out of the district at the end of the season. Health services provided include TB screening and onsite testing, which was done using GeneXpert machines as part of a partnership with the National Health Laboratory Services (NHLS) mobile laboratory. HIV testing services (HTS); chronic disease screening; diabetes screening; and men, women and child health services were also provided. Health education and distribution of IEC materials also formed part of the activities over the two days.

A total of 257 farm workers were reached and 198 screened to TB. 95 were presumptive for TB and 54 tested. Three people were diagnosed with TB and linked to care.

TB educational material and testing for faster diagnosis was available at the site of the awareness campaigns held in farming communities in the Western Cape

A total of 36 farms workers were diagnosed with TB and linked to care between the launch of the TB in Farms Initiative in May and September 2017.

Improved TB screening in the mines

The USAID TB South Africa Project provides capacity building and supervisory monitoring support to improve TB management and TB screening in four mines: Anglo Gold Ashanti, North West Province: Sataria, Limpopo Province; and Sasol and Evander Gold, Mpumalanga Province. During the period under review, TB management training and screening activities were conducted. Data from the two mines in Mpumalanga and North West Province indicates that over 19,000 mine workers were screened, with 41 TB cases diagnosed and linked to care in July and August.

Mine workers are also particularly vulnerable to TB, and are in need of specific focus and services, which the USAID TB South Africa Project facilitates

Indicator	Evander Gold Mine (Mpumalanga)	West Vaal Gold Mine (North West)	Total
No. of people reached	1,783	17,873	19,656
No. of people screened	1,783	17,873	19,656
No. of people TB presumptive	68	923	991
No. of people tested for TB	68	923	991
No. of people confirmed TB	6	35	41
No. of people started on treatment	6	35	41

Table 6: Cascade data for Evander Gold Mine and West Vaal Gold Mine

Improving linkage between diagnosis and treatment initiation for DR-TB patients

Finding missing TB cases and linking patients to care is a core mandate of the USAID TB South African Project, which helps the project to further reduce the transmission of TB and numbers of new TB cases. There are evident gaps in the numbers of patients diagnosed with TB and the numbers initiated on treatment in some districts, indicating that not all TB patients who need treatment are receiving it. In Fezile Dabi, Mangaung and Nelson Mandela Bay Metro districts, laboratory data was compared to ascertain the number of patients initiated on TB treatment as shown in the table below. Figures showed that more than half of laboratory-diagnosed TB cased are not linked to care.

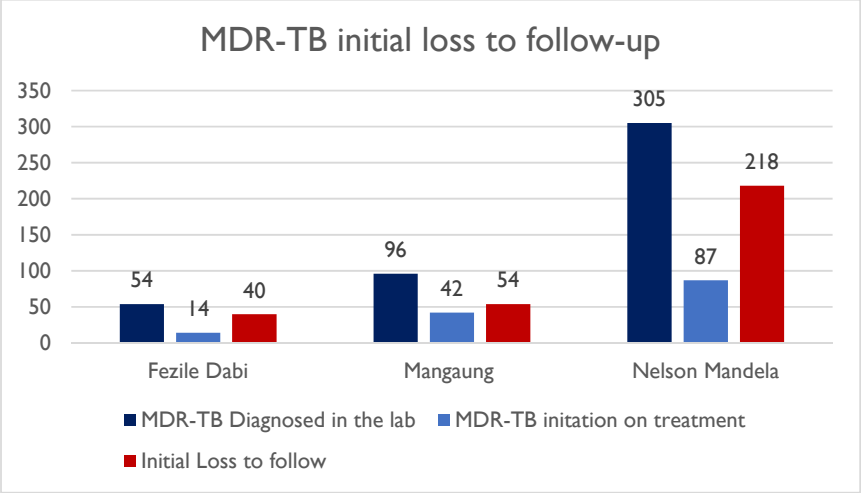


Figure 3: MDR TB initial loss to follow up in Fezile Dabi, Mangaung and Nelson Mandela Bay District

To address this challenge, the project worked closely with the supported facilities to identify patients not yet in care and bring them to and retain them in care. In some cases, these patients were already on treatment, but the records had not yet been updated. The project supports efforts aimed at the improving the recording and reporting of patients. Where patients are not yet on treatment, their names are then given to project-funded NGOs in the relevant districts to trace them and ensure that they are initiated on treatment. Identified MDR-TB patients will be linked to the DR-TB service to ensure that they receive the necessary support to complete their treatment.

Geo-mapping using the ConnecTB mHealth app

A mapping exercise was conducted in Modimolle Sub-district, Waterberg District, and Limpopo Province in August 2017. A total of 210 out of 262 patients were mapped; the remaining patients could not be located as they had migrated (the area is populated by a lot of migrant laborers).

Distribution of DS-TB patients in Modimolle Sub-district

The results clearly show that areas around Modimolle are high-burden areas for TB. Phagameng Township had 110 out of the 210 (52%) patients mapped. Following this mapping exercise, a contact management and active case-finding exercise is scheduled for the next quarter. The project has also contacted an NGO in Vaalwater to provide directly observed treatment (DOT) support and do active case-finding.

At the time of reporting, five districts had been mapped to identify high TB burden areas.

IR2: Sustainability of Effective TB Response Systems Increased

1.2.1 Strengthened management capacity at all levels

Collaboration Regional Training Centres (RTCs)

During the period under review, the project participated in quarterly stakeholder meetings with regional training centres (RTCs) in Eastern Cape, Gauteng, KwaZulu-Natal, Limpopo and North West provinces. The RTC quarterly stakeholder meetings are a forum for the reviewing the delivery of in-service training to HCWs in provinces for the previous quarter, and to share training plans for the next quarter. The USAID TB South Africa Project's contributions were highlighted during the meetings. Emphasis was placed on the need to strengthen mentorship. The project will support mentorship using the low-dose high-frequency training model, and will continue to train TB using a multi-disciplinary team approach.

The project will participate in the 2018 training business planning process. This ensures that capacity building activities for the project are included in the respective provincial master plans, which are underpinned by priorities of the District Implementation Plans (DIPs). In addition, quarterly programme reviews will be conducted in partnership with counterparts working for the RTCs.

Implementation of the NDOH Quality Improvement Initiative (TB QI Project)

As part of the USAID TB South Africa Project support to the National TB Program Quality Improvement intervention, the project continued to support the National Quality Improvement Manager post. As one of the initiatives to strengthen management capacity at all levels, the project participated in the QILM Workshop Two, hosted by the National TB Program Quality Improvement intervention. The QILM Workshop Two was a follow-up to a workshop held in March 2017. The main objective was to share feedback on progress made since the implementation of TB quality improvement (QI) activities in Phase 1 pilot sites.

Through the National Manager, the project facilitated quality improvement training for seven TB QI pilot sites. A total of 44 district and sub-district managers from Eastern Cape, Gauteng and KwaZulu-Natal, and technical partners Health Systems Trust and Kheth'Impilo were trained.

Facility support visits post learning collaborative were conducted in Eastern Cape and KwaZulu-Natal, and were led by the National Department of Health. The QI project has been well received and noticeable improvements are being reported across supported districts. For example, in Nyandeni Sub-district in OR Tambo, TB screening improved from a baseline of 16% in October 2016, to 55% in July 2017 as shown in the figure below.

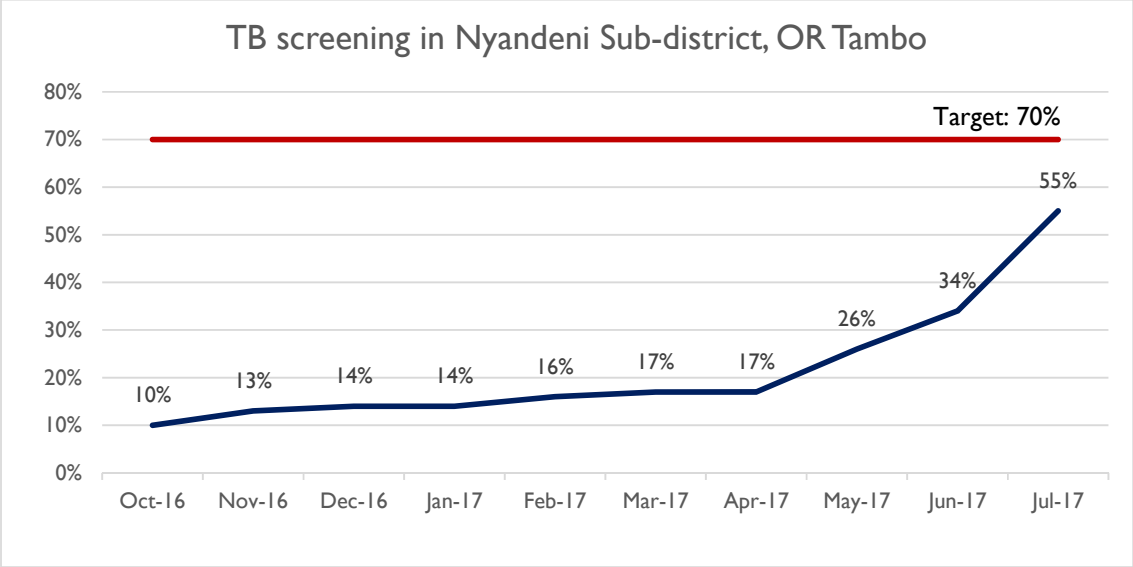


Figure 4: TB Screening in Nyandeni Sub district, OR Tambo

TB screening also improved from 33% to 48% in Sub-District C Nelson Mandela Bay Metro, as shown in the graph below.

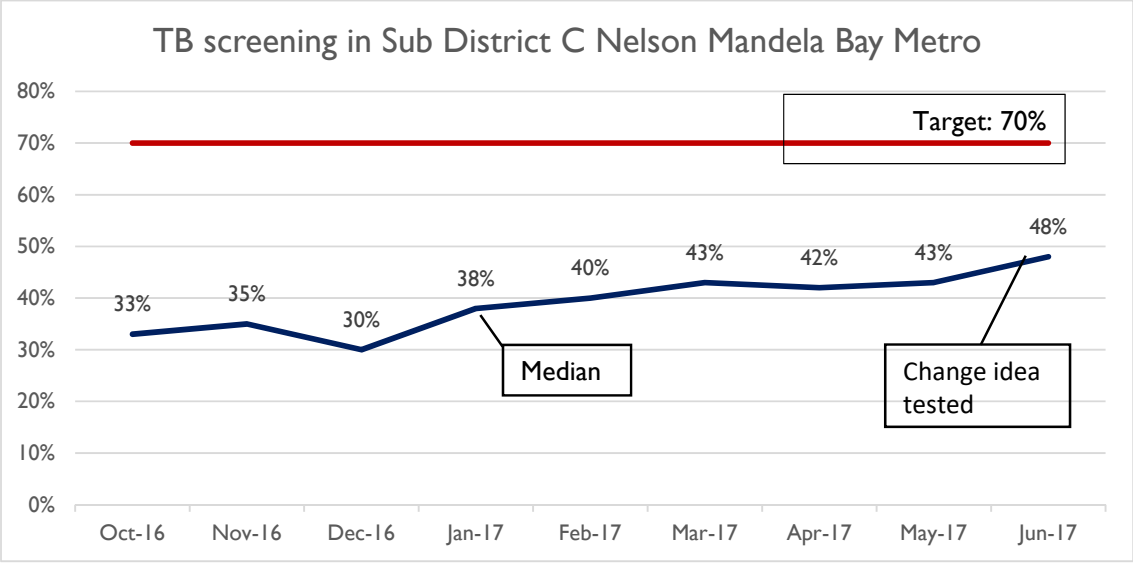


Figure 5: TB Screening rates in NMM sub district C; Oct 2016-June 2017

Across the districts, improvements are also being documented on the other parts of the TB cascade, even though initial focus was on TB screening.

Implementation of quality improvement initiatives in directly supported project sites

All project sites are supported using the Continuous Quality Improvement (CQI) Approach, with the aim of improving the quality of care along the TB care cascade. In line with the NDOH QI Project, the USAID TB South Africa Project also phases in targets, starting with the first pillar of the 90/90/90 targets. Pillar 1 focuses on setting TB screening targets and improving screening.

