



TUBERCULOSIS SOUTH AFRICA PROJECT

USAID Tuberculosis South Africa Project

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USAID/Tuberculosis South Africa Project

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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	<i>Cotrimoxazole</i> 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	<i>Isoniazid</i> 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	<i>Rifampicin</i> 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

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EXECUTIVE SUMMARY

Overview

Progress made during the first year of implementation of the United States Agency for International Development's (USAID) Tuberculosis South Africa Project (2016-2021) demonstrates that the project has established itself as a key national partner in the fight against tuberculosis (TB) in South Africa. As of October 2017, the project directly supports 179 health facilities in South Africa across 19 districts in eight provinces (except for Northern Cape) offering a package of high impact interventions aimed at reducing TB infections in the country. The End TB strategy's 90-90-90 targets were adopted as the overall framework for use in demonstrating project impact across supported facilities. USAID TB South Africa Project-supported districts have seen marked improvements in ensuring that 90% of all clients visiting PHC facilities are screened for TB. The overall screening rate across all supported districts improved from 69% in quarter 1 (October to December 2016) to 74% by quarter 3 (April to June 2017). More in-depth district-level analysis showed significant improvements in individual districts, such as Cape Winelands where the screening rate improved by 17% (from 46% in quarter 1 to 63% by quarter 3). Similarly, a 15% increase in the screening rate was observed in Sekhukhune district, from 73% in quarter 1 to 88% in quarter 3. Despite an increase in the overall number of clients screened for TB, there has been little improvement in the number of presumptive cases tested for TB. The overall proportion of presumptive cases tested remained steady at around 85% between quarter 1 and quarter 3. Thus, more effort needs to be directed to ensuring that in the next quarter, the project can achieve increases in the proportion of presumptive TB cases tested.

Notable improvements were achieved in the number of confirmed TB cases started on treatment, as well as in the reduction of the overall proportion of clients lost to follow-up in supported districts. The number of confirmed cases started on TB treatment increased from 95% in quarter 1 to 100% by quarter 3. Furthermore, a downward trend was observed in the proportion of clients initially lost to follow-up, with a 50% reduction from 4% in quarter 1, to 2% in quarter 3. These early results demonstrate the importance of identifying key critical gaps in the TB Care Cascade, and making concerted efforts to close them through implementing a Quality Improvement Approach. Efforts made to ensure HIV/TB integration have also yielded good results, as demonstrated by the proportion of TB patients with a known HIV status (93.6%). Additionally, the proportion of HIV positive TB patients on antiretroviral (ART) sits at just below 90% (at 87%) in quarter 3. In terms of treatment success rate among new smear positive TB cases in supported districts, this figure has remained static at around 84% for new smear positive TB cases, and increased slightly for retreatment cases (from 71% to 76%).

The project sites that were chosen at the inception of the project were predominantly those that were performing poorly on several TB indicators. Although not all the 90-90-90- targets have been achieved in these sites, significant improvements have been achieved in terms of improving key indicators such as TB screening, treatment initiation, reduction in initial loss to follow-up as well as treatment success, especially among re-treatment cases. Thus, it can confidently be deduced that the package of interventions being implemented by the USAID TB South Africa Project are beginning to demonstrate measurable impact, and will need to be

scaled up in Year 2. The project will prioritize closing identified gaps in the TB Care Cascade, which has been a challenge this past year.

TB Infections Reduced

Increased awareness of the TB epidemic

Interventions implemented under IRI.I in the past year responded directly to Goal I of the National Strategic Plan for HIV/AIDS, Tuberculosis and Sexually Transmitted Infections (STIs) (2017-2021) for South Africa, which seeks to “Revitalize information education communication (IEC) programs in schools, health facilities, workplaces, and community settings”. During the reporting period, the project partnered with national and provincial departments of health to co-host key events to raise the profile of TB and to reach various audiences with targeted messages around TB. National events included:

- i. World AIDS Day 2016 commemorative events which reached more than 3,000 people with TB/HIV IEC materials and services;
- ii. World Diabetes Day 2016 commemorative events where over 1,000 people were offered TB/diabetes screening services;
- iii. World TB Day commemorations in 2017 which reached more than 9 million people with information about TB through a combination of social and mass media (print, radio, television);
- iv. And the 8th South African AIDS Conference, where the project partnered with the Ubuntu Initiative to reach 700 men, the majority of whom reside in community residential units (CRUs, formerly known as hostels) in Kwazulu-Natal Province.

In addition to the national events co-hosted with the National Department of Health, the USAID TB South Africa Project hosted more than 50 events across the 9 provinces of South Africa, reaching a cumulative 88,195 people directly with information about TB during the year under review. Events included community dialogues, social mobilizations, door-to-door information provision activities, *indabas*, and broader engagement with local traditional and political leaders in project-supported districts.

A key strength of the project over the past year has been the development of a significant amount of IEC materials covering a wide range of TB topics targeted at multiple audiences. During the reporting period, more than 750,000 IEC materials were produced and 390,000 disseminated across the country. These include posters on TB/HIV, drug-resistant TB (DR-TB) and TB infection control.

In addition to printed materials, the project’s social media reach grew significantly, and currently includes active engagement on Facebook and Twitter, with regular updates about TB and project events and achievements disseminated to a broad national audience. Through Facebook alone, 62,019 people were reached with information, with 5,717 interacting directly with the content shared. Twitter yielded even better results, with over 6 million people reached via this medium during the year.

Mass media communication is also increasingly being used as a key strategy to saturate the South Africa public with key messages about TB prevention, signs and symptoms, and treatment, among other themes. To this end, USAID TB South Africa project staff participated

in more than 20 radio interviews on community, provincial and national radio stations, reaching approximately 17 million people across the country's nine provinces. To sustain these efforts, the project plans to implement a mass media campaign in November and December 2017 using national radio and television, billboards and rank and transit TV to enhance awareness of TB prevention, diagnostics and treatment services. Planning and coordination of this campaign took up a lot of time of project staff during the year under review.

The Buddy Beat TB package for pediatric support for children on treatment for DR-TB remains a flagship program of the USAID TB South Africa Project. Resources available under this package for pediatric support were expanded to include a comic book, a 'how-to instructional guide for utilizing the Buddy suit, re-designed Buddy costumes, and Buddy miniature toys, which have been distributed to three hospitals in Western Cape Province.

The USAID TB South Africa Project also significantly contributed to saturating mainstream communication platforms with key TB messages in South Africa. Millions of South Africans were reached at all levels. In Year 2, an emphasis will be placed on evaluating the effectiveness of messages and ensuring that the project continues to contribute to achieving Goal 1 of South Africa's National Strategic Plan for HIV/AIDS, TB and STIs.

Effective implementation of infection control

The FAST strategy, spearheaded by the USAID TB South Africa Project, was adopted as one of the core national strategies towards improving infection prevention and control (IPC) in health facilities in South Africa. Healthcare workers at various levels have been trained on the FAST Approach. By October 2017, 15 hospitals in five provinces were implementing the FAST Approach. Early results show marked progress, indicating that implementing hospitals have actively screened 39,740 patients, resulting in the identification of 236 TB patients diagnosed by GeneXpert. TB surveillance and screening was also done for 497 healthcare workers, with 179 symptomatic for TB and two testing positive for TB. These results show that given time, the FAST Approach has potential to make a significant difference in the levels of detection of unsuspected drug-susceptible and DR/RR TB cases in health facility settings.

Over the last year, the project has also supported effective implementation of IPC measures at both primary healthcare and community/household levels. A total of 56 comprehensive risk assessments were conducted in supported facilities, revealing serious gaps which potentially contribute to increased risks of TB transmission at facility level. The project has systematically addressed these challenges through technical assistance provided to assist facilities to develop IPC plans and in training facility staff to implement them. To further strengthen implementation of IPC at primary healthcare level, 11 carbon dioxide (CO₂) monitors were placed in health facilities in three provinces to support efforts to evaluate environmental controls in place, and to ensure efficacy of IPC measures in supported facilities.

The IPConnect mobile health (mHealth) application was also developed to improve monitoring and reporting of IPC risk assessments conducted. The application includes relevant TB guidelines accessible via an online/mobile platform and is set to be a key resource assisting healthcare workers to improve infection control in South Africa. At community and

household levels, community healthcare workers employed by NGOs funded by the project were trained on household IPC measures to reduce the likelihood of community level TB transmission. In the next quarter, community health workers will be trained to conduct household risk assessments for all TB patients managed at community level to ensure that contacts of TB patients are protected from potential TB transmission in their households.

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 of efforts aimed at ensuring the sustained impact of implemented interventions in supported sites. The project partnered with the National Department of Health (NDOH), Gates Foundation and the Institute for Healthcare Improvement (IHI) to develop and implement a TB quality improvement program that aims to strengthen management capacities to respond to the disease at all levels. This initiative is implemented in nine districts, with the USAID TB South Africa Project supporting five of these. In addition, the project has seconded a QI manager to the NDOH to oversee the implementation of QI activities at the department.

Through implementation of the QI program, noticeable improvements were observed and reported from supported Phase I-pilot districts. 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, Eastern Cape Province and improvements from 33% to 48% in Sub-District C in Nelson Mandela Bay Metro, also Eastern Cape Province). Across the districts, improvements were also documented on the other sections of the TB Care Cascade, even though initial focus was on TB screening. For example, in Ehlanzeni district, Mpumalanga Province initial loss to follow-up dramatically fell from 9.3% in quarter 1 to 5.7% in quarter 2 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 the year the project also facilitated QI training targeting relevant personnel in all supported districts, resulting in the establishment of 55 quality improvement teams. It is expected that cascading the QI training to all supported districts will facilitate the achievement of similar results on a broader scale nationally.

Furthermore, during the period under review, 4,359 health care worker HCWs were trained on various TB-related topics, including Basic TB Management and Interpersonal Communication and Counselling. In addition to the didactic trainings offered by the project, in-service training was also conducted as part of the low-dose high-frequency training approach, reaching 1,374 HCWs nationally.

Improving the Care and Treatment of Vulnerable Populations

Comprehensive partnerships for care

Goal Three of the NSP (2017–2022) emphasizes the importance of reaching all key and vulnerable populations with comprehensive, customized and targeted interventions. Under

the theme ‘Leave no one behind’, the NSP acknowledges that whilst South Africa faces a generalized TB epidemic, specific groups within the population are more vulnerable and require intensified efforts towards TB prevention, treatment and care. To facilitate the achievement of Goal 3, the USAID TB South Africa Project provides support to migrants (which include farm workers as well as mine workers, contacts of TB patients and healthcare workers as vulnerable populations with an elevated risk of contracting TB based on where they work and live).

The USAID TB South Africa Project facilitated the establishment of a Memorandum of Understanding between the Eastern Cape Provincial Department of Health and farm owners in the province to ensure sustained provision of key TB/HIV services for migrant farmworkers. Within this public-private partnership arrangement, the project provided services to farm workers in Sarah Baartman district between April and October 2017. As a direct result of the support provided, 6,395 farm workers were reached with TB messages and 5,806 (91%) of them were screened for TB. Of those tested, 42 people carbon dioxide (CO₂) were diagnosed with TB (39 DS and three *Rif* resistant TB cases), and all were linked to care.

Following its launch in Eastern Cape in late May 2017, the TB in Farms Initiative, was expanded to Western Cape Province in September, managing to reach a total of 257 farm workers and to screen 198 of them for TB. This initiative netted 95 farm workers who were presumptive for TB, and tested 54 of them. Of this number, three were diagnosed with TB and linked to care. Through support provided in both provinces, 45 farms workers were diagnosed with TB and linked to care, with an observed TB incidence of 676/100,000 population, which is slightly higher than incidence in the general population. Although the number of cases detected is not particularly high, farm workers and migrants in general are recognized as a vulnerable, hard-to-reach population in the NSP. Furthermore, the detection of these 45 cases averted a potential (minimum) 450 TB infections that could have occurred because of undiagnosed and untreated TB in this group. In the next quarter, more cost-effective measures will be explored to ensure sustainable provision of TB and related services to farm workers in supported districts.

In addition to the targeted intervention for farm workers, the project also supports mine workers in four mines across three provinces: Limpopo, Mpumalanga and North West. During the period under review, TB management training and screening activities were conducted in four participating mines in the three provinces. A little over 66,200 mine workers were screened for TB, with 98 TB cases diagnosed and linked to care between October 2016 and September 2017. A more structured model of support for mine workers is under development for implementation in the next quarter. This approach, it is hoped, will ensure that synergies are established with activities implemented by other Global Fund-supported partners. The NDOH has stated its clear intention to “leave no one behind”, thus the project will continue to develop and implement models of support for vulnerable populations identified as critical in the achievement of broader national goals on TB prevention, care and treatment.

Small grants

The 2016 World Health Organization (WHO) Global TB Report estimates that South Africa is missing approximately 154,000 TB cases from its treatment programs. The USAID TB South

Africa Project has identified and developed several strategies to work with the NDPH to find these missing TB cases. One such strategies that has proved highly effective is the work done by 20 community based non-governmental organizations (NGOs) funded by the USAID TB South Africa Project to support TB patients on treatment at community and household levels. Over the period under review, these NGOs reached over 64,000 people through community awareness campaigns and door-to-door campaigns. These campaigns resulted in the identification of 366 TB patients, with 98% (357) of those diagnosed linked to care.

In addition to awareness campaigns, funded NGO conducted contact management and reached 11,794 adult contacts with 345 confirmed TB positive and linked 97% (334) to care. During the same period, 2,598 child contacts were reached and 90% of them were screened for TB with 113 confirmed to have TB. As these results show, contact screening continues to yield high TB cases of 4,644 per 100,000 population among child contacts and 2,925 per 100,000 population among adult contacts. These results were presented to the NDOH and helped inform the prioritization of contact management as a key case-finding strategy in South Africa. During the reporting period, local NGOs collectively contributed towards the identification of 824 TB cases, which would have otherwise not been found. In the next quarter, the NGOs will prioritize contact management and strengthen effective implementation of infection prevention and control at household levels.

Implementation of the Drug-Resistant Tuberculosis Service Package in South Africa

On December 22, 2015, the White House officially released a plan to address 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 US Government's (USG) domestic and global tuberculosis (TB) strategies. It will also contribute to the success of existing strategies to eliminate MDR-TB. South Africa is amongst four countries that have been identified as potential sites for implementation of Phase I of the introduction of the NAP. The USAID TB South Africa Project is the key partner working with the NDOH to implement the DR-TB Service Package in South Africa to enhance patient support for DR-TB patients. Interventions that form part of this package are being implemented in Limpopo (Matlala Hospital), Free State (J.S Moroka, Heidedal, Botshabelo, National and Manguang University of the Free State Community Partnership Programme (MUCCPP) hospitals) and Eastern Cape (Nelson Mandela Metro, Osmond, Jose Pearson and Empilweni hospitals) provinces. The project conducted baseline assessments across the three provinces, with preliminary results showing serious challenges related to limited nutritional assessments of enrolled patients, inadequate side effect evaluation and management and narrow patient and family education. At the time of reporting, introduction workshops and training had been done in all three provinces. Furthermore, 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.

I INTRODUCTION

The USAID Tuberculosis South Africa Project was awarded to University Research Co., LLC (URC) on March 17th, 2016 with the primary objective of providing technical assistance to the Government of South Africa (GoSA) to reduce the burden of TB in the country. The project builds on the achievements 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:

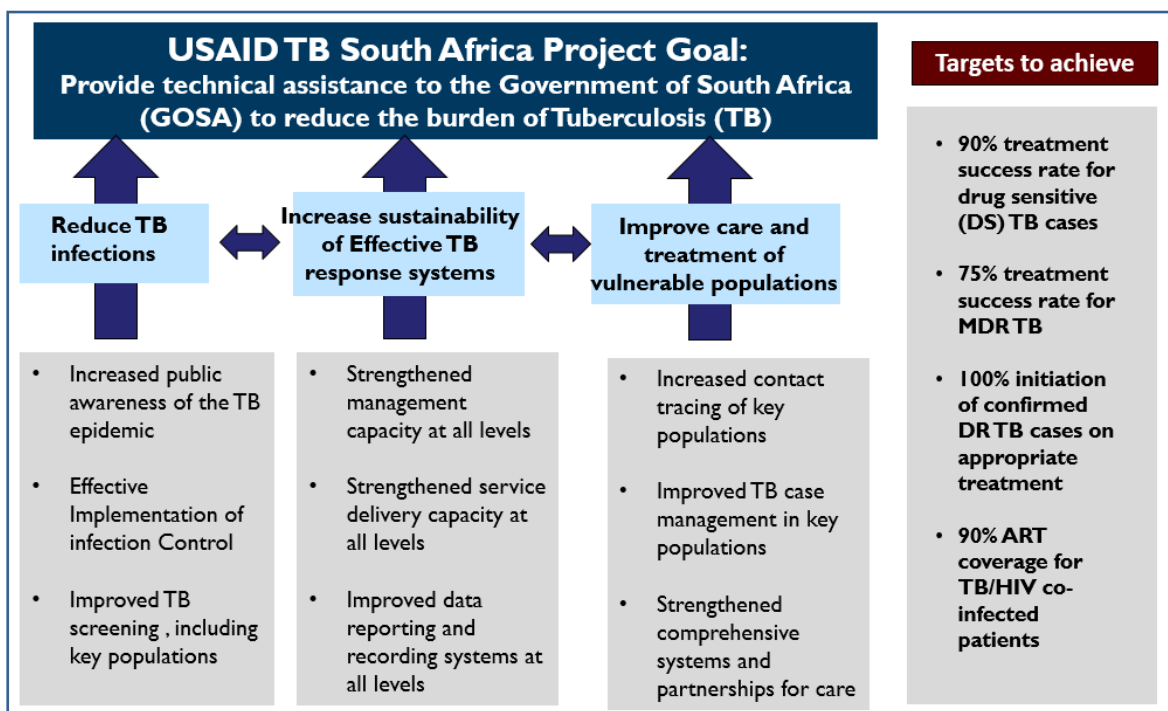
- Promotes the World Health Organization (WHO) End TB Strategy;
- Promotes an effective multi-sectorial approach to TB and strengthening of health systems to improve the quality of TB care in South Africa; and
- Expands patient-centered care as guided by the national Integrated Clinical Services Management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

The project expands access of TB services to key populations, using the NGO Network Model to strengthen links between NGOs and health facilities to increase patients' access to TB services and scale-up of innovative mHealth-based systems for patient retention. The project also works to leverage on existing resources from the 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 DS-TB cases;
- 75% treatment success rate for DR-TB cases;
- 100% initiation of confirmed DR-TB cases on appropriate treatment; and
- 90% ART coverage for TB/HIV co-infected patients.

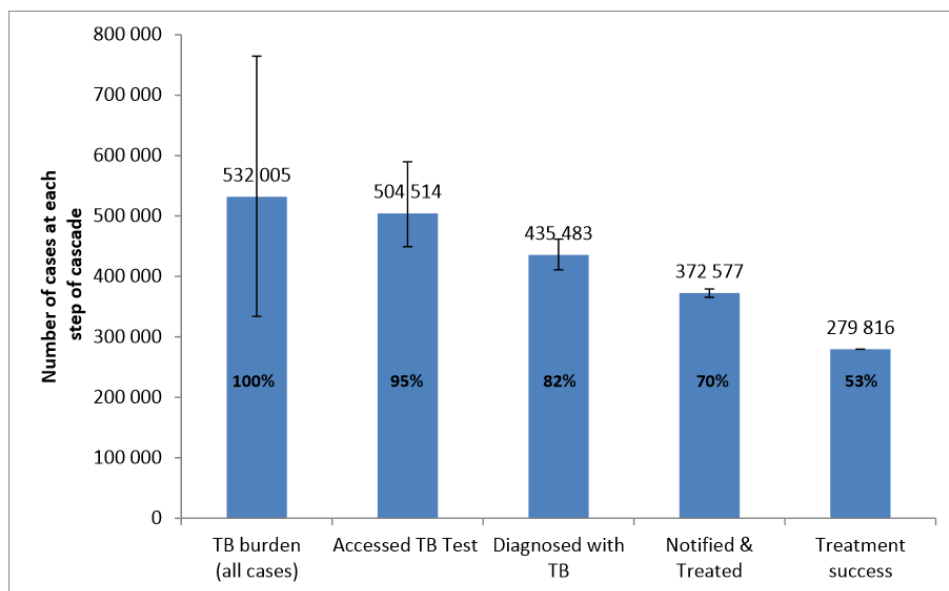
These targets are aligned to the 90/90/90 targets for TB and HIV, and project activities are aligned to district-level implementation plans. Figure I below shows the project results framework.

Figure 1: USAID TB South Africa Project Results Framework



The South African NDOH remains committed to addressing and closing identified gaps in the TB Care Cascade to achieve global 90-90-90 targets. In achieving the 90/90/90 targets, emphasis is placed on addressing gaps in the TB Care cascade and identifying missing TB cases.

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 2016 WHO reports estimates that South Africa is missing approximately 154,000 TB cases. The USAID TB South Africa Project, a technical partner of the NDOH identified and

developed several strategies to address gaps in the TB Care Cascade as highlighted in Figure 3 below.

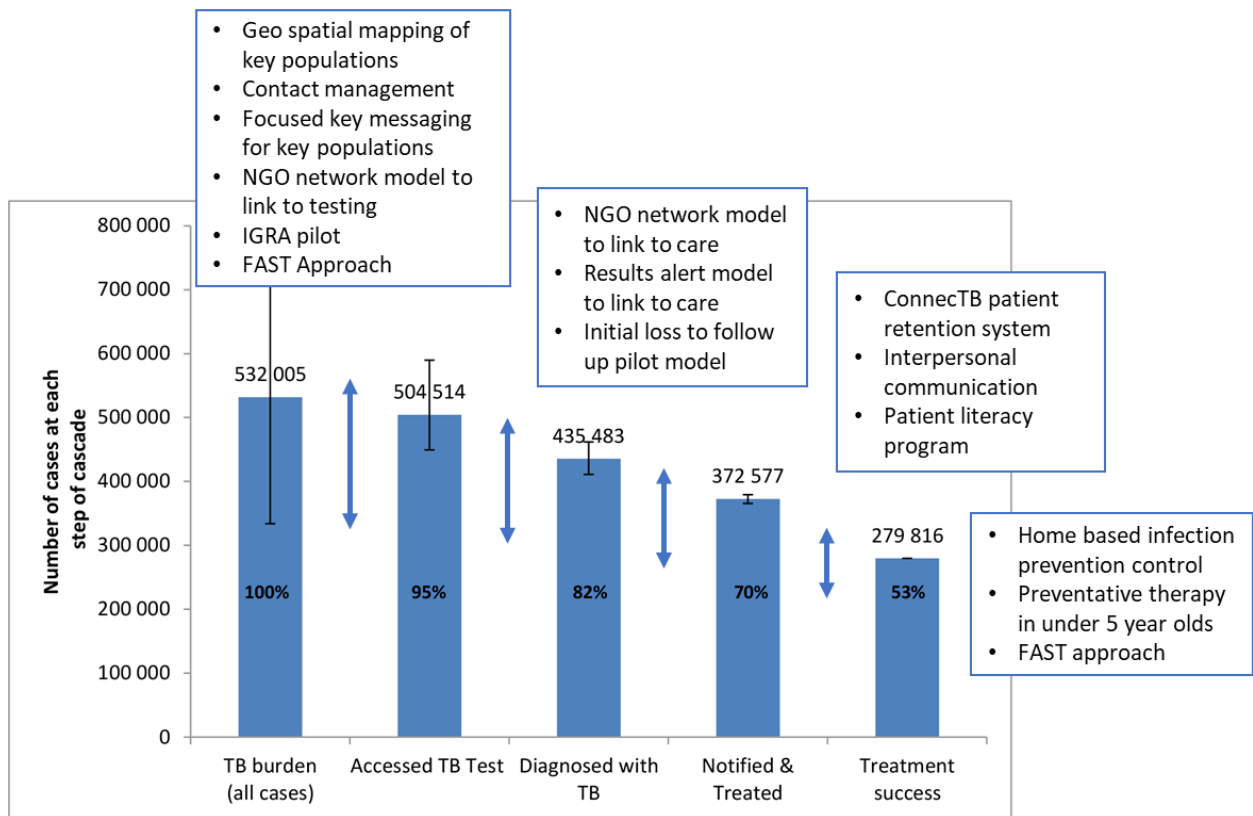


Figure 3: USAID TB South Africa approach to address TB cascade gaps

The project continued to play a key role in supporting the GoSA, the NDOH and all nine provincial departments of health in improving TB outcomes.

Update of project-supported districts:

The project reviewed the supported districts with guidance from NDOH and USAID. At the beginning of Quarter I, the project was supporting 20 districts. With subsequent discussions with USAID and NDOH personnel, direct support to Northern Cape was reduced in July 2017, leaving the project directly supporting 19 districts. These districts account for 120,523 (47.4%) of the TB burden in the country as illustrated in Figure 4 below. This is a reduction from 24 districts supported in the previous year.

