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TUBERCULOSIS SOUTH AFRICA PROJECT

USAID Tuberculosis South Africa Project

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Project Annual Report

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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
CO2	Carbon Dioxide
CPT	*Cotrimoxazole* Preventative Therapy
CQI	Continuous Quality Improvement
DM	Diabetes Mellitus
DOT	Directly Observed Treatment
DOTS	Directly Observed Treatment, Short Course
DR-TB	Drug-Resistant Tuberculosis
DSPs	District Support Partners
DS-TB	Drug-Susceptible Tuberculosis
DVE	Data Verification Exercise
ETR	Electronic Tuberculosis Register
FAST	**F**inding TB **A**ctively, **S**eparating safely, **T**reating effectively
PY03	Financial PY03
GXP	GeneXpert® MTB/RIF (Xpert)
HCT	HIV Counseling and Testing
HIV	Human Immunodeficiency Virus
ICSM	Integrated Clinical Services Management
IC	Infection Control
IEC	Information, Education and Communication
IPC	Infection Prevention and Control
IPCC	Interpersonal Communication and Counselling
IPT	*Isoniazid* Preventive Therapy
LDHF	Low-Dose High-Frequency
M&E	Monitoring and Evaluation
MDR-TB	Multi-Drug Resistant Tuberculosis
NDOH	National Department of Health
NGO	Non-Governmental Organization
NTP	National Tuberculosis Control Program

PEPFAR	United States President's Emergency Plan for AIDS Relief
PMDT	Programmatic Management of Drug-Resistant Tuberculosis
PPP	Public-Private Partnership
PTB	Pulmonary Tuberculosis
QI	Quality Improvement
QIP	Quality Improvement Plan
RTCs	Regional Training Centers
RR	*Rifampicin* Resistant
SCR	Smear Conversion Rate
SOP	Standard Operating Procedure
STI	Sexually Transmitted Infection
TAT	Turnaround Time
TB	Tuberculosis
TOT	Training of Trainers
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

With a total five-year (2016-2021) funding of $64,801,397, the United States Agency for International Development (USAID) Tuberculosis South Africa Project provides technical assistance to the Government of South Africa (GoSA) with the objectives of reducing the burden of tuberculosis (TB) infections, increasing sustainability of effective TB response systems, and improving care and treatment of vulnerable populations. By the end of Program Year Three (PY03), a total of $36,785,310.41 (57%) of the budget has been spent and the project is on track to achieve all the key milestones as shown below.

Indicator	*Baseline*	*Final Target (2021)*	*PY03 Target (2018)*	*Actual Achieved*		
				PY01	*PY02*	*PY03*
Treatment Success Rate for Drug Sensitive TB (%)	82	90	**87**	83	75	72
Treatment Success Rate for Drug Resistant TB (%)	54	75	**64**	53	68	75
Initiation of confirmed DRTB cases on appropriate treatment (%)	59	100	**84**	64	72	86
ART Coverage for TB/HIV co-infected patients (%)	91	90	**90**	86	85	88

Reduction in the TB Burden: The project's overall goal is to contribute towards the reduction of the burden of TB as per the South Africa's National Strategic Plan, 2017 from the baseline of 834/100,00 in 2016 to 700/100,000 by 2019 and 617/100,000 by 2021. As demonstrated in figure 1, by the end of PY03, South Africa is on track and has surpassed the anticipated targets estimated at 520/100,000 (38% reduction from the baseline) against an expected target of 700/100,000 by the end of 2019.

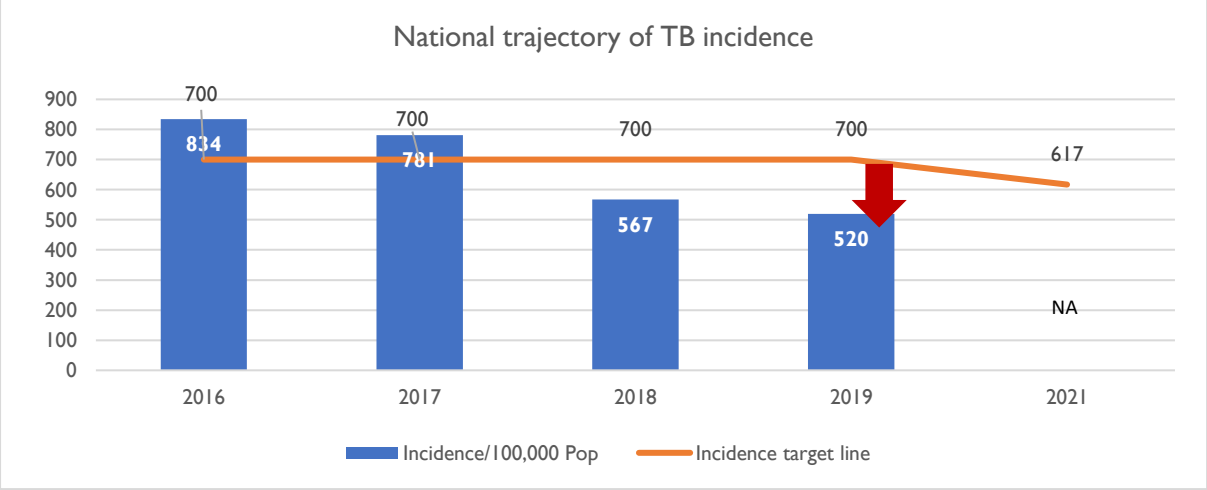


Figure 1: Projected National Trajectory of TB Incidence required to reach the Projects/Country Target by 2021 compared to current Incidence (source: South Africa's National Strategic Plan for HIV, TB and STIs 2017-2022 and WHO Global Tuberculosis reports 2016, 2017, 2018 and 2019)

TB screening rate: The TB screening rate in the 14 supported districts has increased progressively from a baseline of 69% to 82% in PY03, which represents achievement of 117% of the contractual target for 2018. The project moving forward will focus on the quality of screening at facility level which has remained suboptimal in some facilities. Thus, in PY04, the project will focus on intensified CQI and clinical systems mentorship interventions with the additional technical capacity proposed to USAID.

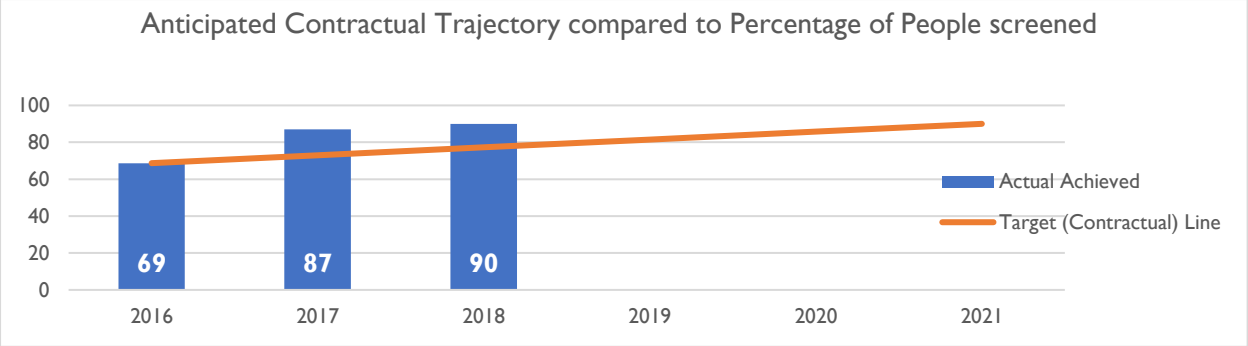


Figure 2: Anticipated Contractual Trajectory on Percentage of People screened for TB compared to achievememts in the 14 supported districts (source DHIS reports)

TB testing rate: The DS-TB testing rate has increased from the baseline of 84% to 88% in 2018; which represents an achievement of 102% above the anticipated contractual target of 86.5% for PY03.

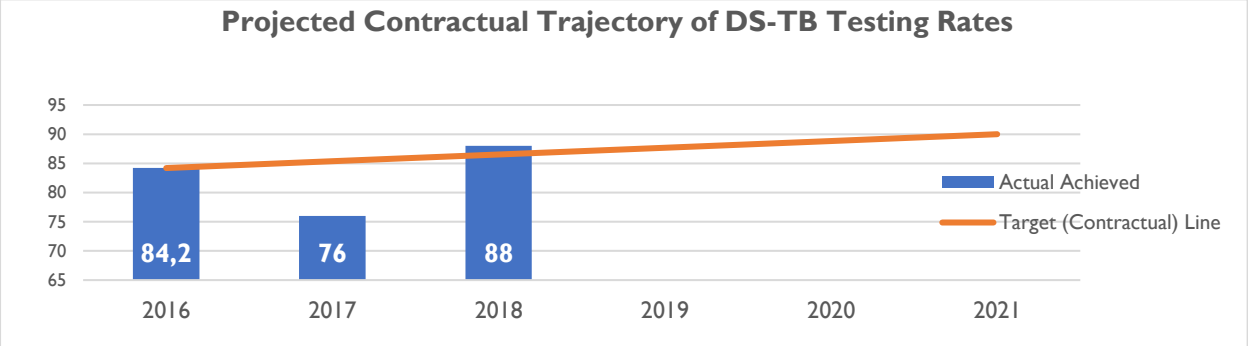


Figure 3: Percentage of DS-TB Testing Rates versus yearly target achievements, PY03 (source: DHIS)

Treatment Initiation: The treatment initiation Rate for DS-TB has been maintained at above the 90% target from baseline to PY03 and the current DS-TB treatment initiation rate is 97%, way above the anticipated target for 2018 as illustrated in figure 4.

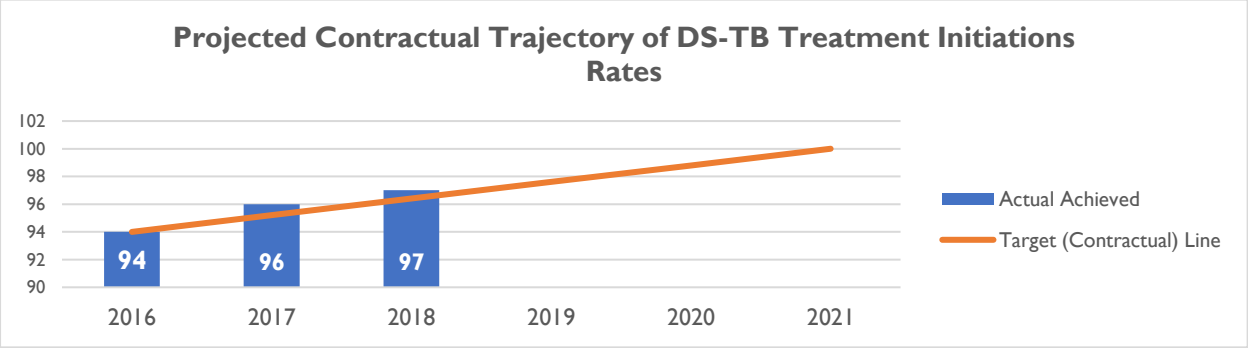


Figure 4: Projected Contractual Trajectory of DS-TB Treatment Initiations Rates required to reach 2021 Target compared to project's achievements, FY03 (source: DHIS)

Drug-resistant TB (DR-TB) treatment initiation rate: This has progressively increased from a baseline of 59% to 83.6% in PY03 which represents a 103% achievement against the anticipated contractual targets. Note, the cumulative number of DR-TB patients enrolled on

new drugs and regimens was *6,683 of which 4,930 were from the project supported districts representing 74%* of all the DR-TB patients enrolled on treatment nationally. With the continued support to the DR-TB decentralization process, the project target will be met in PY04.

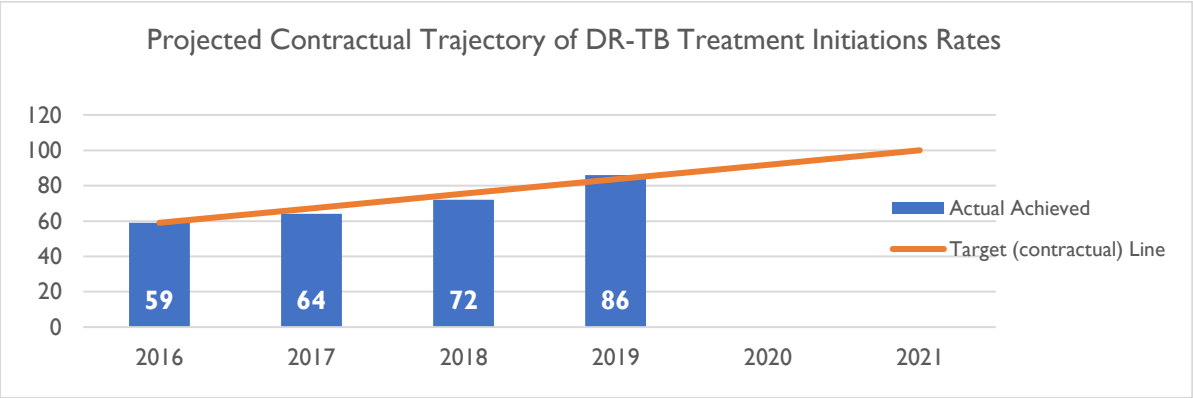


Figure 5: Projected Contractual Trajectory of DR-TB Treatment Initiations Rates required to reach 2021 Target (100%) compared to project's achievements, FY03 (source: DHIS)

DS-TB Treatment Success Rate: The Treatment Success Rate (TSR) for DS-TB in project-supported areas was 82% at baseline; however, this dropped to 72% in PY03. This drop is not peculiar to the project supported districts; similar trends were seen with the national data and has been attributed to data and systems errors following the introduction of the TB Module in TIER.Net. The project has embarked on a data clean-up exercise to cover all the districts to mitigate the challenges of TIER.NET.

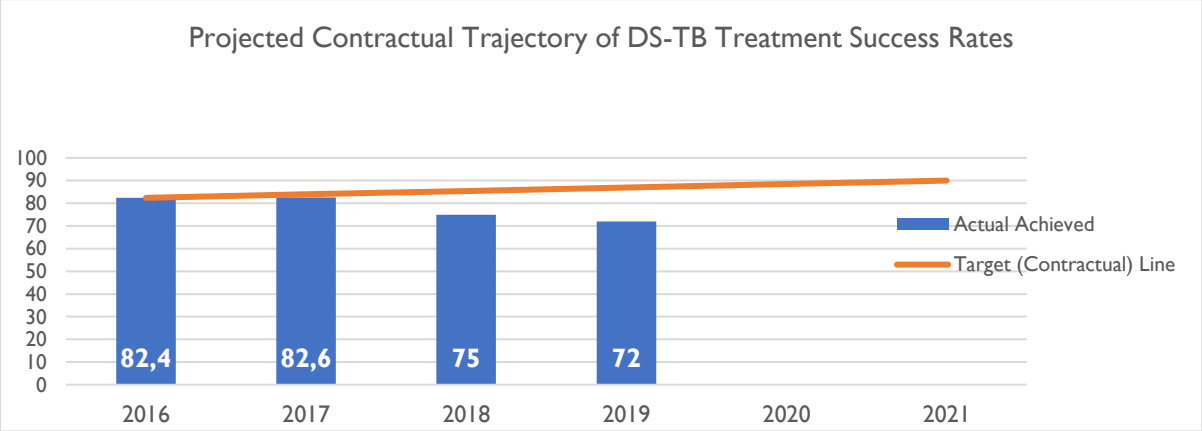


Figure 6: Projected Contractual Trajectory of DS-TB Treatment Success Rates required to reach 2021 NSP Targets (90%) compared to project's achievements, FY03 (source: DHIS)

DR-TB Treatment Success Rate: For DR-TB the TSR was 54% at baseline; this increased tremendously to 75% in PY03 for the Bedaquiline cohort against the expected contractual target of 66.5% in 2018. This represents a 112% achievement against the contractual anticipated target for PY03. Note that the DR-TB reporting was not integrated into the TB module of Tier.net, thus not affected by the migration of data and transition to Tier.net. The program continues to use the EDR.web.