For example, the TB Care Cascade in Ehlanzeni Sub-district presented an opportunity to test the QI Approach, which entails training on QI methods, establishing QI teams and using these to institute change.

Table 7: TB Care Cascade in Bushbuckridge Sub-district, Ehlanzeni District, Mpumalanga Province

Data elements	Quarter 1/2017	%	Quarter 2/2017	%
Total HC > five years	310,627		301,808	
Screened for TB	197,115	63,5%	209,015	67.5%
Presumptive for TB	2,876	0.9%	3,033	1.5%
Investigated for TB	2,876	100%	3,017	99.4%
Tested positive TB	259	9.3%	172	5.7%
Started treatment	243	92.2%	166	96.5%
Initial Loss To Follow-Up	11	4.2%	5	2.9%
Died	2	0.8%	1	0.6%
Diagnosed RR TB	3	1.3%	16	9.3%
Started treatment	3	100%	14	87.5%
Initial Loss To Follow-Up	0	0%	1	6.2%
Died	0	0%	1	6.2%

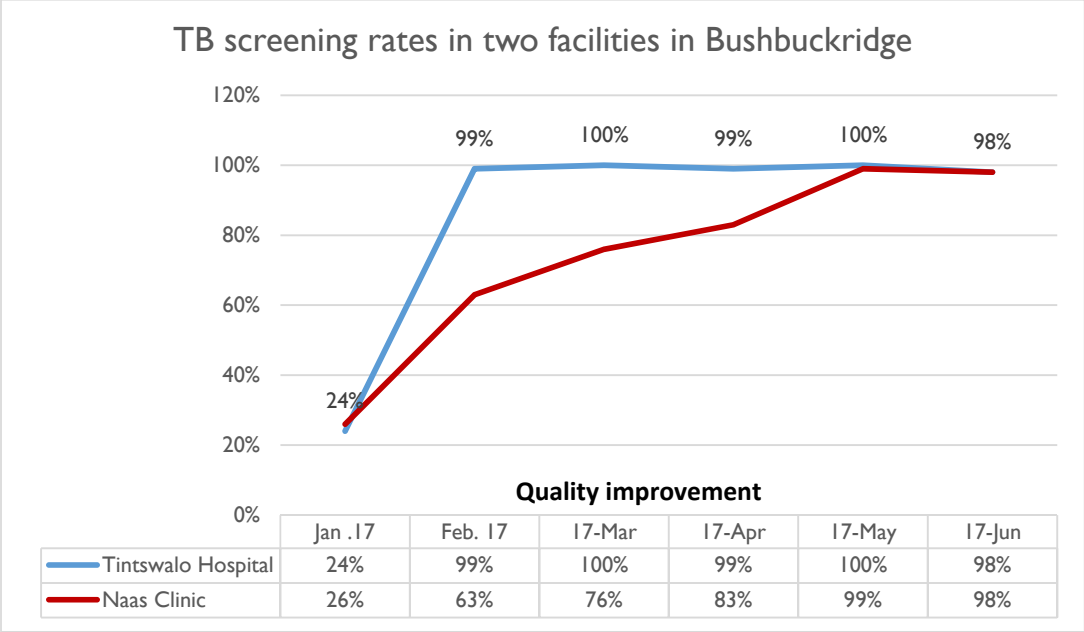


Figure 6: TB screening in TB South Africa Project-supported sites

Some root causes identified as being responsible for poor TB screening include poor screening in districts hospitals due to lack of tools and prioritisation by facility managers. The facilities were supported with TB screening stamps and in-service trainings were conducted. TB screening has improved in these facilities as shown in the figure above.

Improving TB screening has also had a cascade effect of increasing case detection rates, including RR TB case detection. However, the linkage to care amongst RR cases requires strengthening.

Below is another example of the cascade effect of improving TB screening in West Coast, utilising the QI Approach to address root causes of poor TB screening in health facilities.

Table 8: TB Care Cascade in Cedarberg Sub-district, West Coast, Western Cape Province

Data elements	Quarter 1/2017	%	Quarter 2/2017	%
Total HC > five years	27,153		25,777	
Screened for TB	16,663	61%	17,007	65.9%
Presumptive for TB	654	3.9%	627	3.6%
Investigated for TB	654	100%	627	100%
Tested Positive TB	88	13.5%	74	11.8%
Started Treatment	86	97.7%	73	98.6%
Initial Loss To Follow Up	2	2.3%	0	0%
Died	0	0%	1	0%
Diagnosed RR	0	0%	0	0%

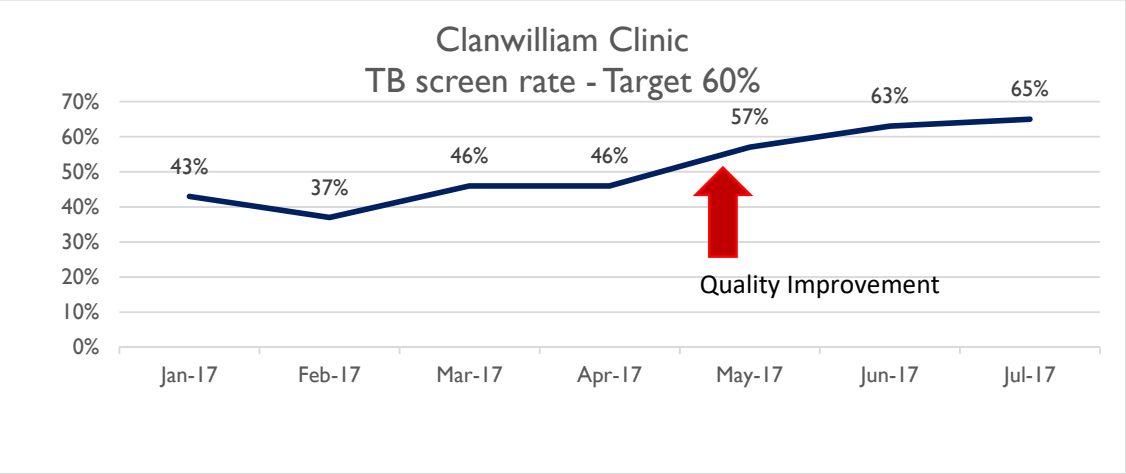


Figure 7: Clanwilliam Clinic screening rates after QI interventions

IR 2.2: Strengthened service delivery capacity at all levels

Capacity building using the didactic approach

During the reporting period, a total of 1,280 HCWs were trained on various TB-related topics as shown in the table below.

Table 9: Didactic training conducted nationally

Training course	# Male	# Female	Total
Basic TB Management	100	358	458
Basic TB Management & Interpersonal Communication and Counselling	7	110	117
Continuous Quality Improvement	19	174	193
Infection Prevention & Control	37	188	225
TB/HIV Information System (THIS)	10	96	106
DR-TB Service Package Workshop for Matlala Core Team Members	7	14	21
DR-TB Management	3	17	20
Interpersonal Communication and Counselling	4	13	17
Nine-month DR-TB Treatment Regimen	1	43	44
Ototoxicity Screening & Monitoring Framework	14	19	33
TB Review Workshop	2	16	18
EDR Web & Data Validation	2	26	28
Total	**206**	**1,074**	**1,280**

Capacity building using low-dose high-frequency training approach

In addition to the didactic trainings offered by the USAID TB South Africa Project, in-service training sessions were conducted during the quarter, as part of low-dose high-dose frequency training approach, reaching 658 health workers as shown in the table below.

Table 10: list of on-site trainings conducted

Training course	District	Number trained
DR-TB updates	Nelson Mandela Bay Metro	22
Infection Prevention & Control	Gert Sibande	34
ConnecTB	Ehlanzeni, West Coast	76
TB Cascade Analysis	West Coast & Cape Winelands	59
Update on National TB Guidelines	Dr Kenneth Kaunda, Dr Ruth Segomotsi Mompati	27
Basic TB Management & Interpersonal Communication and Counselling	Amajuba	14
FAST & Infection Prevention and Control	City of Johannesburg	30
Recording & Reporting	Tshwane	19
Fit Test for Respirator Use	Cape Winelands & West Coast	20
Sputum Collection	Mangaung	37
Sputum Rejection Workshops	KwaZulu-Natal – 11 districts	290
TB/HIV TIER/ETR Integration workshop	uMkhanyakude	30
Total		**658**

Training material development and adaptation

During the reporting period, the project revised TB IPC module, contact management for CHW and sputum collection content for community health workers. TB Management content for training SANRAL peer educators on TB was adapted for the CHW manual. The project continued to work with BEA to develop online modules for CCWs. At the time of reporting the project was in the process of doing the same for the Basic TB Management course. The project is reviewing the modules through field testing prior to accreditation.

Support National Health Laboratory Services to improve access to and use of Labtrak and SMS printers

Improving sputum turnaround time is critical to ensure that confirmed TB patients are linked to care timeously. Health care workers in the following supported areas have been registered with Labtrak to access laboratory results when needed. Using Labtrak, facilities can access sputum results within 24hours and reflex testing within five to seven days. Early access to results allows for fast tracking of TB patients to care. Time to initiation in hospitals is within 24 hours of receiving results. There is a need to develop a recall system for public health care

level, as this is already done for DR-TB. Table below shows the average time to treatment initiation in supported sites

Table 11: Treatment commencement time in some supported districts

Province/district	Number of facilities	Turnaround time	Time to treatment initiation
Mangaung	4	24 – 48 hrs.	24 hrs. in hospitals, two to five days at PHC
OR Tambo	21	24 – 48 hrs.	n/a
Nelson Mandela Bay Metro	All facilities	24 – 48 hrs.	Two to three days
Cape Winelands and West Coast	All facilities are on Labtrak	24 – 48 hrs.	One to three days

Facilitate clinical audits/reviews in DS/DR-TB sites within supported districts to improve the quality of care of DS/DR-TB patients

Clinical chart audits were conducted across five provinces covering 69 facilities. More than 690 TB patients' charts were audited. Challenges identified included:

- Inconsistency in recording patient details, e.g. ID number documented in the register but not in the patient's file, ICD-10 codes written in the register but not the file, and patient initiated on ARV recorded in the register but not patient file.
- Adherence to diagnostic algorithm – sputum is collected for GXP in >80% of presumptive TB cases in PHC facilities, but not all GXP are followed up with the collection of baseline smears for Acid Fast Bacilli (AFB).
- Smear results not updated in patient files.
- Contact management remains a challenge in most facilities. A Contact Management SOP was developed for implementation by funded NGOs in supported sites.
- Monitoring of side effects – unlike the DR-TB Clinical Chart, the DS-TB Patient Blue File does not provide for side effects monitoring; this is sometimes captured in the nurse's notes.
- Updating of smear results not done –copies of lab results are pasted in the patient file, but these are not always recorded in relevant spaces
- Incomplete HIV information – ART initiation and information on the regimen is not always recorded. The TB/HIV Integrated System is set to improve this as t this type of information has always been captured in TIER.net.

To further address identified challenges, the USAID TB South Africa Project supports cluster meetings were sub-district facilities meet to regularly conduct joint chart audits and data verification exercises, and to link findings with low-dose high-frequency trainings, and facility and cluster-based QI plans.