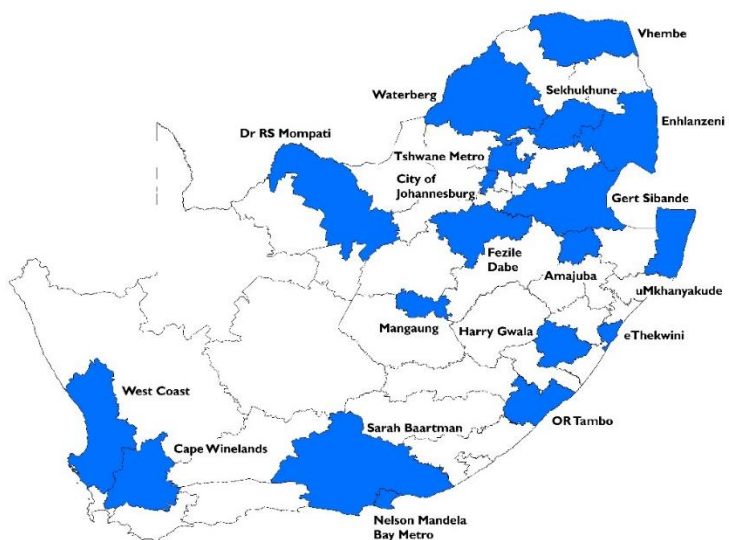


Figure 4: USAID TB South Africa Project supported districts (September 2017)

Update on staffing: USAID TB South Africa Project successfully staffed all key positions identified in the project proposal except for that of the Chief of Party (COP) following a resignation in July 2017. Interviews were held to select a new COP, and at the time of reporting negotiations were in progress with a potential candidate. Most of non-key positions have also been filled. At national level, the positions of DR-TB advisor and private-public partnerships coordinator remain vacant, also following resignations. In addition, in three vacancies remain in KwaZulu-Natal Province. The current staffing complement is outlined in Annex II.

Steering Committee Meetings: The NDOH, together with USAID, established a Steering Committee as a mechanism to enhance the functioning of the USAID TB South Africa Project, and to that ensure wider expertise was brought into the project to achieve maximum success/impact. The committee provides overall guidance to the project to ensure that its strategies are in line with NDOH priorities and targets. During the reporting period, the project successfully held two steering committee meetings, the first on April 13th, 2017 and the second August 7th, 2017. During the meetings, the project gave feedback on the implementation of the project. TB game changers presented to the Steering Committee include:

- Quality Improvement Approach, which is being implemented in all supported districts. The project presented the tools used, including fishbone and QI templates, and the steering committee recommended that they be adapted at NDOH level. The tools were duly adapted by the NDOH
- Finding missing TB cases. The project presented various interventions to contribute to finding the missing TB cases. These include the FAST Approach, TB in the Farms Initiative, geospatial mapping of TB patients, and NGO support at local level for patients receiving treatment. Given the high yield of TB cases among contacts, the Steering Committee recommended that more resources be channeled to contact management at local level.
- The ConnecTB app was presented as a game changer to improve adherence among DR-TB patients, with adherence rate above 95% being reported. A request was made for the project to submit a write-up for ConnecTB. This document was submitted. At the time of reporting, the project was awaiting comments and feedback.

The project was commended for achievements and progress to date. The Steering Committee further highlighted the need for the project to improve its data analytics to inform all interventions based on up-to-date information. The project will present performance per districts in the next meeting of the Steering Committee in a bid to highlight areas that need more support.

This report outlines key activities and achievements undertaken by the USAID TB South Africa Project during a year of implementation (covering the period October 1st, 2016 to September 30th, 2017).

2 ACCOMPLISHMENTS BY RESULTS

IRI: TB Infections Reduced

1.1 Increased public awareness of the TB epidemic

The TB South Africa project played a significant role in raising the profile of TB and raising awareness and knowledge about TB in South Africa over the last year. Communication strategies employed assisted to increase demand for TB services, and improve treatment adherence rates and retention in care generally, and more specifically in project-supported districts. This was mainly done through carrying out community outreach and education activities; developing and distributing IEC materials, and the use of social and mass media to disseminate messages to wider audiences. The project also worked closely with the NDOH to commemorate important health events such as World Diabetes Day (14 November 2016) and World AIDS Day (1 December 2016) and World TB Day (24 March 2017).

World AIDS Day commemorations:

The project supported World AIDS Day (WAD) 2016 commemoration events at both national and provincial level. During the national WAD event held in Sinaba Stadium in Daveyton, Ekurhuleni Metro, Gauteng on December 1st, 2016, the project worked closely with the districts to provide health services to more than 3,000 people who attended the event. Promotional materials, including TB messages were distributed and IEC materials on TB/diabetes, TB and pregnancy, TB in children, TB and pregnancy and MDR-TB were translated into seven languages and a total of 140,000 brochures were distributed during the WAD celebrations.



Figure 5: In line with the theme, "It is in our hands to end TB and HIV" pupils at the Western Cape provincial WAD event wrote on TB and HIV on their hands.

During provincial events, health education sessions on TB, HIV and diabetes prevention and treatment were convened. Comprehensive screening services, including TB screening, were offered. In Western Cape, the project supported the WAD event at Intlanganiso Secondary in Khayelitsha, Cape Town, which targeted 800 students to raise awareness on TB and HIV prevention. Through the provincial WAD events, the project reached more than 9,000 people with TB messaging and 3,229 were screened for TB. Of these, 430 reported TB symptoms and 418 were referred for TB investigations. Three people were diagnosed with TB and linked to care.

World Diabetes Day commemoration:

The USAID TB South Africa Project collaborated with the Bongi Ngema-Zuma Foundation and Free State Provincial Department of Health in commemorating World Diabetes Day. The awareness campaign was held on November 12th, 2016 in Mangaung Metro, Bloemfontein,

Free State Province. The project highlighted the links between TB and diabetes through the distribution of related IEC materials. The project also provided TB screening services during the event. Of the 1,077 people who participated in the event, a total of 592 were screened for TB and three were symptomatic. These were all referred to nearby clinics for testing. A total of 635 people were screened for diabetes at the event.

World TB Day commemorations:

The project supported the TB day commemorative event in Free State Province, in addition to organizing activities and events in seven other provinces (Gauteng, KwaZulu-Natal Limpopo, Mpumalanga, Northern Cape, North West and Western Cape).

The national World TB Day commemorative event was held on March 31st, 2017. The project joined the GoSA to commemorate World TB Day in Mangaung Metro, Bloemfontein, Free State Province. Deputy President of South Africa, Mr. Cyril



Figure 6: The Deputy President, Mr Cyril Ramaohosa giving the key note address during the World TB day Celebrations.

Ramaphosa, was the keynote speaker. He was joined by Acting Free State Premier, Mr Butaka Komphela, Dr Aaron Motsoaledi, Minister of Health, and other national and provincial political and health leaders, and representatives from technical and funding partners. The theme for World TB Day was 'Unite to End TB'. In South Africa, the theme was extended to 'Unite to end TB and HIV: South African leaders taking action.' This was a call for greater cooperation between government, technical and funding partners, and South Africans to eradicate the dual burden of TB and HIV in South Africa. The Deputy President took this occasion to launch the NAP (2017–2022). As well as providing strategic and technical support during planning for the event, USAID TB South Africa Project provided various IEC and promotional materials for dissemination, as well as providing screening services

The project reached more than 9 million people through the dissemination of multi-media messages. In addition, 80,000 IEC materials were disseminated during the supported provincial and national events.

Key mobilization activities in supported provinces

During the year under review, the project participated in various campaigns aimed at addressing various TB issues in target communities. More than 50 events were held across the nine provinces through the efforts of project staff and funded NGOs. These included *indabas*, Rotary days, community dialogues to engage traditional leaders and local political leaders, and TB awareness campaigns. In other communities such in Sekhukhune, the campaigns aimed to improve community awareness about TB to address high death rates in the area. The intensive case-finding and HIV counselling and testing (HCT) awareness campaign in Makhuduthamaga, Limpopo Province held from December 2nd to 13th, 2016 was attended by 207 participants from community care-givers, HCWs, traditional leaders, traditional health practitioners, TB ambassadors, church leaders and local councilors to

ascertain reasons for the high TB mortality rate at Makhuduthamaga and to suggest possible strategies to address it.

#Ubuntu Initiative:

From June 12th to 18th, 2017, the USAID TB South Africa Project was part of a consortium that included civil society organisations, eThekweni Municipal Health Services, KwaZulu-Natal Provincial Department of Health, the NDOH and South African personalities, which held a series of activations in the districts of eThekweni and ILembe in KwaZulu-Natal Province. The activations were held on the sidelines of the 8th South African AIDS Conference, and aimed to reach men in particular with comprehensive health services. Inhabitants of nine community residential units (formerly called hostels) were targeted for the interventions, in line with the requirements of the NSP (2017–2022), which articulates men as a target group for health services. The activations were held under the banner of #UbuntuInitiative, and were intended to get men to commit to better health-seeking behavior in terms of HIV and TB prevention and treatment, to reduce incidences of gender-based violence, and to take up voluntary medical male circumcision.



Figure 7: Men addressing men on health issues during the Ubuntu Initiative, in eThekweni, KwaZulu-Natal Province

The initiative mobilized high profile and local KwaZulu-Natal and South African personalities, who were briefed on the issues being driven by the Ubuntu Initiative.

A total of 754 people were screened for TB during the activations, 699 (93%) of them men. Of those screened, 45 presumptive cases were referred for on-site testing, with one person testing positive. In addition, the initiative had a strong media engagement component, and was able to reach more than 8 million listeners via both radio and television programming.

Health talks on TB targeting pregnant women:

The project held health talks in Gauteng Province (Bheki Mlangeni Hospital), Western Cape Province (Wellington CDC), and North West Province in August 2017. 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



Figure 8: The project facilitated health talks on TB with pregnant women in antenatal clinics in Gauteng (above) and Western Cape (below) provinces

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 windows to improve circulation of fresh air.

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; none were found to be presumptive for TB.

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 (Oct 2016 to Sep 2017)

Data element/indicator	Oct 16 - Sep 17
Number of people reached by type of TB messaging (social and mass media)	17,502,192
Number reached through community outreach activities	88,195
Number of IEC materials produced	750,000
Number of IEC materials distributed	393,484

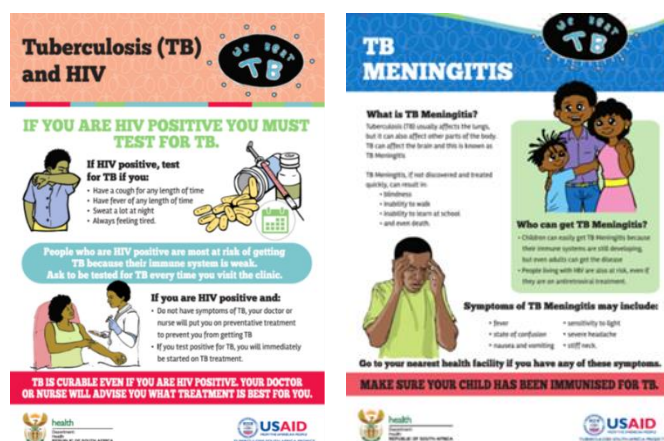


Figure 9: posters on TB/HIV (left) and TB meningitis (right) are available in 11 South African languages

In addition to distributing more than 390,000 IEC materials, the project revised some of its communication outputs and developed new posters covering the topics of TB meningitis, TB/HIV, DR-TB and TB infection control. The posters were also translated into 10 languages and were distributed to all facilities to create and raise awareness of the co-morbidities.

Implementation of patient-centered, interpersonal communications and counselling

The USAID TB South Africa Project uses interpersonal communication and counselling (Inter-PC/C) to disseminate TB information and strengthen TB counselling knowledge and practice. The aims of this strategy are to 1) increase uptake of screening and testing services; 2) support patients to adhere to their treatment for the prescribed duration; 3) build the necessary knowledge and capacities among healthcare staff to offer the best care to patients; and 4) encourage family and communities to apply TB risk reduction strategies, basic infection control measures and provide socio-economic support to TB patients. The interpersonal communication module was developed and added to the basic TB training for CHW in the third quarter. In coordination with the NDOH, the project supported the Centre for

Communications Impact (CCI) in developing an interpersonal communication training manual. The final manual, including the accompanying training package, will be finalized in October 2017 and field-tested prior to print and dissemination.

During the year under review, a total of 270 CHWs were trained on interpersonal communication and counselling.

Communications and visibility/raising products/outputs

Mass Media:

The USAID TB South Africa Project supported mass media efforts to raise the profile of TB in supported districts. The project gave TB health education and talks on radio programs in various provinces. Topics discussed during the interviews include TB, TB/HIV, DR-TB, TB in children, and TB infection prevention and control.

Radio interviews:

Over the reporting year, USAID TB South Africa Project staff participated in more than 20 radio interviews on community, provincial and national stations, reaching more than 17 million people across the nine provinces. Radio stations used include Umhlobo Wenene FM, Motheo FM, Umgungundlovu FM, SABC Channel Africa and Lotus FM, among others.

Print media:

The project also achieved some media coverage in the print media as outlined below:

- Following approval by USAID, the World TB Month press release was published on the SABC Education online platform on 28 March 2017 <http://sabceducation.co.za/media-office/3301-usaid-joins-the-people-and-government-of-south-africa-at-world-tb-day-2017-events>
- As a direct result of the greater engagement with media by USAID TB South Africa Project, the story of Prince Hlanganiso of the Zulu Royal House, a national TB Ambassador was published in the Drum magazine. <http://www.drum.co.za/news/zulu-prince-comes-forward-about-having-tb/>
- The work being done in Amajuba district, KwaZulu-Natal province, to enhance multi-stakeholder engagement in TB responses was published in a community newspaper, the Newcastle Advertiser: <http://newcastleadvertiser.co.za/117218/traditional-healers-learn-to-fight-tb/#.WNPp1iK9poY.email>.
- The work of the USAID TB South Africa Project on the TB screening and community engagement planned was published on an international online platform, Modern Ghana: <http://www.modernghana.com/news/765360/partners-work-together-to-drive-down-tb-in-south-africas-kw.html>

In April 2017, the project facilitated the broadcasting of four public service announcements (PSAs) on Mindset Network, a health facility-based television network. The four PSAs were on TB symptoms, TB treatment, infection control and TB and HIV. The public service announcements were broadcast daily, Monday to Friday, from March 29th to May 17th, 2017. In total, the PSAs were broadcast in 962 facilities across all nine provinces.

Furthermore, in August 2017, the project received USAID approval to run a national mass media campaign using national radio and television, strategically positioned billboards, and rank and transit TV to enhance awareness of TB prevention, diagnostics and treatment services. The campaign, which will contribute to USAID TB South Africa Project activities around World Diabetes Day (14 November) and World AIDS Day (1 December) 2017 commemorations, will launch on 5 November and run until 24 December. 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.

Social media:

USAID TB South Africa uses social media as part innovative approaches to disseminate targeted TB education messages. This is mainly done through the project Facebook We Beat TB South Africa page. During the year under review, the project's Facebook page reached 62,019 people, with 5,717 interactions of visitors with the content on the page.

In addition to Facebook, the project also uses twitter handle @WeBeatTB and reached 6,134,779 people throughout the year with various messages about TB.

To increase the reach of social media during March, when the world commemorates TB Day, the project partnered with 10 NDOH TB Influencers; South African celebrities with a huge following on social media and a keen interest in health issues.

The project Twitter page was characterized by active and regular engagement between March 24th and 31st, with over 6.1 million impressions recorded from content generated by the project. Notably, on March 20th, and again on March 27th, the #EndTB hashtag, created specifically for the project, was trending. Tweets and retweets on TB via @WeBeatTB also had the effect of encouraging social media users to seek more information about TB. The project's clinical staff responded to medically related questions posed by users of social media.

The team continued to use the project's social media pages to create awareness, not only about TB, but also to showcase project activities, reaching a total of 55,947 people. In August (when South Africa commemorated 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.

The quality of interactions of Facebook users with the project also showed a marked improvement, with people more likely to contact the project for practical information and help with TB treatment, side effects management 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 and resolution of any challenges.

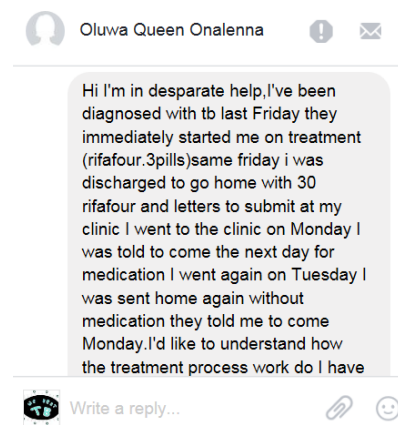


Figure 10: TB patient seeking information and support via social media

Project stories and photo essays:

The USAID TB South Africa Project documented its successes and impact in the form of write-ups, leaflets, photo essays and slideshows that were displayed at events hosted by the USAID TB South Africa Project. Stories and write-ups completed and submitted to USAID for approval include:

1. Focus on key populations: TB in Farms Intervention
2. ConnecTB, a mobile health application for locating TB patient contacts
3. TB and women in South Africa
4. My TB journey: the story of Princess Mabota-Rapholo
5. From TB Survivor to TB Ambassador: The Story of Lolo Kekana
6. Overview of the successes of the USAID TB South Africa Project
7. Addressing drug-resistant tuberculosis by implementing the United States Government National Action Plan
8. Improving patient retention through ConnecTB
9. Community-based tuberculosis management through local non-governmental organizations
10. Implementation of the FAST Approach in South Africa
11. Continuous quality improvement
12. Strategic partnerships to improve tb management
13. Buddy Beat TB: Supporter of pediatric patients undergoing treatment

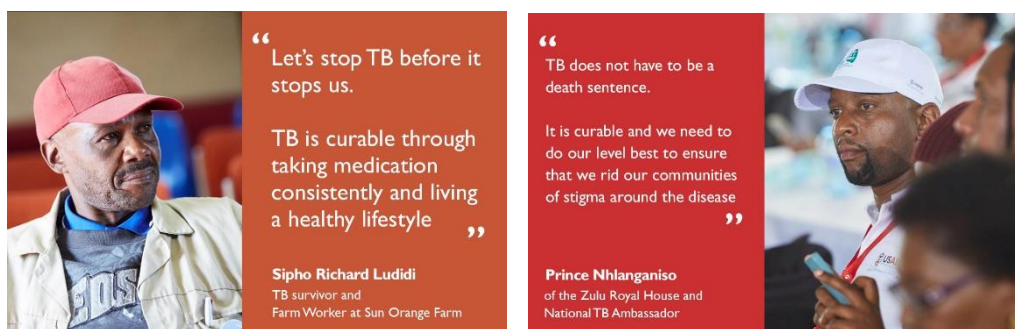


Figure 11: Photo essays featuring quotations about TB from a TB survivor and farm worker, Sipho Ludidi and Prince Nhlanganiso, a TB survivor and TB ambassador.

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

Buddy Beat TB (commonly known as Buddy) serves as a companion to pediatric patients through treatment and supporting children's understanding of their treatment (creating 'friends of Buddy' that resemble pills and injections that children encounter in their treatment regimen).



Figure 12: Buddy Comic Book

Buddy was developed under the USAID TB Care II Project South Africa in partnership with the NDOH. During the year under review, the project developed an adherence package for pediatric DR-TB patients, including a comic book, how-to guide (video and pamphlet), Buddy costumes, and Buddy miniature toys. Health facilities use the package to address stigma and psychological effects of hospitalization in pediatric patients. Three hospitals: Brooklyn Chest Hospital, Brewelskloof Hospital (both in Western Cape) and Sizwe Tropical Diseases Hospital (Gauteng) received Buddy suits. Buddy was also introduced to King Dinuzulu hospital in KwaZulu-Natal Province. The project further supported the official Western Cape provincial launch of the Buddy Beat TB campaign on September 15th, 2017. Buddy Beat TB branded and promotional materials, including t-shirts, comic books and pull-up banners were provided for the event. Pull-up banners were provided to the province for use in the facilities to create awareness about the campaign among out-patient clients in waiting areas.

To support the continuation of the campaign, the project commenced 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, the project is 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 the documents will go a long way towards ensuring that the Buddy intervention package is used in a standardized way in all supported hospitals.



Figure 13: MDR-TB patients at Brewelskloof Hospital during the launch of Buddy in the Western Cape province

Tackling TB in Schools Initiative



Figure 14: TB awareness at a primary school

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

During the period October 2016 to September 2017, the project implemented activities to address TB in schools in five provinces, reaching more than 3,700 learners and 200 teachers.

In Fezile Dabi, 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, although 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. In total, 220 pupils were reached with TB information, 202 were screened, and 28 were found to be presumptive for TB and referred for further investigations. A total of 180 'Tackling TB in Schools' branded backpacks were given to learners during the information sharing sessions. In addition, six schools were reached on November 7th and 8th 2018 in Nelson Mandela Bay Metro. Over 3,000 learners were reached with TB messaging. The project also works with school health teams to include TB screening into health assessments conducted in schools.

In Bojanala, North West Province, activities aimed at tackling TB in children were implemented in collaboration with the Department of Education. Eighty-eight caregivers were reached with TB education. The initiative reached 1,288 learners and 35 teachers with TB messages. In North West Province, the Provincial Department of Education is taking the lead in advocating for teachers to be trained on TB and for school administrations to be oriented on how to conduct TB screening

In Limpopo Province, the project partnered with the departments of health and basic education, and provided TB screening and HIV testing services to 200 learners at Lephalale Technical Vocational Education and Training, Waterberg. The initiative found 20 young people who were symptomatic for TB, although none tested positive. Four students tested HIV positive and were linked to care

Due to the success of the campaign, which 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, is planned for implementation in the future. 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.

TB educational videos

Five branded human-interest documentary videos were produced during the period under review to communicate information on basic TB signs and symptoms; preventing TB in children; MDR-TB treatment; contact tracing and management; and stigma prevention and reduction. The videos were submitted to USAID in late September for review and approval to disseminate. All five videos can be accessed by following the link: <https://drive.google.com/open?id=0B7AF5InfiBgEdkVzblFtTVdXYnM>

In addition, team members began experimenting with developing human interest video stories based on the experiences of South African 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 also been submitted to USAID for approval to disseminate.

Capacity building in advocacy, communication and social mobilization for department of health managers

The project supported the NDOH to develop advocacy, communication and social mobilization (ACSM) training guidelines which, when approved, will be used to train HAST/communications and ACSM program officers from all provinces.

Union World Conference on Lung Health

The 47th Union World Conference on Lung Health was held from October 26th to 29th 2016 in Liverpool, United Kingdom, under the theme ‘Confronting resistance: Fundamentals to innovations’. More than 3,000 participants from over 100 countries participated in the showpiece annual global conference. The project was represented by seven participants, who participated in several sessions. Sessions included oral abstract presentations, poster presentations and presenting in workshops, all of which showcased project successes and innovative approaches to the global TB community. The team had the opportunity to learn about the latest developments in connection with TB prevention, diagnosis, treatment and support, and to network with local and international partners in the fight against TB.

The USAID TB South Africa Project presented four posters entitled:

- Pediatric patient support through TB character ‘Buddy Beat TB’ in Western Cape and Gauteng provinces – South Africa
- Investigation of non-conversion for bacteriologically-confirmed tuberculosis in Emfuleni sub-district, Gauteng, South Africa (e-Poster)
- Using mobile health solutions to improve patient retention in MDR-TB patients in Eastern Cape, South Africa
- Improving ART access in TB services in selected facilities in South Africa

1.2 Effective implementation of infection control

Poor infection control measures in facilities increases risk of TB transmission. To address infection control, the project supports facilities in conducting annual risk assessments. From October 2016 to September 2017, 117 comprehensive risk assessments were conducted in supported facilities. Gaps noted during the assessments include:

- Absence of IPC plans in some facilities
- Occupational health services not in place in some facilities, thus staff not routinely screened for TB
- Poor implementation of IPC plans
- HCWs not fit-tested for respirators
- Lack of designated areas for sputum collection
- No records in place for regular checking of environmental mechanical devices.

The facilities were supported to develop facility-specific TB IPC plans. In addition, the USAID TB South Africa Project supported the procurement of 1,000 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 identified specific technologies to strengthen implementation of IPC, including the use of carbon dioxide (CO₂) monitors for environmental evaluations. During the reporting period, 11 CO₂ monitors were installed across three provinces KwaZulu-Natal (three), Eastern Cape (one) and Western Cape (seven) to evaluate environmental controls in place, and to ensure efficacy of infection control measures in supported facilities. CO₂ level in a room is used as a proxy for levels of ventilation. Poorly ventilated rooms will have higher CO₂ levels, and pose greater risks for TB infection for those who occupy the spaces when the levels are high.