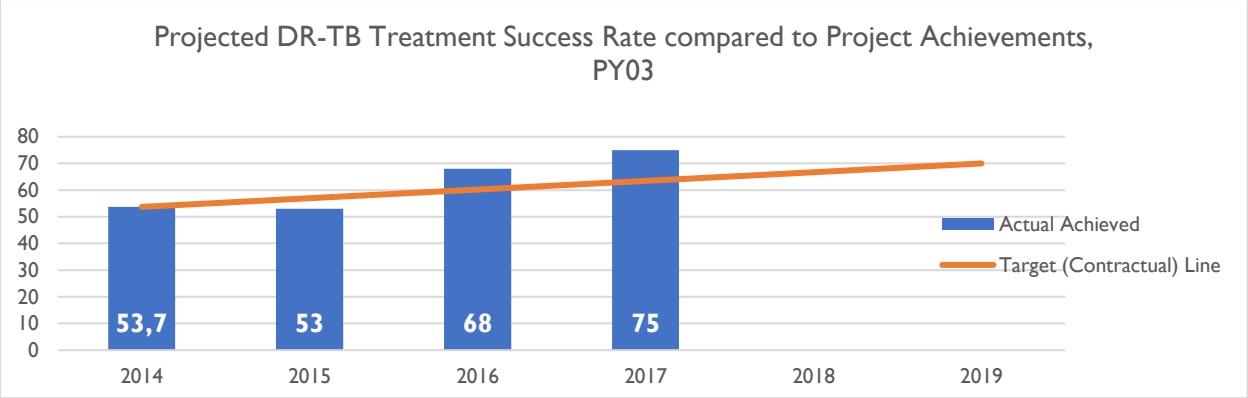
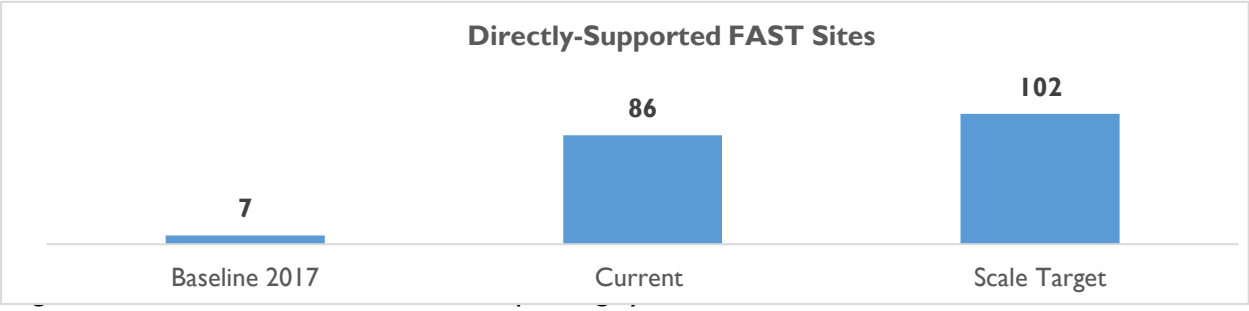


Figure 7: Projected Contractual Trajectory of DR-TB Treatment Success Rates required to reach 2021 NSP Targets (75%) compared to project's achievements, FY03 (source: DHIS)

Drug Resistant TB Technical Support: The project has ensured 100% coverage with decentralization of DR-TB management in all the 14 districts and 63 sub-districts. This is line with the government's policy of 'one functional decentralized DR-TB site per sub-district'. As a result, patients receiving the short course regimen for DR-TB have shown a marked reduction in the initial lost-to-follow-up (LTFU) rates (including a 50% reduction in the death rate). Among the 2017 cohort of RR/MDR-TB patients receiving short regimen, LTFU was 12% for the short injectable regimen; 10% for BDQ short regimen (target is less than 15%). The LTFU rate for 2016 BDQ long regimen cohort was 15%.

Implementing the FAST Initiative: Implementation of **F**inding TB **A**ctively, **S**eparating safely, **T**reating effectively (FAST) initiative in health facilities increased from a baseline of 7 facilities to 86 out of the 102 eligible sites in the supported districts. Through the implementation of FAST, the project improved TB screening in the hospitals from a low of 35% (2017) baseline to 68% in PY03 (2019). Of the 1,994,604 patients screened in the FAST implementing facilities, 5,848 were diagnosed with TB of which 240 were DR-TB. Number of health facilities provided with IPC tools and staff IPC trainings also increased from 56 in PY01 to 102 in PY02 and 146 in PY03.

Figure 8: Histrionic Scale-up of FAST Approach from seven facilities (PY02) to 86 (PY03) out of the projected target of 102 by 2021 in directly supported districts



Next steps: The project will continue with targeted demand generation interventions which include among others targeted communication campaigns in TB high burden areas. In PY04, the project will continue with the expansion of the FAST initiative to reach all the 189 (102 from the supported districts) eligible facilities in the supported districts. The NGO network will be expanded from 49 to 60 NGOs (funded by the project) including support to the

existing community institutions within the facility catchment areas. Intensified Continuous Quality Improvement (CQI) program, including data quality improvement that prioritizes TB screening, testing and treatment will be strengthened to improve overall TB prevention and control outcomes. The project has already embarked on an extensive data cleaning to ensure valid, reliable and clean data is available for performance monitoring. The process also intends to address the causes of the disparities in data reporting.

IR2: Increased Sustainability of Effective TB Response Systems

The project provides technical support to strengthen TB response systems at national, provincial and district levels. TB service quality improvement, systems management mentorship and capacity building are the key strategies to improve effectiveness and sustainability of the TB response systems in the project-supported areas.

Major achievements to date:

- The projected supported a total of 53 meetings (including five at national level and 48 at provincial level) where evidence-based planning and performance improvements were discussed. The efforts culminated in the development of district specific implementation plans linked to the local TB epidemic in all the 14 districts.
- On a quarterly basis over the last three years, 11 district TB teams were provided with the technical and logistical support to conduct regular TB review meetings. During the reviews, TB program performance was discussed with the relevant district, sub-district and facility managers to improve TB system management and patient outcomes.
- A total of 3,527 (2,952 females and 575 males) health care workers at the different levels of the health care system, received various clinical trainings and mentoring sessions.
- In PY03, post training evaluations and mentorship support was provided to 1,364 trainees to enhance their skills.
- All 14 districts are using new tools and approaches introduced by the project to improve service quality and program management. Seven districts (50%) have achieved a DS-TB treatment initiation rate of between 80-90% (NDOH 2019 analysis).
- The project has facilitated the expansion of the TB module in TIER.Net to 1,031 facilities out of 1,063 project-supported facilities in five provinces that are implementing TIER.Net. This is a 97% coverage for use of the TB module in TIER.Net.

Main challenges and Opportunities: There are currently limited focus on leadership, management and governance training/mentorship for operational managers and specific TB managers. The shortfall in meeting targets for health workers training in Limpopo Province is due to the local government's moratorium on travel for health care workers to attend off-site trainings. Western Cape province has not adopted the TB module for TIER.Net and the 174 facilities in the three supported districts are excluded in the expansion of TIER.Net.

Next steps: The project will continue to support districts through mentorship and quality improvement methodologies. As part of the capacity building, the project will further work

with each district to leverage the conditional grant funds to increase case detection as well as to improve patient adherence to DS and DR-TB treatment regimens. The focus will be placed on ensuring that the remaining seven districts achieve at least 90% treatment initiation among those diagnosed with TB. Leadership, management and governance training and mentorship will be intensified during PY04.

The project will focus on on-site training and low-dose high-frequency mentoring of clinicians (as opposed to didactic training) to ensure that all clinical staff (even if not permitted to travel) are capacitated on the clinical management of patients. Regular on-site clinical reviews and chart reviews will be done to ensure adherence to guidelines and protocols. The project will continue with the training-of-trainer (TOT) approach as a priority to promote sustainability of effective TB response system.

The project has identified facilities currently not on TIER.Net and has been facilitating relevant districts authorities to ensure 100% coverage for TIER.Net. As an immediate short-term solution, the project will provide data capturers in districts where data backlogs were critical.

IR3: Care and Treatment of Vulnerable Populations Improved

The project focuses on marginalized, vulnerable populations, as well as those most at-risk, through contact tracing management and TB case-monitoring; expanding community involvement in and links with the Primary Health Care (PHC) system for Direct Observation of Treatment Short-course (DOTS) delivery; and increasing formal and informal linkages with organizations and institutions that work with these populations.

Major achievements to date:

- Eligible index cases for whom contact tracing conducted increased from a baseline of 5,624 (PY01) to 8,369 (PY02), however, this decreased to 5,735 in PY03.
- The rate of successful contact tracing was maintained above 90% for all project years from PY01 to PY03. In PY03, a total of 33,580 contacts from 8,369 index TB patients were reached and 95% screened for TB, of which 20% were presumptive for TB. 92% of the presumptive TB were tested and 100% of TB diagnosed were linked to care.
- The number of project-supported NGOs participating in contact tracing increased from 22 in PY01 to 42 in PY02. However, only 30 were supported in PY03.
- The proportion of people who know their HIV status has been consistently high above the 90% target for all project years.
- In PY03, partnerships with 11 private general practitioners (GPs) in OR Tambo district and PEPFAR District Support Partners (DSPs) were developed. A total of 124,439 people were reached, all (100%) were screened for TB, 21,267 (17%) presumptive clients were identified and 18,506 (87%) were tested for TB, 1,172 (6%) people tested positive for TB (32 being DR-TB patients) and 1,044 (89%) were initiated on appropriate treatment (24 being DR-TB patients). Eleven (1%) patients died before treatment initiation.

- Additional partnerships established in PY01 and PY02 are on-going to ensure key population (farmers, transport workers, miners, healthcare workers) dominated institutions are supported with establishment of TB services.

Main challenges and Opportunities: The reduction in the number of NGOs participating in contact tracing in PY03 occurred due to the delay in Request for Applications (RFA) approval. However, the situation is rectified, and the recruitment of additional NGOs is ongoing. The proportion of TB-HIV co-infected patients who initiated Antiretroviral Therapy (ART) although currently showing marked improvement remained below the projected target of 89.8% for PY03. This is attributed to transitioning of district support partners at the end of the USG last funding cycle that resulted in delays in ensuring active engagement with HIV DSPs. With new funding finalized and more deliberate collaboration with the Project initiation, the rates are increasing, and we anticipate meeting the 90% target in PY04 as illustrated in the figure below.

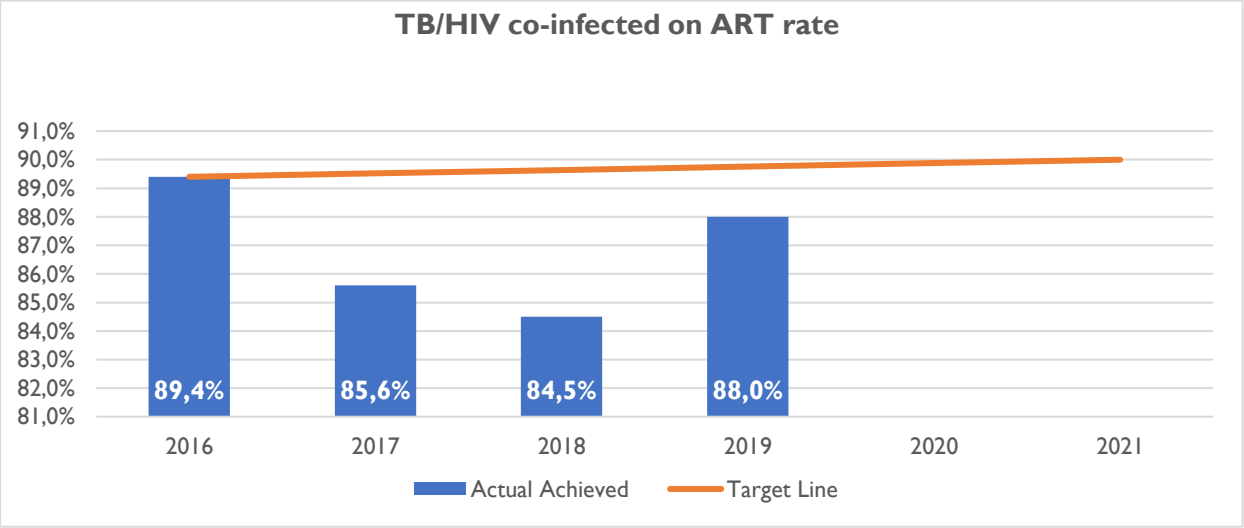


Figure 9: Projected TB/HIV co-infected on ART rate and actual rate achieved by PY03

Based on project's experience, one decentralized DR-TB site per sub-district does not provide adequate access or coverage for DR-TB services for the affected populations. Some districts are still administering the injectable regimens.

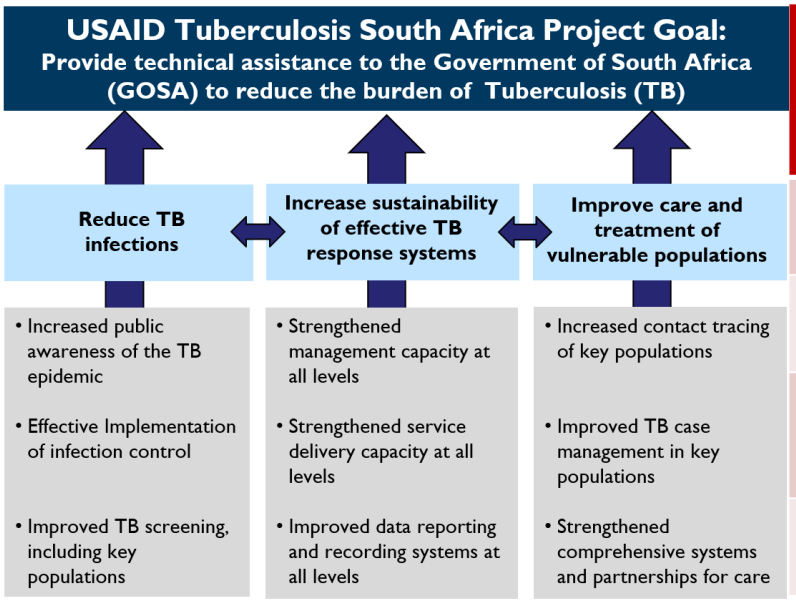
Next steps: The project will prioritize CQI processes and clinical systems mentorship in the facilities to address management of TB/HIV co-infected patients. Collaboration with DSPs including elaboration of a monitored Memorandum of Understanding (MOU) will be ensured for complementarity of interventions.

The project will continue to support the national department of health (NDOH) in phasing out the injectable DR-TB regimen in all the supported districts. During PY04, technical assistance will continue in all the 202 DR-TB decentralized sites will be supported to ensure improved DR-TB care and management. To strengthen outreach and access to high quality patient support and care for TB services in a range of settings, the project will continue to develop new and stronger partnerships with the health service, across government agencies,

Global Fund partners, local organizations and health service providers in the private sector. Partnership with private GPs will be scaled up in eThekwini and Sarah Baartman districts.

INTRODUCTION

The USAID Tuberculosis South Africa Project (2016-2021) has the primary objective of providing technical assistance to the GoSA to reduce the burden of TB in the country. 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, as shown in the Figure 1 below. To achieve these objectives, the project is guided by the GoSA National Strategic Plan for HIV, TB and STIs (2017-2022) to find 90% of all TB patients and place them on appropriate treatment; to find at least 90% of the TB patients in key populations and place them on appropriate treatment; and to achieve 90% treatment success for DS-TB, and 75% for DR-TB. Thus, the project's activities and interventions are aligned to the 90-90-90 strategy to ensure that South Africa's National TB program can achieve these ambitious targets. In addition, the project has prioritized finding 163,456 estimated TB Missing patients as outlined in the South African "TB Think Tank Missing TB patients Strategy"[1].



Indicator	Baseline	Target
Treatment success rate for drug sensitive (DS) TB cases	82%	90%
Treatment success rate for Multi-drug resistant (MDR) TB	54%	75%
Initiation of confirmed drug resistant (DR) TB cases on appropriate treatment	59%	100%
ART coverage for TB/HIV co-infected patients	91%	90%

Figure 10: USAID TB South Africa Project Results Framework and targets by 2021

Geographical Coverage

The project is strategically positioned to provide support to the highest TB burden districts in South Africa. During the reporting period, support was provided to 14 districts which reported 113, 997 TB patients which accounted for 48% of the TB burden in the country. Furthermore, the project supports eight (OR Tambo, Nelson Mandela Bay, eThekwini, City of Tshwane, City of Cape Town, Mangaung and Sekhukhune) of the 21 priority districts identified by the government of South Africa for finding missing TB patients (Figure 2). Project's contribution to the finding of Missing TB Patients in the 14 Supported Districts is provided in Annex 1.

[1] South Africa wants to end its TB epidemic, November 2018

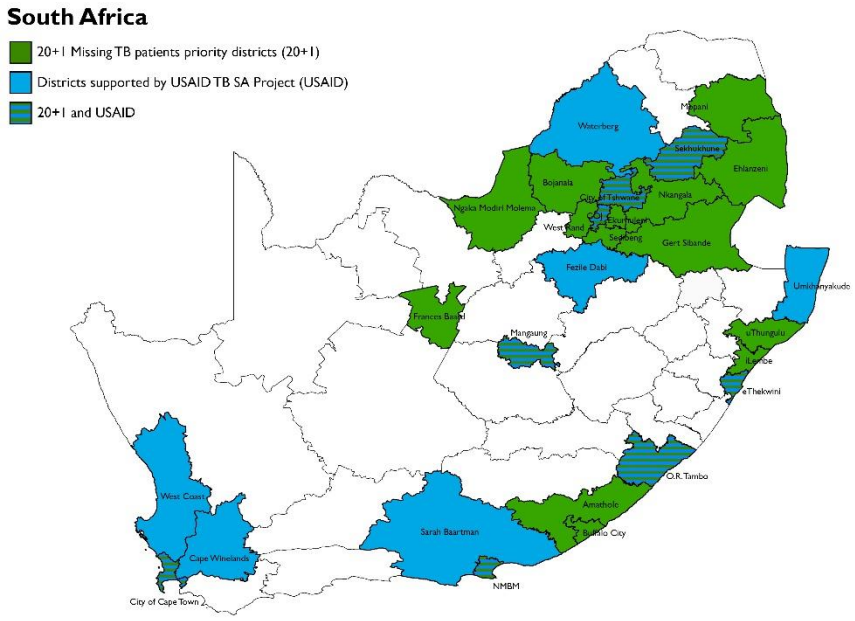


Figure 11: Map of South Africa indicating 20+1 priority district and project coverage

Targeted support

A trend analysis of WHO reports for the last four years (Figure 3) indicates that the TB incidence rates are gradually declining in South Africa, however, pockets of high TB transmission remain.