Implementation of the DR-TB service package in South Africa

To improve the quality of DR-TB care and, thus, treatment success, USAID developed the document entitled *A Practical Guide to Delivering Essential Supportive Care to Patients with Drug-resistant Tuberculosis,* in response to implementation targets set out in the United States Government (USG) National Action Plan (NAP) to combat multidrug-resistant TB. The tools provided in the guide allow countries to identify and estimate the resource needed for supportive care interventions at national, provincial, or facility level, as well as helping providers create and track individualized care plans for each patient. South Africa is amongst four countries that have been identified as potential sites for Phase I of the introduction of the guide NAP. The DR-TB service package aims to enhance patient support as illustrated in the table below:

Table 11: Essential elements for South Africa

Package of services for MDR-TB patients in 2014 cohort that will form the baseline (or suggest other control/baseline population and provide details of their support)	**2017 – Currently being offered to all patients**	**2017 – Services that will be provided to patients in the evaluation population** (list both USAID-funded and Global Fund or other supported services)
• Clinical evaluation • Bacteriological monitoring • Audiometry • Other labs as needed • Free TB medicines • Small group TB health education session • Lay counsellor one-on-one counselling (face-to-face) • Assistance to collect a social grant (met with a social worker) • Psychological support (met with a psychologist) • Nutritional support • Transport assistance • Rehabilitative services • Social grants	• Clinical evaluation • Bacteriological monitoring • Audiometry • Other labs as needed • Free TB medicines • Small group TB health education session • Lay counsellor one-on-one counselling (face to face) • Assistance to collect a social grant (met with a social worker) • Psychological support (met with a psychologist) • Nutritional support • **=>**Transport assistance (emergency medical services provide transport for patients from hospitals to decentralised sites/Also collect medication and deliver to nearest hospitals • **=>**Social grant received assist patients to go to clinic for daily injections in areas where there are no injection teams • Rehabilitative services • TB tracer teams assist to track interrupters and LTFU	• Improved health education package • Improved nutritional support (supply to be documented and develop IEC materials on nutrition specific for DS/DR-TB • Improved psychosocial support • Patient support in community through patient support navigator and meetings • Contact management • Infection prevention and control • Transport assistance through social grants • Tracer teams

South Africa is focusing on the implementation of eight out of the 14 elements of the DR-TB service package.

The interventions are being implemented in three provinces: Limpopo (Matlala Hospital), Free State (J.S Moroka, Heidedal, Botshabelo, National and MUCCPP hospitals) and Eastern Province (Nelson Mandela Metro, Osmond, Jose Pearson and Empilweni hospital).

The results of the baseline assessment conducted across the three provinces is shown in the table below.

Table 12: Baseline outcomes for RR TB for 2014 cohort

		DR-TB outcomes for 2014 cohort					
District	**DR-TB cohort**	**Success**	**%**	**Died**	**%**	**Failure**	**%**
Nelson Mandela Bay Metro	161	92	57.1%	59	36.6%	10	6.2%
Mangaung	132	78	59.1%	51	38.6%	3	2.3%
Sekhukhune	0	0	0.0%	0	0.0%	0	0.0%

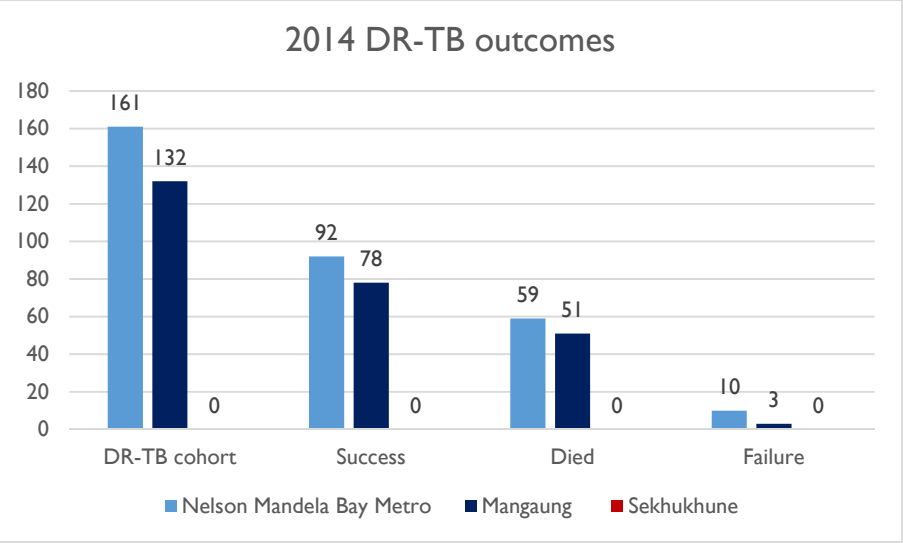


Figure 8: Baseline outcomes for RR TB for 2014 cohort

Drug-resistant TB data in the 2014 cohort shows a high death rate in both Nelson Mandela Bay Metropolitan, Eastern Cape Province (32.4%) and Mangaung District, Free State Province (28.8%). This can be attributed to poor monitoring and treatment of adverse events. There was no data for Sekhukhune District at the time of reporting (as there were no patient enrolments in 2014).

Some preliminary baseline findings from patient enrolment include:

- Limited nutritional assessments of enrolled patients
- Limited side effect evaluation and management
- Limited patient and family education

To date, introduction workshops and training were conducted in three provinces. A total of 52 of the targeted 200 patients had been enrolled using chart reviews as well as patient experience surveys at the time of reporting

Figure 9: DR Patient enrolled in Nelson Mandela Bay Metro, Mangaung and Sekhukhune districts this quarter

Province	District	Patients enrolled
Eastern Cape	Nelson Mandela Bay Metro	31
Free State	Mangaung District	16
Limpopo	Sekhukhune District	5
Total		**52**

1.2.3 Improved data reporting and recording systems at all levels

Support NDOH to roll out the TB/HIV Integrated System to facility level in supported districts

During the reporting period, TB/HIV Integrated System (THIS) trainings were conducted in eight districts Gert Sibande, Vhembe, uMkhanyakude, Nelson Mandela Bay Metro, Fezile Dabi, Mangaung, Ehlanzeni, and Sara Baartman Staff in the field continue to support implementation, mainly through conducting trainings on TB recording and reporting systems for data capturers, as low skill in this area hampers progress with capturing figures into the TB module.

IR3: Care and Treatment of Vulnerable Populations Improved

1.1.4 Increased contact tracing of key populations

Contact tracing by funded NGOs

During the reporting period, the USAID TB South Africa-funded NGOs at the community level reached a total of 2,794 adult contacts, and managed to screen 98% of them for TB. All presumptive cases were tested, and 64 people were diagnosed with TB and initiated on treatment. 386 children were reached and 93% of them were screened for TB. 69% of the children screened were presumptive for TB. Of the presumptive TB cases tested, 25 were confirmed to have TB and started on treatment as shown in table below.

Project-funded NGOs also undertake contact tracing and management as part of their contribution to ending TB in the communities where they work

Table 13: Case finding cascade for key populations.

Indicator	Q3 (Adult)	Q3 (Child)
No. of new index patients	1,311	
No. of contacts reached	2,794	386
No. of contacts screened	2,766 (98%)	361 (93%)
No. of contacts TB presumptive	409 (15%)	250 (69%)
No. tested for TB	392 (95.8%)	237(94.8%)
No. confirmed positive TB	64 (16%)	25 (10%)
No. TB confirmed started on TB treatment	64 (100%)	25 (100)

Contact management continues to yield high TB cases of 6,925 per 100,000 population among child contacts, and 2,313 per 100,000 population among adult contacts. Supported NGOs will continue to prioritize contact management as a strategy to find missing TB cases.

1.1.5 Improved TB case management in key populations

Addressing latent TB amongst health care workers

The project partnered with the NDOH, Qiagen (manufacturers of QuantiFERON gold) and NICD to develop a draft implementation protocol to address latent TB amongst health care workers. The protocol was submitted for ethics review and approval. Implementation of the protocol will commence once approved. Targeted sites include FAST sites in OR Tambo district, Eastern Cape Province and Tshwane District, Gauteng Province.

Roll-out of ConnecTB to local NGOs

The project is in the process of expanding its ConnecTB platform to all funded NGOs. Four grantees were using the ConnecTB platform for TB patient management in the previous quarter; two grantees' contracts ended in July and the NGOs subsequently had to stop implementation. 15 more grantees were trained and three started reporting on the system during the period under review. The system had to undergo a few modifications to ensure that patients were enrolled speedily. Changes included making mandatory fields optional, resulting in fewer inputs per patient. Seven additional NGOs will be trained in October 2017. , 925 DR-TB patients and 1,125 DS-TB patients have been enrolled onto the platform. At 95%, the average treatment adherence rate for patients on ConnecTB remains high.

Table 14: DR-TB patient status on ConnecTB

Province	District	Grantee	Active	Cured	Lost to follow up	Died	Hospitalized / Moved out of the district	Total	Average adherence rate
Eastern Cape	Nelson Mandela Bay Metro	*Care Ministry*	174	97	6	38	207	522	98%
Limpopo	Waterberg	*Kgatelopele*	11	0	0	0	0	11	99%
Mpumalanga	Gert Sibande	*Isiphephelo*	61	21	2	1	1	86	100%
KwaZulu-Natal	eThekwini	*Asiphile*	105	0	0	1	1	107	91%
Western Cape	Cape Winelands	*Wagon of Hope*	37	37	0	0	0	37	95%
Eastern Cape	Buffalo City	*Letsema*	89	22	0	3	48	162	86%
	Project total		**477**	**177**	**8**	**43**	**257**	**925**	**95%**

1.1.6 Strengthened comprehensive systems and partnerships for care

Several public/private partnerships are currently being pursued in the commercial agricultural, mining and transport sectors to facilitate improved TB care and management across sectors.

Table 15: Partnerships and collaboration

Sector	Partner(s)	Areas of collaboration
PEPFAR DSPs	FPD	In partnership with Foundation for Professional Development, the project will co-organize the 2018 South Africa TB Conference scheduled for June 12th to 15th, 2018. The project will assume responsibility for drafting the conference program, identifying and approving workshops, satellite sessions and symposia, as well as managing the abstract review process. The USAID TB South Africa Project will also chair one of the four

		tracks in the conference which is entitled 'Access: human rights, stigma, and marginalized populations'.
Transport Sector		As part of engagements with stakeholders in the transport sector, the project entered into partnership with the South African National Roads Agency (SANRAL) with the aim of improving TB/HIV management for SANRAL contract and migrant workers, who are responsible for road maintenance in South Africa. The capacities of 17 SANRAL peer educators on basic TB management were enhanced during training. Further, plans to provide TB screening services during HIV testing and screening campaigns have been solidified
Pharmaceutical / Diagnostics		Partnership is currently being discussed with Cepheid to pilot the use of GenXpert OMNI and the Xpert MTB/Rif Ultra test to intensify TB case-finding amongst key populations and rapid testing of families of MDR-TB patients who have defaulted on TB treatment to reduce community-level transmission of TB. A draft concept note has been submitted to Cepheid and a work plan will be developed in the next quarter to map the next steps.
		A draft memorandum of understanding was entered into with the NHLS outlining collaboration in three main areas: (i) operational research to determine the feasibility of using QuantiFERON –TB plus (QTF-plus) amongst health care workers in health facility settings (ii) provision of technical assistance to improve use of Rif Alerts and other related data to facilitate quicker diagnosis and treatment initiation for DR-TB patients in supported districts (iii) facilitate use of surveillance information provided by NICD to provide technical assistance to improve TB management.
Private General Practitioners (GPs)		The USAID TB South Africa Project is forging partnerships with private general practitioners (GPs) in OR Tambo District, Eastern Cape Province. This is done by funding NEXT2People Foundation. In this enterprise, private GPs will work with local communities and the NDOH to ensure integrated TB disease management.
Mining Sector		The project conducted a support visit to Sataria Mine in Thabazimbi on August 10th, 2017. The aim of the visit was to compile a list of index patients within the mine which is to be shared with Global Fund (Aurum) to enable them to conduct contact tracing and management in peri-mining communities surrounding the mine. This activity forms part of collaborative activities identified through the project's partnership with the National Global Fund TB Project that focuses on mine workers and people living in peri-mining communities in overlapping supported districts, namely Waterberg and Gert Sibande in Mpumalanga Province.

2. MONITORING AND EVALUATION

Current data for output and performance indicators

Background

During the reporting period, the project received guidance from the NDOH and USAID to reduce the level of support in Northern Cape Province. Support remains through the NGOs work and the project will continue as a provincial partner providing technical support in specific areas. This report therefore excludes data from Northern Cape.

The project continued to provide technical support to 19 districts. However, eThekwini and Harry Gwala districts in KwaZulu-Natal had limited support as the district coordinator posts in these districts were vacant.