The CO₂ monitors work by sounding warning alarms when a set threshold of 5,000 ppm CO₂ 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 in Western Cape Province. Readings recorded are indicated below.

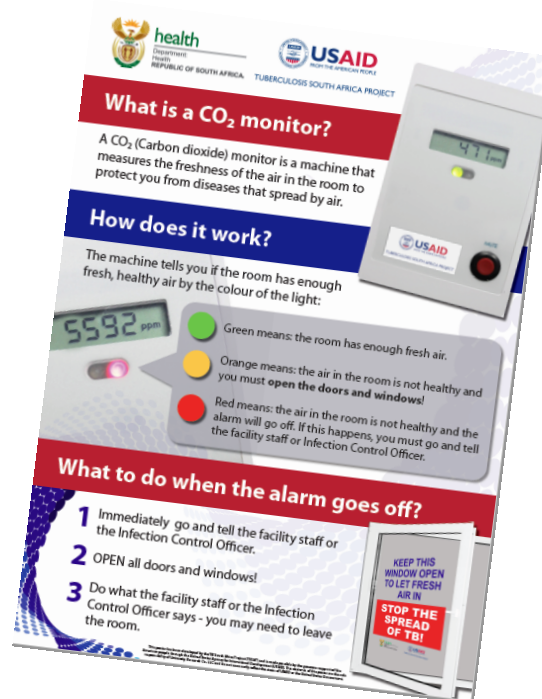


Figure 15: CO₂ monitor poster

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 CO₂ 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 CO₂ monitors with a reduced threshold of 1,200ppm. These will be installed in supported facilities during the next quarter.



Figure 16: A CO₂ monitor developed by the project



To address the problem of inadequate ventilation for sputum collection area, the project procured 10 outdoor sputum booths that will be installed in supported facilities. The outside sputum booth will provide adequate ventilation, privacy and patient dignity for this important step in TB diagnosis and treatment.

Figure 17: Naturally ventilated outdoor sputum booth

Implementation of the FAST Approach in health facilities

As part of the support to the DOH, the project spearheaded the implementation of the FAST Approach (**F**ind cases **A**ctively, **S**eparate safely, and **T**reat effectively) to reduce TB infection in healthcare settings as the primary administrative IPC approach. The FAST Approach was initially piloted in Eastern Cape Province. The strategy describes a core set of interventions designed around the notion that prompt diagnosis and effective treatment are by far the most important components for preventing the spread of TB, without which all other traditional approaches would be ineffective.



USAID TB South Africa Project staff, together with counterparts from the NDOH attended a FAST workshop in Hanoi/Vietnam from September 27th to 30th 2016 to explore and analyze other countries experiences of implementing the FAST Approach as a way of building on lessons learnt and developing strategies and implementation plans for South Africa. This was followed by engagement of the Eastern Cape Province in December 2016 and, subsequently, introduction of FAST in Nelson Mandela Academic Hospital in March 2017.

The project conducted baseline assessments in the first phase of implementation in five hospitals: Nelson Mandela Academic hospital (NMAH) (Eastern Cape), South Rand Hospital (Gauteng), Parys Hospital (Free State), Pelonomi Hospital (Free State) and Boitumelo Hospital (Free State). Key findings from the hospitals include that:

- TB screening is not conducted in a systematic manner;
- Risk assessments, although conducted, are not implemented in a systematic manner;
- Poor up and down referral systems for clients diagnosed with TB is a challenge,
- Contact management is not always done;
- There are inadequate IEC materials 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 for successfully rolling out the FAST Approach in health settings was developed.

The USAID TB South Africa Project hosted a National FAST Workshop on August 17th and 18th 2017 in Johannesburg, Gauteng Province. The event was convened as a platform to share lessons learnt and review guidelines, and discuss barriers and challenges of implementing infection control measures in health facilities in South Africa. 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 is implementing the FAST Approach in 15 hospitals in five provinces (Eastern Cape, Free State, Gauteng, KwaZulu-Natal and Limpopo). As a result of the intervention, hospitals implementing the FAST Approach have actively screened 39,740 patients and identified 236 patients with TB, confirmed by GeneXpert (234 DS-TB and two DR-TB cases). These patients were identified in both in- and out-patient departments. The results provide 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 period being assessed, 179 were symptomatic, and two of these were positive for TB in one hospital (one each with DS-TB and *Rifampicin* resistant (RR) TB).

IPConnect application

The NDOH recommends conducting risk assessments annually, as the process can be quite detailed and time-consuming. High TB transmission rates in South African health facilities 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 IPC questions are also accessible via the application IPConnect, which is also available on the web platform (www.ip-connect.org.za).

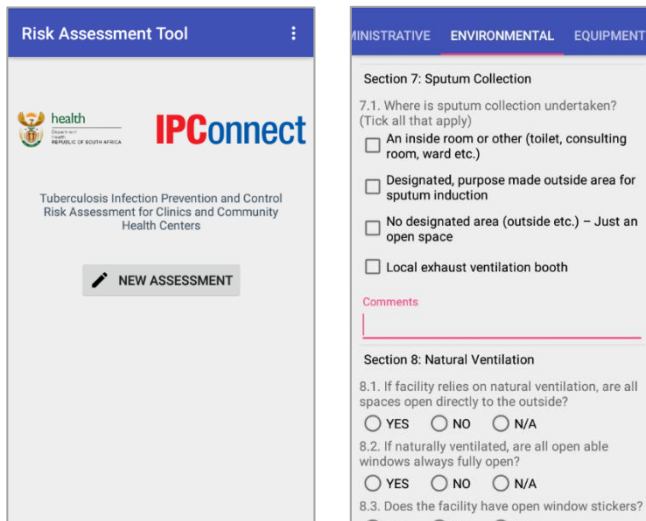


Figure 18: IPConnect Risk Assessment module splash screen and screenshot of the environmental form on IPConnect Risk Assessment module

The project launched the IPConnect app during the first quarter which made available provided IPC guidelines to healthcare workers via an online platform. The application also provides tips for HCWs on infection control. Risk assessment tools were added to the application to make it possible for health facilities to conduct annual assessments electronically in September 2017. The application is available free via the Google and Apple stores. Access is restricted, however; 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, information is available in real-time and reports can be generated from data provided.

Infection control in homes

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 quarter 2 (January-March) to 95% by the end of quarter 4 (July-September) 2017.



Figure 19: 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.

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

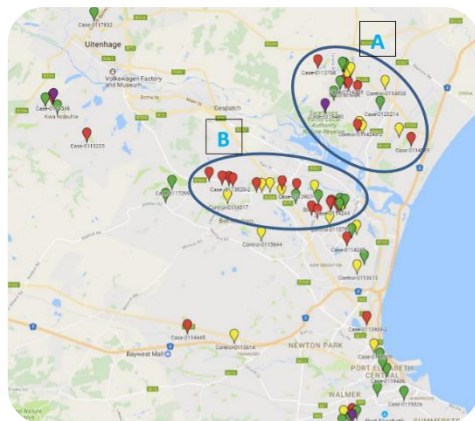


Figure 20: Studies by the USAID TB South Africa Project (map above) and NICD (map below) indicated the same high-burden clusters of TB in Nelson Mandela Bay Metro

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 and 164 contacts were identified. Of the contacts, 26 were diagnosed with TB. 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 communities 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 transmission and quality of patient management and care. 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.

1.3 Improved TB screening, including among 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 64,000 people

with TB messages, and 90% of them were screened for TB as shown in Table 3 below. Of those screened, 170 TB cases were diagnosed and 165 were linked to care.



Figure 21: USAID TB South Africa Project-funded NGOs use various strategies to disseminate information about TB in the communities where they work

Table 3: Results of awareness-raising and door-to-door campaigns

Indicator	Q1 (Oct-Dec)		Q2 (Jan-March)		Q3 (Apr-June)		Q4 (July-Sept)		Total
No. of people reached	1,243		12,052		28,578		22,428		64,301
No. of people screened	948	76.3%	9,646	80%	22,818	80%	20,176	90%	53,588 (83%)
No. of people TB presumptive	126	13.3%	1,417	15%	1,977	9%	1,930	10%	5,450 (10%)
No. of people tested	68	54%	350	25%	967	49%	1,333	69%	2,718 (50%)
No. of people confirmed TB	15	22%	67	19%	114	12%	170	13%	366 (13%)
No. of people started on treatment	11	73%	67	100%	114	100%	165	97%	357 (98%)

TB in Farms Intervention

During the reporting period, The USAID TB South Africa project piloted an innovative strategy to improve access to TB care for farm workers in Eastern Cape and Western Cape provinces.

Eastern Cape:

Farm workers are considered a key population for TB due to limited access to health services. To address TB among farms workers, the project developed an intervention package to improve access to care for this target group. A baseline assessment of TB in the farms in Kouga sub-district, Sarah Baartman district, Eastern Cape Province was conducted to better understand the burden of TB in the farms and assess the types of health services available to farm workers in relation to TB and other related illnesses. The baseline assessment was conducted in four areas in Kouga sub-district: in Addo, Kirkwood, Gamtoos and Langkloof. Over 1,300 permanent workers were identified in the 27 farms visited with an estimated 5,000 seasonal workers. Farms are predominantly served by mobile clinics which come once

a month, alternatively farm workers must visit a nearby fixed clinic meaning that they do not work (and cannot get paid) for the day. Generally, across the farms visited the results of the assessment showed low literacy levels amongst farm workers, limited access to health information, misconceptions and lack of knowledge and stigma around TB and HIV. Health education about TB was given at the end of each focus group discussion and the relationship between TB and HIV was explained.

The assessment led to the development of an intervention package, with the overall goal of supporting the district to address and reduce the burden of TB in the farms through a public-private partnership package of interventions aimed at improving targeted TB screening, early diagnosis of TB and prompt initiation on treatment, improved retention of patients on TB treatment and to strengthen linkages between TB service providers and farms. The package focuses on raising awareness about TB; building the capacities of HCWs, farmers and peer educators in identifying and managing TB; and increasing access of this key population to TB and related health services.

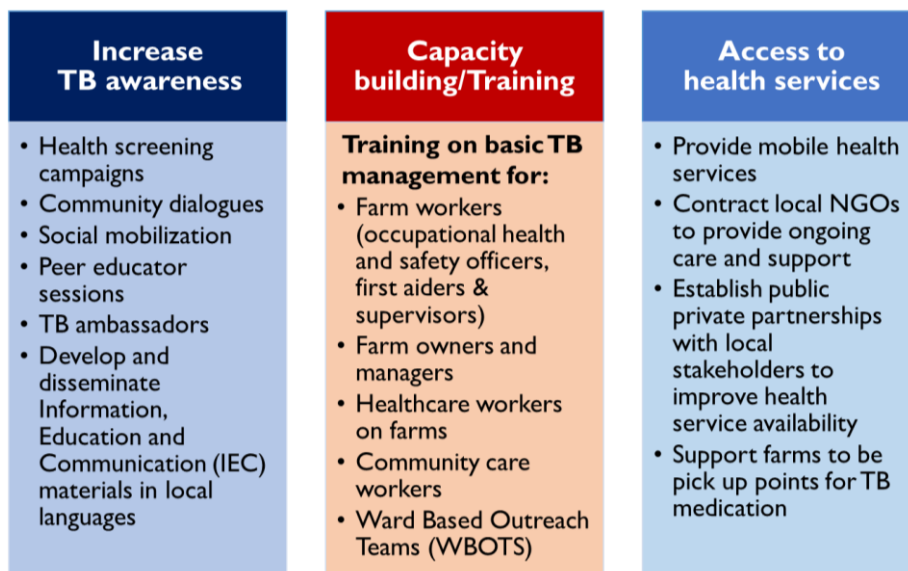


Figure 22: Model of care for TB in Farms

The project, in partnership with the DOH and farming communities provided services to farm workers in Sarah Baartman district starting in April 2017.



Figure 23: TB services offered to farm workers during campaigns

As a direct result of the support provided, 6,395 farm workers were reached with TB messages, and 5,806 (91%) of them were screened for TB as shown in Table 4 below. From

this number, 42 people were diagnosed with TB (39 DS-TB and three RR cases) and all were linked to care.

Table 4: TB screening among farm workers

Indicator	Apr	May	June	July	Aug	Sept	Grand total	
Number of farm workers reached with ACSM messages	342	1540	545	1128	1218	1622	6395	
Number of farm workers screened for TB	342	1448	443	1012	1128	1433	5806	91%
Number of farm workers with TB symptoms	189	309	130	205	288	257	1378	24%
Number of farm workers tested for TB	189	309	80	178	270	249	1275	93%
Number of farm workers tested positive	5	8	3	4	12	10	42	3%
Number of farm workers diagnosed with DS TB	4	7	3	3	12	10	39	93%
Number of farm workers initiated on DS TB treatment.	4	7	3	3	12	10	39	100%
Number of farm workers diagnosed with DR TB	1	1	0	1	0	0	3	7%
Number of farm workers referred for DR-TB initiation	1	1	0	1	0	0	3	100%

In addition to routine support provided, a two-week (in September 18th to 21st and 26th to 28th, 2017) end-of-season health screening campaign was conducted in the larger farming communities surrounding the farms in the Kirkwood, Addo and Gamtoos areas. The success of the campaign can be attributed to the large community turnout and participation, and the endorsement of political and community leadership. Health services provided include HTS, screening for diabetes, examinations for minor ailments, as well as health education and distribution of IEC materials and condoms.

Western Cape:

The TB in Farms Initiative was expanded to West Coast district in September 2017. An end-of-season health screening campaign was launched and conducted at Mouton Citrus Farm, located in Citrusdal. The two-day 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. 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 on-site testing, which was done using GeneXpert machines as part of a partnership with the National Health Laboratory Services (NHLS) mobile laboratory. HIV testing services; 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 for TB. Of these, 95 were presumptive for TB and 54 were tested. Three people were diagnosed with TB and linked to care.

A total of 45 farms workers were diagnosed with TB and linked to care between the launch of the TB in Farms Initiative in May, and September 2017. From these findings, TB incidence among farm workers is 676/100,000 population.

Improved TB screening in the mines

The USAID TB South Africa Project provides capacity building and supervisory monitoring support to improve TB screening and management at four mines: Anglo Gold Ashanti, (North West Province) Sataria (also known as Zondereinde Platinum in Limpopo Province) and Sasol Synfuel and Evander Gold mines (Mpumalanga). During the period under review, TB management training and screening activities were conducted in the four mines, reaching and screening over 66,200 mine workers for TB. The efforts resulted in the diagnosis of 98 TB cases who were linked to care between October 2016 and September 2017 as shown in Table 5 below.



Figure 23: 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	Total	Proportion
Number of mineworkers reached	66 277	
Number of mineworkers screened for TB	66 277	100%
Number of mineworkers with TB symptoms.	2 385	4%
Number of mineworkers tested for TB	2 203	92%
Number of mineworkers tested positive	98	4%
Number of mineworkers initiated on TB treatment.	98	100%

Table 5: TB screening among mine workers

Geo-mapping using the ConnectTB mHealth app

Geo-mapping aims to identify TB hotspots so that public awareness and contact management can be targeted to these areas. During the reporting period, geo-mapping of TB patients was done in Cape Winelands (Breede Valley sub-district), Amajuba, uMkhanyakude (Hlabisa sub-district) and Nelson Mandela Bay Metro. Districts were supported to develop action plans to raise awareness about TB and to enhance their contact management efforts in identified hotspots.

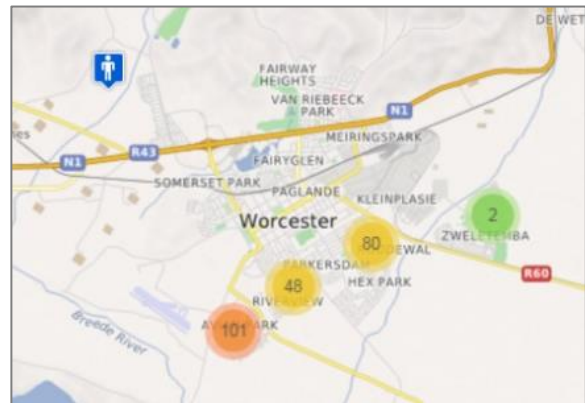


Figure 24: Geo-mapping in Cape Wineland District

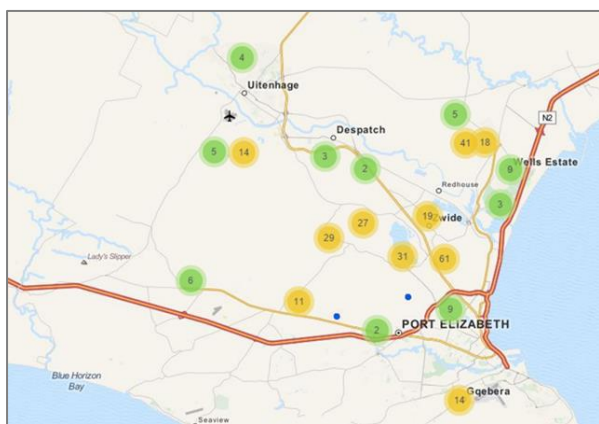


Figure 25: Geomapping in NMBM

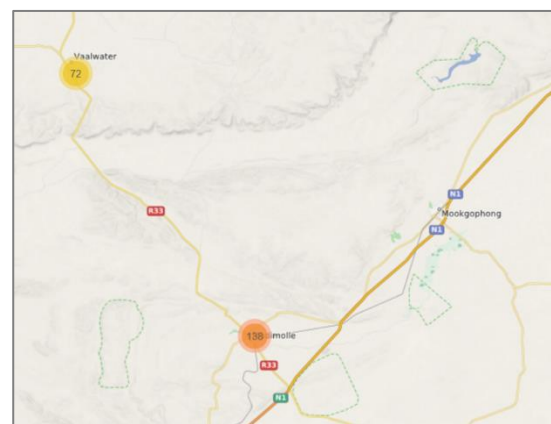


Figure 26: Geomapping in Modimolle, Limpopo

All mapping exercises identified high burden TB areas and the project worked closely with the district to conduct awareness activities and contact management in these areas.

The project also contacted NGOs in identified hotspots to provide directly observed treatment (DOT) support and undertake active case-finding.

IR2: Sustainability of Effective TB Response Systems Increased

2.1 Strengthened management capacity at all levels

Implementation of the NDOH Quality Improvement Initiative

The NDOH partnered with USAID TB South Africa Project, the Gates Foundation and IHI to develop a quality guided support approach for TB program support. The aim was to standardise the quality improvement approach in the TB program. Implementation of activities is NDOH-driven to ensure sustainability.

Nine districts were selected as pilot sites based on burden of disease, to provide -nationally coordinated quality improvement-based support. The project supports the initiative in five out of the nine districts.

In the first quarter, the project supported the first NDOH QI consultative meeting where more than 70 participants, from all provinces and employed by implementing partners, discussed measures to improve the quality of TB services. The meeting discussed the development of a quality improvement model for TB. A QI package was developed by the core team, which included project staff, and is being piloted in nine districts. An implementation roadmap was developed with provincial engagements to introduce the QI plan approach. As part of USAID TB South Africa Project support to the National TB Program Quality Improvement Intervention, the project employed and seconded the National Quality Improvement Manager who leads the country's implementation of the quality initiative.

As one of the initiatives to strengthen management capacity at all levels, the project participated in a Quality Improvement Leadership Management Workshops hosted by the National TB Program Quality Improvement intervention. The QILM workshop trained managers on QI methods. This was followed by a second workshop held in March 2017 to share feedback on progress made since implementation of TB QI activities in Phase I pilot sites.

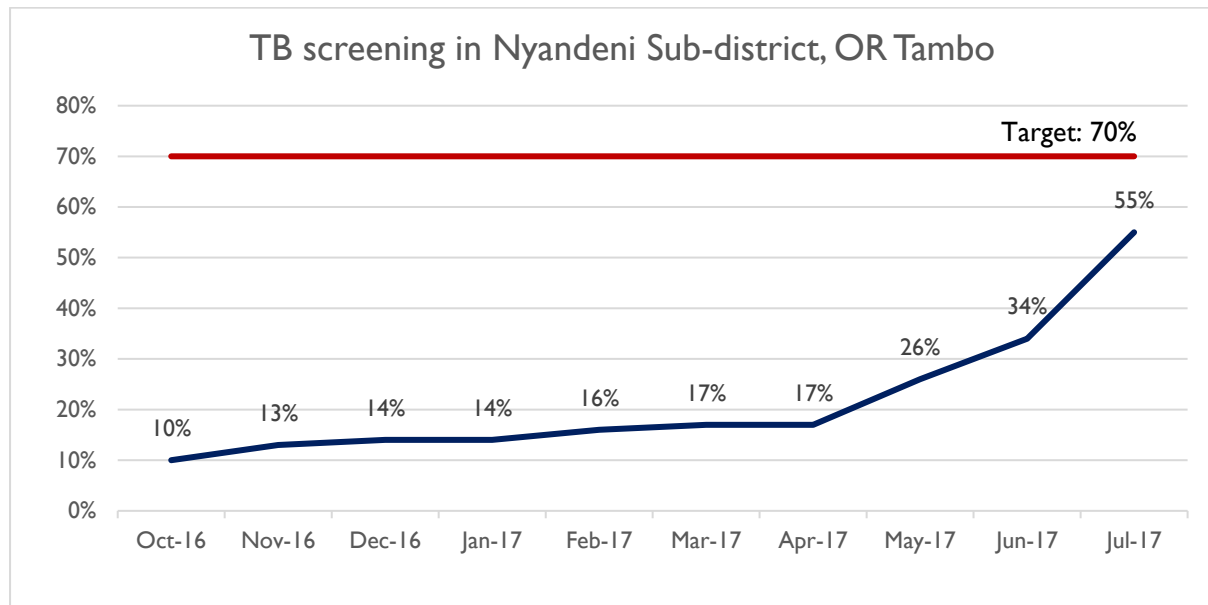
Through the National Manager, the project facilitated quality improvement training for seven TB QI pilot sites. A total of 44 district and sub-district managers from Eastern Cape, Gauteng and KwaZulu-Natal provinces, and technical partners Health Systems Trust and Kheth'Impilo were trained in quarter 2.

Five first learning sessions were conducted in three USAID TB South Africa Project-supported districts: eThekweni, OR Tambo and Nelson Mandela Bay Metro (NMBM) during quarter 3. In total, 374 staff members participated, including district management. The project facilitated the establishment of 55 QI teams in supported districts. The QI teams spearhead implementation of QI activities within clusters that comprise a hospital, community healthcare (CHC) and a few referrals to primary healthcare (PHC) facilities.

Facility support visits post-learning were conducted in Eastern Cape and KwaZulu-Natal, and were led by the NDOH. The QI project is well-received and noticeable improvements have been reported across supported districts. For example, in Nyandeni sub-district, OR Tambo,

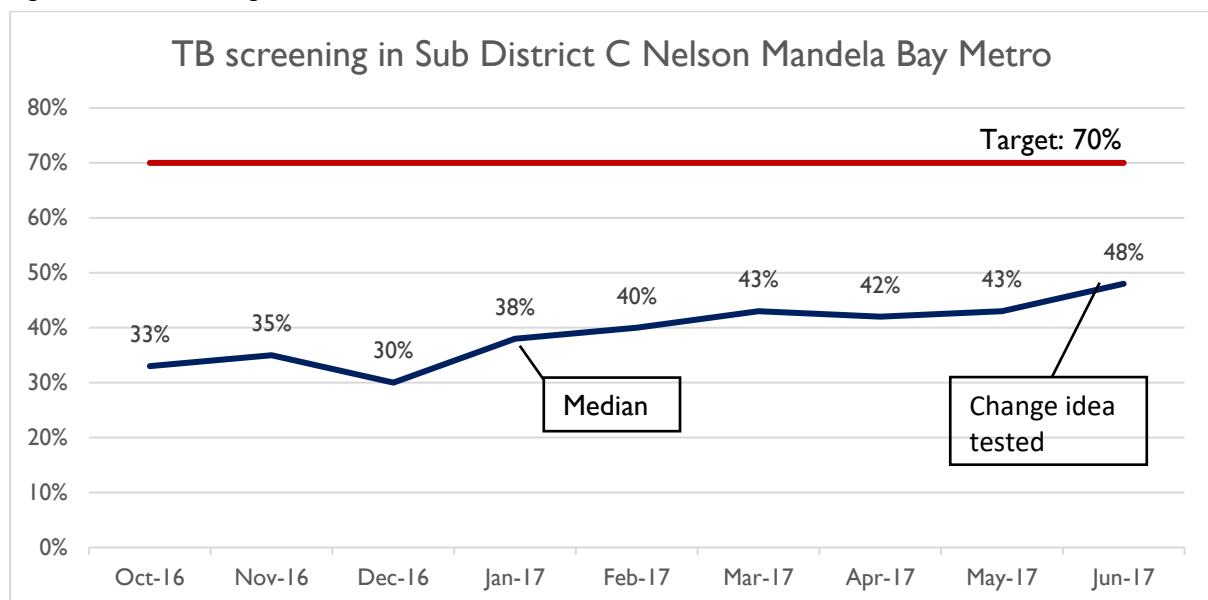
Eastern Cape Province, TB screening improved from a baseline of 16% in October 2016, to 55% in July 2017 as shown in the Figure 26 below.