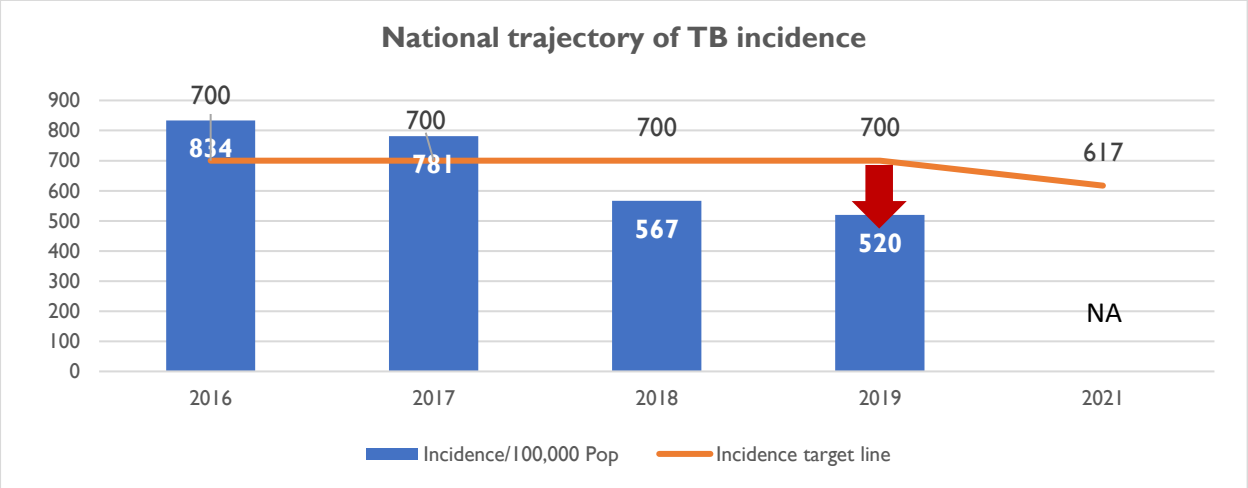


Figure 12: Reduction of the TB burden (from 834-520/100,000) in South Africa, 2016 -2019 (source: South Africa's National Strategic Plan for HIV, TB and STIs 2017-2022 and WHO Global Tuberculosis reports 2016, 2017, 2018 and 2019)

In PY03, the project focused its support on the TB hotspots with the greatest need, rather adopting a generalized approach. Hot spots were identified in each district to ensure that interventions are targeted including raising awareness of the TB epidemic, improving infection prevention and control, increasing screening particularly for individuals with high TB risk, strengthening service delivery and management capacity, improving data and information systems, improved TB management among key populations as well as strengthening partnerships for care. In addition to the hotspot maps, the facilities that contribute 80% of the

TB burden in each district were identified, to ensure that the providers, teams and the facility TB infrastructure functions as an integrated and coordinated "whole" system. The technical assistance (TA) support includes: prioritization of interventions is based on the local TB profile and performance of key indicators in the facility and its catchment area; facilitating modalities to improve the TB care cascade to narrow the existing gaps in the continuum of response cascade; improving and strengthening clinical care for patients upon diagnosis (including contact tracing) and documentation in clinical stationery; improved and strengthened TB clinical care for vulnerable children; providing quality TB care; strengthening supply chain management, medication dispensing and supply chain reliability of commodities and TB regimens; leveraging TB screening and diagnosis at all patient entry points; improving compliance with national testing algorithm and strategy; strengthening referrals from TB screening and diagnostic points to TB treatment and retention; and, supporting the roll-out of the TB Module of "THIS" system including expansion of coverage and functionality.

The project's funded NGOs and ACSM activities were also strategically positioned to the targeted TB hotspots and high burden facilities. Working with project funded NGOs and other established community institutions (e.g. the ward-based outreach teams (WBOTs) targeted support was provided to TB patients at community and household level. The entry into the community is through diagnosed TB patients who need adherence support and are provided with directly observed therapy to improve treatment adherence. The comprehensive package of support provided at community level takes into consideration coverage, effectiveness, quality and impact on the local TB epidemic including: implementation of risk stratification to prioritize patients for DOT support; increasing DR-TB patient support in support of the decentralization process; assessment of outcomes for community supported patients; engagement and training of PHC Re-engineering teams (focusing on the WBOTs) and other community institutions in supported districts; strengthening HIV/TB integration into community activities; bi-directional referral systems between community and facility-based services; case finding by expanding access to traditional and non-traditional facility- and community-based institutions; leveraging other critical entry points for TB case finding; implementation of operational plan for TB among key populations (KPs) (pregnant women, diabetics, children under five and PLHIV); strengthening collaboration with DSPs with clear roles and responsibilities; and, roll out of TB in Farms (uMkhanyakude, Cape Winelands, West Coast, Waterberg and Sekhukhune).

ACCOMPLISHMENTS BY INTERMEDIATE RESULTS (IRs)

IR 1: TB Infections Reduced

The main areas for project interventions to reduce TB infections include strategies for improved screening for TB for early identification of TB cases and stop transmission, improved follow-up for those dropping out of treatment to reduce ongoing community transmission, stronger infection control practices in health facilities and congregate settings to protect the HCWs and patients presenting with other ailments other than TB, effective treatment to promote cure and reduce incidence of drug resistance, and advocacy to increase public awareness of the risk of contracting TB and of prevention measures. PMP results are provided in Annex 2.

Screening: Of the 33,734,369 clients seen in supported districts, 82% were screened in PY03. (Table 1) Overall the screening rate has increased from the baseline with a corresponding increased positivity rate from 7.6% to 9.7% in the same period. To improve the achievements (i) project's intensified efforts of finding the missing TB patients; (ii) implemented demand generation interventions in TB high burden areas; (iii) provided patient centered Interpersonal Personal Communication and Counselling (IPC/C) and; (iv) as well as the expanded the Finding TB Actively, Separating safely, Treating effectively (FAST) initiative.

Table 1: Number and Percentage of People screened for TB in the 14 supported districts: source DHIS reports

	2016 (Baseline)	2017	2018
Head count	10,716,802	34, 506,708	33, 734, 369
Number screened	7,361,809	25,862,359	27,720,295
Actual Achieved (%)	69%	75%	82%
Contractual target (%)	69%	73%	77%

Legend: Red: target not achieved, Yellow: target not achieved, but improving; Green: target achieved. Note: 2019 annual notifications not yet available on DHIS

Despite the remarkable progress the quality of screening at facility level remained suboptimal in some facilities as it was below the 90% target. Further the Western Cape province is not implementing the FAST approach based on Local Government prioritization and policy approach

During PY03, the project will continue with targeted demand generation interventions which include among others targeted infection prevention and control (IPC) campaigns in TB high burden areas and ACSM and will also continue the IPC/C and IPC campaigns as part of the Phila Campaign. The project will also continue with institutionalization of Continuous Quality Improvement (CQI) interventions, and expand these in the hospitals, the regular monitoring of poor performing facilities during the cluster follow up and intensifying the support by involving managers at facility level to understand and take ownership of their data. FAST will be expanded to reach all the 102 eligible facilities in the 11 supported districts to address the remaining challenges in the 459 high burden facilities.

Testing: Of the 27,720,295 screened for TB symptoms (Oct 2018- Sept 2019), 704,047 (3%) were presumptive for TB and 90% of these presumptive cases were tested for TB, and among the 67,731 who tested positive for TB, 66,011 (97%) were started on treatment (Figure 4).

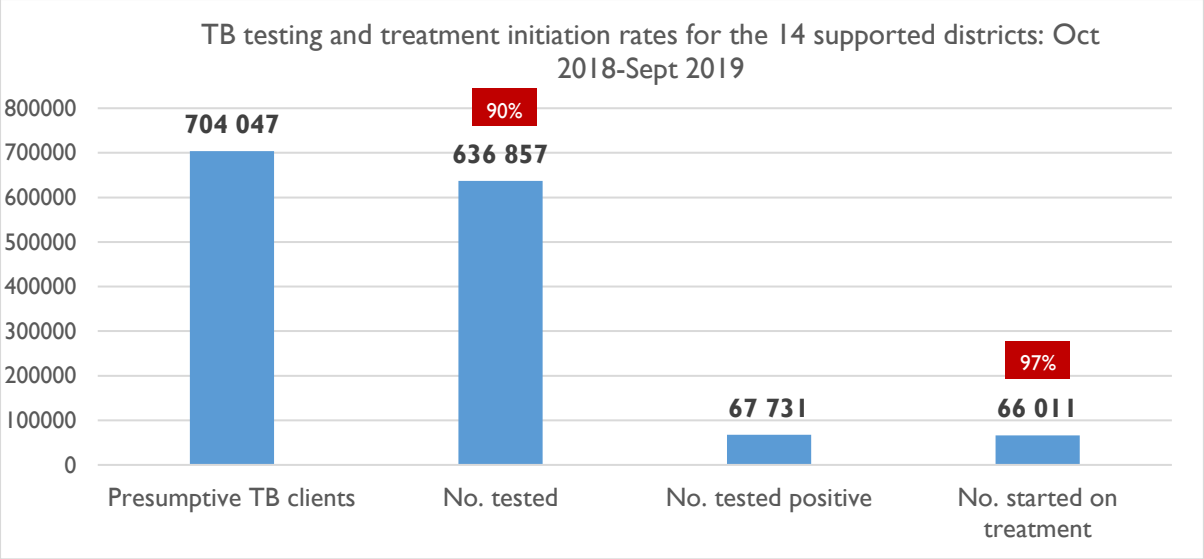


Figure 13: TB testing and treatment initiation rates for the 14 supported districts: Oct 2018-Sept 2019 source: District Health Information system (DHIS)

Overall the testing rate has increased from the baseline of 84% to 88% by the end of PY03 (Table 2). The project continued to assist the government through the mentorship of the data capturers and the clinicians on the TB Module in the TIER.Net and targeted CQI interventions by addressing the challenges of the laboratory sputum rejections through onsite mentorship on quality collection and transportation of specimen, quality recording and reporting in all the tools including the TB information reporting system. The testing services has also been enabled by the existing DOH TB diagnostic services that provides the platform upon which TB testing interventions are implemented; TB testing services available in all primary health care clinics and the expansion of GeneXpert (GXP) which has gradually replaced sputum smear microscopy for diagnosis, further facilitating TB testing and earlier case finding.

Table 2: Number and percentage of people tested for TB in the 14 supported districts: source DHIS reports

	2016	2017 (PY02)	2018 (PY03)
Number tested	194,563	655,670	636,857
Presumptive cases	231,071	867, 637	704, 047
Percentage (Actual Achieved)	84	76	90
Percentage (Contractual Target)	84	85	88

Legend: Target by PY03: Red: target not achieved, Yellow: target not achieved, but improving; Green: target achieved.

Note: 2019 annual notifications not yet available on DHIS

The achievements are attributed to the project's active collaboration with NICD/NHLS and the facilitated functional linkage with the supported facilities, particularly with regards to Rif-alerts; identification of barriers to early diagnosis; engagement of private practitioners; building capacity of local NGOs to identify and link presumptive TB patients to diagnostic services; targeted contact management through the projects NGO network model; and, targeted IPC campaigns with seamless linkage to the TB care cascade of the key and vulnerable populations.

Treatment Initiation: DS-TB initiation of treatment has been maintained at above the 90% target; for all three years, for PY03, the treatment initiation rate is 96% (Table 3). As seen in Table 4, the DR-TB initiation rate has progressively increased from a baseline of 59% to 72%

from PY01 to PY03 (against an anticipated target of 75% in PY03). The cumulative number of patients enrolled on new drugs and regimens for the management of drug-resistant TB was 6,682 of which 4,930 were from the project supported districts representing 73% of all the DR-TB patients enrolled on treatment nationally.

Table 3: DS-TB Treatment Initiation, 2016 – 2018 in the 14 supported districts: source DHIS reports

	2016	2017	2018
Number started on TB treatment	13,225	45,056	56,810
Number tested positive for TB	13,921	46,933	59,177
Percentage Initiated on Treatment	94%	95%	96%

Legend: Target by end of PY03: Red: target not achieved, Yellow: target not achieved, but improving; Green: target achieved.
Note: 2019 annual notifications not yet available on DHIS

Table 4: DR-TB Treatment Initiation, 2016 – 2018 (source: WHO global Tuberculosis reports 2016, 2017, 2018 and 2019)

	2016	2017	2018	2019
Number started on DR TB treatment	6,603	6,566	6,882	4,571
Number tested positive for DR TB	11,192	10,259	9,558	5,312
Percentage (Actual Achieved)	59%	64%	72%	86%
Percentage (Contractual Target) *	59%	67%	75%	84%

*Legend: *Target by PY03; Red: target not achieved, Yellow: target not achieved, but improving; Green: target achieved.*

To ensure the initiation targets are met the project focused on targeted CQI and clinical systems mentorship interventions which among others ensured collaboration with the Regional Training Centers to build capacity of health care workers on the four pillars of the TB care cascade including case finding, testing, treatment and retention in care. The project developed the Basic TB Management participant manual for community health care workers (CHCWs); implemented and used the self-directed learning modules. The project also established and facilitated the implementation of supervisory structures ("Clustering") for quality improvement in the supported districts. Systems and services strengthening support was provided to the DoH during the introduction of new DR-TB treatment regimens, including management of serious adverse events and adverse events. The Interpersonal Communication and Counselling Manual was also introduced and operationalized.

All the interventions were enabled by the decentralization and de-institutionalization policy of government which has increased access to DR-TB treatment; the roll-out of new diagnostics – GXP with decreasing turn-around time (TAT) for results facilitates treatment initiation. Further, the project received SAMA Accreditation for three courses: Basic TB Management; Continuous Quality Improvement; and TB-HIV-Diabetes Mellitus. The accreditation facilitates participation by medical officers.

During PY04, the project will continue with support to the decentralization process while adapting DR-TB service package in the established 202 sites of the 14 districts. Focus will be placed on improving records, reporting and tracking of patients transferred between facilities. The Rif alerts communication between the labs and the facilities in all the supported districts

will be further strengthened. Clinical systems mentorship which includes the CQI process focused on the 475 high burden facilities the 14 supported districts will also be strengthened.

In PY04, all the 475 high burden facilities out of the 1,237 facilities in the project supported services will be saturated with support as follows:

i) Expansion and consolidation of the FAST strategy in all the 102 FAST eligible facilities in the 11 supported districts.
ii) Expansion of community involvement and ensure bi-directional and functional links with the Primary Health Care (PHC) system. Formal and informal linkages between the PHC and organizations and institutions that work with TB key populations will be enhanced for each catchment area of the PHC facility/Health facility. The NGO network will be expanded from 49 to 60 supported NGOs to better support the existing community institutions within the facility catchment areas increase? testing services.
iii) The private practitioner's initiative currently implemented in the OR Tambo district will be expanded to Sarah Baartman and eThekwini district.
iv) Micro-targeted IPC campaigns in the hotspots and ensuring functional linkage with the TB care cascade will be supported to find the missing TB patients and improve district outcomes. The IPC campaigns serve an important purpose of educating communities about the risks of TB transmission and the importance of seeking care. The demand generation, advocacy and social mobilization activities encourage communities to utilize and to access TB testing and treatment services.
v) The project will address systems and services barriers through clinical systems mentorship and targeted CQI interventions. In addition, leadership, management and governance capacities will be strengthened through technical assistance and continuous quality improvement - focused on health managers, primary health area supervisors and local area managers.

IR 1.1 Increased public awareness of the TB epidemic

Despite the high implementation capacity for TB treatment, with over 8,000 public health facilities in South Africa, the extent of the TB epidemic and the risk of TB infection continues to have a low public profile. The absolute number of people reached with project awareness activities has fluctuated since project inception from the use of traditional mass media (national radio and television station, billboards etc.) to a more grassroot approach of using community media due to cost effectiveness. In PY01, the project awareness activities reached over 8 million people. In PY02, the project surpassed its target of 6.4 million and reached over 33 million using traditional mass media campaigns. However, in PY03, the project introduced cost effective considerations and micro-targeting (focus on key and vulnerable populations and TB hotspots) of interventions, thus reached only 4.3 million against a target of 8.8 million.