Cascade analysis towards the 90-90-90 TB targets: April to June 2017

- **90% of head count screened for TB;**
- **90% of those with symptoms tested for TB**
- **90% of clients diagnosed with TB put on treatment and**
- **90% of those put on treatment successfully complete treatment.**

Supported districts are required to ensure that the proportion of clients seen at clinics and screened for TB improve from 60.9% to 90% by 2021. Performance improved from 71% in October to Dec 2016 to 74% in January to March 2017 and further improved to 77% in April to June 2017. The screening rate ranged from 40% in Dr. Ruth Segomotsi Mompati, to 97.6% in Amajuba District. Four districts (Cape Winelands and West Coast districts in Western Cape; City of Johannesburg and Tshwane in Gauteng) did not report as the districts were in the process of finalizing their data.

Table 16: Cascade analysis for USAID TB South Africa Project-supported districts comparing the period October to December 2016 and January to March 2017

USAID TB South Africa Project supported facility cascade data						
	Oct-Dec 2016		Jan-March 2017		April-June 2017	
	Number	%	Number	%	Number	%
Head count	9 463 089		10 129 695		6 677 730	
Number screened for TB	6 513 988	69%	7 322 740	72%	4 910 615	74%
Presumptive TB clients	185 781	3%	217 443	3%	128 128	3%
Number tested	159 195	86%	179 620	83%	108 680	85%
Number tested positive	10 135	6%	11 074	6%	6 137	6%
Number started on treatment	9 599	95%	10 397	94%	6 150	100%
Number initially lost to follow up	403	4%	583	5%	133	2%
Number died before treatment started	86	1%	95	1%	50	1%

The proportion of symptomatic clients tested for TB has remained more or less the same 86% (Oct-Dec 2016) 83% (January to March 2017) and 85% (April to June 2017),

The proportion of symptomatic clients tested for TB ranges from 32.6% in UMkhanyakude to 100% in Dr. Ruth Segomotso Mompati. The proportion of symptomatic clients put on treatment is at 100% for supported districts, which exceeds the 90% target. The proportion initially lost to follow-up and those that die before treatment is low at 1% in the supported districts. The detailed district cascade analysis is as shown in Annex 1.

ETR.net data for supported districts

This section contains district data from the ETR.net reports covering the period April to June 2017. This report covers data from fourteen out of the nineteen districts identified for full support by the USAID Tuberculosis South Africa Project. These districts, per province are:

1. Eastern Cape: Nelson Mandela Bay Metro (NMBM) sub-district C, OR Tambo and Sarah Baartman;
2. Free State: Fezile Dabi and Mangaung Metro
3. KwaZulu-Natal: uMkhanyakude;
4. Limpopo: Sekhukhune, Waterberg and Vhembe;
5. Mpumalanga: Ehlanzeni and Gert Sibande;
6. North West: Dr Ruth Segomotsi Mompati (Dr RSM)
7. Western Cape: Cape Winelands and West Coast

In eThekwini and Harry Gwala, KwaZulu-Natal Province, there was minimal support as the project did not have someone on the ground. In Amajuba, Tshwane and COJ, data was not finalized at the time of the report writing.

Although the activity report covers the period July to September 2017; case finding data presented here is for the period April to June 2017, while the outcome data covers the period April to June 2016.

Case-finding data

There were 11,615 cases reported this quarter, a 2% increase from the 11,391 cases reported from the same districts in the January to March quarter. Notable increases were 42% and 36% from Sarah Baartman and OR Tambo respectively. Cape Winelands and Gert Sibande districts reported declines of 19% and 28% respectively.

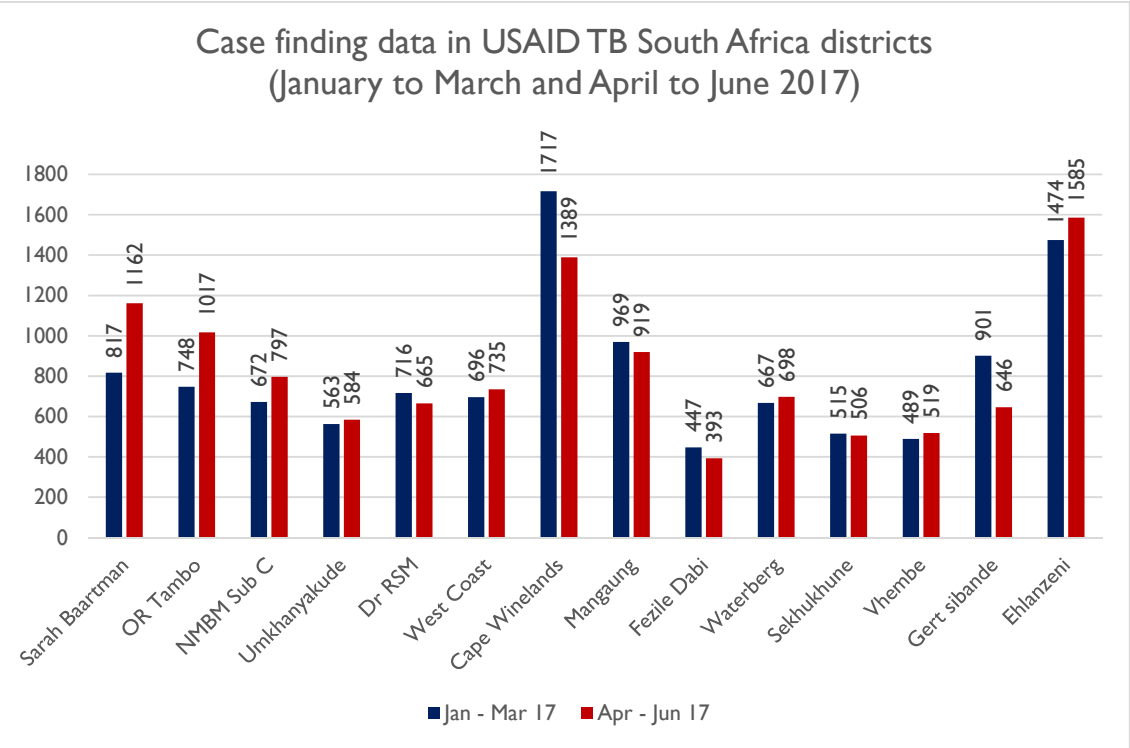


Figure 10: Case finding data in USAID TB South Africa supported districts: January to March 2017 and April to June 2017

Treatment success rate by district (January to March 2016 and April-June 2016)

Of the 3951 new bacteriologically confirmed TB cases 3247 (82%) were successfully treated in the supported districts. This represents a two percentage decline compared to the previous quarter. Gert Sibande who reported a decline from 85% to 44% resulted in observed decline. However; OR Tambo (93%) and UMkhanyakude breached the 90% treatment success rate.

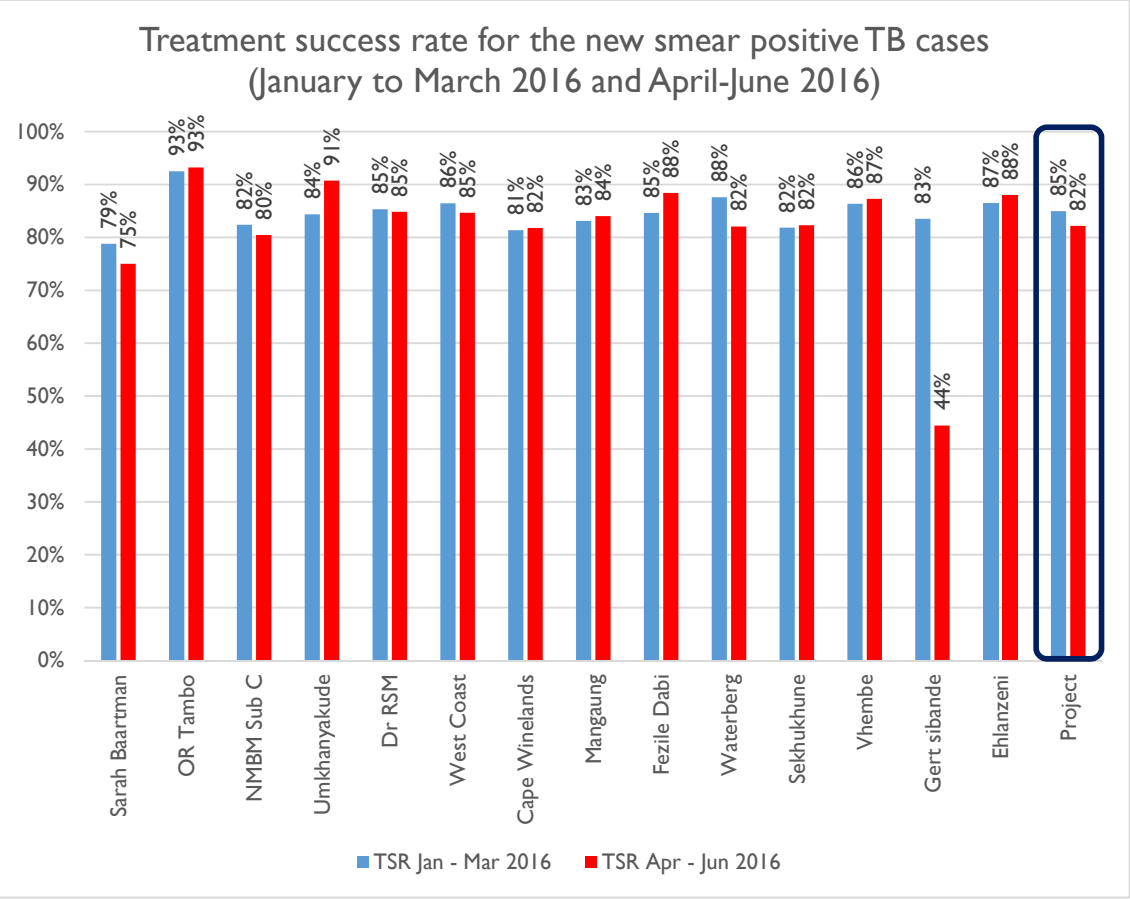


Figure 11: Treatment success rate for the new smear positive TB cases: Jan-Mar 2016 and April-June 2016

Treatment success rate in retreatment cases

Treatment success rate among re-treatment cases increased from 70% during the last quarter to 76% (out of 608 patients). There is an unusually low reporting of retreatment cases, with some districts reporting no retreatment cases. Districts reporting outcomes for patients below 30 are: OR Tambo (2), NMBM Sub C (0), UMkhanyakude (15), Dr RSM (14) Mangaung (17), Fezile Dabi (9), Waterberg (12), Sekhukhune (7), Vhembe (14) Gert Sibande (7) and Ehlanzeni (12).