Figure 27: 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 Figure 27 below.

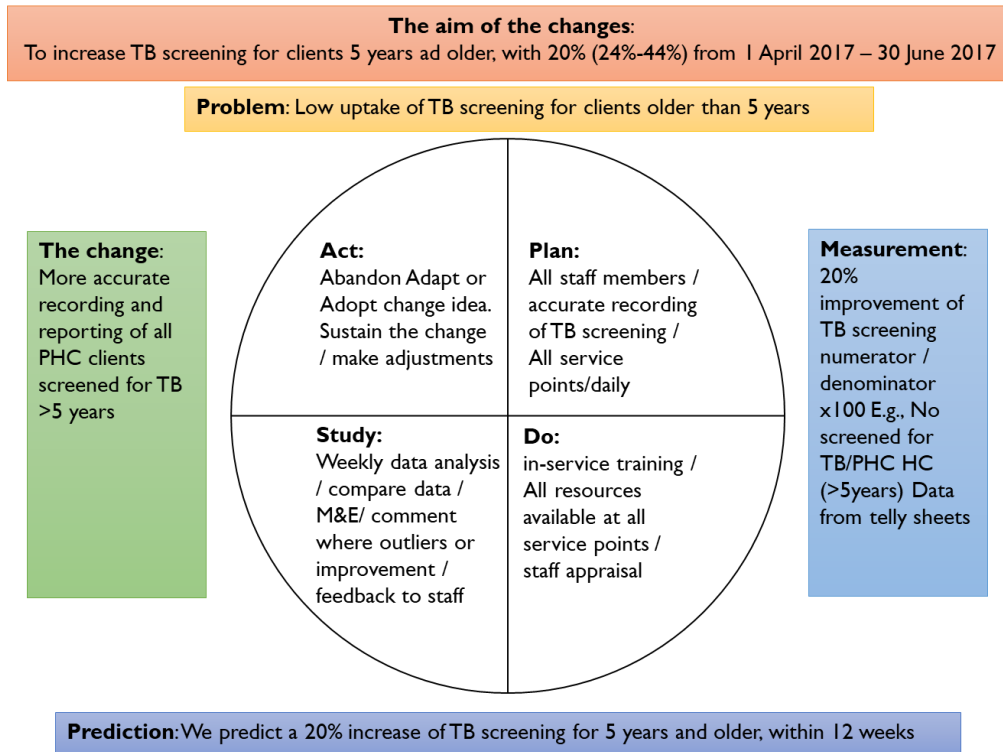
Figure 28: TB Screening rates in NMM sub-district C; Oct 2016-June 2017



Across the districts, improvements were documented on other sections of the TB Care Cascade, even though initial focus was on TB screening. The focus of the project will now shift to improving the second pillar of the TB Care Cascade, while ensuring that focus on TB screening remains.

The USAID TB South Africa Project designed and printed a fishbone template and PDSA cycle on erasable boards to assist the facilities and teams in monitoring progress on implementation of their QIPs. These have also been adapted by the NDOH TB QI technical working group and rolled out to all districts, including non-directly supported sites.

Figure 29: Cluster QIT member presenting progress with QIP at district HAST meeting

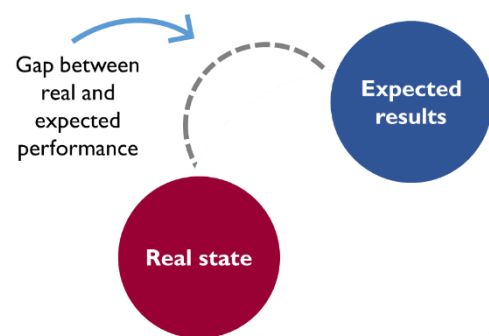


Implementation of quality improvement initiatives in directly supported project sites

The project quality assurance and improvement strategy aims to bridge the gap between real and expected performance through development of QI plans. The project currently supports 200 sites across the nine provinces using the QI strategy, and has developed clinical and data quality assessment tools used to evaluate patient quality of care and provide program guidance on how to improve clinical and data management of TB and DR-TB clients.

Accredited training manuals on QI and quality assurance (QA) were also developed to support the setting up and strengthening of QI teams in supported districts. All supported districts have quality improvement teams in place, and conduct training on quality improvement in all districts.

The project's entry point to all districts was the orientation of the District Health Management Teams (DHMTs) on the project QI strategy to get their formal buy-in. This was then followed by training of HCWs on QI.

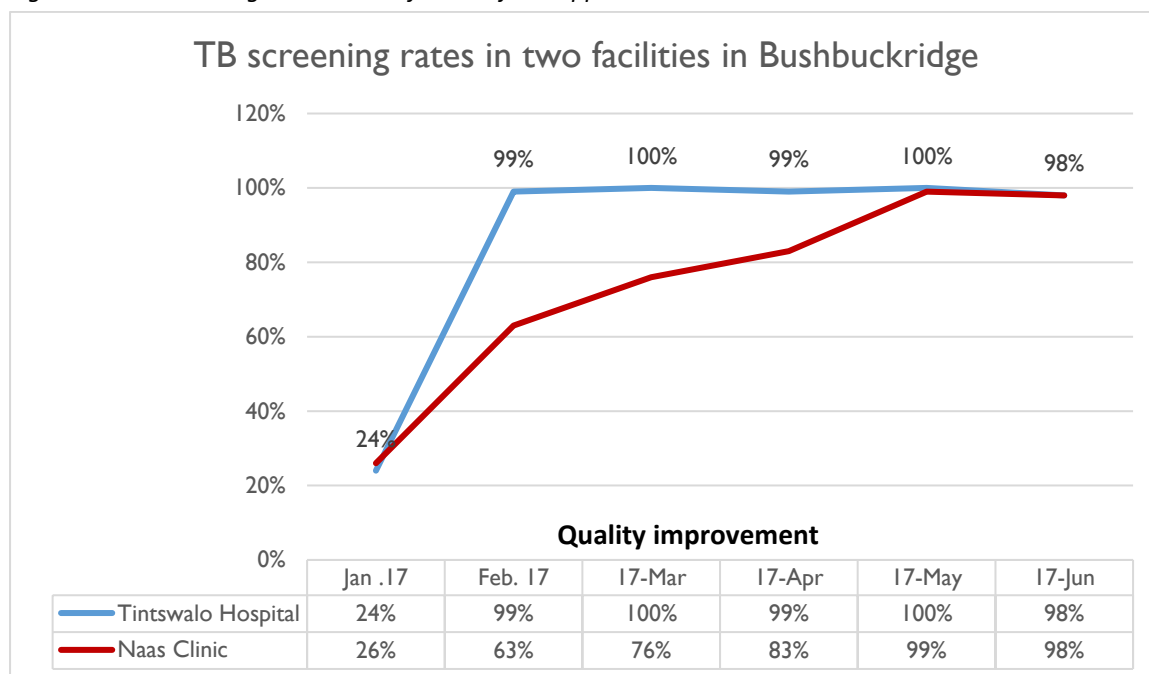


For example, the TB Care Cascade in Ehlanzeni sub-district presented an opportunity to test the QI Approach, which entails training on QI methods, establishing QI teams and using these to institute change.

Table 6: TB Care Cascade in Bushbuckridge sub-district, Ehlanzeni, Mpumalanga Province

Data elements	Jan-Mar 2017	%	Apr-Jun 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 30: 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.

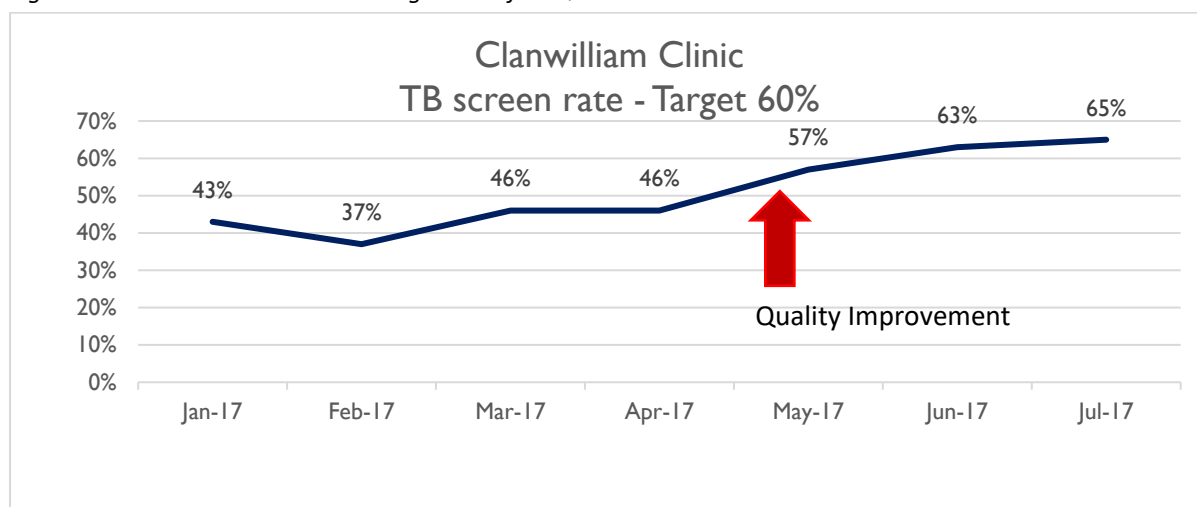
Improving TB screening has also had a cascade effect of increasing case detection rates, including RR TB case detection. However, the linkage to care amongst RR cases requires strengthening.

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 7: 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 31: Clanwilliam Clinic screening rates after QI interventions



Build district management and leadership and program governance capacity through comprehensive training and on-the-job mentoring program

The project provides management capacity through participation in program review meetings. All supported provinces were supported in reviewing program performance during quarterly review meetings. The following observations were made during the reviews:

- Insufficient continuity of performance reporting: most program reviews do not provide adequate guidance to allow for monitoring efficacy of intervention

- Inadequate standardisation of program reporting: most program reviews attended do not provide a standardised reporting format to allow for stakeholder's interventions to be comparable, limiting learning opportunities
- Lack of clarity on integrating program reviews with District Implementation Plans (DIPs).

As a result, the project introduced cascade reporting during the reviews to contribute to improving TB program monitoring nationally. Cascade reporting was adopted in all provinces.

Strengthening health systems and implementation of DIPs

To strengthen TB platforms at both district and provincial level in the context of the work of DIPs, the project's provincial managers and district coordinators were supported to better understand the DIP Phase 3 processes as a way of enhancing their support to implementation in the selected districts. Following the training in the first quarter, project supported districts to identify key activities for the TB program based on gaps identified during DIP planning workshops hosted in supported districts. This activity is also linked to QI activities in districts.

2.2 Strengthened service delivery capacity at all levels

Collaboration with Regional Training Centres

Regional training centres (RTCs) fulfil a coordinating role within districts and provinces in South Africa in terms of delivery of trainings and other capacity building initiatives for HCWs. The project has engaged and collaborated with RTCs in eight provinces: Eastern Cape, Free State, Gauteng, KwaZulu-Natal, Limpopo, Mpumalanga, North West and Western Cape. Areas of collaboration include capacity building, with co-facilitation by DOH counterparts (PHC trainers, clinical trainers, master trainers and TB/HIV coordinators, joint planning and reporting of activities through participation in quarterly stakeholder meetings and capturing USAID TB South Africa Project trainings on the SkillSMART database (enabling HCW capacity building tracking). The project also worked with RTCs and NDOH to review and update all TB training materials.

USAID TB South Africa Project's contributions were highlighted during quarterly meetings of the RTCs. Emphasis was placed on the need to strengthen mentorship using the low-dose high-frequency training model, and will continue to train recipients on 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 DIPs. In addition, quarterly program reviews will be conducted in partnership with counterparts from the RTCs.

Capacity building using the didactic approach

As one of the initiatives to enhance health system capacities to meet the current challenges facing TB control and elimination in South Africa, trainings for various categories within the healthcare system were conducted during the year. With the knowledge and skills received

during the various training sessions, it is expected that TB service delivery along the continuum of care will be strengthened. From g October 2016 to September 2017, a total of 4,359 HCWs were trained on various TB-related topics as shown in the table below.

Table 8: Didactic training conducted nationally

Training Course	# Male	# Female	Total
Basic TB Management	343	1 596	1 939
Basic TB Management & Interpersonal Communication and Counselling	15	213	228
Continuous Quality Improvement	71	550	621
Infection Prevention & Control	87	421	508
TB/HIV Information System (THIS)	42	200	242
ACSM Training	14	36	50
TB-HIV-DM	38	246	284
DR-TB Management	40	169	209
9-month DR-TB Treatment Regimen	3	42	45
Ototoxicity screening & monitoring framework	9	24	33
Recording and Reporting	22	57	79
EDR Web & Data Validation	21	74	95
FAST Orientation Workshop	7	19	26
Total	712	3 647	4 359

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 year, as part of the project's low-dose high-dose frequency training approach. Through this approach, the capacities of 1,374 health workers were strengthened, as illustrated in Table 9 below.

Table 9: List of on-site training conducted

Training course	Total number trained
DR-TB updates	104
Infection Prevention & Control	34
ConnecTB	76
TB Care Cascade analysis	92
Update on National TB Guidelines	27
Basic TB Management	166
FAST and infection prevention and control	47
Recording and reporting	198
Fit test for respirator use	20
Sputum collection	37
Sputum rejection workshops	290

TB/HIV TIER/ETR.Net integration workshop	30
Infection prevention and control	68
TB/HIV in pregnancy	185
Total	1,374

Training material development and adaptation

The project continues to develop up-to-date training modules to strengthen the capacities of HCWs in various areas. Many of these are accredited by the South African Medical Association (SAMA), ensuring that developed materials are of a high quality and reputable. Professionally accredited courses provided by the USAID TB South Africa Project include the following topics:

- Basic TB management
- TB and silicosis
- DR-TB
- TB/DM/HIV
- Continuous quality improvement

In addition, the project continued to work with BEA to develop online modules for HCWs. At the time of reporting, the project was in the process of reviewing the Basic TB management online course. These will assist to reach health care workers who may not be able to attend didactic training sessions.

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

Improving sputum turnaround time is critical to ensuring that confirmed TB patients are linked to care timeously. Health care workers have been registered with Labtrak to access laboratory results when needed. Using Labtrak, facilities can access sputum results within 24 hours, and reflex testing results within five to seven days. Early access to results allows for faster tracking of TB patients and bringing them to care. Time to initiation in hospitals is within 24 hours of receiving results. There is a need to develop a recall system at primary healthcare level, as this is already done for DR-TB. Table 11 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 level
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 quality of care of DS and DR-TB patients

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

- Inconsistency in recording patient details, e.g. ID numbers documented in TB registers but not in patients' files, ICD-10 codes written in the register but not in the file, and patients initiated on ARV recorded in the register but not in the patient files.
- Adherence to diagnostic algorithm – sputum is collected for GXP in >80% of presumptive TB cases in PHC facilities, but not all GXPs 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 the monitoring of side effects; this is sometimes captured in the nurses' 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 regimens is not always recorded. The TB/HIV Integrated System is set to improve this as this type of information has always been captured in TIER.net.

To further address identified challenges, the USAID TB South Africa Project supports cluster quality improvement meetings where 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.

Drug-resistant TB support

In South Africa, numbers of TB cases diagnosed over the past decade have been steadily growing, with the number of MDR-TB cases doubling from 7,350 in 2007 to approximately 14,161 in 2012. World Health Organization estimates suggest that in 2015 there were 19,613 laboratory-confirmed MDR/RR-TB cases and 1,024 XDR-TB cases in South Africa. Of these, only 12,527 (64%) MDR/RR-TB cases and 730 (71%) XDR-TB cases were initiated on treatment (Global TB Report, 2016). However, despite access to timely diagnosis through the rollout of GeneXpert across South Africa as a first line diagnostic tool that enables rapid screening for *Rifampicin* resistance, treatment outcomes in South Africa remain low. Only approximately half of all cases are successfully treated.

USAID TB South Africa Project support for DR-TB interventions is aligned to the following global and national TB strategies:

- National TB Control Program Strategy to Decentralize DR-TB Management

- United States National Action Plan for Combating Drug-Resistant Tuberculosis
- End TB Strategy

The project aims to improve access to DR-TB diagnosis, improve access to quality DR-TB treatment and improve treatment adherence amongst DR-TB patients

Expand community-based programmatic management of MDR-TB

Model of care for drug-resistant TB

The USAID TB South Africa play a key role in the development and implementation of the National DR-TB Decentralization Policy since its development in 2011, and will continue to support implementation of decentralization as a strategy to improve access to quality DR-TB services aligned to the strategic objectives of both the NDOH and the NAP. To introduce a model of care that will achieve set performance targets, the project identified 10 focal MDR-TB sites in six

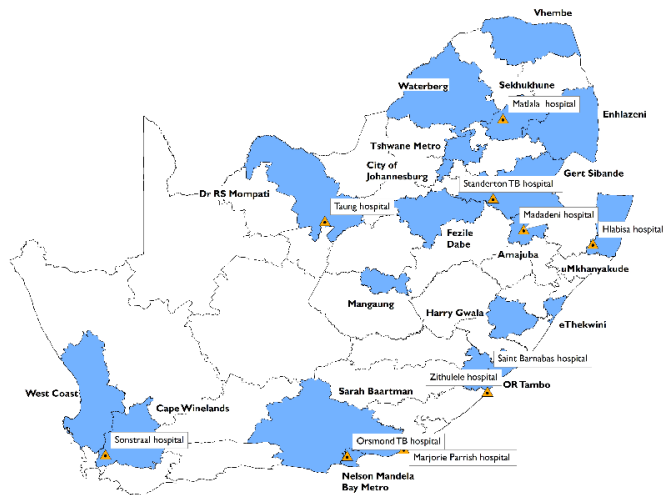


Figure 32: DR-TB supported sites

provinces for intensified support. Further, to assess the impact of the project, a baseline facility assessment of 10 MDR-TB sites was conducted between November 2016 and February 2017 to provide insights into gaps in the facilities and to identify areas where additional support is required, in a bid to improve patient outcomes. The baseline assessment aimed to:

- Identify 10 MDR-TB decentralized sites that require further strengthening.
- Provide a snapshot of the status of MDR-TB decentralization in South Africa
- Provide recommendations aimed at informing USAID TB South Africa Project programmatic support for MDR-TB decentralized sites.

The baseline assessment showed that only four out of ten MDR-TB decentralized sites have all the required clinical equipment (ECG and KUDUwave machines) as well as information technology (IT) resources available including EDRWeb, NHLS Labtrak access and internet connectivity). All DR-TB medicines were available at all sites at the time of assessment, although pharmacy stock-outs were reported at two sites (Sonstraal (pediatric Levofloxacin) and St Barnabas (Moxifloxacin) over a period of six months. Most supported sites are newly decentralized, with significant capacity gaps and some recording and reporting challenges. Eight out of 10 (80%) (Apart from Sonstraal and St Barnabas hospitals) indicated that DR-TB reporting is not done using either the DR-TB register and/or EDRWeb, and that the facility sends registration forms to the district for reporting.

The facility risk assessments show that 6 out of 10 (60%) MDR-TB decentralized sites cannot prove that they undertake have TB IPC facility risk assessments. Also, 60% of facilities were stocked with IEC materials, while 50% have a functional IPC committee. At the time of the

assessment, all sites reported having adequate supplies of personal protective equipment (PPE). However, germicidal ultraviolet (GUV) lights and CO₂ monitors were not available in most sites.

Regarding referral networks of patients from MDR-TB decentralized sites to centralized sites/centers of excellence, 80% indicated the existence of a functional referral pathway. For both up and down-referral between MDR-TB decentralized sites and primary healthcare facilities (PHC), 80% of MDR-TB decentralized sites indicated an existing functional referral pathway. For referral networks to a specialized tertiary healthcare facility, 90% of MDR-TB decentralized sites indicated a functional referral pathway.

In terms of support of NGOs and community based organization (CBOs), 40% of MDR-TB decentralized sites indicate the direct support of NGOs/CBOs in terms of patient tracing, individualized patient treatment support, patient contact screening and MDR-TB drug injectable services. Although Zithulele Hospital does not have an NGO or CBO that it is directly linked to, the health facility provides community patient outreach support. Only 20% of MDR-TB decentralized sites indicated that they provide palliative care services by trained personnel.

Based on the baseline assessment, the project implemented the following activities in supported decentralized sites:

1. Capacity building of clinical management, including on-site training and low-dose high-frequency mentoring of clinicians through web-based learning platforms to ensure that all clinical staff are capacitated on the second line LPA reflex testing. Other areas of focus include clinical management around the implementation of new regimens including, Shorter MDR TB regimen, Regimen with new TB drugs e.g. Bedaquiline, and other individualized extended regimens. Regular on-site clinical reviews and chart reviews were done to ensure adherence to guidelines and protocols.
2. The project partnered with CSIR to conduct risk assessments in sites where there had not been assessments done recently. QI focal personnel and IPC officers were supported to establish functional TB IPC committees and on-site training and mentoring of staff in the appropriate use of PPE. Further, IEC materials on IPC were also provided and CO₂ monitors were installed in some sites as early warning indicators of inadequate ventilation.
3. The project supported the training of personnel on Version 2 of EDRWeb in supported districts. In addition, low-dose high-frequency mentorship was provided by trained USAID TB South Africa Project provincial and district staff on data capturing and analysis in supported facilities.
4. The project supported documentation of referral pathways between PHC facilities and decentralized sites and contributed to improving linkage to care through supported NGOs.

Improving linkages 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 Africa Project, which helps the project to further reduce the transmission of TB and numbers of new TB cases. There are evident gaps in the number of patients diagnosed with TB and the number of those initiated on treatment in some districts, indicating that not all TB patients who need treatment are receiving it. In Fezile Dabi, Mangaung, Free State Province and Nelson Mandela Bay Metro, Eastern Cape Province, 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 all laboratory-diagnosed TB cases are not linked to care.

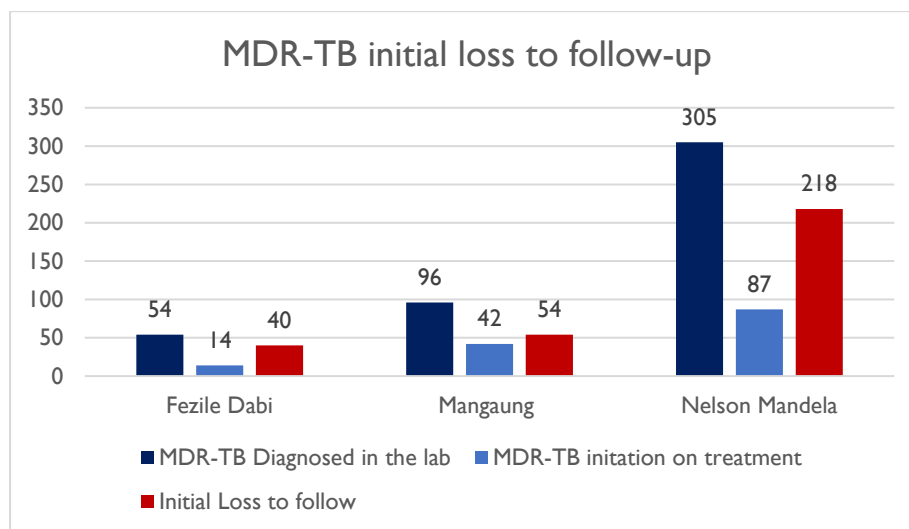


Figure 33: MDR-TB initial loss to follow-up in Fezile Dabi, and Nelson Mandela Bay Metro

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

The project engaged with NICD regarding collaboration and partnership between provincial epidemiologists and USAID TB South Africa Project provincial managers to ensure weekly *Rifampicin* Resistance alerts are disseminated so these patients can be linked to care. As a result, *Rifampicin* Resistance alerts are sent to project coordinators, who then work with NGOs and the DOH to trace and ensure that all patients are linked to care.

Support to the National Drug-Resistant TB Advisory Committee

The project participated in the National DR-TB Advisory Committee meeting held in Cape Town on November 9th and 10th 2016. The committee focused on evidence-based advice,

identification of difficulties in the roll-out of new agents and review of the programmatic implications of changes that are crucial in improving outcomes. A total of 148 HCWs were trained on DR-TB and newer second-line drugs during quarter 1, while 163 more were trained in quarter 2.