In order to generate demand for TB services and to increase public awareness of the TB epidemic, the project implemented a wide range of ACSM activities. These activities included targeted IPC campaigns in TB high burden areas; patient centered IPC/C; strengthening of TB messages as part of the Phila Campaign; utilization of facility-based television network to increase TB awareness; commemoration of key national health days; integration of TB messages into mainstream media; engagement of TB ambassadors and champions to improve involvement of communities; use of national media platforms; and, partnership with key

government departments, civil society and the NGO sector. Table 5 provides the data on ACSM process indicators for PY03.

Table 5: ACSM Process Indicators with cumulative numbers, October 2018 – September 2019: source: project quarterly reports

ACSM indicators	Total
Number of IPC campaigns	324
Number of radio or newspaper interviews	40
Number health days commemorated	7
Number of IEC materials distributed	352,665
Number of people trained in interpersonal communication and counselling	548
Number of TB patients supported by health staff trained in IPC/C	4785
Number of HCWs trained on ACSM guidelines	104

NGO Involvement in Public Awareness (ACSM): The project target was to support 60 NGOs to implement its network model that includes awareness interventions. From a baseline of three to 22 in PY01, 42 in PY02 and 49 in PY03. As part of the "Finding the Missing TB patients" initiative, 22 NGOs were contracted to conduct campaigns in TB high burden areas. However, during PY03, the number of supported NGOs decreased to 30 against the anticipated target of 60. This was due to the requirement by the project Steering Committee for a cost-effective evaluation of the NGO program. Thus, for the major part of PY03, the project was involved in ensuring a successful evaluation of the model.

The project completed the Cost-Effective Evaluation (CEE) of the NGO Network Model and results have been shared and approved by Steering Committee. A new Request for Applications (RFA) Process has thus been completed and awaiting approval by USAID. During PY04, the NGO network will be expanded. The project will continue to focus on demand creation geared to the affected KPs as opposed to general public awareness; micro-targeted and cost-effective IPC campaigns in the catchment of the TB hotspots in the districts; expansion of the Patient centered IPC/C; focus on ACSM interventions to raise the TB profile using multiple media and the existing government structures; and, expansion of the NGO and other community institutions (beyond supported the anticipated 60 NGOs) involvement in the TB services.

Expand implementation of targeted infection prevention and control campaigns in high TB burden areas

In PY03, the project supported districts implemented a total of 324 community campaigns, including 33 door-to-door visits, to educate families about TB and provide screening and referrals to local healthcare facilities. Through the wide range of

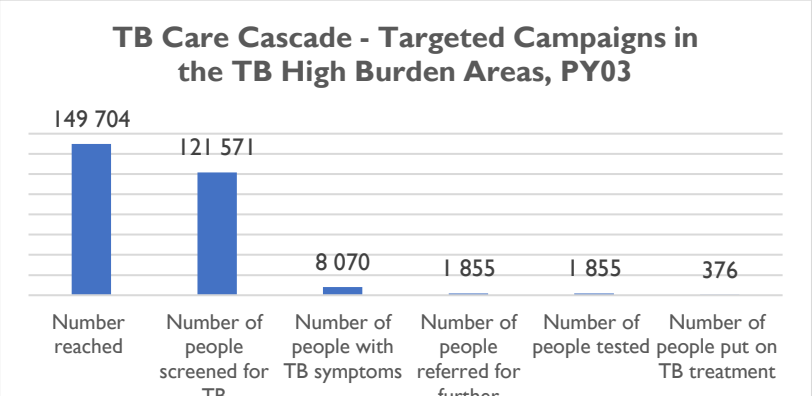


Figure 14: TB Care Cascade - Targeted Campaigns in the TB High Burden Areas, PY03. Source: project quarterly reports

activities implemented, a total of 149,704 people was reached with 98,121 of them reached through specific campaigns undertaken in hotspots which have a high TB burden. Of those people reached, a total of 376 new TB cases which would have been missed TB patients were diagnosed and linked to care (Figure 5).

Scale-up implementation of patient-centred inter-personal communications and counselling (IPC/C) package to improve retention in care

In order to improve treatment adherence and ensure that patients are educated and counselled to understand the importance of adherence and retention in care; the project continued to earnestly scale up IPC/C in the supported districts. In the reporting period, a total of 548 health workers were trained on IPC/C. The aim of the training was to capacitate healthcare workers with skills to provide patient-centred care for improved clinical outcomes among TB patients. Further, participants were orientated on the adherence plan. Those trained on IPC/C included professional nurses, community health workers and other healthcare workers. Meanwhile, the project coordinators continue to conduct onsite monitoring of the package to ensure that it is implemented appropriately at all sites. A total of 4,892 patients received patient centered counselling (Table 6).

The treatment adherence support and interpersonal communications and counselling provided by the local NGOs funded by the project has contributed significantly to improved treatment outcomes particularly for DR-TB patients. A cohort analysis was conducted for DR-TB patients initiated on treatment in 2015 and 2016. Results for the 2016 cohort, show that the treatment success rate (TSR) was 94% among DR-TB patients supported by Care

Ministry (a project funded NGO) compared to a TSR of 48% for patients receiving only the standard of care (Figure 6). A similar positive trend is observed for proportion lost to follow up (LTFU) and proportion of patients who died. LTFU was 3% among NGO supported patients compared to 21% among those receiving only the standard of care. The odds of being lost to follow up at any point during treatment were significantly lower among NGO patients compared to standard of care patients (OR=0.05, p<0.001, 95% CI [0.01 – 0.39]). Finally, patients receiving NGO care had significantly lower odds of death at any point during treatment (OR=0.08, p<0.001, 95% CI [0.03 – 0.27]). These early results show that the interpersonal communications and counselling together with the treatment adherence support provided by local NGOs is significantly improving the treatment outcomes particularly for DR-TB patients in South Africa. Further, an abstract on this intervention has been written.

Table 6: Number of HCWs trained and patietns counselled

District	HCWs trained	Patients counselled
Nelson Mandela Bay Metro	77	1375
OR Tambo	149	115
Sara Baartman	46	1223
Tshwane	21	-
eThekwini	-	620
uMkhanyakude	95	266
Waterberg	22	-
Sekhukhune	-	154
Mangaung	70	1032
Cape Winelands	34	-
City of Cape Town	18	-
West Coast	16	107
Total	**548**	**4892**

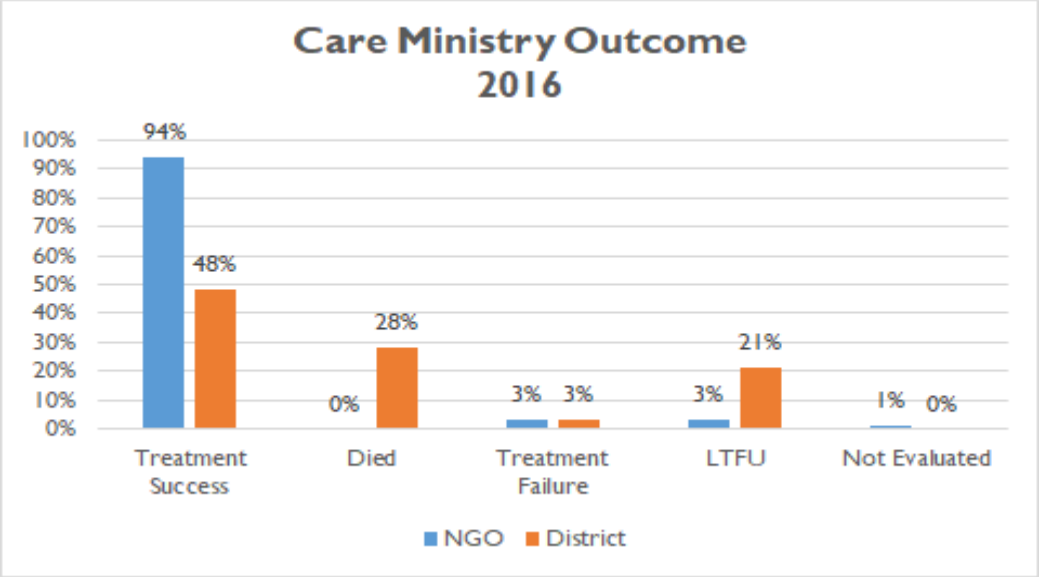


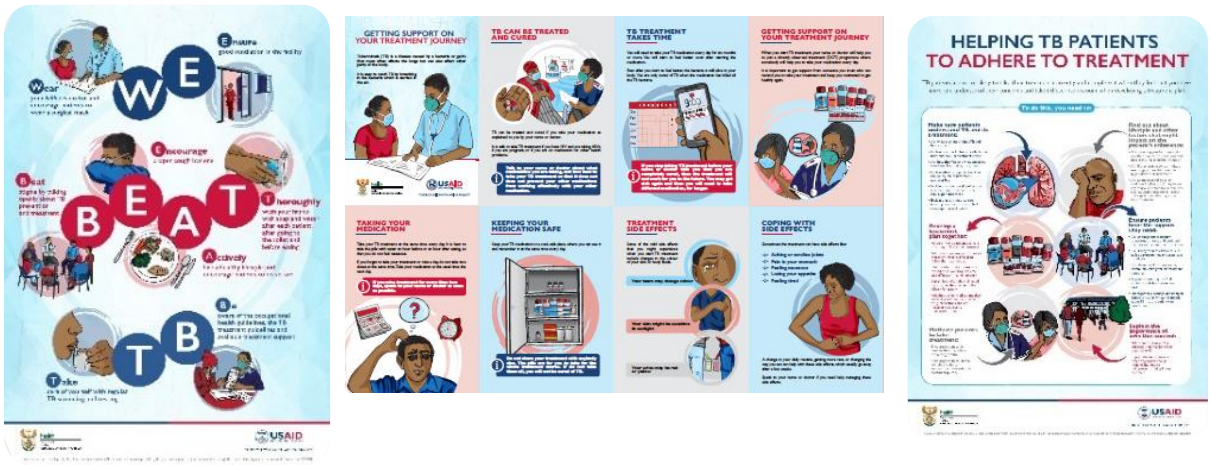
Figure 15: DR-TB Treatment outcomes at CARE Ministry NGO for 2016 cohort. Source project quarterly reports

Develop new and innovative messages to respond to district-level TB challenges and disseminate via national and community media channels

Material development and dissemination

During the reporting period, information, education and communication (IEC) materials aimed at supporting IPC/C were developed. The material included posters and pamphlets as illustrated in Figure 7. These materials aim to support and enhance adherence counselling and to assist TB patients in developing treatment plans in collaboration with their care provider. Two posters and a patient education pamphlet were also developed and disseminated as part of the IPC/C package for allied and non-allied healthcare workers in project supported districts.

Figure 16: IEC material developed as part of the Interpersonal Communication and Counselling training manual



During PY03, a combination of IEC materials was printed and distributed including TB brochures (TB in children, TB and diabetes, TB and pregnancy and drug resistant TB) and TB smart cards which cover topics such as TB and HIV and TB treatment. The aim was to support the commemoration of key health days (World Diabetes Day 2018, World AIDS Day 2018 and World TB Day 2019) related activities both at national level and in supported districts. The IEC materials were printed in six languages specific to supported districts (Sotho, English, Afrikaans, Zulu, Xhosa and Sepedi) and appropriately branded with TB messages on the importance of knowing the TB and HIV status and TB treatment adherence. A total of 352,465 of these materials were disseminated across the project's 14 supported districts. For a more cost-effective approach towards disseminating important messages to patients, the project utilized facility-based television sets and community radio stations to increase TB knowledge among diverse audiences in communities. Messages disseminated through these platforms were aimed to increase individual capacities to prevent themselves from contracting TB infection and to seek care and adhere to treatment should they be diagnosed with TB. Prior to implementation, assessments were conducted in supported districts to ascertain the availability of television monitors in facility waiting areas. As a result, the project procured 140 USBs and loaded them with TB short documentary-style videos (https://tbsouthafrica.org.za/resources/audio-visual) that were produced by the project (Figure 8). An Estimated 60,769 patients have been reached across three districts and 10 facilities. The challenge with this approach is that not all the initially identified facilities have television sets in working order or compatible with USBs. However, the strategy is very valuable as it ensures that patient's awareness of the TB epidemic is increased whilst patients are waiting to consult with healthcare practitioners.

Figure 17: A short documentary style video about managing the side effects of TB available on the project website and YouTube channel

Build capacities of DOH program managers (TB/HIV, PMTCT, NCDs, etc.) and managers of funded NGOs in supported districts on ACSM

A key gap that was identified in supported districts was the lack of structured ACSM plans. ACSM activities are usually conducted in an ad-hoc fashion with limited capacity for implementation. To address this gap, training guidelines were developed, and 102 department of health staff were trained on the guidelines to develop comprehensive skills for implementation of ACSM activities specifically for the TB program. The cadres trained include 55 health promoters, 20 HIV and AIDs /STI/ TB (HAST) managers, 19 ACSM officers, five communications officers, two M&E officers as well as provincial/ district TB managers. As a direct result of the training, a total of 12 plans have been developed;

Figure 18: Eastern Cape Provincial and District Department of Health HIV/AIDS and TB Programme Managers at ACSM guidelines training

five from project supported districts and seven from non-supported. The initial trainings were held in Eastern Cape- (covering OR Tambo, Alfred Nzo, Amathole, Buffalo City and Joe Gqabi districts) (Figure 9). The second training was conducted in Nelson Mandela Bay Metro (covering Nelson Mandela Bay Metro and Sara Baartman). Following these workshops, a comprehensive provincial ACSM workplan was developed. The third training was undertaken in Mangaung with participants from Fezile Dabi and Mangaung districts. The plans developed focus on specific addressing challenges for example, low TB screening rates among men, high LTFU rates, low treatment success rates, high death rate, stigma and negative staff attitudes in facilities, all of which affect TB treatment clinical outcomes. At the end of the workshops, technical assistance was provided to assist the districts with completing costed ACSM plans with specific targets and outcomes based on the challenges identified.

Continue to increase TB awareness through commemoration of key national health days: World TB Day, World Diabetes Day and, World AIDS Day and Woman's Month

Figure 19: Project funded NGOs participating in World Health events

The project commemorated World Diabetes Day on 14th November 2018, World AIDS Day on 1st December 2018 and World TB Day on the 24th March 2019. Activities include health walks, presentation of health information and screening services for TB screening, diabetes screening and HIV testing. The national World AIDS Day commemorations were hosted by the Gauteng province. In order to raise awareness about the event and to mobilize community participation pre-commemorative events were conducted in different communities. The theme the country adopted '*It's time for Religious Leaders and Parliamentarians to lead the fight to End TB in South Africa*'. The first event was on March 24th, 2019 at the Anglican Cathedral in Cape Town, Western Cape province, while the main national commemorative event was on March 28th, 2019 in Mdantsane, East London in the Eastern Cape. In addition, A total of 147,690 IEC materials with different topic were distributed during the pre-activation activities. Commemoration of the event was graced with the presence of the USAID Mission Director, Mr. John Groarke. Mr Groarke shared a message of support during the event outlining the contribution of USAID to the fight against TB in South Africa.

Another strategic event to commemorate World TB Day was held in eThekwini district on 15th March 2019. This event focused on engaging with traditional headers as key role players in the fight against TB. The event which was graced by His Majesty King Goodwill Zwelithini of the Zulu Kingdom and the Deputy President Mr. David Mabuza. The USAID Consulate General, Ms Sherry Sykes, participated in the event and gave a message of support. As part of the day's activities the dignitaries paid a courtesy visit to 10 households of TB patients to learn about their treatment experience. The project supported this activity by providing TB patients with *'My survival kits'* which have various necessities for TB patients including pill boxes, IEC materials and personal protective supplies such as tissues and masks to practice and encourage

good hygiene. Project funded NGOs also partnered with the department of health to commemorate these key health days including mobilization and involvement of communities in the celebrations (Figure 10).

Commemoration of National Women's Day and Month (2019)

To highlight issues related to TB in Pregnancy, the project undertook a series of activities to help create awareness about TB in women especially those who are pregnant as they are at risk of not only contracting the disease but also infecting their babies. The project hosted various activities aimed at highlighting issues relating to TB among women at household, community, facility and district levels. The activities were done under the theme "*Growing South Africa Together for Quality Women's Health*" *Eastern Cape.*

The project collaborated with the Provincial Department of Health to conduct a series of events building up to a TB/HIV Indaba (stakeholder summit) to engage women as catalysts of change in relation to TB/HIV in their communities. The Indaba took place on 29th August 2019 in a community hall located in Kwazakhele catchment area (Figure 11). It was attended by over 300 people including Department of Health officials, pregnant women, youth and other community members from various districts in the province. Discussions during the indaba covered topics such as treatment defaulting, TB/HIV in pregnancy and basic TB/HIV knowledge. The Indaba closed with all Departments and Community Level Stakeholders present signing a pledge committing to working together for quality Women's health.