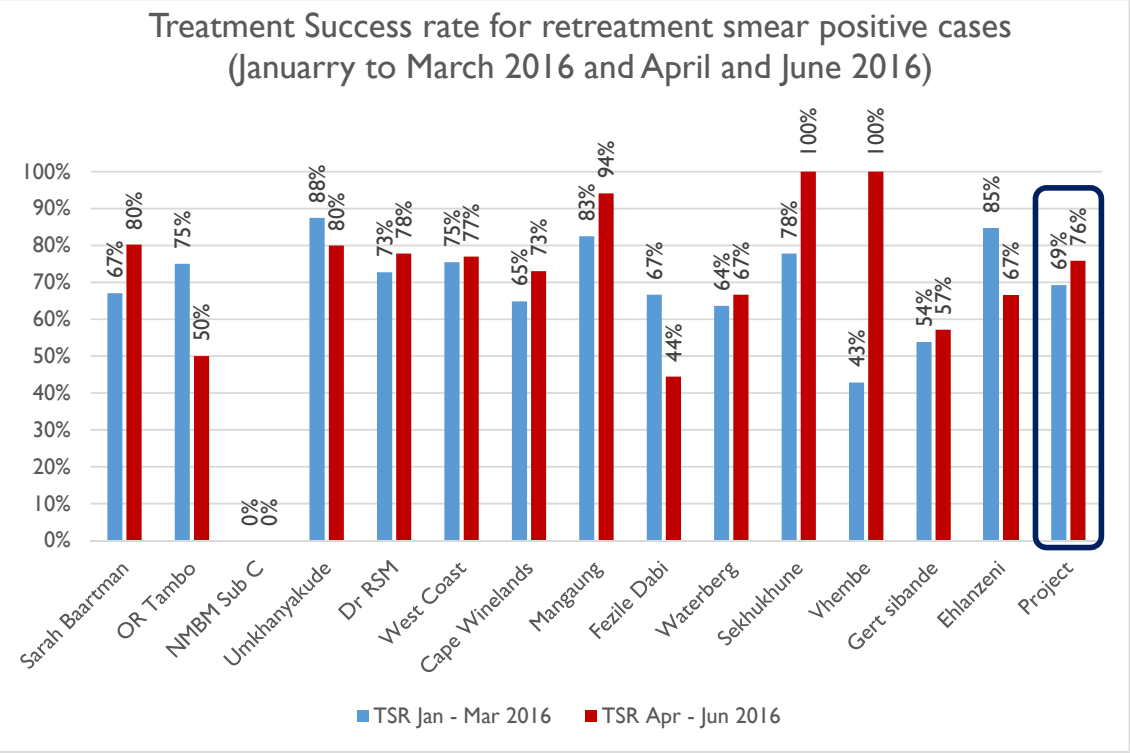


Figure 12: Treatment success rate for retreatment smear positive cases (January to March 2016 and April to June 2016)

Lost to follow-up (LTFU)

Of the 3,951 new smear-positive cases reported; 309 (8%) were lost to follow-up. This is a one percentage point increase from the previous quarter; but the same as the October to December 2015 LTFU rate. LTFU rates in seven of the supported districts are at 5% and below, which is the national target. The rest are above the <5% target; NMBM (15%), Sarah Baartman (15%) and Cape Winelands (12%) have worrisome LTFU rates of 12% and above. To address the high LTFU, NGO support is being strengthened in these districts.

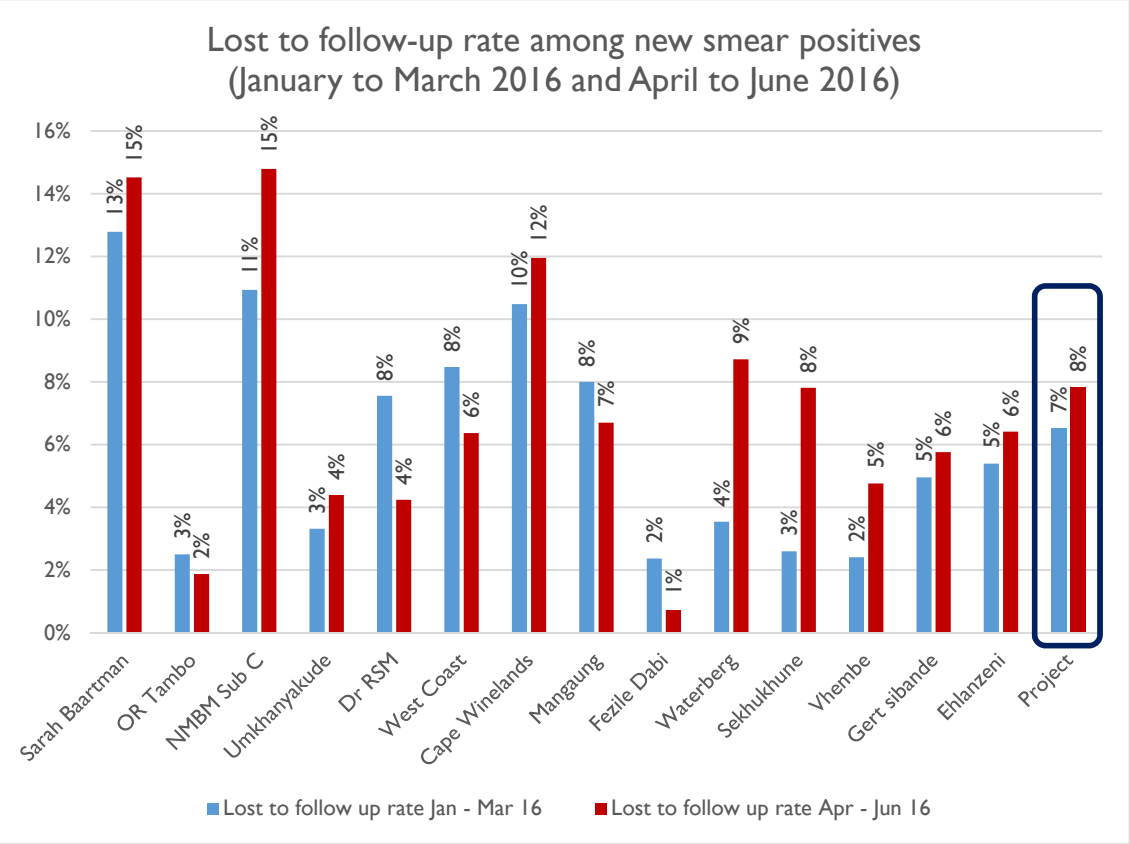


Figure 13: Lost to follow up rate among new smear positives (January to March 2016 and April to June 2016)

Mortality

The supported districts' average mortality was 4%. Nine of the supported districts had mortality of 5% and below. Dr RSM reported the highest mortality rate of 9%. Plans are underway to conduct a death audit to understand the root causes, of mortality and address the challenges accordingly.

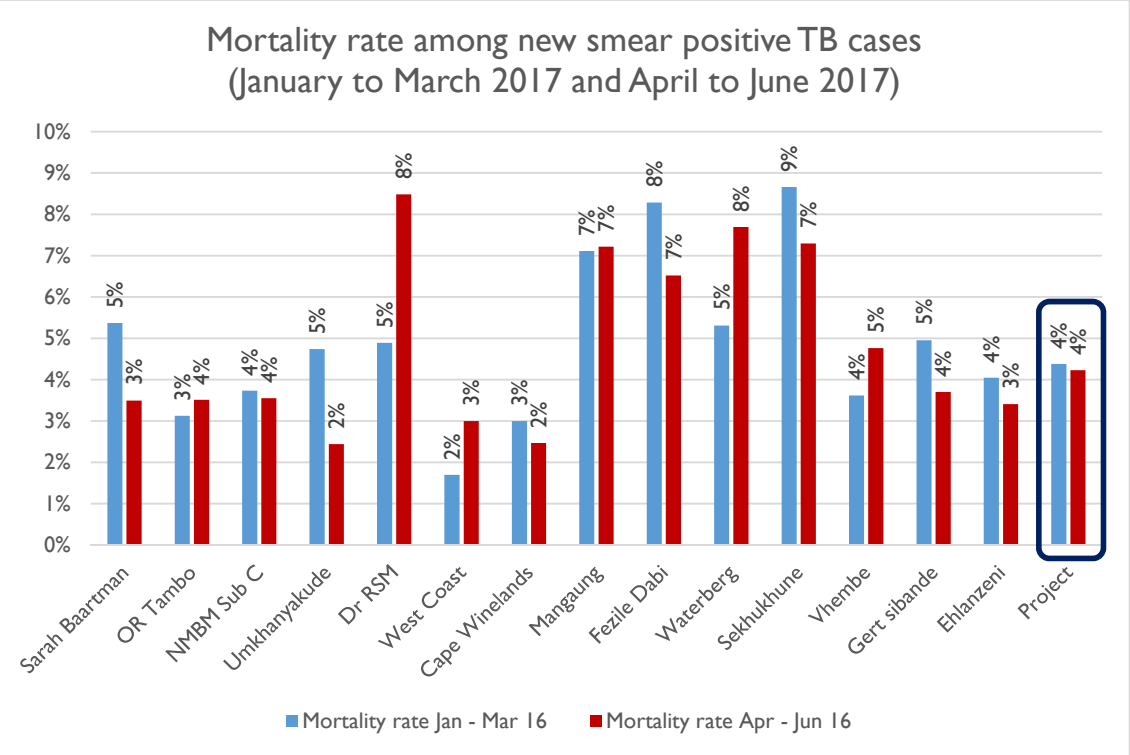


Figure 14: Mortality rate among new smear positive TB cases (January March 2017 and April to June 2017)

TB/HIV Data

Of the 9,070 notified TB cases in the 11 supported districts in the period April to June 2017, 8,493 (94%) had a known HIV status and 4,471 (55%) of those were co-infected with HIV. 3,741 (84%) of the co-infected were on *Cotrimoxazole* and 3,893 (87%) of the co-infected cases were on ART. (See Annexes 2)

Monthly data from supported facilities

Background

April to June 2017 was the first quarter with more than 99% complete data from supported facilities. It was also the first data to be analyzed and discussed at the USAID TB South Africa Project Quarterly Meeting. Some district coordinators had not fully grasped how to use the monthly data collecting tool and subsequent QIP that follow in addressing identified gaps. Some districts had selected more than 10 facilities to support under pressure from the NDOH; it was agreed that it impossible to support as much as 17 facilities and visit them monthly. A rationalization exercise would follow that could see a change in the number of supported facilities in some districts. The analysis below is of the original total of 179 supported facilities in eight provinces. It was shown from the data that although some individual facilities had very good success stories of improvements in some indicators over the three months; most showed mixed results which resulted in the overall picture of the combined data not showing improvements.

TB screening rates

Mangaung, Sekhukhune, Ehlanzeni, NMBM, OR Tambo and Cape Winelands combined data showed an increasing trend in TB screening rates among clinic attendees. The combined data in the rest shows screening rates going up and down during the period.