Implementation of the drug-resistant TB service package in South Africa

To improve the quality of DR-TB care and treatment success, USAID developed a 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 NAP to combat MDR-TB. Tools provided in the guide allow countries to identify and estimate the resources needed for supportive care interventions at national, provincial, and facility level, as well as helping providers create and track individualized care plans for each patient. South Africa is amongst four countries identified as sites for Phase I - the introduction of the NAP. The DR-TB service package aims to enhance patient support, as illustrated in the table below:

Table 10: Essential elements for South Africa's DR-TB service package

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)
<ul style="list-style-type: none"> • 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 	<ul style="list-style-type: none"> • 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 	<ul style="list-style-type: none"> • 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

- Rehabilitative services
- TB tracer teams assist to track interrupters and LTFU

South Africa is focusing on the implementation of eight out of the 14 elements of the DR-TB service package in three provinces: Limpopo (Matlala Hospital), Free State (J.S Moroka, Heidedal, Botshabelo, National and MUCCPP hospitals) and Eastern Cape Province (Nelson Mandela Metro, Osmond, Jose Pearson and Empilweni hospital).

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

Table 11: Baseline outcomes for DR-TB for 2014 cohort

District	DR-TB cohort	DR-TB outcomes for 2014 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%

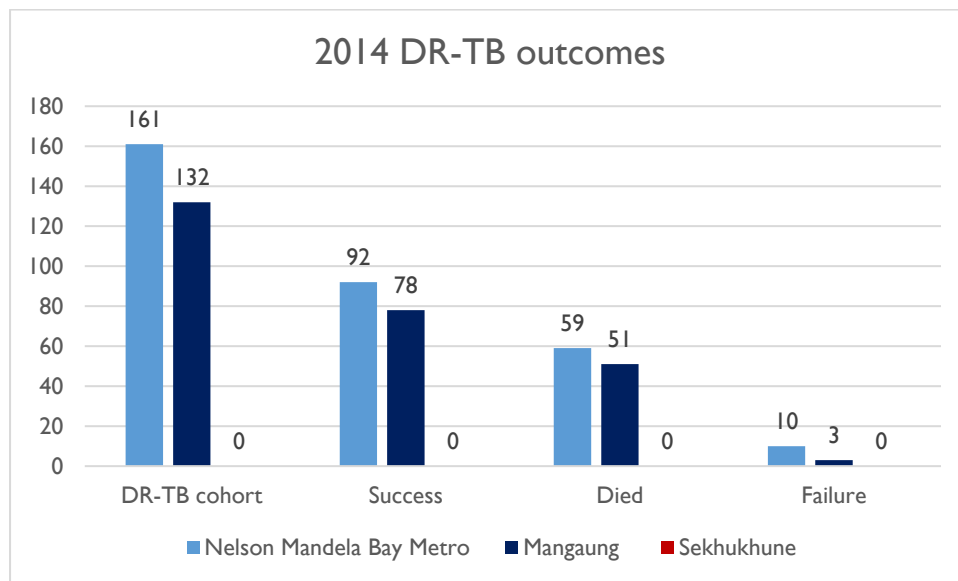


Figure 34: Baseline outcomes for RR TB for 2014 cohort

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 or poor management of TB/HIV co infection. 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 active management for life threatening SAEs
- 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 35: DR-TB patients 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

2.3 Improved data reporting and recording systems at all levels

Capacity building on M&E and increased data use at facility and district level

The project supported district-level data analysis and use in all supported districts, with tangible results in, for instance, Amajuba and uMkhanyakude districts, KwaZulu-Natal Province facilities. In these facilities, low outcomes were identified from ETR.net and quality improvement plans developed. The project supported the districts to address identified gaps in recording and reporting.

Five DRAT exercises were carried out in five districts: Amajuba and uMkhanyakude in KwaZulu-Natal, Nelson Mandela Bay Metro in Eastern Cape, Moses Kotane sub-district in North West Province, and Mangaung Metro in Free State Province. Common findings are listed below:

- Frequent staff rotations without proper training and mentoring result in poor program management
- Smears are not routinely collected, and results are not routinely recorded
- There is no record of patients on *Isoniazid* preventive therapy (IPT)
- TB diary dates do not always provide the correct return dates, resulting in high not evaluated patients and treatment under doses
- Use of the same register for presumptive TB cases and follow-cases made it difficult for staff to do monthly reporting Sub-optimal use of TB diaries results in failure to provide and record patient review dates
- Low IPT uptake

The project provided technical support in developing quality improvement plans and is supporting implementation of these plans.

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

During the period under review, the USAID TB South Africa Project provided varying levels of support to provinces and districts based on their uptake of the initiative. During the year under review, TB/HIV Integrated System (THIS) trainings were conducted in eight districts: Gert Sibande and Ehlanzeni (Mpumalanga), Vhembe (Limpopo), uMkhanyakude (KwaZulu-Natal), Nelson Mandela Bay Metro and Sarah Baartman (Eastern Cape), Fezile Dabi and Mangaung (Free State). 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 in terms of capturing figures into the TB module.

IR3: Care and Treatment of Vulnerable Populations Improved

3.1 Increased contact tracing of key populations

Contact tracing by project-funded non-governmental organizations

During the reporting period, the USAID TB South Africa Project funded NGOs at community level, reaching a total of 11,794 adult contacts and screening 98% of them for TB as shown in Table 14. Of these, 2,338 patients were presumptive for TB, and 84% tested. A total of 345 people was diagnosed with TB, and 334 of them initiated on treatment.



Figure 36: Project-funded NGOs also undertake contact tracing and management as part of their contribution to ending TB in the communities where they work

Table 12: Contact management for adults

Indicator	Q1		Q2		Q3		Q4 (Adult)		Total
	No.	%	No.	%	No.	%	No.	%	
No. of new index patients	142	%	1,094	%	2,745	%	1,785	%	5,766
No. of contacts reached (adults)	354		1,831		5,700		3,909		11,794
No. of contacts screened	333	94.1%	1,614	88%	5,430	95.3%	3,849	98%	11,226 (95%)
No. of contacts TB presumptive	54	16%	498	31%	1,172	21.6%	614	16%	2,338 (21%)
No. tested for TB	32	59%	268	54%	722	61.6%	517	84%	1,539 (66%)
No. confirmed positive TB	13	41%	32	12%	88	12.2%	212	41%	345 (22%)
No. TB confirmed started on TB treatment	13	100%	32	100%	88	100%	201	95%	334 (97%)

During the same reporting period, 2,598 child contacts were reached, and 90% of them were screened for TB. A total of 56% of children screened were presumptive for TB. Of presumptive TB cases tested, 113 were confirmed to have TB and 108 started on treatment as shown in Table 15 below.

Table 13: Contact management for children

Indicator	Q1		Q2		Q3		Q4		Total
No. of child contacts reached	51	%	287	%	620	%	1,640		2598
No. of contacts screened	51	100%	287	100%	619	99.8%	1,476	90%	2,433 (94%)
No. of contacts TB presumptive (referred for testing)	48	94%	206	72%	290	47%	816	55%	1360 (56%)
No. tested for TB	48	100%	58	28%	170	59%	497	61%	773 (57%)
No. confirmed positive TB	5	10%	12	21%	23	14%	73	15%	113 (15%)
No. TB confirmed started on TB treatment	5	100%	12	100%	23	100%	68	93%	108 (96%)

Contact management continues to yield high TB cases of 4,644 per 100,000 population among child contacts, and 2,925 per 100,000 population among adult contacts. Supported NGOs will continue to prioritize contact management as a strategy to find missing TB cases during the next quarter.

3.2 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 HCWs. The project plans to evaluate the feasibility of utilizing QuantiFERON to identify HCWs at increased risk of developing TB and offering appropriate preventative services (including IPT for HIV positive, strengthening FAST in specific areas of work and utilizing CO₂ monitors to identify high-risk settings). 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.

TB Symposium on Key Population

To find missing TB cases among migrants (farm workers and mine workers), contacts of TB patients and healthcare workers, a TB symposium was co-hosted with the National Department of Health on the May 29th and 30th 2017 in Johannesburg. The key objectives of the symposium were to share existing good practices and service delivery models for finding missing TB cases among key populations, and to develop a response framework to facilitate the achievement of the 90-90-90 targets for key and hard-to-reach populations in South Africa. TB



Figure 37: TB Symposium plenary

experts discussed strategies to improve TB case-finding, treatment, care and support in the mining and commercial agricultural sectors, as well as in prisons. Community and facility-based targeted service delivery for contacts of TB patients and healthcare workers was also discussed. The outcome of the discussions included the following:

- **Key Populations Knowledge Hub:** An interactive, web-based platform was established to facilitate sharing of resources (including research reports, publications and presentations) related to TB among key populations. The knowledge hub currently has 80 members from different organizations, including PEPFAR DSPs, national and provincial department of health personnel and implementing partners.
- **TB Key Populations Technical Working Group (TWG):** A TWG was established to monitor progress regarding TB management among key populations. The members of the TWG include NDOH, Aurum Institute, National Health Laboratory Service, AgriAids South Africa, TB/HIV Care, Foundation for Professional Development, International Organization for Migration, Medical Research Council, Medical Bureau for Occupational Diseases and TB Proof. Draft Response Framework for achieving the 90-90-90 targets for key populations: The technical discussions during the TB symposium will be summarized into a response framework to guide national efforts towards ensuring that the 90-90-90 targets for key populations in South Africa are achieved.

TB Satellite Session on Key Population

On June 13th, 2017, the project co-hosted a TB Satellite Session with the NDOH at the 8th South African AIDS Conference held in Durban. The session was attended by approximately 250 people, including policy makers, research experts, representatives of funding agencies and implementing partners on HIV/TB in South Africa. The objective of the session was to highlight the contributions of key actors to the HIV and TB epidemics in South Africa, and to share priority interventions for achieving the 90-90-90 targets for TB in South Africa. The Deputy Director General at the National Department of Health, Dr. Yogan Pillay, emphasized the need to accelerate efforts towards more effective treatment regimens and better diagnostics. In addition, he stressed the need to focus on the needs of people with comorbidities (e.g. people living with HIV, diabetics and smokers who are at increased risk of developing TB).



Figure 38: Participants at the TB satellite session

Roll-out of ConnectTB to local NGOs

During the period under review, the project continued to provide DOT support through the ConnectTB app. In quarter 1, three funded NGOs were using ConnectTB. The project is expanding its ConnectTB platform to all funded NGOs. By quarter 4, 15 more grantees had been trained, and three additional NGOs had started reporting on the system. 925 DR-TB patients and 1,125 DS-TB patients have been enrolled onto the platform cumulatively. At 95%, the average treatment adherence rate for patients on ConnectTB remained high during the year under review.



Table 14: DR-TB patient status on ConnectTB

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	eThekweni	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%




3.3 Strengthened comprehensive systems and partnerships for care

Several public/private partnerships are being pursued by the USAID TB South Africa Project 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
Agricultural Sector	  Sundays River Valley Citrus Growers	Train and mentor farm PHC facility staff on TB management Ensure availability and access to chronic medication for farm workers Provide access to laboratory services for TB testing

	association & Eastern Cape Department of Health	Assist farm primary health care (PHC) facilities with data collection tools and reporting according to the National Indicator Data sets (NIDS)
Transport sector	 Department of Transport	Member of the Transport Sector HIV/AIDS & TB coordinating committee and governing forum Provide technical assistance to strengthen TB response within the transport sector national strategic plan on HIV, TB and STI 2017-2022 and related activities.
PEPFAR DSPs	 Foundation for Professional Development	In partnership with Foundation for Professional Development, the project will co-organize the 2018 South Africa TB Conference scheduled for June 12 th to 15 th 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’
	 Broad Reach Healthcare	Collaborate in the implementation of TB HIV activities in the co-supported district: Gert Sibande.
Mining Sector	 The Global Fund	Identify mines in overlapping GF supported districts in Limpopo (Waterberg, Sekhukhune) and Mpumalanga (Gert Sibande) provinces Identify index cases in the mines and conduct contact tracing and TB screening within the mines Share information/data on index cases with the GF for contact tracing in peri-mining communities in overlapping districts
Transport Sector	 South African	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

	National Roads Agency (SANRAL)	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	 <p>Cepheid Cepheid</p>	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.
	 <p>National Health Laboratory Service (NHLS)</p>	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)	 <p>NEXT2People Foundation</p>	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.

3 MONITORING AND EVALUATION

USAID TB South Africa Project high-level impact indicators are reported in the table below. The project reported a treatment success rate for DS-TB at 82.4%. The project is in line to achieve ART target for TB/HIV co-infected patients, having achieved 89.4%, against the 90% target. A low MDR-TB initiation rate of 43.2% and MDR-TB treatment success rate of 53.7% remain a challenge. As discussed above, the project has implemented some strategies were implemented to improve DR-TB services in project- supported sites.

Table 16: Project progress towards national impact targets

Project impact indicators	Target by the end of 2021	Achievements as of December 2016
Treatment success rate for DS-TB cases (2015 cohort)	90%	82.4%
Treatment success rate for MDR-TB (2014 cohort)	75%	53.7%
Initiation of confirmed DR-TB cases on appropriate treatment	100%	43.2%
ART coverage for TB/HIV co-infected patients	90%	89.4%

During the year under review, the project began monitoring 90-90-90 indicators in supported districts in line with recommendations of the Steering Committee. This report presents the project’s performance in terms of the 90-90-90 performance in supported districts for the period October 2016 to June 2017. Notification data from ETR.Net will cover the period July 2016 to June 2017, with outcomes covering July 2015 to June 2016. Data from directly supported facilities will cover the period April to June 2017.

Northern Cape Province faced some structural challenges in the management of the TB program. With the guidance of the NDOH and USAID, the project no longer directly supports Northern Cape. This report, therefore excludes data from Northern Cape.

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

The project works to support the NDOH to achieve the 90/90/90 targets for TB

- 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 69% in the period October to December 2016, to 72% in January to March 2017. The figure further improved to 74% during the period April to June 2017 (see Annex III for the full cascade analysis by district)

Table 17: Cascade analysis for USAID TB South Africa Project-supported districts comparing the period October to December 2016 and January to June 2017

USAID TB South Africa Project supported facility cascade data						
	Oct-Dec 2016		Jan-Mar 2017		Apr-Jun 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%

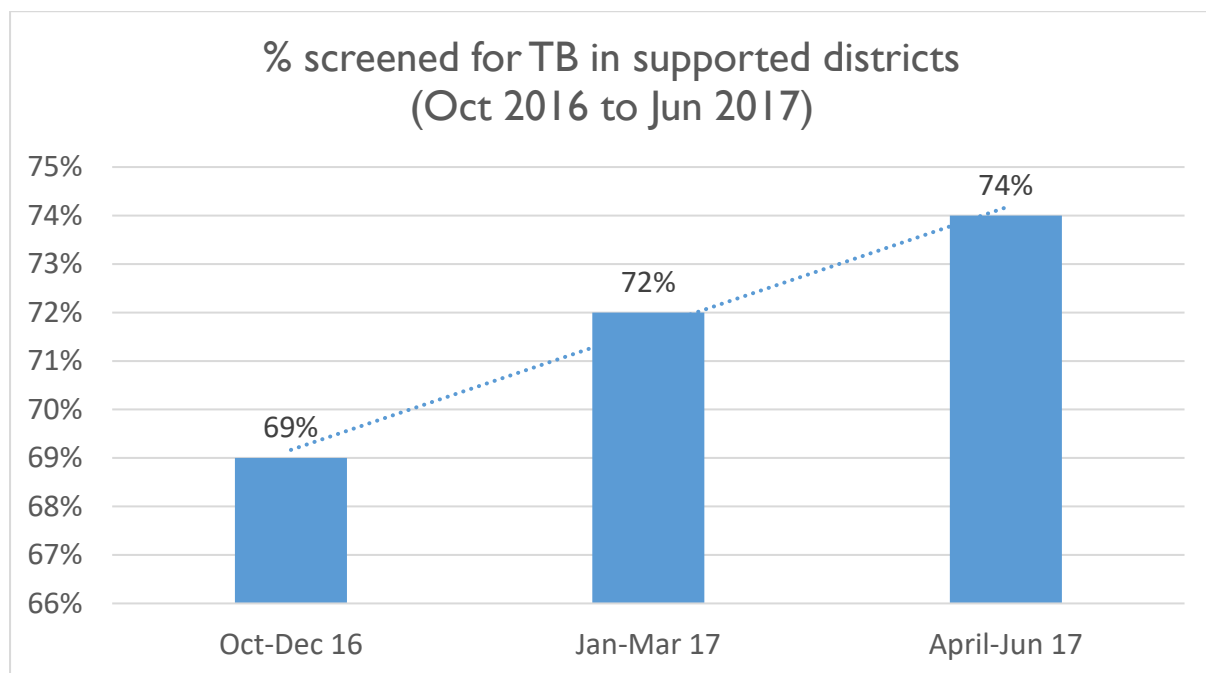
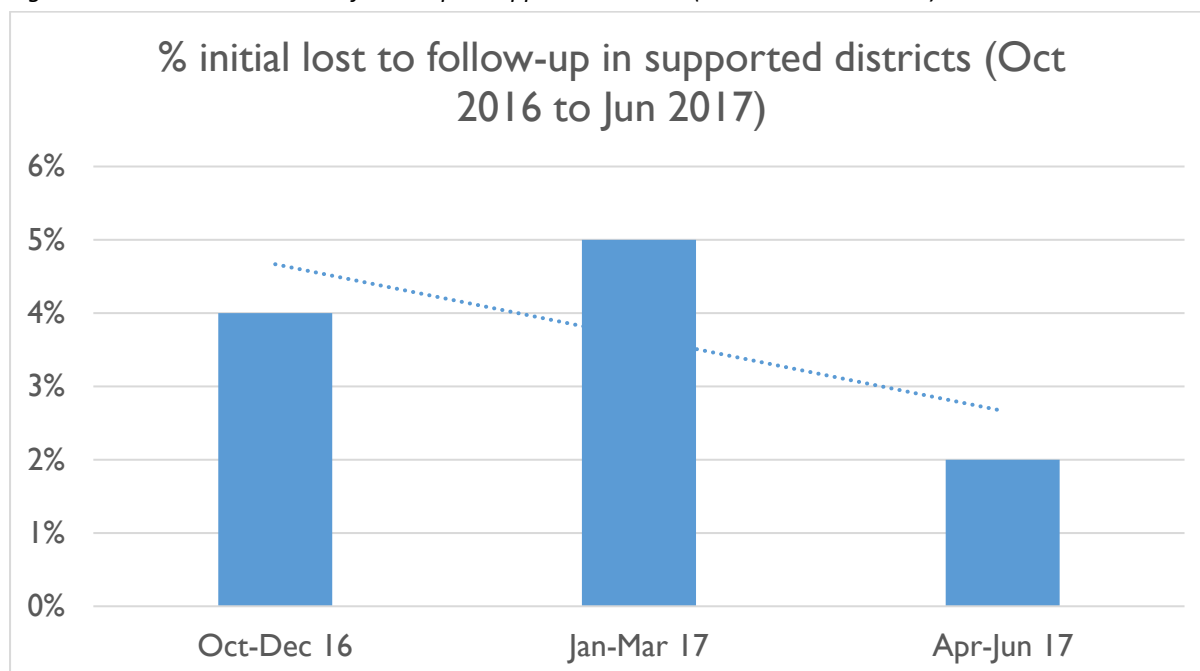


Figure 39: Percent screened for TB in supported districts October 2016 to June 2017

Figure 40: Percent initial lost to follow-up in supported districts (Oct 2016 to Jun 2017)



The initial loss to follow-up rate, encouragingly, shows a general downward trend.

ETR.net data for supported districts

This section contains district data from ETR.net reports covering the period July 2016 to June 2017.

Case notifications continue to decline in supported districts. This is aligned to the decline in TB notification rates nationally.

Figure 41: Case Finding trends July 2016 - June 2017 in supported districts

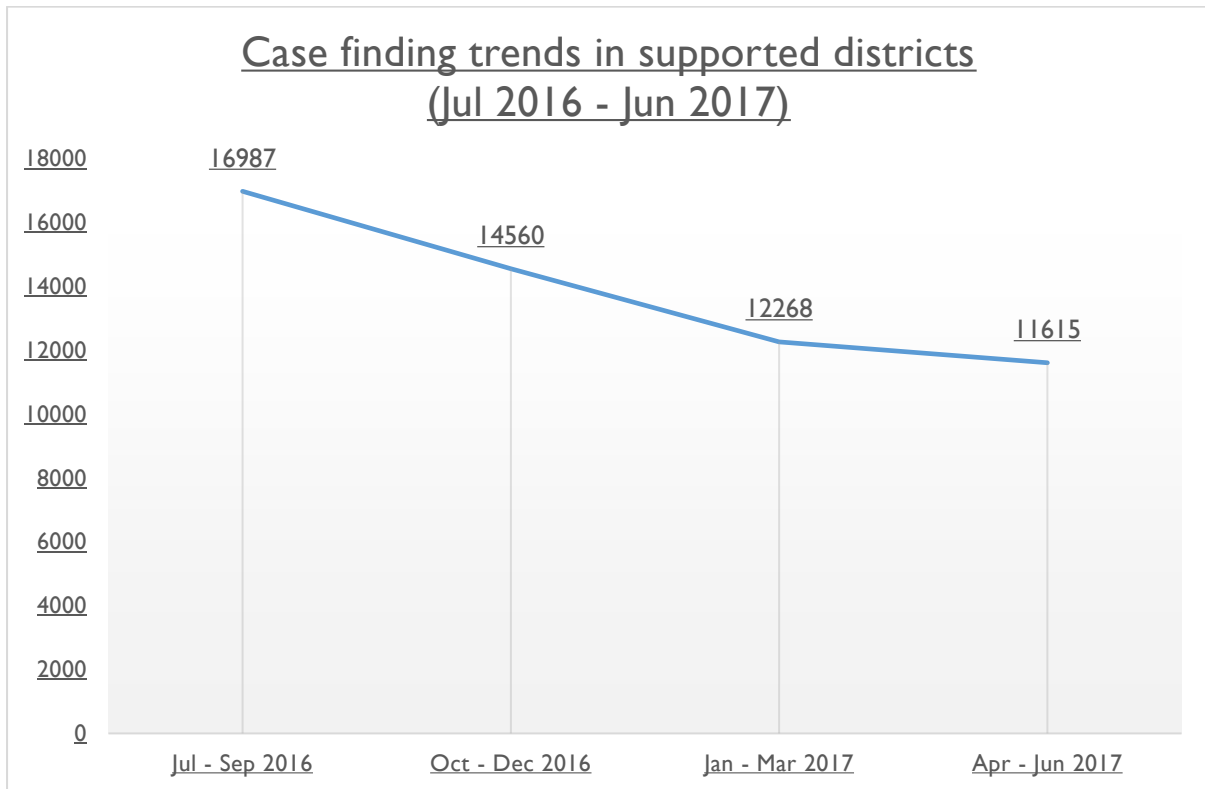
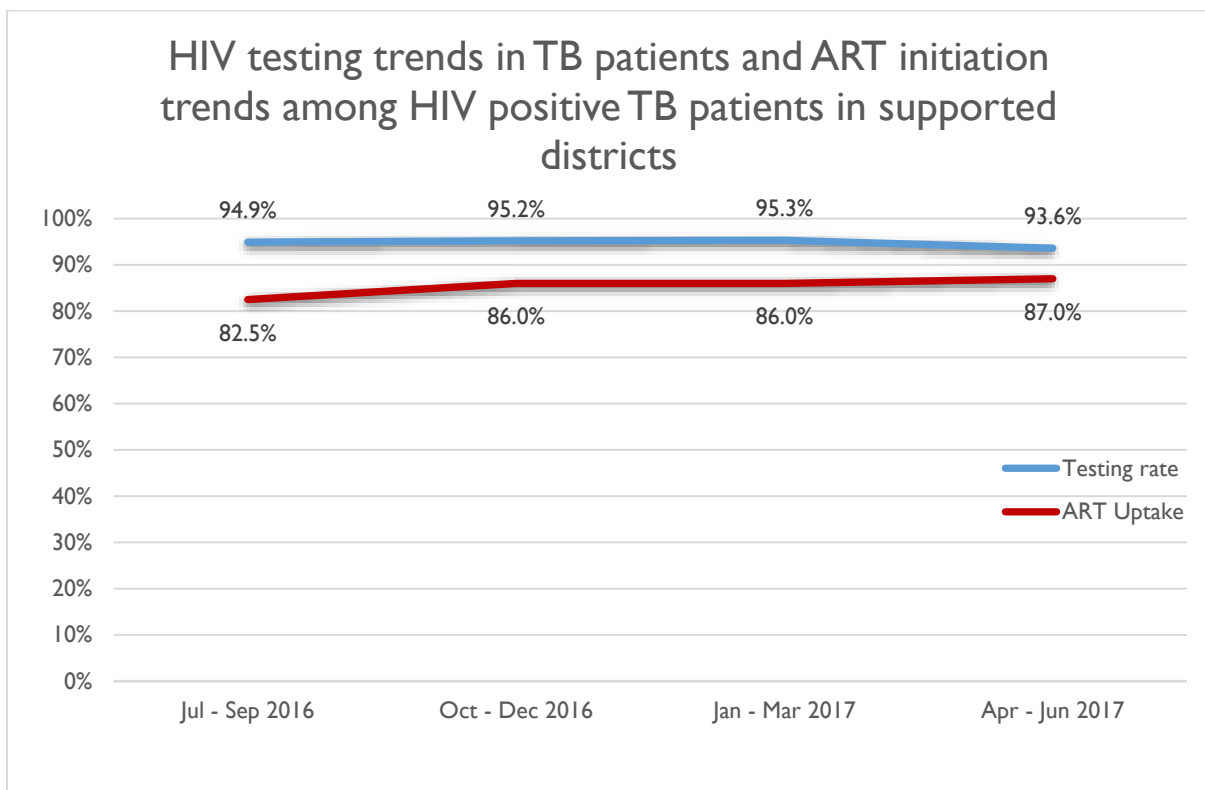