Figure 20: Group discussions and brainstorming solutions at the TB/HIV in Pregnancy and Youth Indaba

Prior to the Indaba, three community dialogues and two door-to-door campaigns were conducted with general community members including women, youth and traditional health practitioners (THPs) who are usually the first point of contact in rural settings. During these activities including the Indaba a total of 367 people was reached with TB information of which 193 were screened for TB. Thirty-three (33) people were symptomatic and tested. Two people tested positive for TB and both were put on treatment.

Increase the project's contribution to TB research and knowledge through write-ups, presentations at local and international conferences, and material dissemination at strategic events

The project delivered four oral and two poster presentations at the 49th Union World Conference on Lung Health in the Hague in Netherlands in October 2018. In addition to the above, 11 additional abstracts were accepted for presentation at the 50th Union Conference on Lung, Health to be held in Hyderabad, India in November 2019. The accepted abstracts for the 2019 Lung Conference include oral presentations, poster discussions and e-posters.

Integrate TB messages into mainstream and community media

The project has continued to leverage on the use of mainstream media with a focus on community radio stations to create TB awareness in the supported districts. In PY03, a total of 40 community radio interviews were conducted as illustrated in Table 7 below. Some of the interviews were conducted to coincide with commemorative health days including World Diabetes Day, World AIDS Day, World TB Day and Women's Month which is aimed at raising awareness about TB in pregnancy. The interviews reached a combined 4.2 million people.

Table 7: Number of interviews and people reached via radio stations in PY03

District	Radio station	# inter-views	# people reached	Thematic area(s) covered
Nelson Mandela Bay Metro	Nqkubela FM	6	50,000	TB in pregnancy TB screening
OR Tambo	UNITRA	1	500,000	TB
Tshwane	Radio Pulpit, Pheli FM, UNISA, Soshanguve FM and Moretele FM	5	211,000	TB and HIV TB pathogenesis and transmission TB treatment and adherence TB prevention
eThekwini	Isolomzansi, Vuma FM and Inanda FM	5	130,000	TB signs and symptoms Multi drug resistant TB TB treatment adherence
uMkhanyakude	Mtuba Rise FM	8	130,000	Knowing your TB / HIV status The impact of TB in South Africa Working with THPs and other community-based stakeholders TB in pregnancy
Sekhukhune	Thabantsho FM	4	20,000	DR-TB care package TB in pregnancy DR-TB regimens
Mangaung	Lesedi FM, Mosupatsela Community radio and Motheo FM	3	3 million	DR-TB care package What is TB The spread of TB TB management TB contact screening
Cape Winelands	Paarl FM	3	200,000	Social mobilization for World TB Day TB and men's health TB, HIV and chronic diseases
West Coast	Radio Namakwaland	5	74,000	TB in children TB and HIV
Total		**40**	**4.2 million**	

Scale up engagement of 50 TB champions and 50 ambassadors who are beneficiaries of the project to advocate for improved access to quality TB services

To inspire community members to fight TB, the project innovatively used local TB survivors as ambassadors to share their experience with TB. The model is working well as people at the grassroots learn from survivors that TB can be prevented, and it can also be cured. The approach also works as community members find it relatable when they see their fellow community members not only openly talking about the disease but having been successfully cured from it. In the PY03, a total of 23 TB champions and ambassadors were identified and participated in community campaigns and dialogues in supported districts.

In a recent event held in uMkhanyakude district, a community dialogue aimed at raising awareness on TB in pregnancy; three TB survivors shared their experiences of being pregnant with TB as well as their treatment journey the aim was to increase advocacy for change and acceptance for TB services. Through this innovative approach, health workers who had contracted TB at some point in their lives have seized the opportunity to also disclose and share their experiences. For instance, in OR Tambo district, a dialogue was conducted at Zithulele Hospital, which is a FAST site and the TB champion who is staff member at the facility was invited to participate to encourage colleagues and patients alike to screen and test for TB. TB ambassadors have also collaborated with project funded subgrantees to conduct door-to-door activities. In one instance in Waterberg district the TB ambassador used this opportunity to share her experiences with TB with members of a household and to motivate them to use TB services in their communities.

Increase visibility of the project through communication and media platforms

Social media continues to be used to create awareness about TB and the work of the project in the 14 supported districts. During the period under review, social media platforms were used to innovatively to allow TB survivors to become content creators by sharing their treatment journey. The stories are under the banner 'It's time to share our TB journeys toward healing'. In PY03 the project social media platforms (Facebook and Twitter) reached a total of 119,373 people. The social media sites were busiest during March and December which covers two commemorative health days of World TB (Figure 12) and World AIDS Days. Through partnerships with Radio Namakwaland on which the project has interview slots there was an increase of people reached by the project. The community radio station has 11,000 followers who tune in through live streaming. The project also uses its website to reach people and in the reporting period it registered 4,665 pageviews (Figure 13).

Figure 21: World TB day 2019 commeration popularised through project social media platform.

Figure 22: TB stories shared on project We Beat TB social media.

Implement paediatric DR-TB patient support in seven participating hospitals through structured activities that include use of the Buddy Beat TB package

Figure 23: Buddy interacting with patients and caregivers at Pelonomi Hospital in Mangaung

To support children who are on DR-TB treatment, the project implemented the Buddy Beat TB program in seven facilities in (Jose Pearson, in Nelson Mandela Bay Metro Pelonomi Hospital in Mangaung (Figure 14). Sonstraal Hospital, Brewelskloof Hospital and Brooklyn Chest Hospital in the Western Cape; King Dinuzulu Hospital in KwaZulu-Natal and Sizwe Hospital in Gauteng). A Buddy family event was held on 30th May 2019, at Brooklyn Chest Hospital. Forty-five (45) pediatric patients and their parents/caregivers participated in the event, together with healthcare workers and students supporting the unit. This was an age appropriate way to educate the sick children about the disease while also educating parents/guardians on supporting and encouraging their children on their TB treatment journey.

Further, the project conducted an assessment to evaluate Buddy Beat TB program activities at four hospitals; King DiniZulu, Sizwe, Brooklyn Chest and Brewelskloof. During the assessments focus group interviews were conducted with healthcare workers providing care to the children and some patients.

Findings from the assessments included:

- Buddy activities stimulate and bring excitement and a positive mood change to pediatric TB patients as evidenced by their eagerness to interact with Buddy by touching the costume, giving or getting hugs.
- Pediatric patients relate to Buddy as their friend who supports them in their treatment journey while admitted in hospital.

- Children enjoy the coloring book, but they need to have a variety with Buddy specific pages as well to better enhance their understanding of their treatment journey.
- Buddy activities are conducted mainly on specific health days or facility fun days.
- The Buddy comic book titled "Buddy Beat TB" is a good source of information; however, it is too wordy, and language needs to be age appropriate and minimize the use of scientific terminology.
- Having a wall mural and comic books helps to sensitize and prepare new patients who have not been exposed to Buddy prior to conducting Buddy activities as indicated by their reactions of excitement to seeing Buddy in real life.
- Some sites have embraced the concept and are innovatively implementing it. For example, in Brewelskloof Hospital in Cape Winelands district a song was composed by one of the staff members with the intention of encouraging pediatric patients to take to take their treatment.

Challenges and recommendations included:

- The consulting rooms need to be made child friendly by branding them with Buddy so that patients can feel at ease and not associate it with negative and painful experiences.
- Buddy pillows should be designed using same fabric/material of the Buddy mascot costume with fur as the patients enjoy touching the fur during Buddy activities.

IR 1.2 Effective implementation of Infection Prevention and Control (IPC)

To institutionalize implementation of effective infection prevention and control measures in health facilities, the project supports the department of health with a comprehensive IPC package which includes conducting facility IPC risk assessments, training on IPC guidelines as well as mentoring on IPC practices. The project also leads with the implementation of urine lipoarabinomannan assay (U-LAM), which seeks to increase TB case detection among HIV positive patients who are seriously ill, regardless of CD4 count *(determined based on four signs, respiratory rate > 30/min; temperature > 39^0C; heart rate > 120/min; unable to walk unaided*).

In PY03, a total of 300 facilities were targeted for support with the IPC package out of which 146 (49%) are implementing the full package. In addition to this, implementation of the FAST intervention was scaled up to 81% of all hospitals in the project's supported districts, with impressive results both in terms of case finding and improvement in the TB care cascade indicators as outlined below. IPC home risk assessments were also conducted by NGOs to identify risks and improve infection control measures in households. The activities implemented give a clear indication of the gaps and current challenges where project support is required in order to further strengthen IPC measures in facilities and homes, thereby reducing the risk of transmission of TB.

Key Results

Number of sites with IPC compliance according to national IPC standards[2] *:* In PY02, a total of 200 facilities were targeted and the project reached of 189 project-supported facilities In PY03, the target was 200 and the project reached 146 which was a reduction compared to PY02. Few facilities were reached as the targets for PY03 were based on prioritization of 10 poor performing facilities per district with implications on coverage and impact of the intervention. During the same period, only risk assessments as opposed to the full IPC package was implemented and 15 FAST hospitals were supported with 29 CO2 monitors and 10 sputum booths. Each district was provided with one fit test kit. Other challenges during implementation included delayed formal approval from the NDOH to utilize "www.ipconnect-sa.org" as an official reporting site for risk assessments. In the pilot phase of using CO2 monitors, a key challenge noted was inability of TB coordinators to identify key hotspots and promptly respond. Records while completed manually, made it laborious to prioritize intervention sites.

From PY03, the project embarked on interventions that focused on impact, quality, effectiveness and coverage. The project transitioned its mode of IPC technical assistance (TA) support to ensure all the high burden facilities are covered with IPC interventions. The project rolled-out ipconnect-sa.org-based risk assessments in supported sites. Within the same thrust, in PY04, IPC implementation will be expanded and strengthened to cover all the 1237 facilities in the 14 supported district including introduction of IPConnect to all the facilities to facilitate risk assessments and implementation of the IPC package.

To ensure coverage and impact, the project has partnered with Vodacom, a telecommunications company to provide a zero-rated platform for web-based facility assessments on the site www.ipconnect-sa.org. The project is working with web developers to ensure remote monitoring of installed CO2 monitors to ensure identification of high-risk zones, and timeous responses by local facility administrators, district coordinators and at national level. The CO2 alerts have also been integrated with the IPConnect platform, which are already available and utilized for capacity building on infection control.

Number of healthcare workers trained on IPC: Integrated and comprehensive training was conducted for HCWs on IPC as part of the basic TB management training. This was followed by the "Low Dose High Frequency" (LDHF) trainings and mentorship. In PY03, a total of 4,000 HCWs were targeted and 3,441 (86%) were trained. In addition, 2,000 HCWs were targeted for LDHF trainings and 1,365 (68%) were reached. The shortfall in set training targets is attributed to Sekhukhune and Waterberg districts in Limpopo province that could not meet their annual training targets due to the government's moratorium on travel. As a result, HCWs were not being released for off-site trainings.

In PY04, the focus of the project is "training for results and impact". The project will thus focus more on LDHF trainings rather than didactic trainings. The LDHF are less expensive and more effective in providing hands on support for capacity building and implementation.

[2] Establishment of the IPC Committee; Facility has a designated staff member who is responsible for infection prevention and control; Availability of the Infection Control Plan; An annual risk assessment for infection prevention and control compliance is undertaken by the staff member assigned to infection prevention and control

The move from didactic trainings is informed by the fact that the project has now matured and the focus in PY04 is to provide on-site training of HCWs at facility level to offer quality patient care according to TB guidelines. The expected results from this mode of training are: expansion of the FAST Approach to reach all the 189 eligible facilities in the 14 districts; implementation of the IPC package in all the 1,237 health facilities to prevent TB transmission; monitoring of IPC practices in all health care facilities using CO2 monitors; integration of CO2 monitors and web-based risk assessments in primary health facilities; and, supporting the implementation of U-LAM test.

Expand implementation of the FAST Approach in hospitals within supported districts to increase TB case detection

The project has scaled up FAST implementation from a baseline of seven hospitals in PY01 (out of a total of 102 hospitals) to 86/102 (81%) by the end of PY03 (Figure 15). In addition to the 86 directly supported sites, FAST was scaled up to an additional 67 facilities outside of project supported districts, bringing the total supported sites to 153. The Western Cape is the only province not implementing the FAST Approach but implementing selected components of the strategy addressing, TB screening and case detection. Three hospitals in the West coast district were supported with strengthening of TB case detection and linkage to care.

Through the implementation of FAST, the project improved TB screening from 35% (Apr-Sep 2017) baseline to 65% during the project PY02 (Oct 17 – Sep 18) to 68% in PY03 (Oct 18-Sep19) in the targeted facilities as illustrated in the Table 8 below. Of the 1,994,604 patients screened, 5,848 were diagnosed with TB of which 240 were DR-TB patients. Note that these patients could have been missed in the absence of the FAST Approach. The initiation rate among the identified DS-TB patients remained steady at above 90% from 2017 to current 2019 (Figure 16). The TB screening and testing rates, LTFU are concerning and in PY04, the project will be undertaking some deep dive analysis and implement interventions to close the gap.

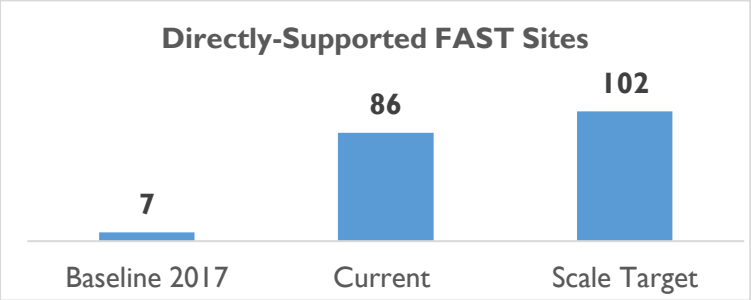


Figure 24: Scale-up of FAST Approach in project directly supported districts

Table 8: Overall performance of FAST Approach in project directly supported districts. Source project monthly/quarterly reports

FAST Hospital Performance	PY01 (Apr -Sep 17)		PY02 (Oct 17 -Sep 18)		PY03 (Oct 18 -Sep 19)	
	No (#7)	%	No (#40)	%	No (#72)	%
Headcount	369845		2585079		2951420	
Number of patients screened for TB	131112	35%	1672229	65%	1994604	68%
Number presumptive	11842	9%	58766	4%	66614	3%
Number tested by GeneXpert (out of presumptive cases)	6214	52%	36900	63%	41578	62%
Number tested positive	886	14%	4977	13%	5848	14%
Number diagnosed with DS TB	839	95%	4683	94%	5600	96%

FAST Hospital Performance	PY01 (Apr -Sep 17)		PY02 (Oct 17 -Sep 18)		PY03 (Oct 18 -Sep 19)	
	No (#7)	%	No (#40)	%	No (#72)	%
Number diagnosed with RR TB	41	5%	203	4%	240	4%
Number started on DS TB treatment	821	98%	4393	94%	5225	93%
Number DS TB initial lost to follow-up	11	1%	215	4%	295	5%
Number DS TB died before treatment started	3	0%	33	1%	32	1%
Number RR TB started on treatment	36	88%	179	88%	199	83%
Number RR TB lost to follow up before treatment started	1	2%	7	3%	12	5%
Number RR TB died before treatment started	1	2%	8	4%	12	5%

Legend: Red: target not achieved, Yellow: target not achieved, but improving; Green: target achieved

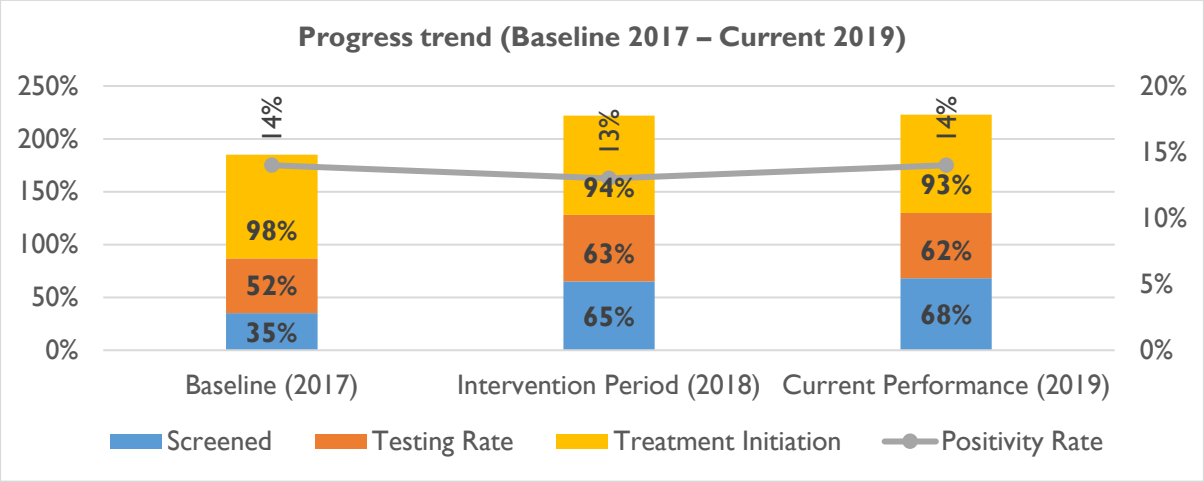


Figure 25: FAST Screening, Case Detection & Treatment Initiation. *Source project monthly/quarterly reports*

Due to FAST interventions, the overall the TAT from diagnosis to initiation of treatment in the FAST sites has also decreased from 4.0 days to 1.4 days in patients who were diagnosed through GXP as illustrated in the Figure 17 below. In addition, the proportion of patients put on treatment increased from 61% to 85.6% within two days of sputum collection (Figure 18).