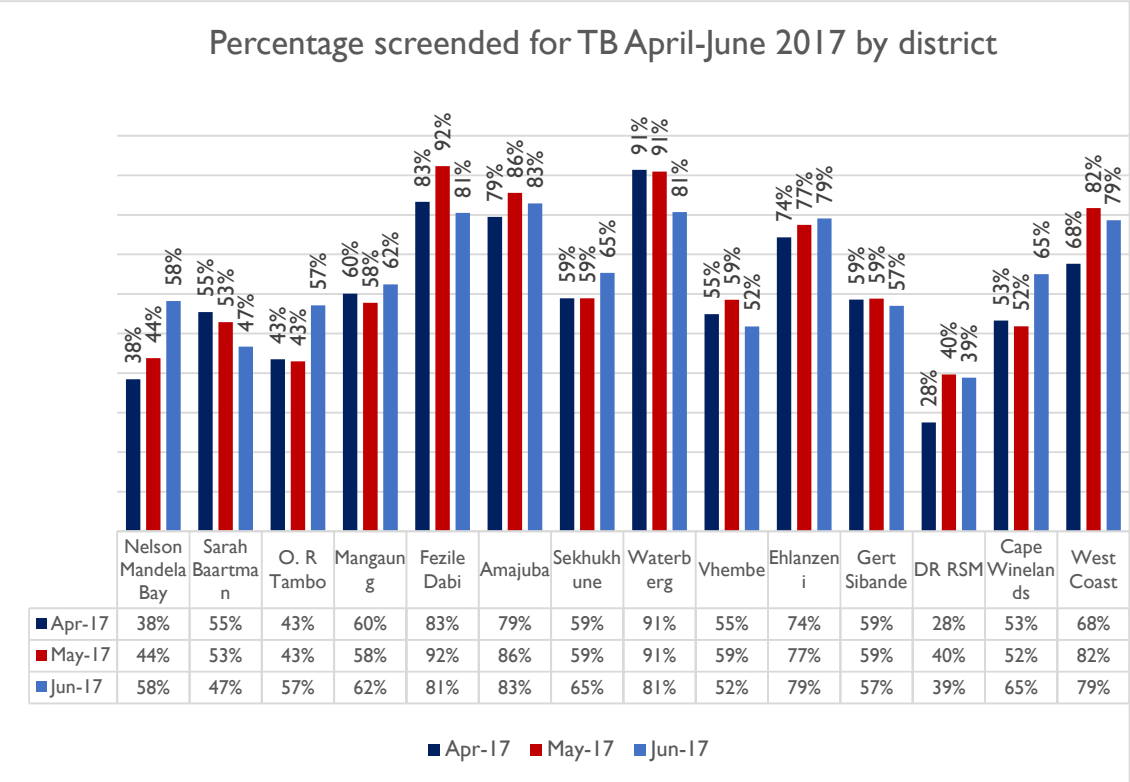
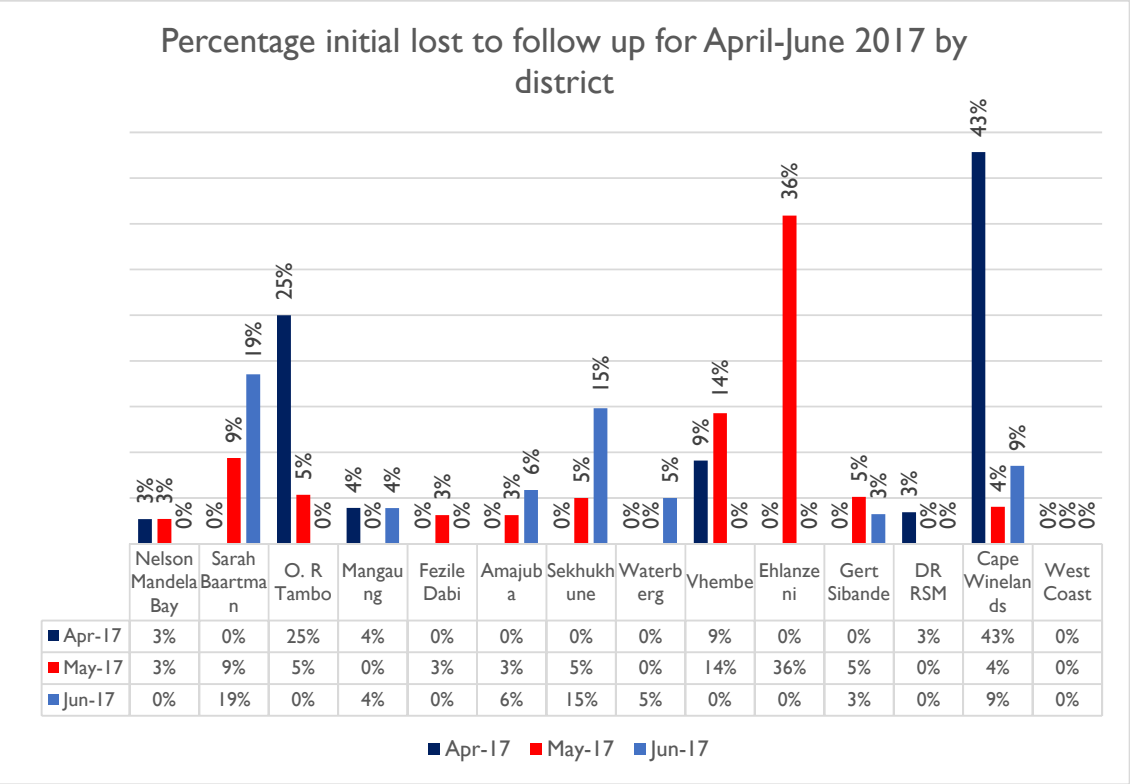


Figure 15: Percentage Screened for TB (April-June 2017) in supported facilities by districts

Initial loss to follow-up

Facilities in Mangaung, Fezile Dabi, Gert Sibande, NMBM, OR Tambo and Cape Winelands had ILTFU that either did not worsen or showed a downward trend. Ehlanzeni, Cape Winelands and OR Tambo had ILTFU rates that fell from 36% to zero, from 46% to 9% and from 25% to 5% respectively.



	Nelson Mandela Bay	Sarah Baartman	O. R Tambo	Mangaung	Fezile Dabi	Amajuba	Sekhukhune	Waterberg	Vhembe	Ehlanzeni	Gert Sibande	DR RSM	Cape Winelands	West Coast
Apr-17	3%	0%	25%	4%	0%	0%	0%	0%	9%	0%	0%	3%	43%	0%
May-17	3%	9%	5%	0%	3%	3%	5%	0%	14%	36%	5%	0%	4%	0%
Jun-17	0%	19%	0%	4%	0%	6%	15%	5%	0%	0%	3%	0%	9%	0%

Figure 16: Percentage initial lost to follow up for TB April-June 2017 in supported facilities by district

Known HIV status

Most facilities are doing very well on this indicator and are mostly in the high 80s, with some reporting 100%. Gert Sibande facilities reporting below 60% and Ehlanzeni (in the 70s) require more inputs to get them to the 90% target.

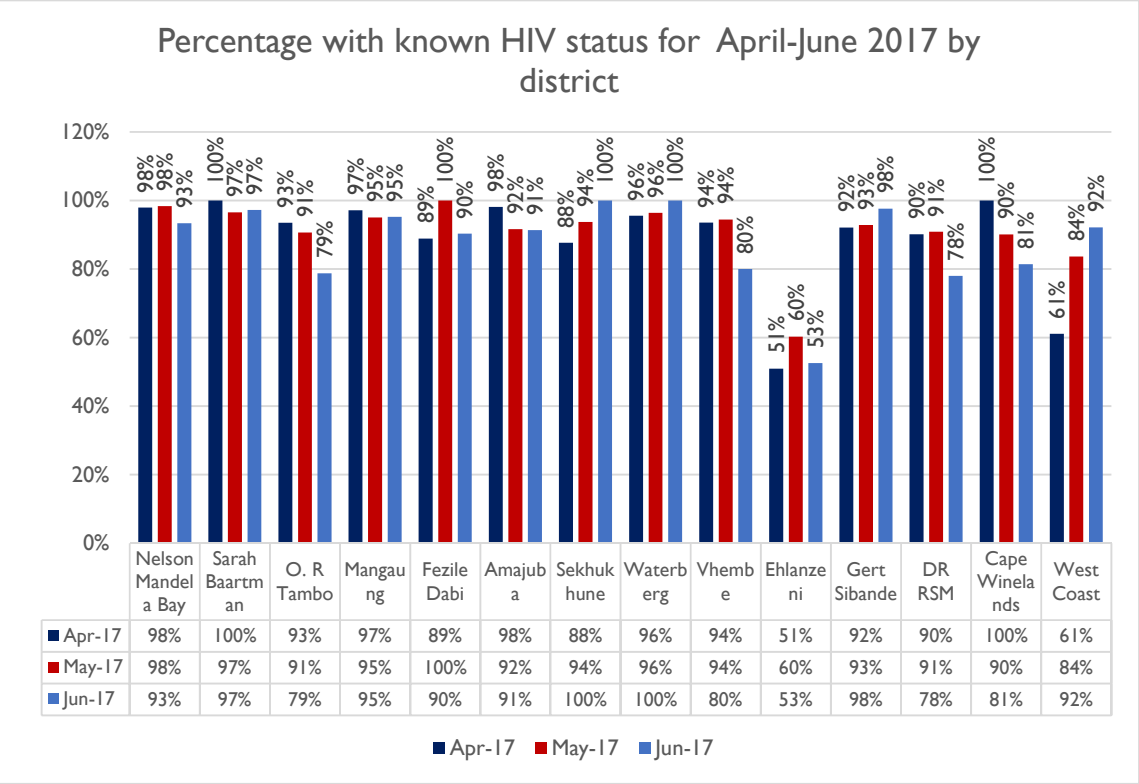
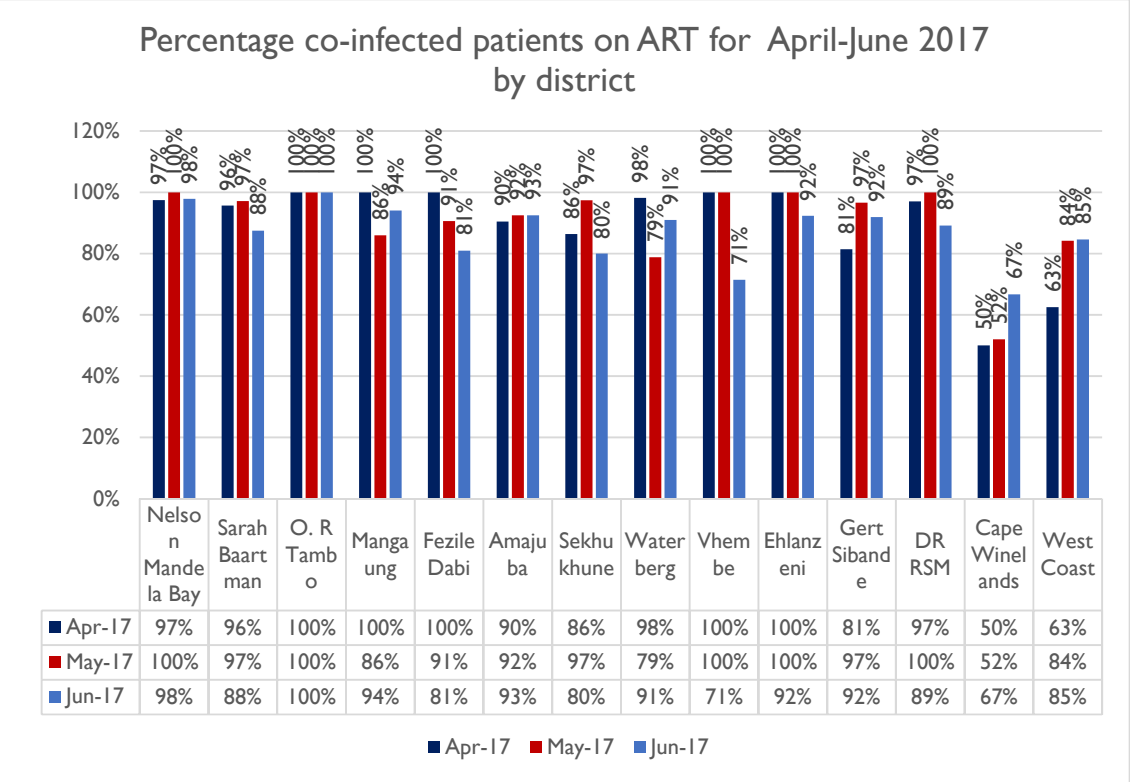


Figure 17: Percentage Screened for TB (April-June 2017) in supported districts

Co-infected patients on antiretroviral treatment for HIV

Data from supported facilities in Cape Winelands and West Coast districts shows an improvement in HAART initiation from 50% in April to 67 in June and 63% to 85% respectively. In the other supported districts, HAART initiation is above 80%.



	Nelson Mandela Bay	Sarah Baartman	O. R Tambo	Mangaung	Fezile Dabi	Amajuba	Sekhukhune	Waterberg	Vhembe	Ehlanzeni	Gert Sibande	DR RSM	Cape Winelands	West Coast
Apr-17	97%	96%	100%	100%	100%	90%	86%	98%	100%	100%	81%	97%	50%	63%
May-17	100%	97%	100%	86%	91%	92%	97%	79%	100%	100%	97%	100%	52%	84%
Jun-17	98%	88%	100%	94%	81%	93%	80%	91%	71%	92%	92%	89%	67%	85%

Figure 18: Percentage of co-infected patients on ART in supported facilities by district

3. Small Grants

During the reporting quarter, 20 grantees rendered patient care in 14 districts. Apart from the 20 currently funded NGOs, seven grantees were approved to implement DOT in the supported district. The seven NGOS will commence activities in October 2017. An additional four applications were received and are being reviewed for funding. Two NGOs resigned from the project and their patients were taken over by other NGOs.

The grantees provided DOT support to a total of 2,378 DS-TB patients and 1,194 DR-TB patients. The number of patients supported by each grantee are as shown in the table below.