Figure 42: HIV testing trends in TB patients and ART initiation trends among HIV positive TB patients in supported districts

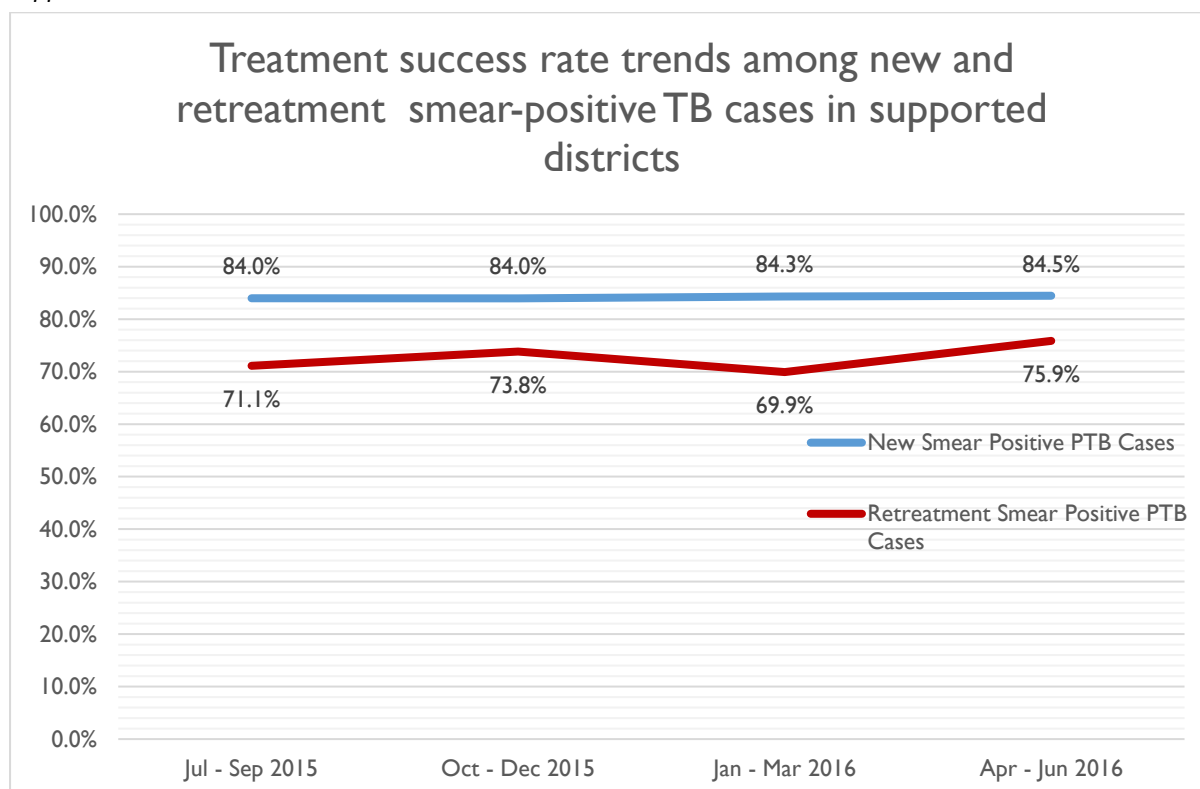


The proportion of TB patients with a known HIV status remains above the 90% target, while the proportion of HIV positive TB patients on ART has edged towards the 90% target. Cape

Winelands and Western Cape districts, both in Western Cape, report TB/HIV data with outcomes that greatly affect this indicator.

The uptake of ART in Cape Winelands and West Coast (44% and 46% respectively from April to June 2017) results in the national figure being lower than 90%. The USAID TB South Africa Project put in place strategies, and is working with these specific districts to improve recording and reporting, both of which contribute to poor performance in these districts. Training is also being conducted to encourage HCWs to initiate patients on treatment early.

Figure 43: Treatment success rate trends among new and retreatment smear-positive tuberculosis cases in supported districts



The project reports treatment success rates among bacteriologically confirmed TB cases in this report, but reporting for all TB cases after the changes. The success rate has remained static around 84% for new smear-positive cases, while this figure increased slightly for retreatment cases from 71% to 76%.

Monthly data from supported facilities

Background

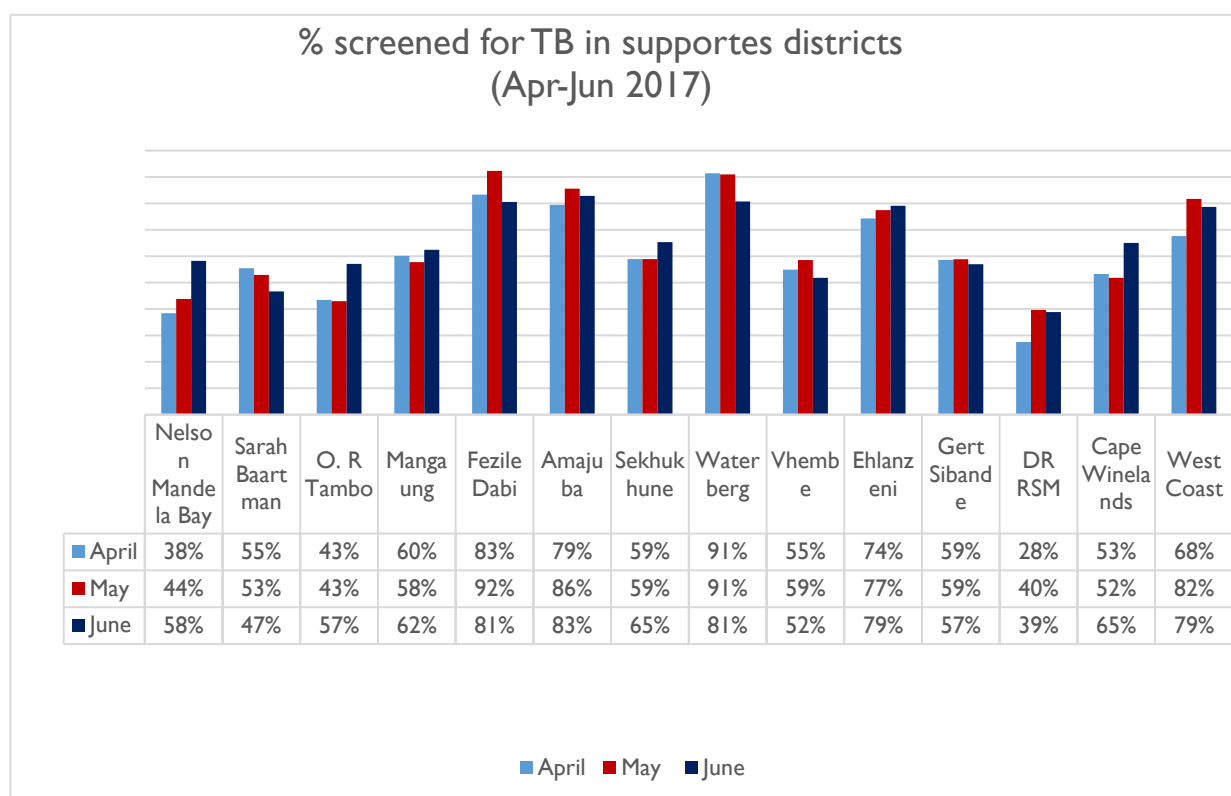
Traditionally, the USAID TB South Africa Project relied on ETR.Net data to assess performance. However, ETR.Net data is delayed, thus has limited use in informing the implementation of quality improvement initiatives that require up-to-date information. To address the gap, the project introduced facility data collection in directly supported facilities. This allows the project to collect up-to-date information, which is used to inform program activities. The period April to June 2017 was the first quarter where the project recorded greater than 99% complete data received from the supported facilities and collated. Data was

analysed and subsequently quality implementation plans (QIPs) were developed to address the identified gaps. The analysis of data from the 179 supported facilities indicates that some individual facilities had very good success stories of improvements in some indicators over the three months. However, other facilities started with much lower performance, meaning that it was harder for them to demonstrate as great improvement as facilities that started at a higher level, thus giving a mixed picture of performance across the facilities. Data in the section below is presented by district.

TB screening rates

Combined data from Mangaung (Free State), Sekhukhune (Limpopo), Ehlanzeni (Mpumalanga), Nelson Mandela Bay Metro and OR Tambo (both Eastern Cape) and Cape Winelands (Western Cape) indicates increases in TB screening of clinic attendees. Although Though Dr Ruth Segomotsi Mompati (North West) showed improvements in this area, at 40%, performance is still poor. Gaps in recording and reporting were identified as the main contributors to poor performance. The project supported the district with TB screening stamps in efforts to improve recording of TB screening conducted.

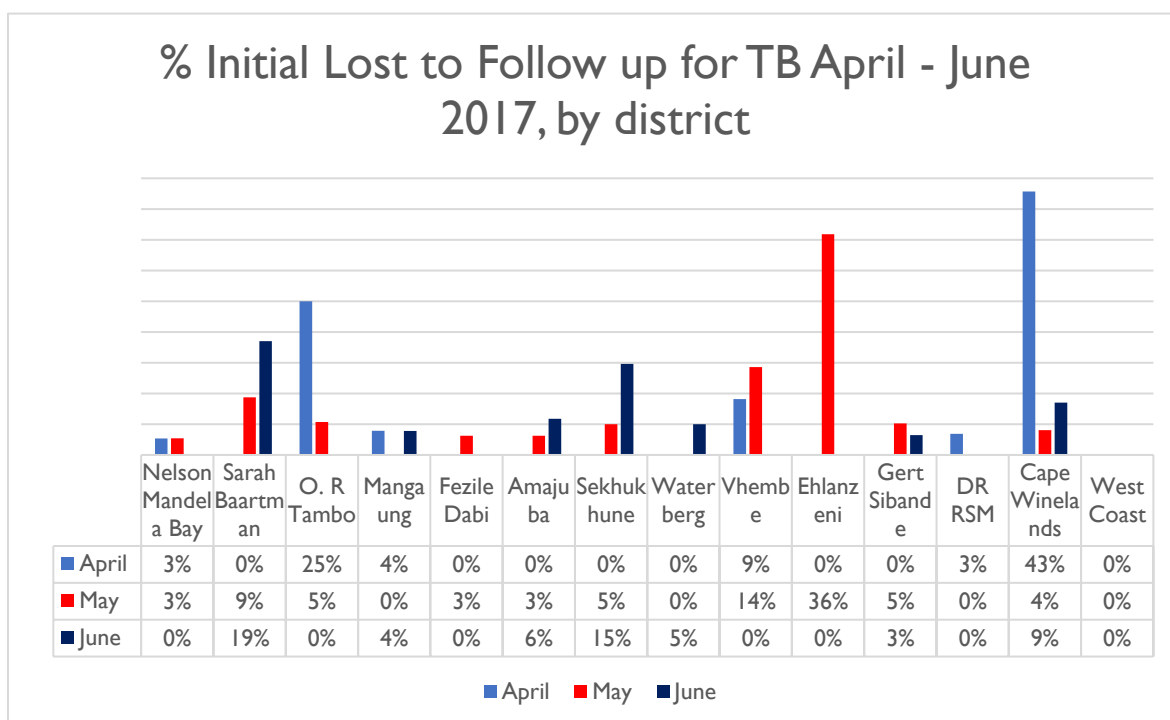
Figure 44: Percent screened for TB in supported districts



Initial loss to follow-up

Facilities in Mangaung and Fezile Dabi (Free State), Gert Sibande (Mpumalanga), Nelson Mandela Bay Metro and OR Tambo (Eastern Cape) and West Coast and Cape Winelands (Western Cape) had initial loss to follow-up (ILTFU) rates that either showed no improvement, or showed a downward trend during the period under review. Further, Ehlanzeni (Mpumalanga), Cape Winelands and OR Tambo had ILTFU rates that fell from 36% to 0%, from 43% to 9%, and from 25% to 5% respectively. The declines were mainly due to the support of project-funded NGOs working to link patients to care in these areas.

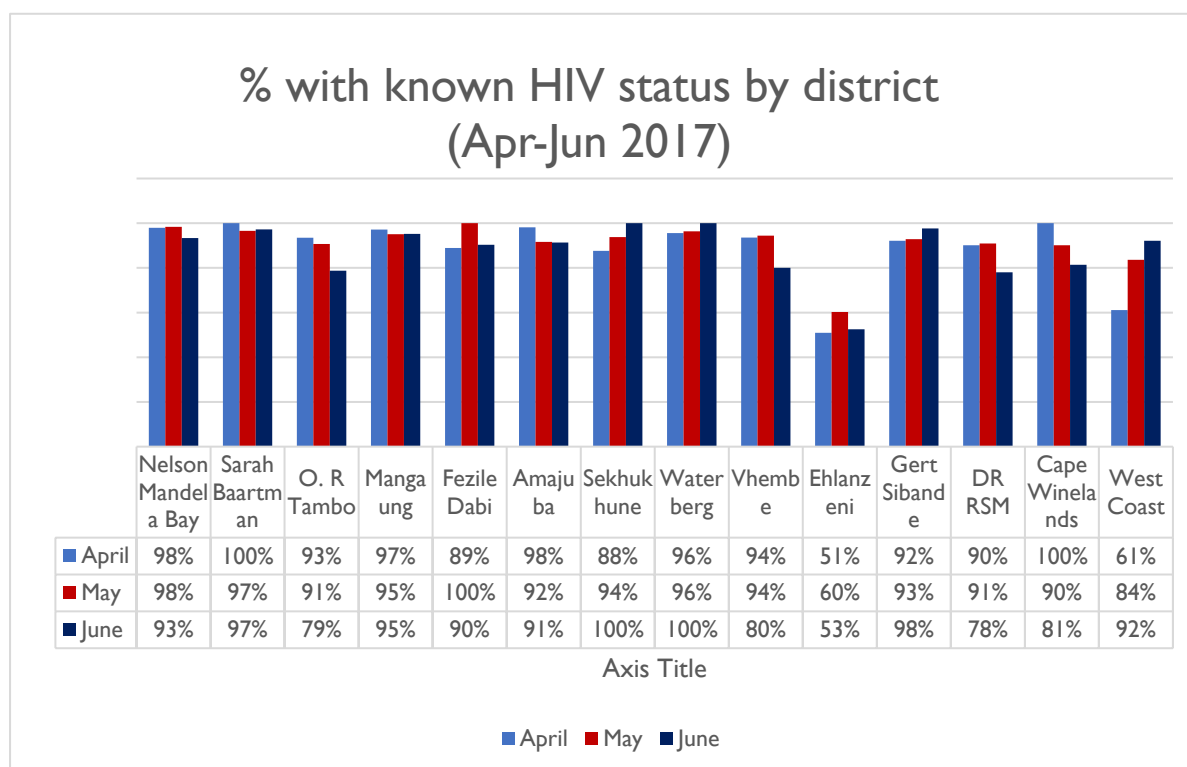
Figure 40: Percent initial loss to follow-up by district (April to June 2017)



Percentage with known HIV status

Most facilities are doing very well on this indicator, with the majority being in the high 80s, and some reporting 100%. Facilities in Gert Sibande that reported below 60% and in Ehlanzeni that reported figures in the 70s require more attention and ongoing support to get them to the 90% target.

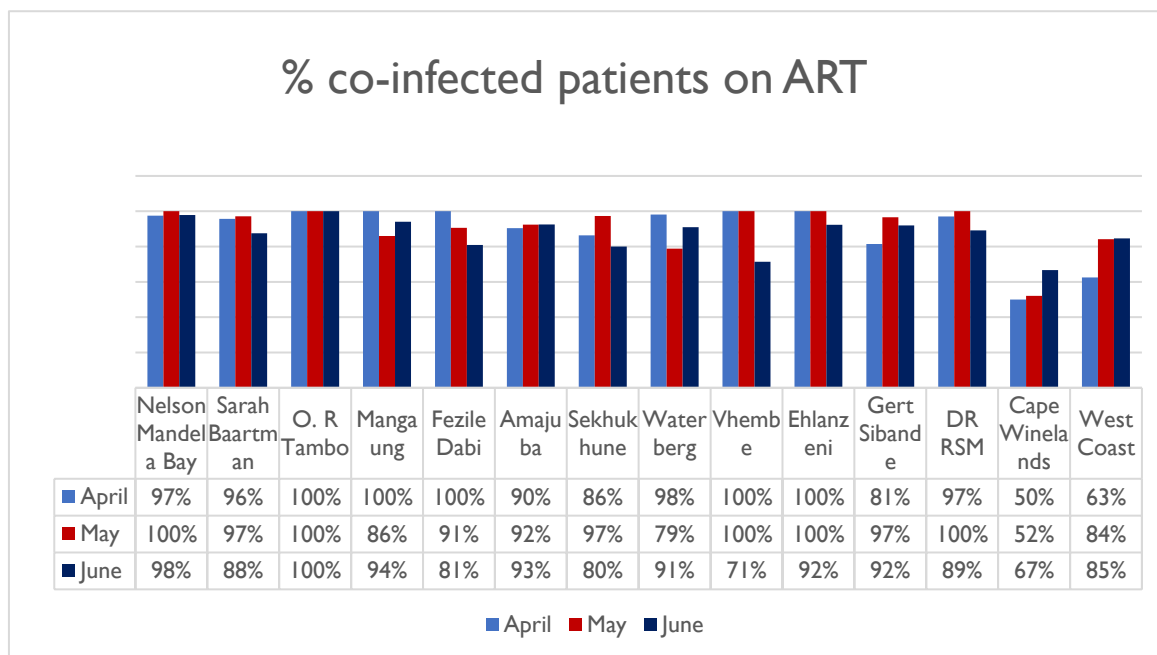
Figure 41: Percent with known HIV status by district (Treatment success rate trends among new and retreatment smear-positive tuberculosis cases in supported districts)



Percentage TB/HIV co-infected patients on antiretroviral

Data from supported facilities in Amajuba (KwaZulu-Natal), Gert Sibande (Mpumalanga), Nelson Mandela Bay Metro and OR Tambo (Eastern Cape) and Cape Winelands (Western Cape) showed an increase in ART initiation among TB/HIV co-infected patients during the year under review. Further, Cape Winelands and West Coast districts also reported significant improvements in the same field, even though they reported the lowest ART initiation rates nationally.

Figure 45: Percent coinfecting patients on ART



MDR-TB data

The data for MDR-TB is generated from the EDR.web. It was not possible to break down the data by district in the version used for 2016 data. The latest version now has the ability to do so. The data is presented by Province and it is for 2016 notifications and 2014 outcomes as presented by the NDOH.

DR-TB notifications Jan-Dec 2016 by Province

Table 18: DR-TB notifications Jan-Dec 2016 by Province

Province	RR Initiation Rate Jan-Dec 2016		
	RR Patients	RR initiated	RR Initiation Rate
Eastern Cape	2 542	2 089	82.2%
Free State	586	475	81.1%
Gauteng	2 116	1 487	70.3%
KwaZulu-Natal	4 087	3 296	80.6%
Limpopo	546	428	78.4%
Mpumalanga	1 049	910	86.7%
North West	760	628	82.6%
Northern Cape	417	449	107.7%
Western Cape	1 681	1 573	93.6%
South Africa	13 784	11 335	82.2%

KwaZulu-Natal notified almost a third of the DR-TB cases followed by Eastern Cape with 18% of the notifications. South Africa had a very high RR initiation rate of 82%. Gauteng had the least initiation rate of 70%.

Outcome data for the 2014 cohort by Province

Table 19: Outcome data for the 2014 cohort by Province

Province	MDR-TB Rx Outcomes 2014						
	MDR-TB Cohort	MDR-TB LTFU Rate	MDR-TB Death Rate	MDR-TB Rx Success Rate			
Eastern Cape	1 804	257 14.2%	535 29.7%	848 47.0%			
Free State	554	127 22.9%	142 25.6%	234 42.2%			
Gauteng	1 339	235 17.6%	258 19.3%	656 49.0%			
KwaZulu-Natal	4 010	731 18.2%	714 17.8%	2 391 59.6%			
Limpopo	490	112 22.9%	80 16.3%	263 53.7%			
Mpumalanga	1 090	151 13.9%	300 27.5%	585 53.7%			
North West	698	77 11.0%	170 24.4%	372 53.3%			
Northern Cape	334	73 21.9%	106 31.7%	125 37.4%			
Western Cape	1709	547 32.0%	264 15.4%	708 41.4%			
South Africa	12 028	2 310 19.2%	2 569 21.4%	6 182 51.4%			

The treatment outcomes for the 2014 cohort is 51.4%; a slight improvement from the 48% treatment success for the 2013 cohort. North West reported the least treatment success rate at 37.4% while KZN reported the highest at 59.6%. The loss to follow up is worryingly high at 19.2%. Western Cape reported the highest LTFU rate of 32%.

4 SMALL GRANTS

During the previous year, a request for applications (RFA) for funding for community and national NGOs was released, and more than 300 organizations submitted their applications for funding to improve management of TB at community level. Twenty-five NGOs were pre-selected for final consideration. By the end of September 2017, 20 NGOs had been confirmed for funding by the project. Seven more NGOs will start activities in October 2017. Four applications received during the year were under review for funding. Two NGOs resigned from the project and their patients were taken over by other NGOs in the same areas

Project-funded NGOs provided individualized patient support to 2,378 DS-TB patients and 1,194 DR-TB patients. The number of patients supported by each grantee are shown in table below.

Table 20: Number of supported DS and DR-TB patient by province, district and NGO

Province	NGOs	Supported district	Supported patients			Total (province)
			DS-TB	DR-TB	Total (district)	
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	eThekweni	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

In addition to treatment adherence support, members of households where TB patients reside are educated on TB infection control practices, like strict adherence to treatment to reduce infectivity, and the wearing of masks to prevent cross-infection to family members and the community at large.

USAID TB South Africa staff conducted support visits to all NGOs as per the approved work plan. In-service training was provided to the NGOs to improve patient support. The project will continue to monitor the quality of care given to patients by the NGOs to improve the clinical outcomes of these patients. Regular support visits to the grantees will be continued through project staff to mentor the grantees so they meet their targets and contribute to the achievement of project goals.

Building capacities of local NGOs to manage TB at community level



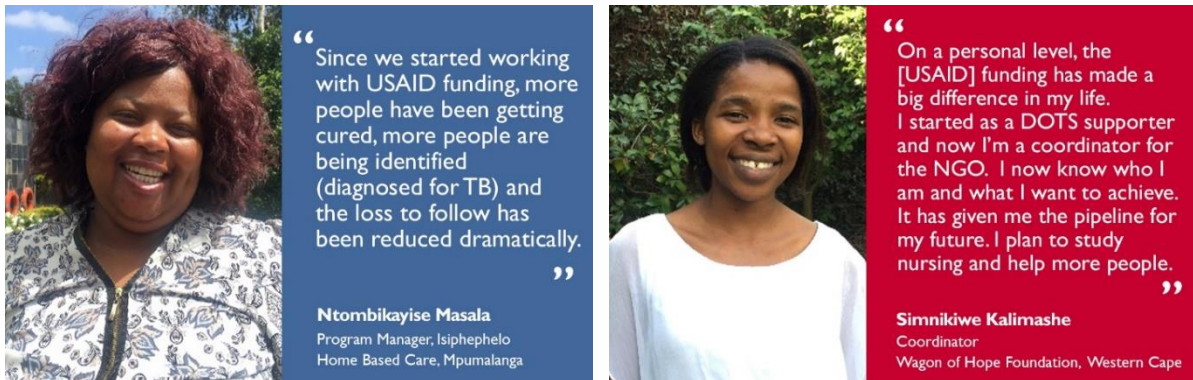
Figure 44: Group picture of participants at the national NGO workshop

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 representatives of the NDOH and of invited NGOs. The workshop served as a platform to build the capacities of community-based NGOs on the critical role they play in reducing TB infections in the communities they serve. Participants were also informed about the grant application process and financial management requirements to qualify for USAID TB South Africa Project funding. A total of 54 NGOs with experience in TB/HIV/homebased care from eight of the country's nine provinces (apart from the Northern Cape) participated in the workshop. The project, together with NDOH officials worked with the NGOs to guide them in areas to prioritize when developing their proposals. A request for applications will be sent out in October to solicit applications from these and other NGOs.