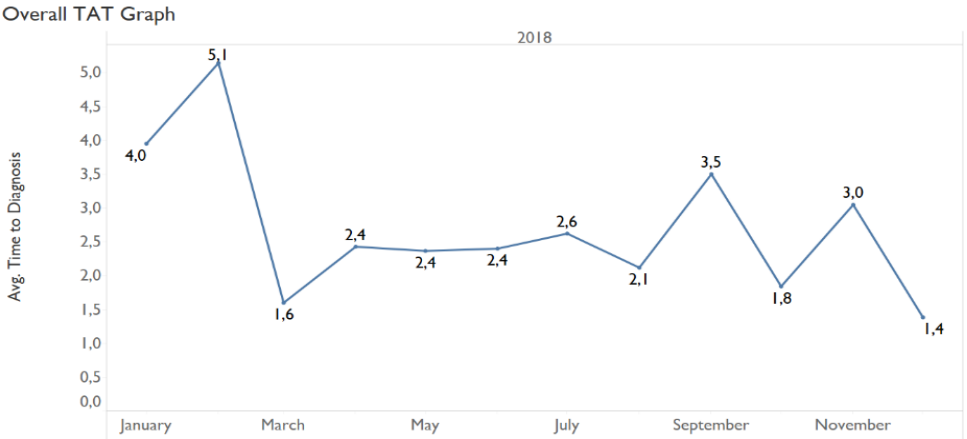


Figure 26: Overall Turnaround Time has reduced in hospital settings in 2018 from 4.0 days to 1.4 days. *Source project monthly/quarterly reports*

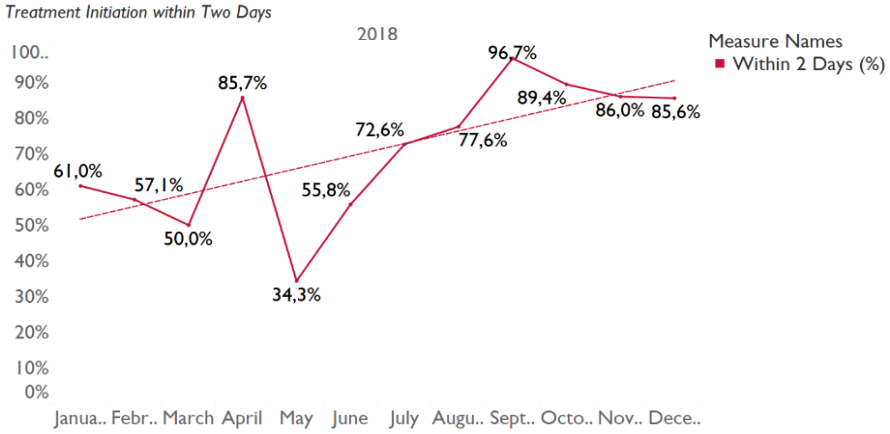


Figure 27: Treatment initiation of patients initiated on treatment within two days of sputum collection

The project in collaboration with the NDOH continued to support the FAST-monthly reviews in six provinces. The objective of the review sessions was for the facilities to share progress on FAST and U-LAM implementation, discuss challenges in the implementation of FAST, assess the impact of CQI activities and share possible solutions.

Implementation of Urine lipoarabinomannan (U-LAM)

The project has supported implementation of U-LAM testing in FAST sites in order to increase TB case detection among severely immunocompromised patients with HIV. The Table 9 below represent U-LAM preliminary results from 23 FAST sites in seven supported districts (OR Tambo, Nelson Mandela Bay Metro, Tshwane Health Metro, Johannesburg Health Metro, eThekwini, Mangaung and Limpopo). Of 4,228 eligible patients 2,344 were HIV positive patients with low CD4 count (less than or equal to 100 cell/uL), and 1,884 were HIV positive patients who are seriously ill, regardless of CD4 count (determined based on four signs, respiratory rate > 30/min; temperature > 39°C; heart rate > 120/min; unable to walk unaided). TB was detected in 925 out of 2,460 (38%) patients tested for U-LAM and 78% of whom were initiated on TB treatment. While improvements on implementation of U-LAM in FAST sites has been noted; under reporting plagues implementation due to lack of data from Limpopo following the travel moratorium instituted by the province between Q2-Q4 of PY03. The integration on U-LAM has so far been a success and a good model for managing patients with advanced HIV disease in order to avert TB related deaths amongst these patients. In PY04, the project will continue to scale up this approach and document impact on trends of deaths among the HIV/TB confected patients.

Table 9: Urinary lipoarabinomannan (U-LAM) implementation in 23 FAST hospitals across 5 provinces (Eastern Cape, Free State, Kwa-Zulu Natal, Gauteng and Limpopo). *Source: project monthly/quarterly reports*

DATA ELEMENT	Oct-Dec 18	%	Jan-Mar-19	%	Apr-Jun-19	%	Jul-Sep-19	%	Total	%
Number of HIV positive patients with low CD4 count (less than or equal to 100 cells/ul	633		621		1012		78		2344	
Number of HIV positive patients who are seriously ill	367		681		801		35		1884	

DATA ELEMENT	Oct-Dec 18	%	Jan-Mar-19	%	Apr-Jun-19	%	Jul-Sep-19	%	Total	%
and regardless of low CD4 count										
Number of clients U-LAM tested	853		944		588		75		2460	
Number tested U-LAM positive	219	26%	297	31%	394	67%	15	20%	925	38%
Number initiated on TB treatment	208	95%	286	96%	217	55%	15	100%	726	78%
Number done Xpert/MTB Rif	187	90%	228	80%	261	120%	0	0%	676	93%
Number diagnosed RR positive	3	2%	8	4%	23	9%	0	0%	34	5%
Number of RR positive on MDR-TB treatment	2	67%	8	100%	4	17%	0	0%	14	41%
Initial death			23						23	
Loss to follow			6						6	

Scale-up IPC practices in homes of 6,000 identified TB index patients through the NGO program to prevent TB transmission

Household risk assessments were conducted in 1,941 households utilizing community health care (through funded NGOs) in PY03. Key findings enabled development of multi stakeholder teams, including facility management and environmental officers to address patient's challenges. Education emphasized the importance of cough hygiene, opening of windows and doors for adequate ventilation, and that hand-washing is an effective strategy in preventing TB infections.

Monitor IPC practices in nine health care facilities using CO2 monitors

Through partnership with the Council for Scientific and Industrial Research (CSIR) the project has developed the Wi-Fi enabled CO2 monitors that can serve as a real-time alarm for the management and operational response of indoor areas with high potential for airborne disease transmission. The project has deployed 34 monitors in nine facilities across three (KwaZulu Natal, Gauteng, & Limpopo) provinces. Each facility has monitors in various wards to understand the differences in CO2 concentration based on location within a facility (also summarized in Table 9). While most monitors functional, some have experienced extended downtime. Downtime can be explained through power outages, network errors, device errors or user intervention (i.e. if a monitor is plugged in to an accessible outlet, people may unplug the monitor to charge electronic devices).

IPConnect, a suite of IPC applications designed for facility staff, facility managers, program managers and technical stakeholders has been expanded to include a dashboard for CO2 monitors. Data are currently collected and stored in a secure repository which IPConnect will leverage to produce on-demand reports. Table 10 below summarizes results from the CO2 monitors. Initial data analysis procedures include 1) examining the number of out of specification (OOS) events in a given day, which is calculated by examining the number of times a given CO2 monitor registered an OOS (typically above 550 ppm) value and taking the sum for the day 2) the percentage of time in a day during which the CO2 monitors recorded an OOS event, and 3) the environmental reproduction (R0e) percentage in a given day (that

is, the probability of TB transmission given the CO2 concentration). If the R0e value is less than one, the disease-free equilibrium is maintained, and transmission would not occur. R0e values above one, then, suggest onward TB transmission.

Table 10: Overall CO2 Monitor Results, by Facility. *Source project monthly/quarterly reports*

Facility	Unit	Monitor Name	Days	Average Daily OOS Events (#)	Average % of Day OOS	Average Daily R0e%
Jubilee	Casualty	Jubilee Casualty01	82.0	2.36	27.0%	1.146
		Jubilee Casualty02	82.0	1.18	15.2%	1.146
	OPD	Jubilee OPD	82.0	0.77	9.5%	0.817
	Polyclinic	Jubilee Polyclinic	10.0	1.90	52.4%	1.869
	Average		**64.0**	**1.55**	**26.0%**	--
KDH	ANC	KDH-ANC	42.0	0.34	2.5%	0.099
	Dental	KDH-DentalClinic2	40.0	0.87	17.0%	0.435
	Pharm	KDH-Pharm	27.0	0.05	0.2%	0.135
	Waiting-Any	KDH_MOPD-Waiting1	82.0	0.88	53.8%	1.917
	Average		**47.8**	**0.53**	**18.4%**	--
Matlala	OPD	Matlala OPD	82.0	0.98	15.4%	1.011
	Average		**82.0**	**0.98**	**15.4%**	--
PMH	Waiting-Any	PMH ANC-Waiting	82.0	0.81	41.0%	1.262
		PMH Waiting	79.0	0.49	34.0%	0.911
	Average		**80.5**	**0.65**	**37.5%**	--
South Rand	Casualty	SouthRand_Casualty	82.0	1.90	21.3%	1.182
	OPD	SouthRand_ODP1	82.0	1.70	41.7%	1.281
	Pharm	SouthRand_ViroPharm	81.0	1.64	99.0%	2.348
	Waiting-Any	SouthRand_Virology Wait1	82.0	0.63	15.4%	0.625
		SouthRand_Virology Wait2	82.0	0.52	8.2%	0.519
	Average		**81.8**	**1.28**	**37.1%**	--
Tshwane	ARV	Tshwane ARV Clinic	82.0	0.77	8.2%	0.840
	Casualty	Tshwane Casualty	82.0	2.52	32.7%	1.447
	OPD	Tshwane OPD	82.0	1.05	47.6%	1.464
	Average		**82.0**	**1.45**	**29.5%**	--
Grand Mean			**71.35**	**1.12**	**28.5%**	--

Based on the analysis of the CO2 monitors, the devices in Prince Mshiyeni Hospital in KwaZulu Natal spent the greatest proportion of the day OOS at 37.5%, followed by South Rand at 37.1% and Tshwane at 29.5%. Jubilee had the highest number of average daily OOS events, and South Rand had the highest daily average R0e% at 1.346%. The individual monitor with the highest number of average OOS events was Jubilee-Causalty-01 with 2.36%. The South Rand monitor at pharmacy spent 99% of time OOS on average, which suggests possible issues with placement. The monitor with the second greatest proportion of time spent OOS was the King DiniZulu Hospital, Medical outpatient department (MOPD) Waiting-01 monitor at 53.8%. These monitors also had the highest average daily R0e% values, at 2.348 and 1.917, respectively.

Conduct operational research to identify latent TB infection (LTBI) among healthcare workers-IGRA study

The operational research study commenced at Pretoria West in February 2019 and 350 HCWs were invited to the study. Of 277 consented and participated, samples of 259 participants have been processed and results of 241 participants analyzed. Early results indicate that of the 272 HCWs screened by QuantiFERON-TB GoldmPlus (QFT Plus) assay for latent TB, 230 (85%) were female, 42 (15%) male and the median age of the participants was 43 years. A total of 121 (44.5%,) were LTBI positive, 149 (54.8%) were LTBI negative and two (0.7%) HCWs had indeterminate QFT-Plus results. Fifty percent of HCWs that are LTBI positive were clinical staff. No active TB cases were found. The project is in the process of analyzing data to study LTBI association with other risk factors for example duration of employment, level of education, and any morbidity due to chronic diseases etc. Also, to probe further on study experience, focus group discussions will be conducted.

Support revision of national and international policies and guidelines on TB management

The project remains a key partner to the DOH in reviewing TB policies and guidelines for the country. During the reporting period, the project contributed to the review of the IPC implementation guide; the TPT Guidelines; the EPI-Review Tools; and the TB Costing Survey Tools. In addition, the project led the development of the Implementation Framework for 'Finding the missing TB patients', which has now been disseminated to provinces for implementation.

IR 1.3 Improved TB screening, including among key populations

KPs are defined as people who are vulnerable, undeserved or at-risk of TB. The project supports the NDOH through implementation of strategies to increase access to improved TB testing, particularly for individuals and groups at high risk. Approaches used include expanding strategies to reach, screen and evaluate individuals in groups at higher risk for latent TB infection and TB disease; improved application of diagnostic tests and clinical assessment with high combined specificity; and minimizing risks of progression from LTBI to disease.

Key Results

Number of KPs Screened for TB: During the PY03, through the NGO network model, a total of 810,454 people (KPs) were reached and screened for TB of which 5,962 were diagnosed with TB and 5.543 (93%) initiated on treatment**.** Through the NGO program alone focusing on awareness and door to door campaigns conducted, the grantees reached 97,097 people and screened 94,209 (97%) out of which 10,485 (11%) were TB presumptive. Of those presumptive, 8.035 (77%) were tested for TB and 319 (4%) were diagnosed for TB and 294 (92%) were linked to care.

A major challenge with measurement of project progress is that the official national and micro-level estimates of KPs statistics is not available for TB programming. Further, since the project's inception in 2016, only 49 (out of the anticipated 60) local NGOs have been contracted to provide community-based TB care services while ensuring a seamless linkage between facility level care and treatment and ongoing community-household based support.

These NGOs provide a comprehensive package (including screening for KPs) of support through a continuum of care starting from prevention and care, diagnosis and treatment all the way to follow up care and support at the household level. The projects contact management package and approach has prompted the government to include contact management as a key component of its package of interventions for reducing community level transmission.

The success of the key populations programming is attributed mainly to door to door and community campaigns. NGOs ensure that for each TB patient diagnosed, their close household contacts are screened for TB resulting in 59,158 contacts screened for TB and 992 diagnosed with TB in 2018. Other interventions include micro-targeted IPC campaigns in TB high burden areas; patient centered interpersonal communication (IPCC); strengthening of TB messages as part of the Phila Campaign; utilization of facility-based television network to increase TB awareness; commemoration of key national health days; integration of TB messages into mainstream media; engagement of TB ambassadors and champions to improve involvement of communities; use of national media platforms; and, partnership with key government departments, civil society and the NGO sector

During PY03, in order to maximize screening for KPs, the project will scale up strategic and focused dissemination of health communication and education in health care settings, and communities in high TB transmission hotspots in the 14 supported districts to generate additional demand and need for services.

Number of Key Populations Tested for TB: There has been an improvement in testing rate amongst the key population. Through the efforts of 49 NGOs, 810,454 people were reached and screened for TB of which 5,962 were diagnosed with TB and 5,543 (93%) initiated on treatment. All the key populations who were presumptive were tested by GXP /sputum.

In PY03, a total of 60 local NGOs will be contracted to provide community-based TB care services while ensuring a seamless linkage between facility level care and treatment and ongoing community-household based support. All the NGOs will provide a comprehensive package of support through a continuum of care starting from prevention and care, diagnosis and treatment all the way to follow up care and support at the household level.

Proportion of KPs Initiated on Treatment: The treatment initiation rate has been maintained above 90% since inception of the project. Through the efforts of 49 NGOs, 810,454 KPs were reached and screened for TB of which 5962 were diagnosed with TB and 5,543 (93%) initiated on treatment.

NGOs ensure that for each TB patient diagnosed, their close household contacts are also screened for TB, tested and initiated on treatment. In 2018, a total 59,158 contacts were screened for TB and 992 diagnosed and offered treatment services. In PY03, a total of 60 local NGOs will be contracted to provide community-based TB care services while ensuring a seamless linkage between facility level care and treatment and ongoing community-household based support. All the NGOs will provide a comprehensive package of support through a continuum of care starting from prevention and care, diagnosis and treatment all the way to follow up care and support at the household level. Expansion and access to reliable, linked TB services for key populations will be prioritized including tailoring of program elements to the specific conditions and different issues of each KP population category.

IR 2: Sustainability of Effective TB Response Systems Increased

The project provided technical support to strengthen health systems at national, provincial and district levels, including those for drug and laboratory policy and management, human resources for health, and M&E. Quality improvement (QI), systems mentorship and capacity building remain key strategies to improve the quality of services provided to all TB patients.