Figure 19: Number of supported DS and DR TB patient by Province, District and NGO

Province	NGOs	Supported district	Supported patients			
			DS-TB	DR-TB	Total (district)	Total (province)
Eastern Cape (5 NGOs)	Care Ministry Mfesane	Nelson Mandela Bay Metro	301	285	586	811 patients (23%)
	Grahamstown Hospice Camdeboo Hospice	Sarah Baartman	65	66	131	
	Hospice Association of Transkei (HAT)	OR Tambo	21	73	94	
Western Cape (3 NGOs)	Wagon of Hope	Cape Winelands	153	24	177	321 patients (9%)
	CMAN LGO	West Coast	144	0	144	
Kwa-Zulu Natal (2 NGOs)	Asiphile E-Uganda	eThekwini	0	102	102	498 patients (14%)
	Mpilonhle	uMkhanyakude	396	0	396	
Northern Cape (3 NGOs)	Masiphile Grassroots Edge	Frances Baard	108	6	114	177 patients (5%)
	Hearts of Compassion	John Taolo Gaetsewe (JTG)	0	63	63	
Free State (1 NGO)	Mosamaria	Mangaung	431	0	431	431 patients (12%)
Limpopo (2 NGOs)	HAPG Kgatelopele	Waterberg	137	12	149	149 patients (4%)
North West (1 NGO)	Mamosa	Dr Kenneth Kaunda	73	0	73	73 patients (2%)
Mpumalanga (4 NGOs)	Isiphephelo Home Base Care Center	Gert Sibande	218	73	291	686 patients (19%)
	Phaphamani Home Base Care Wisani Community Project	Ehlanzeni	331	64	395	
National	Hospice Palliative Care Association (HPCA)	National	0	426	426	426 patients (12%)
			2,378	1,194	3,572	3,572

Building capacity of local NGOs to manage TB at community level

Group picture of participants at the national NGO workshop

The USAID TB South Africa Project hosted a national NGO workshop from September 3rd to 5th, 2017 in Johannesburg, Gauteng Province to build the capacities of local NGOs to improve TB management at community level. The workshop was attended by the NDOH and representatives of the invited NGOs. The workshop capacitated the community-based NGOs on the critical role they play in reducing TB infections in the communities they serve. The NGOs were also trained on grant application and financial management. A total of 54 NGOs with a wide range of experience in TB/HIV/homebased care experience attended the workshop from eight of the country's nine provinces (with the exception of the Northern Cape) and were capacitated on TB management. The project, together with the Department of Health officials, worked with the NGOs to guide them in areas to prioritize the development of their proposals. A request for applications will be sent out in October to solicit applications from these and other NGOs.

NGOs were also trained on grant application and financial management

USAID was recognized for the impact it is achieving within communities through the grants distributed through the USAID TB South Africa Project.

Staff members from two supported NGOs share their stories of how the project has impacted the TB patients in their communities and them personally.

4. ACTIVITIES FOR NEXT QUARTER

- Revive the model community dialogues linking all stakeholders and role players in communities
- Enhance and roll-out the TB in Schools Initiative
- Revive and enhance a model of community dialogues to reach traditional leaders, religious leaders and traditional health practitioners
- Develop interventions to address TB in 'provincial migrant workers' which impacts on the death audit and loss to follow-up.
- Roll out and implement the TB in Farms Initiative in West Coast District, Western Cape Province
- Implement a taxi industry wellness campaign in partnership with the NDOH-PHILA campaign, National Department of Transport and the taxi association SANTACO
- Finalize draft Response Framework for TB among Key Populations, outlining interventions towards the achievement of the 90-90-90 targets for key populations
- Roll out of ConnecTB to WBOTs in the Nelson Mandela Bay District and expand ConnecTB to all supported NGOs.
- Support World Diabetes Day and World AIDS Day commemorative activities
- Continue to expand the ConnecTB app for use by all funded NGOs
- Expand data verification to two more districts.
- Expansion of geo-mapping to all supported districts.
- Implement and upload functionality to centralize all monthly facility data
- Launch the risk assessment module on IPConnect.

Annexes

Annex 1: Cascade data analysis by district (Oct-Dec 2015, Jan-Mar 2017 and Apr-Jun 2017) Sekhukhune, Vhembe and Waterberg

	Sekhukhune						Vhembe						Waterberg					
	Oct-Dec 2016		Jan-Mar 2017		Apr-Jun 2017		Oct-Dec 2016		Jan-Mar 2017		Apr-Jun 2017		Oct-Dec 2016		Jan-Mar 2017		Apr-Jun 2017	
	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%
Head count	575978		609695		681794		629701		833226		633410		291492		394903		395801	
Number screened for TB	419409	72.8%	496298	81.4%	600202	88.0%	490453	77.9%	654251	78.5%	534462	84.4%	259363	89.0%	330931	83.8%	322274	81.4%
Presumptive TB clients	2105	0.5%	12983	2.6%	15099	2.5%	10476	2.1%	12005	1.8%	11085	2.1%	6520	2.5%	8388	2.5%	7877	2.4%
Number tested	1827	86.8%	11818	91.0%	14600	96.7%	10222	97.6%	11871	98.9%	11061	99.8%	6298	96.6%	8102	96.6%	7546	95.8%
Number tested positive	96	5.3%	398	3.4%	555	3.8%	165	1.6%	206	1.7%	142	1.3%	352	5.6%	436	5.4%	343	4.5%
Number started on treatment	90	93.8%	389	97.7%	537	96.8%	164	99.4%	205	99.5%	142	100.0%	341	96.9%	418	95.9%	338	98.5%
Number initially lost to follow up		0.0%	1	0.3%	8	1.4%		0.0%	1	0.5%	0	0.0%		0.0%	12	2.8%	2	0.6%
Number died before treatment started		0.0%	0	0.0%	10	1.8%		0.0%	8	3.9%	0	0.0%		0.0%	7	1.6%	3	0.9%

Annex 2: Cascade data analysis by district (Oct-Dec 2015, Jan-Mar 2017 and Apr-Jun 2017)

	Fezile Dabi						Mangaung						Dr Ruth Segomotsi Mompati					
	Oct-Dec 2016		Jan-March 2017		April-June 2017		Oct-Dec 2016		Jan-March 2017		April-June 2017		Oct-Dec 2016		Jan-March 2017		April-June 2017	
	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%
Head count	260 864		275815		206138		481794		491120		106492		55464		227138		183478	
Number screened for TB	192 056	73.6 %	206530	74.9 %	155963	75.7 %	303930	63.1 %	305946	62.3%	83858	78.7 %	2158 2	38.9%	90797	40.0%	83325	45.4%
Presumptive TB clients	4143	2.2%	4125	2.0%	3693	2.4%	11547	3.8%	9841	3.2%	1431	1.7%	2016	9.3%	4727	5.2%	6716	8.1%
Number tested	3727	90.0 %	3773	91.5 %	3405	92.2 %	4769	41.3 %	9841	100.0 %	1344	93.9 %	2016	100.0 %	7517	159.0 %	6716	100.0 %
Number tested positive	293	7.9%	318	8.4%	232	6.8%	675	14.2 %	666	6.8%	162	12.1 %	199	9.9%	447	5.9%	261	3.9%
Number started on treatment	283	96.6 %	308	96.9 %	230	99.1 %	649	96.1 %	611	91.7%	146	90.1 %	202	101.5 %	404	90.4%	465	178.2 %
Number initially lost to follow up		0.0%	7	2.2%	2	0.9%		0.0%	43	6.5%	16	9.9%	1	0.5%	43	9.6%		0.0%
Number died before treatment started		0.0%	3	0.9%		0.0%		0.0%	12	1.8%	0	0.0%		0.0%				0.0%

Annex 3: Cascade data analysis by district (Oct-Dec 2015, Jan-Mar 2017 and Apr-Jun 2017), City of Johannesburg, Tshwane, Frances Baard and Gert Sibande

	COJ				Tshwane				Frances Baard				Gert Sibande			
	Oct-Dec 2016		Jan-March 2017		Oct-Dec 2016		Jan-March 2017		Oct-Dec 2016		Jan-March 2017		Oct-Dec 2016		Jan-March 2017	
	Number	%	Number	%	Number	%	Number	%	Number	%	Number	%	Number	%	Number	%
Head count	4315132		4353290		880787		972370		132395		136648		514685		532 608	
Number screened for TB	3070497	71%	3259185	75%	541319	61%	614650	63%	62729	47%	61854	45%	267067	52%	320 471	60%
Presumptive TB clients	80434	3%	70605	2%	13844	3%	16748	3%	2687	4%	3056	5%	6419	2%	7486	2%
Number tested	65609	82%	67927	96%	13833	100%	16623	99%	2687	100%	3056	100%	6112	95%	7052	94%
Number tested positive	4465	7%	4429	7%	797	6%	895	5%	281	10%	293	10%	586	10%	663	9%
Number started on treatment	4150	93%	4114	93%	740	93%	818	91%	260	93%	271	92%	551	94%	634	96%
Number initially lost to follow up	265	6%	277	6%	48	6%	69	8%	20	7%	12	4%	26	4%	24	4%
Number died before treatment started	54	1%	37	1%	9	1%	8	1%	1	0%	5	2%	9	2%	5	1%

Annex 4: Cascade data analysis by district (Oct-Dec 2015, Jan-Mar 2017 and Apr-Jun 2017), Gert Sibande, Amajuba and UMkhanakude

	Gert Sibande						Amajuba						uMkhanyakude					
	Oct-Dec 2016		Jan-Mar 2017		Apr-Jun 2017		Oct-Dec 2016		Jan-Mar 2017		Apr-Jun 2017		Oct-Dec 2016		Jan-Mar 2017		Apr-Jun 2017	
	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%
Head count	514685		532608		503949		310760		219603		264204		414970		435939		426274	
Number screened for TB	267067	52%	320471	60%	280863	55.7%	188075	60.5%	214350	97.6%	214350	81.1%	310405	74.8%	333596	76.5%	333596	78.3%
Presumptive TB clients	6419	2%	7486	2%	6346	2.3%	16959	9.0%	5639	2.6%	3696	1.7%	12257	3.9%	44257	13.3%	25121	7.5%
Number tested	6112	95%	7052	94%	5853	92.2%	16959	100.0%	5099	90.4%	3640	98.5%	9183	74.9%	9702	21.9%	8200	32.6%
Number tested positive	586	10%	663	9%	519	8.9%	334	2.0%	329	6.5%	245	6.7%	366	4.0%	400	4.1%	374	4.6%
Number started on treatment	551	94%	634	96%	499	96.1%	334	100.0%	324	98.5%	243	99.2%	363	99.2%	393	98.3%	370	98.9%
Number initially lost to follow up	26	4%	24	4%	3	0.6%	0	0.0%	1	0.3%	0	0.0%	1	0.3%	2	0.5%	3	0.8%
Number died before treatment started	9	2%	5	1%	17	3.3%	0	0.0%	4	1.2%	2	0.8%	2	0.5%	5	1.3%	1	0.3%

Annex 5: Cascade data analysis by district (Oct-Dec 2015, Jan-Mar 2017 and Apr-Jun 2017), Cape Winelands, Harry Gwala and eThekwini

	Cape Winelands						Harry Gwala						eThekwini					
	Oct-Dec 2016		Jan-Mar2017		Apr-Jun 2017		Oct-Dec 2016		Jan-Mar 2017		Apr-Jun 2017		Oct-Dec 2016		Jan-Mar 2017		Apr-Jun 2017	
	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%
Head count	344116		362907		495722		229347		248875		239995		1845495		2009060		1813152	
No. screened for TB	158778	46%	177844	49%	312868	63%	181633	79%	203293	81.7%	205740	85.7%	1600619	86.7%	1674139	83.3%	1666048	91.9%
Presumptive TB clients	7635	4.8%	7039	4.0%	6469	2.1%	6999	4%	9459	4.7%	5878	2.9%	50115	3.1%	49273	2.9%	115515	6.9%
Number tested	7542	98.8%	6933	98.5%	6298	97.4%	6671	95%	9221	97.5%	5645	96.0%	44546	88.9%	46237	93.8%	39509	34.2%
Number tested positive	935	12.4%	1048	15.1%	903	14.3%	381	6%	335	3.6%	264	4.7%	3328	7.5%	1010	2.2%	3560	9.0%
Number started on treatment	883	94.4%	970	92.6%	895	99.1%	378	99%	327	97.6%	262	99.2%	3269	98.2%	1000	99.0%	3546	99.6%
Number initially lost to follow up	47	5.0%	75	7.2%		0.0%	0	0%	5	1.5%	1	0.4%	54	1.6%	8	0.8%	14	0.4%
Number died before treatment started	3	0.3%	1	0.1%		0.0%	3	1%	3	0.9%	1	0.4%	5	0.2%	2	0.2%	0	0.0%