Figure 45: 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 via the USAID TB South Africa Project.



Figures 46 and 47: Staff members from two supported NGOs share their stories of how the project has impacted the TB patients in their communities and them personally.

5 KEY CHALLENGES

Strategic communication is critical to increasing patient and community knowledge and understanding about TB signs and symptoms, prevention and treatment. Provinces lack designated persons to support this component in the district management teams. The project worked with the NDOH in developing ACSM guidelines with the aim of strengthening the capacities of district managers on use communication as a tool in the fight against TB.

Infection prevention and control practices in facilities and amongst community healthcare workers remain a challenge. In facilities, training on infection control has been provided, while the FAST Strategy has been adopted in five provinces, although implementation is still slow. Community healthcare workers providing adherence support to TB patients on treatment are at higher risk of infection and are not currently monitored as closely as they should be. ConnecTB provides a platform that prompts the initiation of personal protection, with a central focus on patients as well as CHWs, emphasizing education on the importance of infection control. Towards improving personal protection among CHWs, training is provided to them on this topic. The project has also started procuring respirators for use by CHWs employed by project-funded NGOs.

The South African NDOH has committed to rolling out the nine-month regimen to manage DR-TB. The proposed regimen, although based on studies conducted in West Africa and Bangladesh, does not utilize South Africa's unique access to newer second line drugs. The nine-month regimen also uses a scheduled drug (section 27) that is still being reviewed by the Medical Controls Council of South Africa. This is further delaying the critical rollout of the nine-month drug regimen, which has been shown to improve treatment outcomes.

The roll out of the national integrated TB and HIV information systems (THIS) is also not being done in a uniform manner across all provinces. The partners who have been providing technical and funding support for the rollout have recently cited budgetary constraints, and districts have turned to the USAID TB South Africa Project for assistance. Although the intervention is in the current project work plan, schedules will need to be adjusted to accommodate this important initiative, based on requests received.

Although the project's access to TB data (DS and DR-TB) has improved during the year under review, this aspect is still a challenge at times. The project needs access to up-to-date information to design interventions based on correct data. The project will continue to work closely with the DOH to improve its access to relevant TB data.

Although identifying and awarding grants to NGOs improved during the year, targets in the work plan were not reached. The Small Grants component of the project continues to evaluate prospective NGOs for funding, a process that is hampered by the lack of NGOs in some supported districts, where there is critical need for ongoing support on the ground. The NGO workshop hosted in quarter 4 was in an effort to build the capacities of interested NGOs in writing strong proposal and in the management of TB. This, it is hoped, will increase the pool of potential grantees for funding, and improve the quality of proposals received and implementation strategies devised.

The absence of a final national policy on occupational TB and HIV is delaying the development and implementation of a comprehensive approach to addressing TB among HCWs, including

among community caregivers. The lack of normative national guidance on occupational TB among CHCWs requires that efforts to address this be carefully thought and implemented.

6 PLANS FOR NEXT YEAR

While the broad objectives of the project remain the same, in Year 2 project staff will implement a more focused approach to intensify efforts towards achieving the 90-90-90-90 TB targets. The targets aim to ensure that 90 percent are screened, 90 percent tested, 90 percent of those diagnosed are started on treatment, and 90 percent treatment success is achieved. This strategic focus is in alignment with South Africa's NSP (2017-2022), the USG Global TB Strategy, the post-2015 WHO Stop TB Strategy and the Sustainable Development Goals (SDGs). Towards this end, the project will focus on implementing the following activities:

- Disseminate the project-developed Strategy on Mainstreaming Gender in Tuberculosis Management to ensure that the TB management needs of women and men are taken into consideration at all levels of project implementation.
- Continue to implement a patient-centered interpersonal communications and counselling (IPC/C) package of interventions for both patients and caregivers aimed at improving patient diagnosis, retention in care and treatment adherence.
- Conceptualize and develop a targeted mass media campaign to improve TB awareness amongst key populations (e.g. in migrants, hard-to-reach populations, healthcare workers, pregnant women, children, DR-TB patients and people with diabetes).
- Continue to support leadership in ensuring strategic profiling of TB issues through jointly hosting community dialogues and entering collaborative agreements with TB ambassadors and political, community, traditional and religious leaders at various levels.
- Implement an IPC strategy in homes of identified DR/DS-TB index patients through the NGO program in all supported districts
- Improve care processes through implementation of QI strategies focused on increasing the effectiveness and efficiency of TB program management.
 - Focus will be on rapid and targeted patient identification, use of new diagnostic assays in health facilities and strengthened operational research to improve the evidence base to close gaps along the TB Care Cascade.
- Implement the DR-TB patient-centered package of care as part of the USG NAP to improve access and quality of care for DR-TB patients.
- Coordinate training requirements of HCWs with RTCs in all supported provinces.
- Continue to support NDOH to build monitoring and evaluation (M&E) capacities by conducting training on TB Care Cascade analysis at facility and district levels, outside project-supported facilities
- Expand the use of innovative tools, including mobile health (mHealth) platforms to further improve data-based planning and management. Efforts will focus on identifying high burden TB areas across the project's supported districts, and implementing targeted interventions where they are needed the most.
- Expand the NGO Network Model to all supported districts. Expand use of ConnecTB with WBOTs linking them to local health facilities.

- Strengthen systems of care and establish multi-sectoral partnerships for key populations, with a focus on farm workers, miners, contacts of TB patients, men in general, pregnant women, children, healthcare workers, and other groups. Revive the cascade model of community dialogues to link all relevant stakeholders and role players in communities to address TB in more coordinated ways. Enhance and roll-out the TB in Schools Initiative. Develop interventions to address TB in ‘provincial migrant workers’, which impact death rates and loss to follow-up rates in specific communities.
- 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 90-90-90-90 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 and World TB day commemorative activities
- 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.

7 ANNEXURES

Annex I: Work plan progress



TBSAP WORKPLAN
PROGRESS FY16-17.)

Annex II: PMP indicators

Performance Monitoring, Evaluation and Learning Plan

January – Dec 2016

Note: Outcome data for DS TB is for the period Jan-Dec 2015 for ETR data, outcome data for the DR TB is for the period Jan-Dec 2014. There is no Data for supported facilities for the period Jan-Dec 2016 as these had not been decided on. This data is available from April 2017 data.

Indicators	Indicator Definition and Unit of Measure	Data Source/ Frequency	Disaggregation	Person Responsible	Baseline (Year) 2015	Target FY 2021	Actual 2016 calendar year
TB Incidence (WHO 2016 report)	Number of new and relapse cases of TB (all forms) estimated to occur every year/Total Population, per 100,000	Annual, WHO estimates (2016 report)	Age, Gender, HIV Status	MEL	834*		0-14=61 >14=774 M=483 F=350 HIV+=473 All=833

Indicators	Indicator Definition and Unit of Measure	Data Source/ Frequency	Disaggregation	Person Responsible	Baseline (Year) 2015	Target FY 2021	Actual 2016 calendar year
TB client successfully completed treatment	Proportion All TB clients who completed treatment; this includes clients who were cured and those without proof of cure at the end of the treatment period (Treatment Success Rate) at project supported districts/Total number TB registered in the cohort	Quarterly – Cohort analysis - All Project sites Compare with ETR data	District/Province	Clinical Team with Provincial and District Coordinators	78%	90%**	SF
							82.4% ETR
TB client lost to follow-up	All TB clients who were initiated on treatment but were lost to follow-up during TB treatment/ Total number TB registered in the cohort	Quarterly – Cohort analysis - All Project sites Compare with ETR data	District/Province	Clinical Team with Provincial and District Coordinators	TBD By province/district	Less than 5%	% SF
							6.7% ETR
TB client death	All TB clients started on treatment but died during the treatment period/ Total number TB registered in the cohort	Quarterly – Cohort analysis - All Project sites Compare with ETR data	District/Province	Clinical Team with Provincial and District Coordinators	TBD By province/district	Less than 5%	SF
							6.5%
DR TB treatment success (2014 Cohort)	Confirmed DR-TB client successfully (cured+ completed) treated at the end of the treatment period / Number of RR GXP cases that were initiated on treatment	Quarterly , Cohort Analysis – all project sites. Compare with EDR data for facility/district	Male/Female	DR Advisor with Provincial/District Coordinators	49%*TBD By province/district	55 %	
							53.7 % EDR

Indicators	Indicator Definition and Unit of Measure	Data Source/ Frequency	Disaggregation	Person Responsible	Baseline (Year) 2015	Target FY 2021	Actual 2016 calendar year
DR TB treatment failure (2014 Cohort)	Number of DR TB patients who failed treatment / Number of RR GXP cases that were initiated on treatment	Quarterly , Cohort Analysis for All project sites Compare with EDR data for facility/district	Male/Female	DR Advisor with Provincial/District Coordinators	TBD	<5%	
							1.9% EDR
TB DR death (2014 Cohort)	Confirmed DR-TB client who died during treatment period / Number of new culture positive cases that were put on treatment	Quarterly – cohort analysis for All project sites Compare with EDR data for facility/district	Male/Female	DR Advisor with Provincial/District Coordinators	TBD	TBD	
							23.8 % EDR
TB DR client lost to follow-up (2014 Cohort)	Confirmed DR-TB client who treatment is interrupted for ≥ 2 consecutive months during the treatment period	Quarterly - cohort analysis for all project sites Compare with EDR data for facility/district	Male/Female	DR Advisor with Provincial/District Coordinators	TBD	Less than 5%	
							9% EDR
Screen for TB symptoms (April-June 2017)	Total number of people screened for TB / Total number of clinic attendees	Monthly , Clinic registers	Age (<5 and ≥ 5)	Clinical Team with Provincial and District Coordinators	TBD	90%	74%

Indicators	Indicator Definition and Unit of Measure	Data Source/ Frequency	Disaggregation	Person Responsible	Baseline (Year) 2015	Target FY 2021	Actual 2016 calendar year
TB symptomatic client with sputum sent (April-June 2017)	TB symptomatic client who had sputum collected and sent for TB testing total number of presumptive TB cases identified	Monthly, Clinic Records	Age (<5 and ≥5)	Clinical Team with Provincial and District Coordinators	TBD	100%	85%
TB symptomatic client test positive (April-June 2017)	Client who had at least one sputum specimen sent for TB testing and the result was positive/Number of presumptive TB cases identified	Monthly, Clinic Records	Male/Female Age (<5 and ≥5)	Clinical Team with Provincial and District Coordinators	TBD	11%-15% (WHO)	6%
TB client start on treatment (April-June 2017)	Patients who after being tested for TB is confirmed as a pulmonary TB and is starting treatment. / Total number of TB cases diagnosed	Monthly, Clinic records	Male/Female Age (<5 and ≥5)	Clinical Team with Provincial and District Coordinators	TBD		100%
Number of RR TB cases diagnosed (Jan-Mar 2017)	Total number of cases diagnosed with RR/TB	Monthly from all project supported sites. Monthly Clinic Registers	Male/Female Age (<5 and ≥5)	DR Advisor with Provincial and District Coordinators			1933 (Supported districts only)

Indicators	Indicator Definition and Unit of Measure	Data Source/ Frequency	Disaggregation	Person Responsible	Baseline (Year) 2015	Target FY 2021	Actual 2016 calendar year
DR TB confirmed client initiated on treatment (Jan-Mar 2017)	Number of RR TB patients initiated on treatment as per national guidelines/Total number of RR TB patients diagnosed	Monthly from all project supported sites. (EDR Report) Quarterly Project will also report data on all treatment initiation – data from NDOH.	Male/Female Age (<5 and ≥5)	DR Advisor with Provincial and District Coordinators	63%	100%** *	1933/5255= 37%
Proportion of TB clients with known HIV status (Jan-Dec 2016)	Number of TB cases tested for HIV (new and known status)/ Total number of TB cases registered	Quarterly , All project sites Compare with ETR data	District/Province	Clinical Team with Provincial and District Coordinators	TBD By province/ district	90%	SF
							95.8% ETR
Proportion of TB clients known HIV-positive (Jan-Dec 2016)	All TB clients known to be HIV-positive in the case-finding period (This includes TB clients already known to be HIV positive and those who test HIV-positive during TB treatment)	Quarterly , All project sites Compare with ETR data	District/Province	Clinical Team with Provincial and District Coordinators	TBD By province/ district		SF
							61.3%
Proportion of TB/HIV co-infected clients on ART	HIV-positive TB client on ART in the case finding reporting period/ total number of HIV positive TB patients	Quarterly , All project sites Compare with ETR data	District, Province	Clinical Team with Provincial and District Coordinators	79%	100%**	SF
							89.4% ETR

Indicators	Indicator Definition and Unit of Measure	Data Source/ Frequency	Disaggregation	Person Responsible	Baseline (Year) 2015	Target FY 2021	Actual 2016 calendar year
HIV-positive client screened for TB	HIV-positive clients who have been screened for TB after positive HIV test / Total number of HIV positive clients	Quarterly DHIS, PEFAR IPs	District/ Province	Clinical Team with Provincial and District Coordinators	TBD	90%	
Number of people reached with public awareness activities (Oct_16-Sep_17)	Total number of people reached by public campaigns with targeted messages	Monthly Project Reports	Type (Mass media, Social Media, Community Activations (Gender)	Strategic Communication Team with Provincial and District Coordinators	TBD	TBD	17,502,192
Screen for TB symptoms	Total number of people screened for TB at community	Monthly Project reports	Male/ Female	Strategic Communication Team with Provincial and District Coordinators	TBD		53588
Proportion of Presumptive TB cases identified	Number of presumptive TB cases identified (any symptom)/total number of people screened	Monthly Project reports	Male/ Female	Strategic Communication Team with Provincial and District Coordinators	TBD	35%	5450/53588=10%
TB symptomatic client with sputum sent	TB symptomatic client who had sputum collected and sent for TB testing/ total number of presumptive TB cases identified	Monthly Project reports	Male/ Female	Strategic Communication Team with Provincial and	TBD	100%	2718/5450=50%

Indicators	Indicator Definition and Unit of Measure	Data Source/ Frequency	Disaggregation	Person Responsible	Baseline (Year) 2015	Target FY 2021	Actual 2016 calendar year
				District Coordinators			
TB symptomatic client test positive	Client who had at least one sputum specimen sent for TB testing and the result was positive/Number of presumptive TB cases identified	Monthly Project reports	Male/ Female	Strategic Communication Team with Provincial and District Coordinators	TBD	11%-15% (WHO)	366/2718=13%
TB client start on treatment	Patients who after being tested for TB is confirmed as a pulmonary TB and is starting treatment. / Total number of TB cases diagnosed	Monthly Project reports	Male/ Female	Strategic Communication Team with Provincial and District Coordinators			357/366=98% (on DS Treatment)

Annex III: 90-90-90 Progress by quarter and by supported district



TBSAP 90-90-90
table by district Jan-

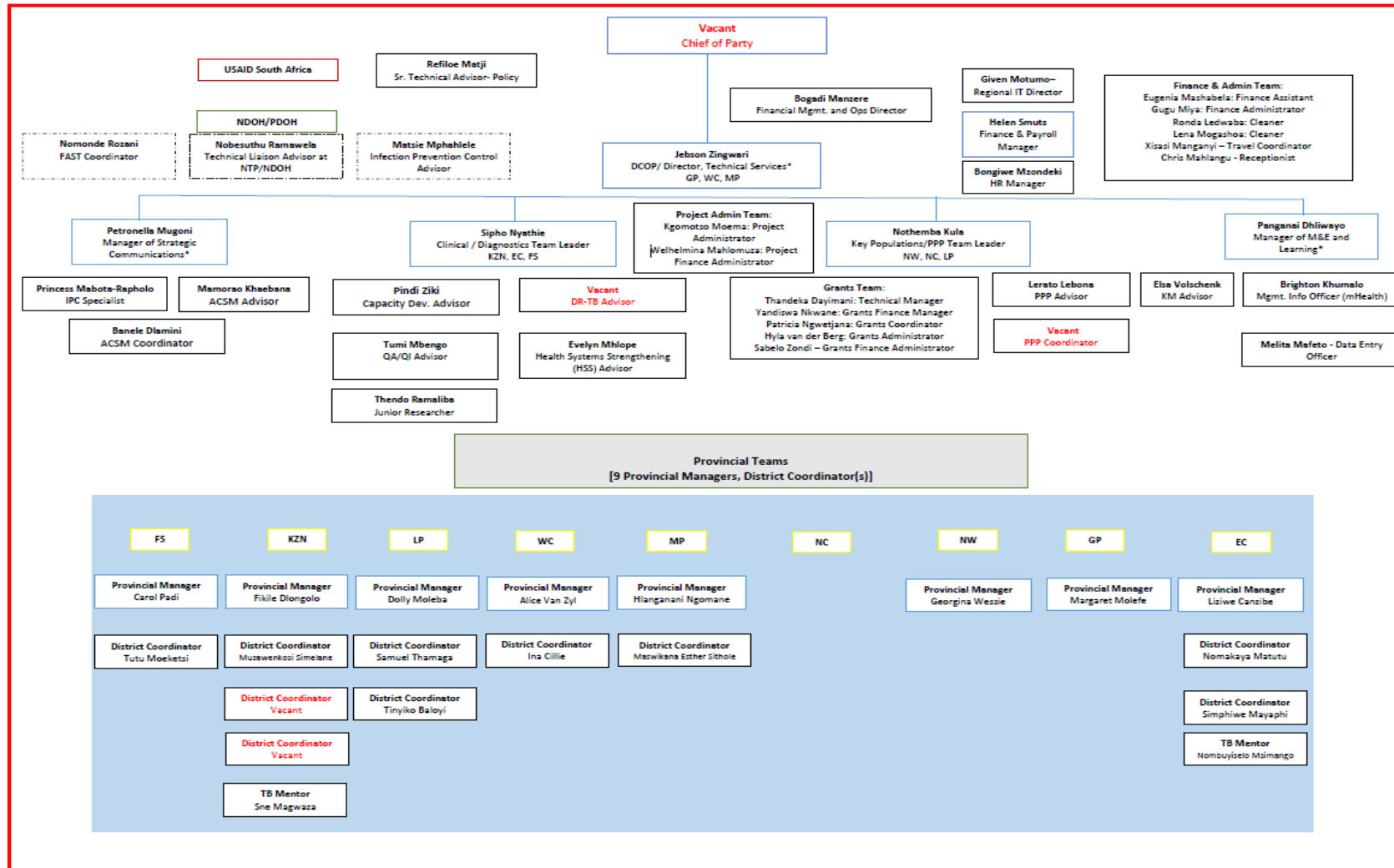
Annex IV: 2016 Annual TB data for USAID TB South Africa Project districts



2016 Annual TB
data for USAID TB Sc

Annex V: USAID TB South Africa Project organizational chart

Organizational Chart- URC TB South Africa Project 2017





FY17 Annual Report
Org Chart Updated

Original Organogram	Revised Title	Current Personnel
Chief of Party		TBD, Refiloe Matji Acting, Applicant pending submission for USAID approval
Director, Technical Services/DCoP		Jebson Zingwari
Manager of Strategic Communications (MSC)		Petronella Mugoni
Financial Management & Operations Manager	Financial Management & Operations Director	Bogadi Manzere
Manager of Monitoring, Evaluation & Learning		Panganai Dhlwayo
TB/HIV Program Implementation Team Leader	Clinical/Diagnostics Team Leader	Sipho Nyathie
Key Populations/PPP Team Leader		Nothemba Kula
Senior Technical Advisor - Policy		Refiloe Matji
Technical Liaison Advisor at NTP/NDOH		Nobesuthu Ramawela
Interpersonal Communications Specialist		Princess Mabota-Rapholo
Infection Prevention and Control Advisor		Matsie Mphahlele
Management Systems Advisor	Health Systems Strengthening (HSS) Advisor	Evelyn Mhlope
DR TB Advisor		Vacant
QA/QI Advisor		Tumi Mbengo
Capacity Development Advisor		Pindi Ziki
PHC/NHI Advisor		<i>Removed Position</i>
<i>Linkages Coordinator</i>		<i>Removed Position</i>
PPP Specialist	PPP Advisor	Lerato Lebona
Data Entry Officer		Melita Mafeto
mHealth Specialist	Management Information Officer (mHealth)	Brighton Khumalo
Knowledge Management Officer	Knowledge Management Advisor	Elsa Volschenk
Director of Grants Administration	Grants Finance Manager	Yandiswa Nkwane
Grants Technical Coordinator	Grants Technical Manager	Thandeka Dayimani
Grants Finance/Admin. Coordinator	Grants Coordinator	Patricia Ngwetjana
Grants Finance/Admin. Coordinator	Grants Administrator	Hyla van der Berg
Finance Manager	Finance & Payroll Manager	Helen Smuts
HR Manager		Bongiwe Mzondeki
Finance/HR Assistant	Finance Assistant	Eugenia Mashabela
Network Administrator	Regional IT Director	Given Motumo
Project Administrator	Finance Administrator	Gugu Miya
Project Administrator		Kgomotso Moema
Admin. Assistant/Finance	Project Finance Administrator	Welhelmina Mahlomouza
Admin. Assistant/Travel Coordinator	Travel Coordinator	Xisasi Manganyi
Admin. Assistant/Receptionist	Receptionist	Chris Mahlangu

Added Positions	
FAST Coordinator	Nomonde Rozani
ACSM Advisor	Mamorao Khaebana
ACSM Coordinator	Banele Dlamini
Junior Researcher	Thendo Ramaliba
Grants Finance Administrator	Sabelo Zondi
PPP Coordinator	Vacant
TB Mentor in KZN	Sne Magwaza
TB Mentor in EC	Nombuyiselo Msimango

Annex VI: USAID TB South Africa Project: Addressing drug-resistant TB by implementing the USG National Action Plan

Background

On December 22, 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 US Government's (USG) domestic and global tuberculosis (TB) strategies. It will also contribute to the success of existing strategies to eliminate MDR-TB.

Globally, there were an estimated 580,000 (range, 520,000 to 640,000) incident cases of MDR-TB/*Rifampicin* resistant (RR) TB in 2015, with cases of MDR-TB accounting for 83% of the total. South Africa is amongst the top 10 countries with the highest global prevalence of MDR-TB. Implementation of the NAP will accelerate access to life-saving MDR-TB diagnosis and treatment, while improving the quality of TB and MDR-TB programs to enhance both prevention and care.