Key Results

National and Provincial Meetings Supported by evidence-based planning and Performance: Meetings supported with evidence-based planning and performance were intensified in PY03, which culminated in the development of district specific implementation plans linked to the local TB epidemic. On a regular basis each district was provided technical and logistical support to conduct the review meetings. During the reviews, TB program performance was discussed with the relevant district, sub-district and facility managers based on current evidence. The project provided technical assistance during quarterly reviews across supported districts and provinces.

However, some of the gaps identified on TB services was beyond the support available from the project. For example, the project is not mandated to provide direct service delivery where there are shortfalls. Collaboration with the DSPs had been a slow process as during PY03, most of the funding mechanisms ended and new partners came on board. During PY04, the districts will be supported based on the local epidemiology through quality improvement methodologies. District specific TB epidemiology will be further developed, and associated plans elaborated with greater involvement of the DOH.

Number of Stakeholder Meetings to review progress and use data for planning: The project initiated and provided technical support for quarterly reviews across supported districts. The main gaps identified include poor quality data to generate information for program decision making. During the reviews, TB program performance was discussed with the relevant district, sub-district and facility managers. Data clean-up has also been initiated. A standard operating procedure (SOP) has also been developed to enable scale-up of the clean-up exercise. In PY04, districts will be supported based on the local epidemiology through quality improvement methodologies. A short term (stop gap); medium- and long-term support plan to ensure availability of valid and reliable data has been developed and implementation started (this includes the recruitment of additional staff).

Number of managers trained in DS-TB and DR-TB Program Management: A total of 3,527 HCWs (2,952 Females and 575 Males) managers at the different levels of the health care system were trained, including program managers and coordinators attended various trainings and other forms of capacity building sessions. The project continues to build LMG capacity at provincial, district, sub district and facility levels as part of its health and community systems strengthening initiatives.

During PY04, Leadership, Management and Governance training and mentorship will be intensified. As part of the training, the project will further work with each district to leverage the conditional grant funds to increase case detection as well as to improve patient adherence

to DS and DR-TB treatment regimens. The project will also focus on capacity building in clinical management of DR and DS-TB (as opposed to didactic trainings) including on-site training and LDHF mentoring of clinicians to ensure that all clinical staff are competent on the clinical management of patients, implementation of new regimens (including, shorter multi drug resistant (MDR-TB) regimen, regimen with new TB drugs e.g. Bedaquiline) and other individualized extended regimens. Regular on-site clinical reviews and chart reviews will continue to ensure adherence to guidelines and protocols.

Project Supported Districts using new tools/approaches related to QI and program management: All the 14 districts are using the new tools and approaches related to QI and program management. The NDOH 2019 analysis shows that of the 14 project-supported districts seven (Nelson Mandela Bay Metro, uMkhanyakude, Sekhukhune, Waterberg, City of Cape Town, Cape Winelands and West Coast) achieved a DS-TB treatment initiation rate of between 80-90%. Project interventions targets high TB burden facilities with sub-optimal performance and identifies bottlenecks in service delivery and facilitates the development of quality improvement plans for improved TB management. To accelerate turn around in these facilities, CQI is augmented with targeted systems mentorship.

In PY03, the project also supported the department of health with the appointment of a QI Advisor at the National Level, and two QI advisors at the district level (Nelson Mandela Bay Metro and West Coast Districts) to drive and institutionalize the QI methodology within the TB program. For sustainability, the project developed a QI Standard operating procedure (SOP) and is contributing towards the national QI change package to share lessons learnt which can be implemented and scaled up nationally. A key challenge has been the slow expansion of CQI initiatives due to lack of consistent TA support to the districts. The government has prioritized CQI to strengthen and ensure quality of care.

In PY04, the project will place additional six CQI Advisors in each district to accelerate the CQI processes (Sarah Baartman, Fezile Dabi, Mangaung, Waterberg, Sekhukhune and City of Tshwane) while ensuring sustainability and institutionalization of CQI. Focus will also be placed on ensuring that the remaining seven districts (OR Tambo, Sarah Baartman, eThekwini, Fezile Dabi, Mangaung, City of Johannesburg and Tshwane) achieve and or maintain favorable TB indicators.

IR 2.1 Strengthened management capacity at all levels

Implement QA/QI Approach to address identified gaps in the TB Care Cascade

Nine CQI learning sessions were conducted in PY03 covering nine sub – districts in seven districts; O.R. Tambo, Waterberg and Fezile Dabi, Sekhukhune, Cape Winelands, West Coast and Sara Baartman (Figure 19, Figure 20). Six out of the seven districts except for Sekhukhune, reported 100% coverage on CQI for all the sub-districts. The most improved indicator remains the TB screening followed by testing rate, although quality of TB screening remains a challenge, as illustrated by low presumptive rate for TB and high positivity rates. While significant improvements in TB screening have been noted in all, facility staff are constantly reminded and measured on their targets for *the Missing TB Patients.*

Hospitals in the West Coast and Cape Winelands, although not implementing the FAST Strategy in full, with the few elements adapted they have shown improvement in the TB Care Cascade.

Five follow up learning sessions for FAST Hospitals in Gauteng and Nelson Mandela Bay Metro Sub – district C were conducted to monitor the CQI projects of the facilities. Four of the follow up sessions were in Nelson Mandela Bay Metro. The placement of the Improvement Officer in Nelson Mandela Bay Metro has added value to implementation of CQI, cluster reviews are consistent and planned regularly.

Figure 29: Laetitia Bam CHC TB Nurse CQI Project presentation

Figure 28: Mabandla Clinic TB Nurse & Data Capturer CQI Project presentation

Implement supervision of 30 QI clusters in the 14 supported districts

During the reporting period, thirty QI cluster review visits were conducted in eight districts (Fezile Dabi, Waterberg, Sekhukhune, uMkhanyakude, Nelson Mandela Bay Metro, OR Tambo, Mangaung and eThekwini) covering 122 facilities. Total number of facilities implementing CQI increased from 496 to 618 between October 2018 to September 2019. The teams acknowledged the importance of facility weekly data verification and data analysis, which are utilized as critical tools for instituting and monitoring the progress of facility CQI projects. Moreover, the *"STEEEP"* (Safe, Timely, Effective, Efficient, Equitable and Patient-centered care) and teamwork approaches were emphasized as key components of CQI. Joint support visits were conducted with the NDOH TBQI Project to Nelson Mandela, OR Tambo and eThekwini districts to monitor the implementation status and assess the impact of CQI activities.

To improve the quality of clinical management of patients, chart audits are conducted during the follow up collaborative learning sessions and QI cluster review visits. Ten percent (10%) improvement has been noted in both the TB screening and testing rate as illustrated by the performance in the two districts (Table 11, Table 12) below for the PY03.

TB Detection Cascade Data

Table 11: O.R Tambo Data TB Care Cascade Q1/18 – Q4/19. Source: DHIS

O.R Tambo District Impact	Oct-Dec 2018		Jan-Mar 2019		Apr-Jun 2019		Jul-Sept 2019	
	No.	%	No.	%	No.	%	No.	%
Headcount	780405		665015		635781		659905	
No. screened for TB	534435	68,5%	600024	90,2%	577433	90,8%	595540	90,2%
Presumptive TB clients	17412	3,3%	17259	2,9%	19268	3,3%	17989	3,0%
No. tested	14540	83,5%	14898	86,3%	17416	90,4%	15645	87,0%
No. tested positive	1417	9,7%	1797	12,1%	1261	7,2%	1597	10,2%
No. started on treatment	1690	119,3%	1730	96,3%	1300	103,1%	1545	96,7%
No. initially lost to follow up		-		-		-	52	3,3%
No. died before treatment started		-		-		-		-

Legend: Red: target not achieved or data quality issue, Yellow: target not achieved, but improving; Green: target achieved

Table 12: Mangaung Data TB Care Cascade Q1/18 – Q4/19. Source: DHIS

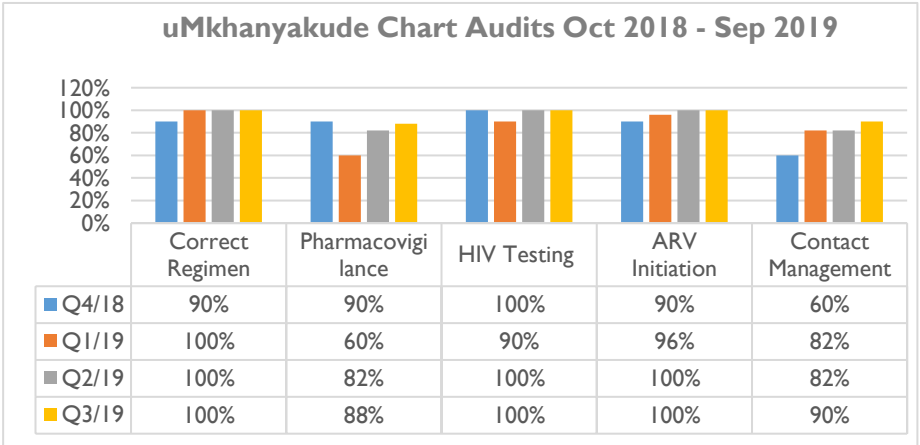
Mangaung District Impact	Oct-Dec 2018		Jan-Mar 2019		Apr-Jun 2019		Jul-Sept 2019	
	No.	%	No.	%	No.	%	No.	%
Headcount	356355		277458		136843		141747	
No. screened for TB	296804	83,3%	275570	99,3%	92431	67,5%	93150	65,7%
Presumptive TB clients	5763	1,9%	4164	1,5%	1489	1,6%	1261	1,4%
No. tested	3371	58,5%	2552	61,3%	1211	81,3%	1032	81,8%
No. tested positive	822	24,4%	705	27,6%	308	25,4%	413	40,0%
No. started on treatment	722	87,8%	732	103,8%	285	92,5%	391	94,7%
No. initially lost to follow up	40	4,9%	19	2,7%		-		-
No. died before treatment started	5	0,6%	3	0,4%		-		-

Legend: Red: target not achieved or data quality issue, Yellow: target not achieved, but improving; Green: target achieved

Screening rate in the first quarter (Oct - Dec 18) was at 69% and improved drastically with more than 10% increase in three consecutive quarters Testing rate in the first quarter (Oct - Dec 18) was at 59% and increased to 82% by the end of the PY03.

Chart Audit

A total of 415 charts were audited across six districts, Sekhukhune, uMkhanyakude, O.R. Tambo, Waterberg, Mangaung and Fezile Dabi. The chart audits assessed the clinical management of TB patients



	Correct Regimen	Pharmacovigilance	HIV Testing	ARV Initiation	Contact Management
Q4/18	90%	90%	100%	90%	60%
Q1/19	100%	60%	90%	96%	82%
Q2/19	100%	82%	100%	100%	82%
Q3/19	100%	88%	100%	100%	90%

Figure 30: uMkhanyakude Chart Audit

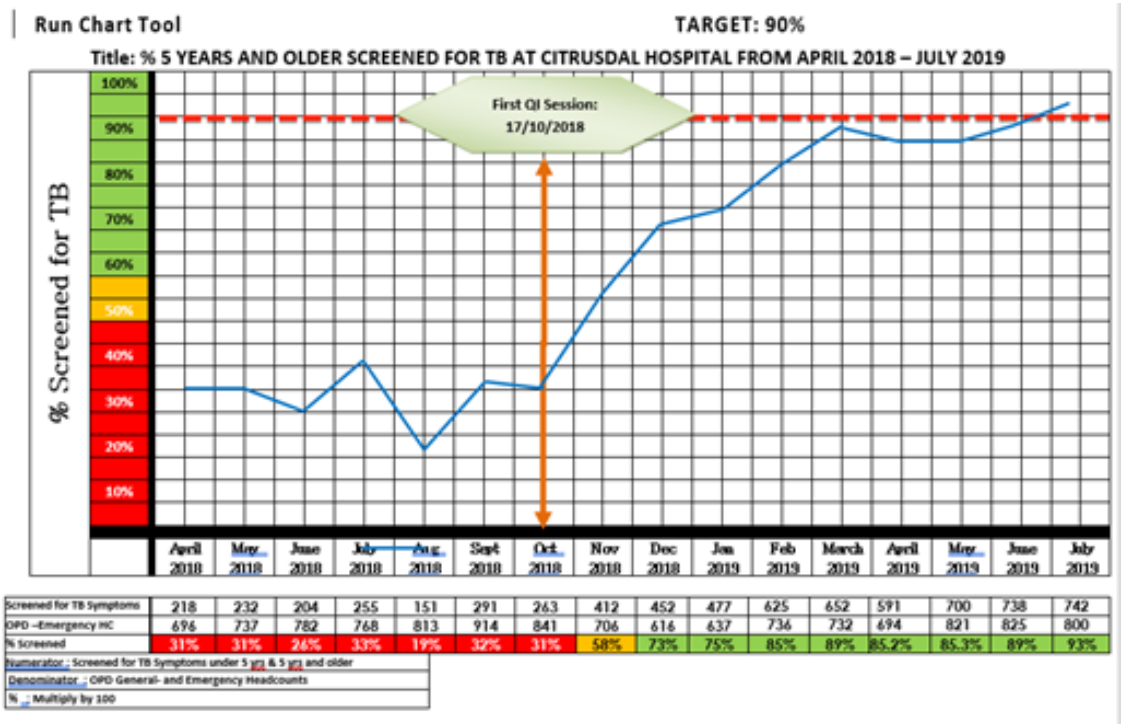
including whether the correct regimen was used, whether pharmacovigilance is being appropriately done as well as HIV testing, ART initiation and contact management. The common challenges noted is the testing of TB patients for HIV, contact management and recording of results. Pharmacovigilance review has improved in all the districts except in uMkhanyakude. Results from uMkhanyakude chart audits showed that at the initial stages contact management was being done for only 60% of selected patients, however this improved to 90% by June 2019. Similar improvements were seen in pharmacovigilance and use of the correct regimen (Figure 21).

Provide TA to provincial and district management on CQI

Current coverage for CQI in the supported districts is 11 out of the 14 supported districts except for uMkhanyakude, Sekhukhune, City of Cape Town, City of Tshwane and City of Johannesburg. Three Hundred and Thirty-Six (336) managers were orientated on CQI in all the supported districts on the different platforms including feedback meetings in the facilities. The support of the district and provincial review meetings creates an opportunity to share best practices and to further orientate managers on CQI. District performance is presented and CQI methodology applied to the challenges identified.

Technical Assistance and support for the implementation of QA/QI Approach to address identified gaps in the TB Care Cascade

The analysis of data from the three supported hospitals (Citrusdal, Swartland, Vredendal) in the West Coast indicates and illustrate success stories of improvements in TB screening over the 10 months. The screening rate in Citrusdal hospital improved significantly from baseline of 31% in October 2018 to 93% July 2019 due to integration with CQI and continued systems mentorship support from the project (Figure 22).



Legend: Red: target not achieved, Yellow: target not achieved, but improving; Green: target achieved

Figure 31: Improved screening rate at Citrusdal Hospital. Source: project monthly/quarterly reports

Brigham & Women's Hospital – facilitate the effective and efficient implementation of TB IPC measures at health facilities in the 14 USAID TB South Africa Project districts

The Brigham & Women's Hospital proposal to collaborate with the project has been reviewed and submitted to USAID for approval. The objective of the proposal is to improve the implementation of IPC measures to reduce the risk of TB transmission in health facilities, protecting patients, health care workers and the public at large in the 14 project-supported districts. Technical support is to be provided to the project includes 1) To assist with re-introduction of upper room germicidal ultraviolet (GUV) in healthcare settings, including support for training on design, installation and maintenance; 2) creating tools and capacity for improved monitoring and evaluation of TB IPC practices and 3) developing innovative approaches to enhance training of stakeholders to perform TB IPC practices.

Build capacity of HIV, AIDS, STI and TB managers, primary health area supervisors and local area managers on DS/DR-TB management, FAST, and IPC

Collaboration with National & Provincial Regional Training Centres (RTCs):

Stakeholder engagement: The project participated in Provincial RTC Stakeholder meetings in KwaZulu Natal, Limpopo and Gauteng provinces. The KwaZulu Natal and Gauteng stakeholder engagement meetings held on a quarterly basis and the project participated in all eight meetings. In these meetings, the project was acknowledged for its contribution to the TB program in the directly supported districts. In Limpopo and Gauteng provinces, the project in partnership with the provincial RTCs hosted the stakeholder meetings. In these platforms the project shares reports on capacity building interventions conducted and planned activities, which are implemented jointly with RTCs and TB Programs department.

SkillSMART compliance: In KwaZulu Natal, the project's capacity building interventions are being captured on the provincial SkillSMART database. This is because the RTC has got data capturers who captures on behalf of project – under the project name. For Eastern Cape, Free State, Gauteng, Western Cape and Limpopo, the project's capacity building interventions are also captured on provincial SkillSMART database, but under the respective provincial RTCs. This is because they expect the project to capture its own training interventions on the SkillSMART database and this is not possible, hence we opted for interventions to be captured in the system even though it is not in the project's name.