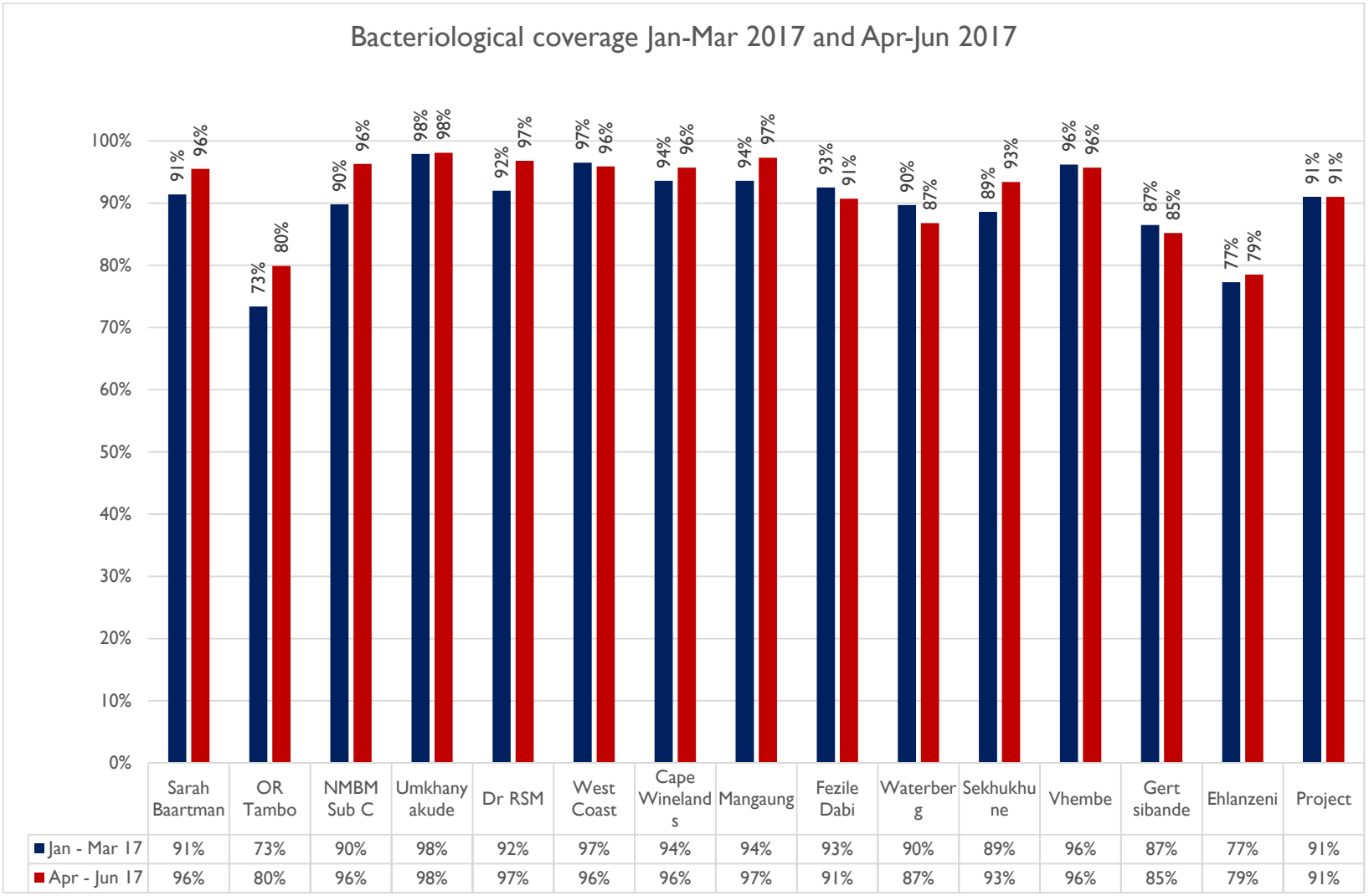
Annex 6: Cascade data analysis by district (Oct-Dec 2015, Jan-Mar 2017 and Apr-Jun 2017)

	COJ						Tshwane					
	Oct-Dec 2016		Jan-Mar 2017		Apr-Jun 2017		Oct-Dec 2016		Jan-Mar 2017		Apr-Jun 2017	
	Number	%	Number	%	Number	%	Number	%	Number	%	Number	%
Head count	4315132		4353290		1592133		880787		972370		948340	
Number screened for TB	3070497	71%	3259185	75%	1165469	73%	541319	61%	614650	63%	617645	65%
Presumptive TB clients	80434	3%	70605	2%	20215	2%	13844	3%	16748	3%	14502	2%
Number tested	65609	82%	67927	96%	20008	99%	13833	100%	16623	99%	14364	99%
Number tested positive	4465	7%	4429	7%	1394	7%	797	6%	895	5%	743	5%
Number started on treatment	4150	93%	4114	93%	1323	95%	740	93%	818	91%	700	94%
Number initially lost to follow up	265	6%	277	6%	60	4%	48	6%	69	8%	38	5%
Number died before treatment started	54	1%	37	1%	11	1%	9	1%	8	1%	5	1%

Annex 7: Table of TB/HIV data by district Jan-Mar 2016

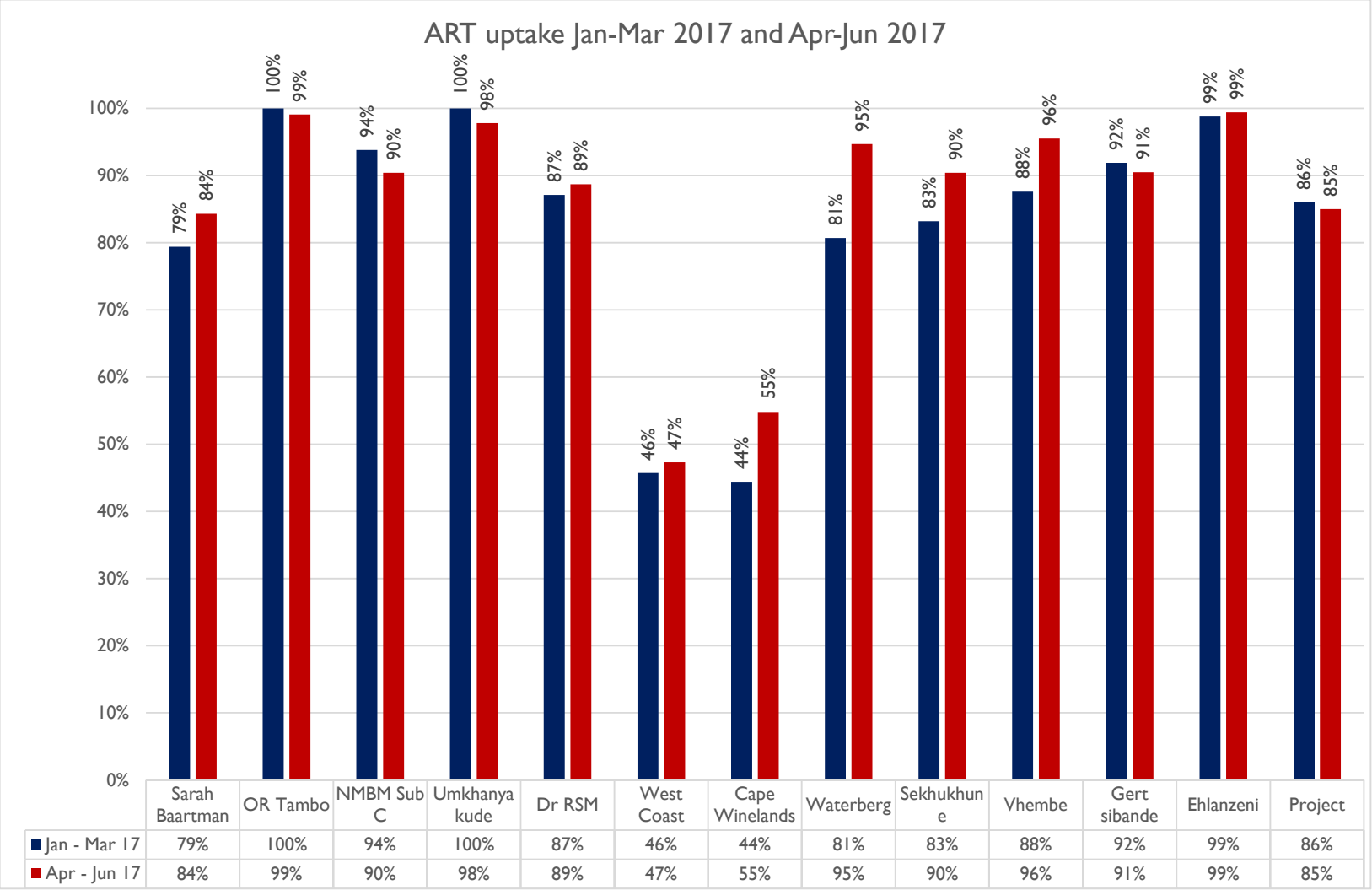
Province	District	TB Cases Registered	TB pts with known HIV status	TB pts co-infected with HIV	Co-infected On CPT	Co-infected On ART	% with known HIV status	% co-infected	% co-infected on CPT	% co-infected on ART
Eastern Cape	Sarah Baartman	1162	1068	517	234	436	91.9%	48.4%	45.3%	84.3%
	OR Tambo	1017	955	466	464	462	93.9%	48.8%	99.6%	99.1%
	NMBM Sub C	797	711	335	261	303	89.2%	47.1%	77.9%	90.4%
KZN	UMkhanyakude	936	907	628	620	614	96.9%	69.2%	98.7%	97.8%
North West	Dr RSM	665	644	335	300	297	96.8%	52.0%	89.6%	88.7%
Western Cape	West Coast	735	676	207	150	98	92.0%	30.6%	72.5%	47.3%
	Cape Winelands	1389	1273	420	308	230	91.6%	33.0%	73.3%	54.8%
Limpopo	Waterberg	698	687	506	461	479	98.4%	73.7%	91.1%	94.7%
	Sekhukhune	506	486	282	259	255	96.0%	58.0%	91.8%	90.4%
	Vhembe	519	485	312	296	298	93.4%	64.3%	94.9%	95.5%
Mpumalanga	Gert Sibande	646	601	465	388	421	93.0%	77.4%	83.4%	90.5%
Project		**9070**	**8493**	**4473**	**3741**	**3893**	**93.6%**	**52.7%**	**83.6%**	**87.0%**

Annex 8: Bacteriological coverage Jan-Mar 2017 and Apr-Jun 2017



	Sarah Baartman	OR Tambo	NMBM Sub C	Umkhanyakude	Dr RSM	West Coast	Cape Winelands	Mangaung	Fezile Dabi	Waterberg	Sekhukhune	Vhembe	Gert sibande	Ehlanzeni	Project
Jan - Mar 17	91%	73%	90%	98%	92%	97%	94%	94%	93%	90%	89%	96%	87%	77%	91%
Apr - Jun 17	96%	80%	96%	98%	97%	96%	96%	97%	91%	87%	93%	96%	85%	79%	91%

Annex 9: ART uptake Jan-Mar 2017 and Apr-Jun 2017



	Sarah Baartman	OR Tambo	NMBM Sub C	Umkhanyakude	Dr RSM	West Coast	Cape Winelands	Waterberg	Sekhukhune	Vhembe	Gert sibande	Ehlanzeni	Project
Jan - Mar 17	79%	100%	94%	100%	87%	46%	44%	81%	83%	88%	92%	99%	86%
Apr - Jun 17	84%	99%	90%	98%	89%	47%	55%	95%	90%	96%	91%	99%	85%

Annex 10: Quarterly financial reports and accruals