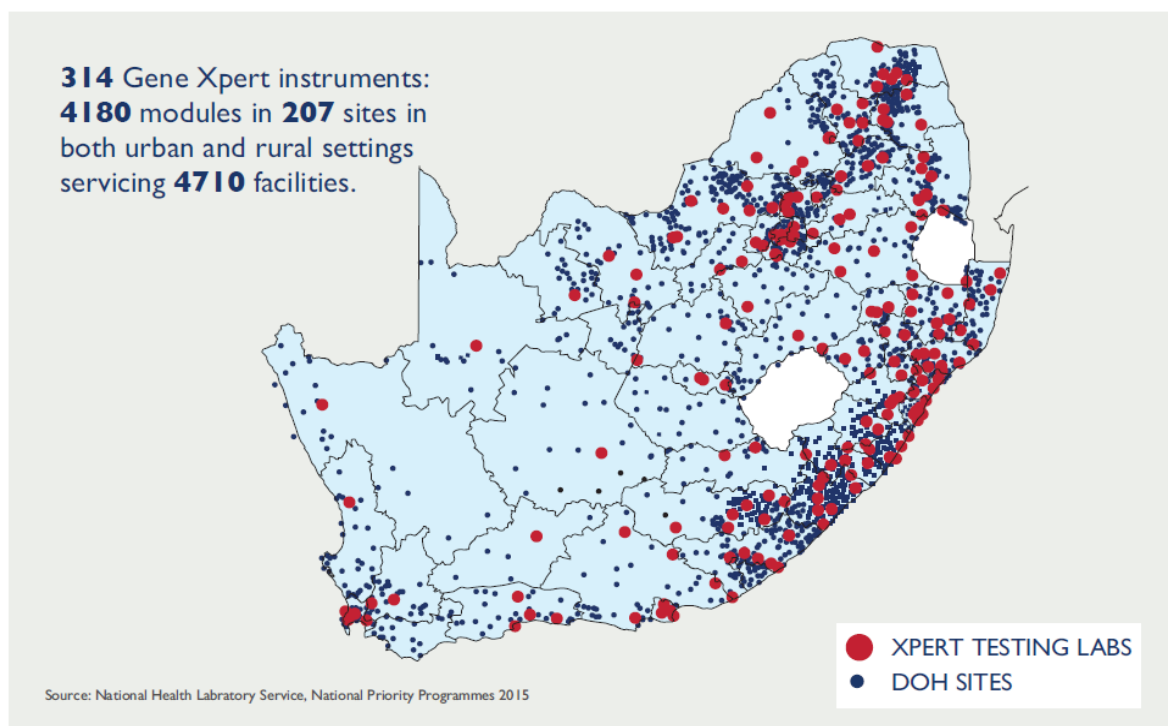
The USAID Tuberculosis South Africa Project implements activities in line with Goal 2 of the NAP, which aims to improve international capacity and collaboration to combat MDR-TB. Activities under Goal 2 include:

- *Strengthening the capacity of national TB laboratory networks to diagnose TB and MDR-TB*
- *Expanding and strengthening national MDR-TB care and treatment capacity to optimize the use of current and novel regimens*
- *Strengthening TB/MDR-TB surveillance and monitoring systems*
- *Improving access to high-quality, patient-centred MDR-TB services*
- *Enhancing adherence to TB and MDR-TB treatment*

Strengthening the capacity of national TB laboratory networks

South Africa has the largest GeneXpert program globally, with GeneXpert being the primary diagnostic tool used for all presumptive TB cases.

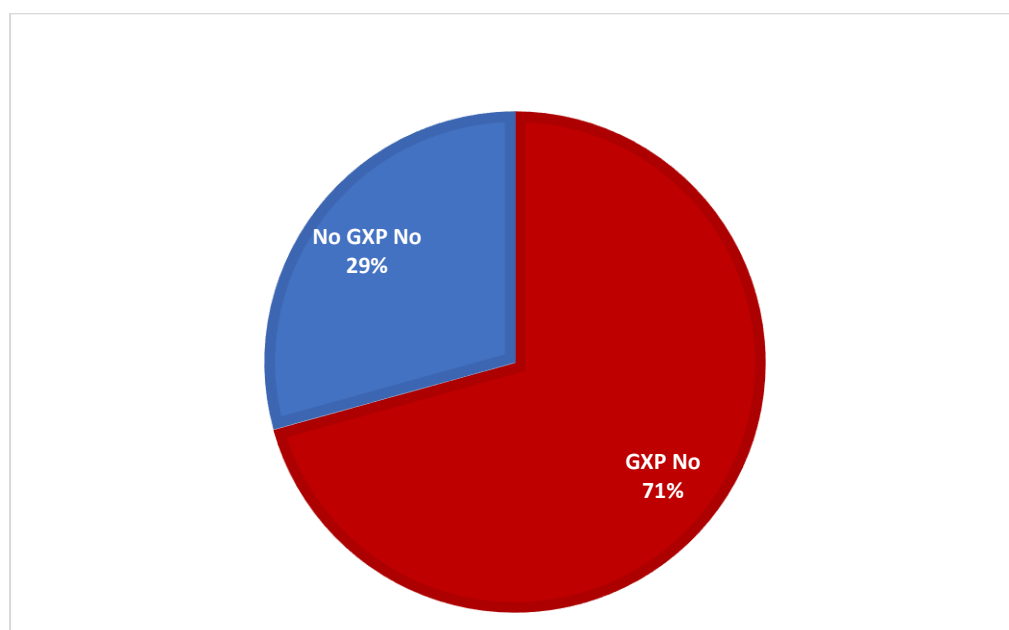
Figure 1: South African laboratory network



The USAID TB South Africa Project prioritises supporting the country to scale-up implementation of the diagnostic algorithm to ensure that all drug-resistant TB (DR-TB) patients are diagnosed at their first encounter with the health system.

In 2015 South Africa procured 51% of all GeneXpert cartridges globally, and in 2016 the country assessed 71% of presumptive TB patients using GeneXpert as the primary diagnostic tool.

Graph 1: Proportion of TB patients utilizing GeneXpert for diagnosis



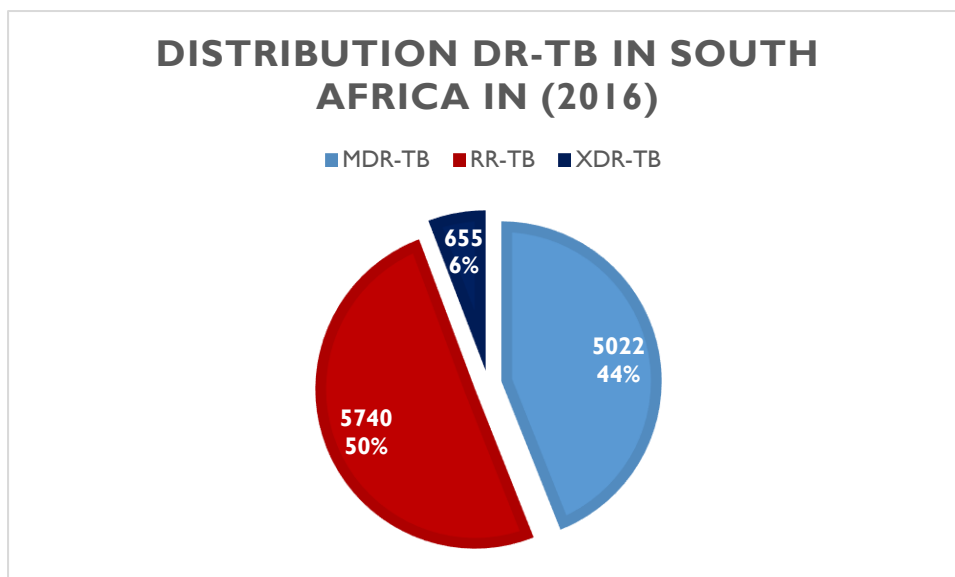
Expanding and strengthening national multidrug-resistant care and treatment capacity

The USAID TB South Africa Project is a member of the National Technical Working Group leading the development of DR-TB treatment guidelines and use of novel treatment regimens. Whilst South Africa has not yet published its DR-TB treatment guidelines, recommendations have already been submitted to the South African National Department of Health (NDoH).

The project has trained over 380 healthcare workers (HCWs) on DR-TB management and treatment regimens, which include the new nine-month regimen and newer second-line regimen. Further, South Africa has initiated 6,074 patients on *Bedaquiline*-based regimens. The country initiates approximately 12,000 patients on DR-TB treatment, and the USAID TB South Africa Project contributes to treatment success through continuous quality assurance initiatives, mainly achieved through undertaking chart audits and data verification exercises.

The graph below illustrates the number of patients on DR-TB treatment nationally.

Graph 2: Types of DR-TB in South Africa (2016)



Strengthening tuberculosis / multidrug-resistant tuberculosis surveillance and monitoring systems

The NDoH appointed the National Institute of Communicable Disease (NICD) to undertake TB surveillance and provide technical expertise to strengthen TB/MDR-TB surveillance and monitoring systems nationally.

The USAID TB South Africa Project, through its membership in the National Technical Working Group, has partnered with NICD to:

- Utilize fourth generation QuantiFERON (an assay to test for latent TB) to establish prevalence of latent TB amongst healthcare workers. A research protocol has already

been developed and submitted to the University of Witwatersrand for ethical clearance and approval. Pilot sites in Gauteng and Eastern Cape provinces are earmarked for implementation.

- Using existing data, estimate the burden of TB per district in all districts in South Africa, to accurately measure impact of interventions based on 90-90-90 global TB targets. The Technical Working Groups has calculated an estimated burden of pulmonary TB for all districts in South Africa. These estimates will be used to measure the impact of program activities.

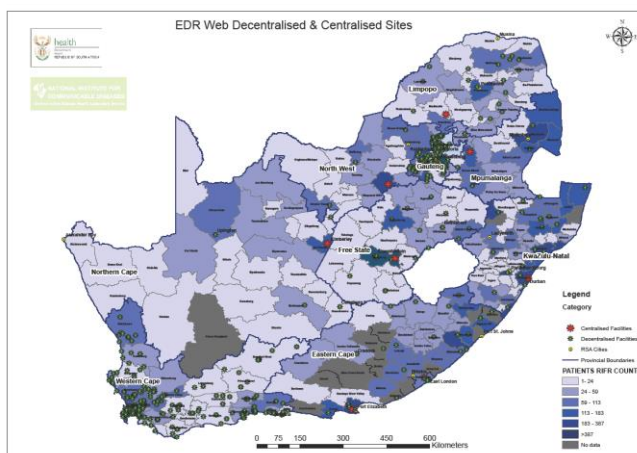
Improve access to high-quality, patient-centred multidrug-resistant TB services

Treatment success for people with DR-TB is unacceptably low, at approximately 50% globally. Studies indicate that important barriers to completing DR-TB treatment include emotional and physical isolation; stigma and discrimination experienced in communities and the health system; financial strain; side effects of medications; mental illness and substance use; other co-morbid conditions, especially HIV infection; lack of understanding of the disease and treatment process; and poor access to health services.

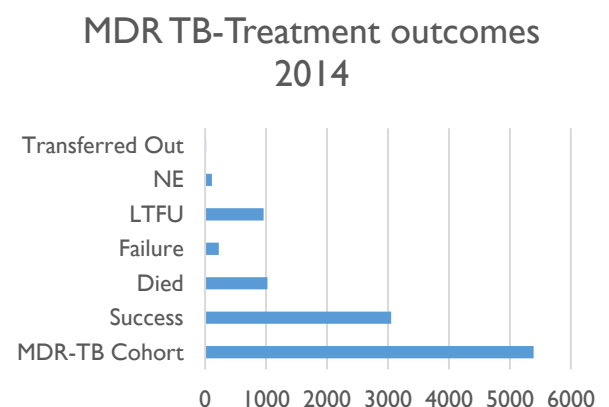
To address some of these challenges, the USAID TB South Africa Project is leading the effort to reach global consensus on a package of essential DR-TB patient-centred services, and to translate that consensus into practical and flexible tools that national programs and implementers, providers and patients, and donors and ministries can use to help each DR-TB patient and improve cure rates.

South Africa is one of four countries (including Bangladesh, China and Ukraine) leading the development and implementation of a patient-centered package of care. While South Africa has already made tremendous strides in improving access to DR-TB treatment and care, in part by increasing the number of treatment sites from 17 in 2011 to 664 in 2016, at 57% the treatment success rate for MDR-TB in the country is still unacceptably low.

Figure 2: Distribution of decentralized DR-TB sites



Graph 3: Treatment performance of MDR-TB program



South Africa has identified three pilot sites for implementation of the DR-TB service package, in Eastern Cape, Free State and Limpopo provinces. These three sites will enroll up to 200 MDR-TB patients for evaluation. This process will use innovative solutions, including: the USAID TB South Africa-developed ConnectTB mobile health (mHealth) application (app), which is used for patient retention and treatment support; risk assessments implemented through another application - IPConnect; web-based infection prevention and control (IPC) assessment tool; and treatment adherence support provided through local community-based non-governmental organizations (NGOs) funded by the project.

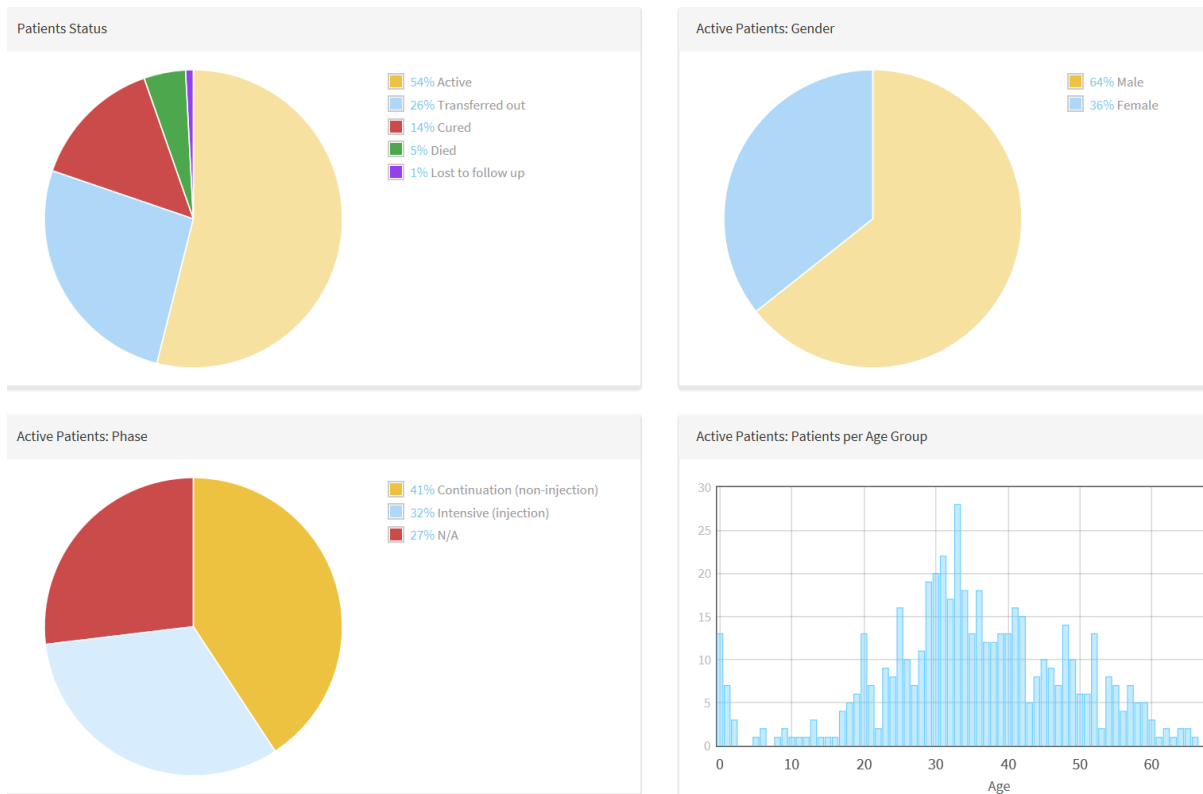
The USAID TB South Africa Project supported Bangladesh and Ukraine by sharing mHealth packages to strengthen capacities to conduct patient evaluations and develop and disseminate patient support materials. Results of the evaluation of the service package are anticipated in May 2018.

Enhancing adherence to tuberculosis and multidrug-resistant tuberculosis treatment

The USAID TB South Africa Project developed and currently implements an adherence support tool used with clients supported by funded NGOs. The ConnectTB app (www.connectb.org.za) is an online platform downloadable to a smart phone and most useful for community healthcare workers when providing treatment adherence support. Some functions of the app include:

- Geo-location of patient adherence visits
- Ability to record patient information to ensure treatment validation
- Prompting for side effects
- Prompting on contact management
- Real-time monitoring and reporting

To date, 914 MDR-TB patients at various stages of MDR-TB treatment have been linked to the ConnectTB platform. This number constitutes approximately 20% of MDR-TB cases initiated on treatment in 2016.



Graph 4: ConnectTB report on TB/DR-TB patients supported by USAID TB South Africa Project

Retention of patients on the ConnectTB platform is impressive, with only 1% recorded lost to follow-up (LTFU) and 26% transferred out. Due to prompting for side effects, an increased number of clients with side effects are identified and referred for hospitalisation (they are then captured as transferred out). To address this gap in recording, the project is implementing a hospital module.

The project also supports patient management through adherence materials delivered directly to supported districts and through supported NGOs. The project develops adherence materials, and has distributed over 160,000 copies to implementing facilities.

Current performance indicators for DR-TB indicate that adherence remains a huge challenge, requiring further scale-up of community-based support, through NGOs funded by the project, and capacity building on adherence approaches for the benefit of community healthcare workers to ensure sustainability.

Table 1. All DR-TB treatment outcomes in USAID supported

USAID supported districts DR-TB performance				
Province	Death rate	LTFU	Not Evaluated	Treatment Success
EC	29.3	9.5	6.5	51.8
FS	14.4	10.78	2	22.1
GP	18.7	16.5	7.3	50
KZN	8.6	3.2	0	36.7
LP	5.3	5.7	0.3	30
MP	35	13.2	0.2	49.9
NW	25	10.6	0	63.5
NC	30.9	19.5	0.8	43.9
WC	15.7	28.25	1.7	52

Table 2. All DR-TB treatment outcomes in USAID supported

Non USAID supported districts DR-TB performance				
Death rate	LTFU	Not Evaluated	Treatment Success	
34.5	11	0	33.6	
8.6	9.4	0.5	22.1	
25.6	23.9	4.9	63.3	
9.3	11.2	0.8	49.4	
0	0	0	0	
22.8	11.7	0	63.2	
10.1	3.9	0.6	18.2	
6.5	7	0	11	
20.7	32.7	1.7	40.8	

Table 3: All DR-TB treatment outcomes

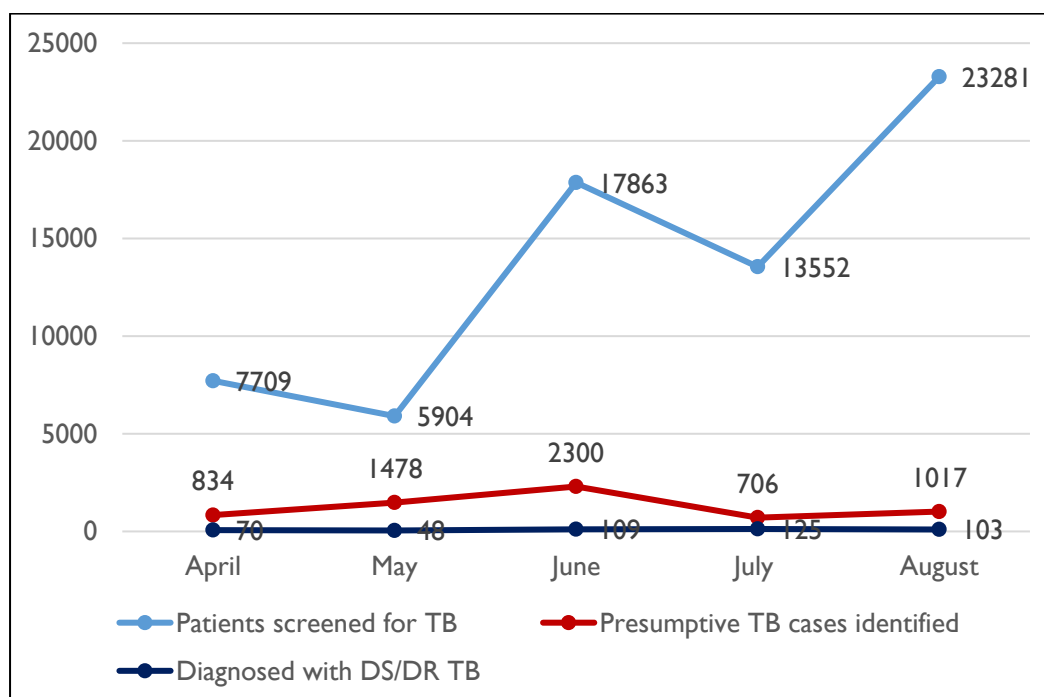
National DR-TB performance				
Province	Death rate	LTFU	Not Evaluated	Treatment Success
EC	31.8	15	0.9	48.3
FS	26.8	24.9	2.7	44.4
GP	21.5	19.7	6.5	50.3
KZN	22.1	20.1	0.8	56.1
LP	15.9	17.2	1	59.9
MP	30.4	14.2	0.3	52.9
NW	29.3	11.6	1.3	56.5
NC	29.5	22	0.6	43.9
WC	17.4	34.2	3.6	41.8

Preventing the transmission of tuberculosis and multidrug-resistant TB in healthcare facilities

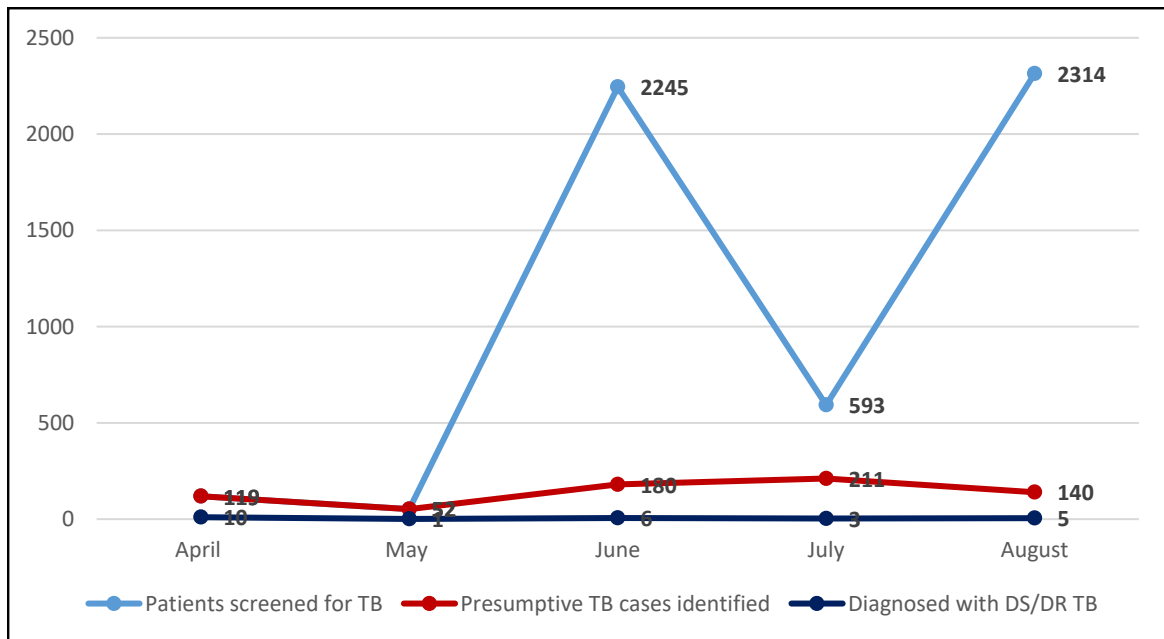
To improve rapid identification of TB and MDR-TB patients at health facility level, the USAID TB South Africa Project adopted and now implements the FAST Approach (**F**inding TB cases, **A**ctively screening, **S**eparating safely and **T**reating effectively). The Approach aims to improve protection of healthcare workers, patients and visitors to health facilities from acquiring TB, and ensure prompt and appropriate TB diagnosis and treatment. The FAST Approach is based on the idea that quick diagnosis of TB and effective treatment of the same are by far the most important components necessary to prevent the spread of TB, without which all other traditional approaches would be ineffective. The FAST Approach was developed in 2011 and included a general protocol and core package of materials, describing steps to be taken to introduce FAST in inpatient settings where the specific aim is to identify unsuspected MDR-TB among TB and chest disease clients in hospitals, and in outpatient settings targeting detection of unsuspected TB. The FAST implementation strategy requires consideration of the type and level of facility, organization of care, diagnostic processes and human resources.

The project introduced the FAST concept to 16 hospitals (1 academic and 15 district) in five provinces to demonstrate feasibility of implementation of the FAST Approach in South Africa. Between April and August 2017, the project screened 73,461 patients and diagnosed 451 DS-TB and 29 DR-TB cases by GeneXpert in both in- and outpatient departments.

Graph 5: Number of patients screened and presumptive TB cases identified in outpatient and casualty departments (April to August 2017)



Graph 6: Number of patients screened and presumptive TB cases identified in hospital wards (April to August 2017)



Based on lessons from pilot programs in South Africa, a localised implementation guide for FAST implementation is required to rollout the FAST Approach nationally.

Results from 15 hospitals effecting the Approach demonstrate feasibility in implementing it. While there is some differentiation in the proportion of clients screened for TB, with an average of 48% screened, it must be considered that these figures are from one year of implementation of a new concept.

The project also convened a national workshop with representatives from the health sector (including PEPFAR-funded partners) and all South Africa Department of Health provincial and district representatives. The USAID TB South Africa Project, in collaboration with the NDoH has developed an implementation standard operating procedure (SOP) to facilitate this roll-out (including reporting tools, risk assessments www.ip-connect.org.za and referral pathways for diagnosed clients).

The USAID TB South Africa Project supports the national roll-out of the FAST Approach to improve occupational health and safety at health facility level, and to ensure rapid and appropriate diagnosis and treatment of TB and DR-TB clients.

Annex VII: Annual financial reports and accruals