Skills transfer: In addition to co-facilitation which the project has institutionalized on training courses with provincial RTCs and district TB programs, the project implemented a ToT course for the FAST strategy in Free State, KwaZulu Natal and Mpumalanga provinces. This has allowed for district officials to acquire the required knowledge and skills to implement the strategy independently of the project

Course Accreditation with South African Medical Association (SAMA):

The project was awarded Continuous Professional Development (CPD) accreditation by South African Medical Association (SAMA) for the 2018-2019 for the following courses: Basic TB Management; TB-HIV-DM; Interpersonal Communications & Counselling; and, Continuous Quality Improvement.

IR 2.2 Strengthened service delivery capacity at all levels

Peer Learning Exchange (Benchmarking):

Peer Learning also known as Peer Exchange or Benchmarking is one of the capacity building interventions for the project. In May 2019, the project facilitated FAST Hospital Recording & Reporting Peer Learning Exercise between Gauteng DoH and Limpopo DoH. The purpose of the hospital visit was for Gauteng DoH colleagues to understand the geographical layout of the hospitals, including the different points of service. Having this understanding enabled the FAST implementation team from Gauteng to determine the patient folder flow in the hospital set up; integration of patient folders, i.e. hospital, TB and HIV folders and where are they kept; process of data capturing as well as linkage of computers at different points; management of TB patients and their outcomes; and, systems that are in place for referral and communication with local/feeder clinics.

Through the scale-up of the FAST strategy in KwaZulu Natal, Free State and Mpumalanga provinces, the peer learning experience was also institutionalized. The FAST champions from FAST Implementing hospitals held sessions during the FAST ToT sessions. This allows fellow HCWs from hospitals in the respective districts to learn how to implement the FAST strategy from a peer. This is underpinned by peer-learning theories and the intervention is gaining momentum through the FAST scale-up ToT activities.

Didactic Trainings:

Trainings for various categories of health workers were conducted from October 2018 to September 2019 (Table 13). 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.

Table 13: Didactic trainings conducted in PY03.

Training Course	Category	# Male	# Female	Total
TB Management	Doctors, Nurses, Allied Workers & Community Health Care Workers	131	828	959
Drug Resistant TB	Doctors & Nurses	68	265	333
Continuous Quality Improvement	Doctors, Nurses & Data Capturers	125	612	737
Interpersonal Communication & Counselling	Doctors, Nurses, Allied Workers & Community Health Care Workers	11	93	104
Infection Prevention & Control	Nurses & Community Care Workers	10	37	47
Advocacy Communication &	Nurses & Allied Workers	11	65	76

Training Course	Category	# Male	# Female	Total
Social Mobilization Guidelines				
FAST	Nurses & Data Capturers	60	282	342
TIER.Net/Recording & Reporting	Nurses & Data Capturer	141	479	620
ConnecTB	Nurses & Community Care Workers	1	19	20
TB Health Summit	Doctors, Nurses, Allied workers & Lay workers	10	98	108
Frontline Epidemiology Course	Doctors	8	18	26
TB Screening Campaigns	Nurses & Lay Workers	3	19	22
Community Dialogue	Community members	1	35	36
GIS Training	Health Information Officers	7	4	11
	Total	**587**	**2 854**	**3 441**

Capacity Building for Managers:

Managers at various levels of TB program management were capacitated through review workshops and workshops conducted either on monthly or quarterly basis. HAST Managers, PHC Supervisors and Local Area Managers were among the attendees (Table 14).

Table 14: Trainings conducted for Managers. Source: attendance registers and training reports

Training Course	Category	# Male	# Female	Total
Data Reviews & Audits	Programme Managers & Coordinators	56	271	327
DR-TB Review Workshop	Programme Managers & Coordinators	88	321	409
HAST Review Workshop	Programme Managers & Coordinators	33	202	235
Provincial TB Technical Review Workshop	Programme Managers & Coordinators	41	199	240
FAST Review Workshop	Programme Managers & Coordinators	60	353	413
RTC Stakeholder Meeting	Programme Managers & Coordinators	14	44	58
District Quarterly Review Workshop	Programme Managers & Coordinators	124	739	863
TB QI Facility Visits	Programme Managers & Coordinators	1	58	59
TB Programme Planning Workshops	Programme Managers & Coordinators	110	391	501
TB/HIV Indaba	Programme Managers & Coordinators	48	374	422
Total		**575**	**2 952**	**3 527**

Table 15: Low-Dose High-Frequency Trainings

Activity	Category	# Male	# Female	Total
Onsite Mentoring & Coaching – identified TB program gaps along the care cascade	Doctors, Nurses, Data Capturers, Allied Workers and Lay Workers	201	1 164	1 365
Total		**201**	**1 164**	**1 365**

Post-Training Assessments:

To address the know-do gap, the project conducted post training assessments that review quality of care and program indicators to evaluate effectiveness of trainings. The project adopted low-dose high-frequency capacity building approach during these assessments (Table 15). See Annex 3 that summarises post-training assessment findings.

Implement DR-TB service package in all the 14 supported districts

Key Results

In PY03, 4,938 DR-TB patients were put on treatment in the project supported districts which represents 48% of all the DR-TB patients initiated on treatment nationally.

The USAID TB South Africa Project supported districts initiated

4,930

DR-TB patients, representing

74%

of all the DR-TB patients initiated on treatment nationally.

However, despite the efforts by government to transition treatment to the new and re-purposed drugs there are still some sites administering the injectable regimens. Further, the policy of "One decentralized per sub district" does not seem to provide appropriate access to DR-TB services. Thus, the project has re-adapted and localized the implementation of this policy. The project is looking further into additional sites to ensure appropriate physical accessibility for the affected populations.

TA is implemented mainly through the CQI and systems mentorship initiatives as opposed to traditional mentorship. The project is focusing on strengthening of "DR-TB management teams" were systems and services are established in each district based on identified critical health systems gaps.

During PY04, all the 202 DR-TB decentralized sites will also be supported to ensure improved DR-TB care and management through institutionalization of clinical governance. To ensure optimal coverage and impact, in PY04, additional technical staff will be contracted (sessional staff) and placed in high burden districts to provide technical assistance and support to the government health staff and institutions to ensure the essential elements for decentralization namely: full complement of administrative and management mechanism in each decentralized site; adequate number of trained multi-disciplinary health professional teams with effective mentorship and supervision to initiate DR-TB treatment; access to laboratory services; access to uninterrupted supplies of drugs; access to the EDRWeb.

MDR TB Cases diagnosed and initiated on treatment: Data from 2014 to 2017 show a 34% decline in reported TB cases nationally (328,896 to 216902). The DR-TB diagnosed cases declined by the same trajectory 31% from 19,073 to 13,199. In PY03 the project made significant progress with the roll out of the DR-TB de-centralization and de-institutionalization policy to ensure that 100% district and sub district coverage (63 subdistricts).

Although the number of DR-TB diagnosed has been declining; the proportion positive for DR-TB initiated on treatment has increased from 57.8% to 72.4%, however, below the target of 100%. The increase in rate is largely due to the decentralization program that has seen all the 63 sub districts in the supported districts with an established decentralized site. This has resulted in treatment being closer to the people and reducing the initial loss to follow up.

In PY04, the project is looking further into additional sites to ensure appropriate accessibility for the affected populations.

Extensively drug-resistant TB (XDR-TB) cases diagnosed and initiated on treatment: The decline observed for DS and DR-TB is also evident for XDR-TB with a decline of 41% in XDR-TB cases from 967 to 553. The proportion of XDR-TB patients initiated on treatment has increased from 65% to 98% from 2016 to 2018. During PY04 all the 202 DR-TB decentralized sites will be supported to ensure improved XDR-TB care and management.

Loss to Follow Up (LTFU): This indicator is on track particularly for DR-TB. With decentralization and de-institutionalization of DR-TB care, patients receiving the short course regimen show a marked reduction in the LTFU (including a 50% reduction in the death rate). Among the 2017 cohort short regimen (RR/MDR-TB) LTFU was 12% (target 15%); short regimen (injectable) was 15% and non-injectable was 10% (target 15%). The target LTFU for DR-TB is <15% and for DS-TB is <5%.

Regular review forums have also been initiated at district and provincial level. The project continues to support pediatric DR-TB patients through the Buddy Beat initiative for better treatment outcomes.

In PY04, the project will ensure improvements in the patient experience/journey by ensuring the injectable regimen is phased out in all the supported districts. In addition, the project will improve and institutionalize clinical governance processes at all levels of care and management. Access to appropriate care of DR-TB along the cascade from community to health facility and back to community will also be a priority.

Pilot of the care package in Eastern Cape, Free State and Limpopo provinces:

During the reporting period, support and monitoring of patients who were part of the 2017 cohort of the pilot on the comprehensive care package continued. As at the end PY03, treatment success for patients on the short regimen was recorded at 64% with 5% of patients still on treatment whereas treatment success for the long regimen was 43%, with 25% of patients still on treatment (Table 16). For both regimens 17% of patients died, Although the mortality audit has not been conducted, it is important to note that 8% of the patients died within the first three months of the pilot and 61% of patients were co-infected with HIV. This can be attributed to patients presenting late in facilities. The LTFU for both regimes was recorded at 9% and project funded NGOs in the pilot sites are currently tracing the patients.

The project has undertaken to conduct mortality audits once approval processes have been granted.

Table 16: Treatment outcomes of patients DR TB Service Package. Source: EDR.Web

	Results by PY03 of the DR-TB care pilot for 2017 cohort			
Regimen	Short regimen	%	Long regimen	%
Total patients	**107**		**118**	
Cured	55		34	
Completed treatment	13		17	
Treatment success	**68**	**64%**	**51**	**43%**
Still on treatment	5	5%	30	25%
Transfer out	3	3%	0	0%
LTFU	10	9%	10	9%
Treatment failure	2	2%	7	6%
Died	20	17%	20	17%

TA support for Drug Resistant TB

Activities

Whereas South Africa has already made tremendous strides in improving access and outcomes for DR-TB treatment and care through the introduction of the new and re-purposed drugs; support and TA to improve clinical governance remains a priority. In PY03, the project was a key implementer of the United States Government (USG) National Action Plan (NAP), which prioritizes the 10-high DR-TB burden countries globally. As part of NAP, the project led the implementation of a patient-centered DR-TB package of care and has now adopted, adapted and is expanding implementation based on the results from the pilot. The focus of the support provided was ensuring improved access to high-quality, patient-centred diagnostic and treatment services; enhancing adherence to TB and MDR-TB treatment; and, to prevent the transmission of TB and MDR-TB within health care facilities and community settings.

The project made significant progress with the roll out of the DR-TB de-centralization and de-institutionalization policy to ensure that all 63 subdistricts in the supported districts have at least one decentralized MDR-TB site, as well as ensuring improved clinical management of DR-TB patients based on the outcomes of the DR-TB National Clinical Audit report which was conducted in March 2018.

Support implementation of DR-TB decentralization

The project continues 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. Decentralized MDR-TB sites have been established in 100% sub-districts in project supported districts to make it easier for patients to be initiated onto treatment and retained in care closer to their homes. There is a total of 99 subdistricts in project supported districts, all of which are covered with a DR-TB decentralized site. Of the 202 decentralized sites in project supported provinces, the overwhelming majority (137) are in the Western Cape

province. The project in collaboration with DOH identified health facilities for scale up of MDR-TB services and supports government to monitor and evaluate decentralization of MDR-TB activities through DR-TB clinical audits, review facilities performance. Webinars on implementation of the DR-TB service package were held during this period. During PY03, significant progress was made, particularly in eThekwini district, which rolled out the implementation of the supportive care package as part of decentralization support. A total of 11 out of 18 facilities in the district are initiating DR-TB patients, with a total of 258 patients have been initiated on DR-TB treatment between October 2018 and August 2019 (Figure 23). A total of three patients died, two have an outcome of pre-XDR-TB and one is LTFU (Table 17).

Table 17: Decentralization coverage in project supported districts

Province	Number of Districts	Number of sub-districts with DR-TB services	Number of sub-districts without DR- TB service	Number of initiation Sites	Coverage of DR-TB services (%)
Eastern Cape	3	10/10	0	14	**100%**
Free State	2	8/8	0	11	**100%**
Gauteng	2	13/13	0	24	**100%**
Kwa-Zulu Natal	2	7/7	0	13	**100%**
Limpopo	2	9/9	0	14	**100%**
Western Cape	3	12/12	0	137	**100%**
TOTAL	**14**	**59/59**	**0**	**202**	**100%**

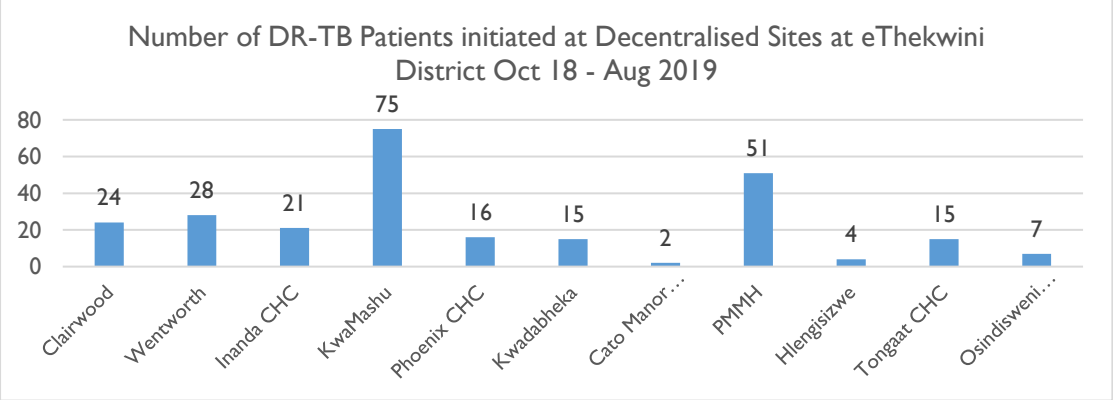


Figure 32: Decentralization of DR-TB sites: Progress to date. Source:project monthly/quarterly reports

MDR-TB Clinical Audits: During the reporting period, the project continued to assist the NDOH to institutionalize DR-TB Clinical Chart Audits in the supported districts, as part of improving quality of care for DR TB patients. DR-TB clinical audits were carried out, in eThekwini, OR Tambo and Tshwane districts to assess the quality of care patients received in these facilities. In supported districts the project worked closely with District TB Coordinators, Centers of excellence, Clinical Specialist, pharmacist, Nursing service managers

and decentralized sites to establish MDR-TB Task teams and to plan MDR-TB Clinical audits for the decentralized sites, and to orientate the task team on the MDR-TB clinical audit tools.

To highlight some of the findings, four MDR-TB clinical audits were conducted at KwaMashu CHC, Inanda CHC, Wentworth and Clairwood Hospitals in the KwaZulu Natal province and results showed challenges with pharmacovigilance reporting as well as contact management and some elements of admission and referral (see an example in Table 18).

Table 18: Summary findings of the clinical audits conducted in eThekwini district

Sections	Inanda	KwaMashu	Clairwood
Section I - Admission and Referral	73%	66.7%	100% (40/40)
Section J - Diagnosis and treatment	52%	77.4%	89% (71/80)
Section K - Side effects documentation and reporting	23%	38%	70% (94/135)
Section L - Evaluation and monitoring	89%	74%	95% (19/20)
Overall Score	**42%**	**60%**	**81.5%**

Legend: Red: target not achieved, Yellow: target not achieved, but improving; Green: target achieved

Addressing challenges with Pharmacovigilance (PV) for MDR-TB: The project contracted the Human Sciences Research Council (HSRC) to conduct a pharmacovigilance study on current PV practices in South Africa to improve reporting and management of adverse events. Structured interviews focusing on knowledge, beliefs and practices (target population – doctors, nurses, pharmacists, quality assurance managers, operational managers, facility managers) were conducted. Adverse event reports submitted between January to June 2019, were audited to ensure minimum required information is available. In Table 19 below, the number of interviews conducted, and adverse event report forms audited in 10 study sites are shown.

Table 19: Number of interviews and adverse event report forms audited in 10 study sites

Site	Status	Number of interviews	Number of adverse event report forms audited
Eastern Cape Site 1	Complete	13	9
Eastern Cape Site 2	*17 to 20 September 2019*	-	-
KwaZulu-Natal	Complete	31	10
Mpumalanga	Complete	15	4
Northern Cape	Complete	14	6
Western Cape	Complete	21	10
Free State	Complete	7	10
Gauteng	*1 to 4 October 2019*	-	-
North West Province	*12 to 13 September 2019*	-	-
Limpopo	*25 to 27 September 2019*	-	-
Total to date		**101**	**49**

NGO Network Model (DR-TB treatment outcomes): DR-TB patients treatment outcomes analysis was conducted for patients supported and not supported by Asiphile E-Uganda, Isiphephelo and Mpilonhle grantees to evaluate the NGO support to DR-TB patients. The outcomes for 2016, 2017 and 2018 cohorts were considered. Figure 24 below show the results of the NGOs in their supported health facilities. The reports show that the outcomes

of the patients supported by the grantees are better than outcomes of the non-supported patients.

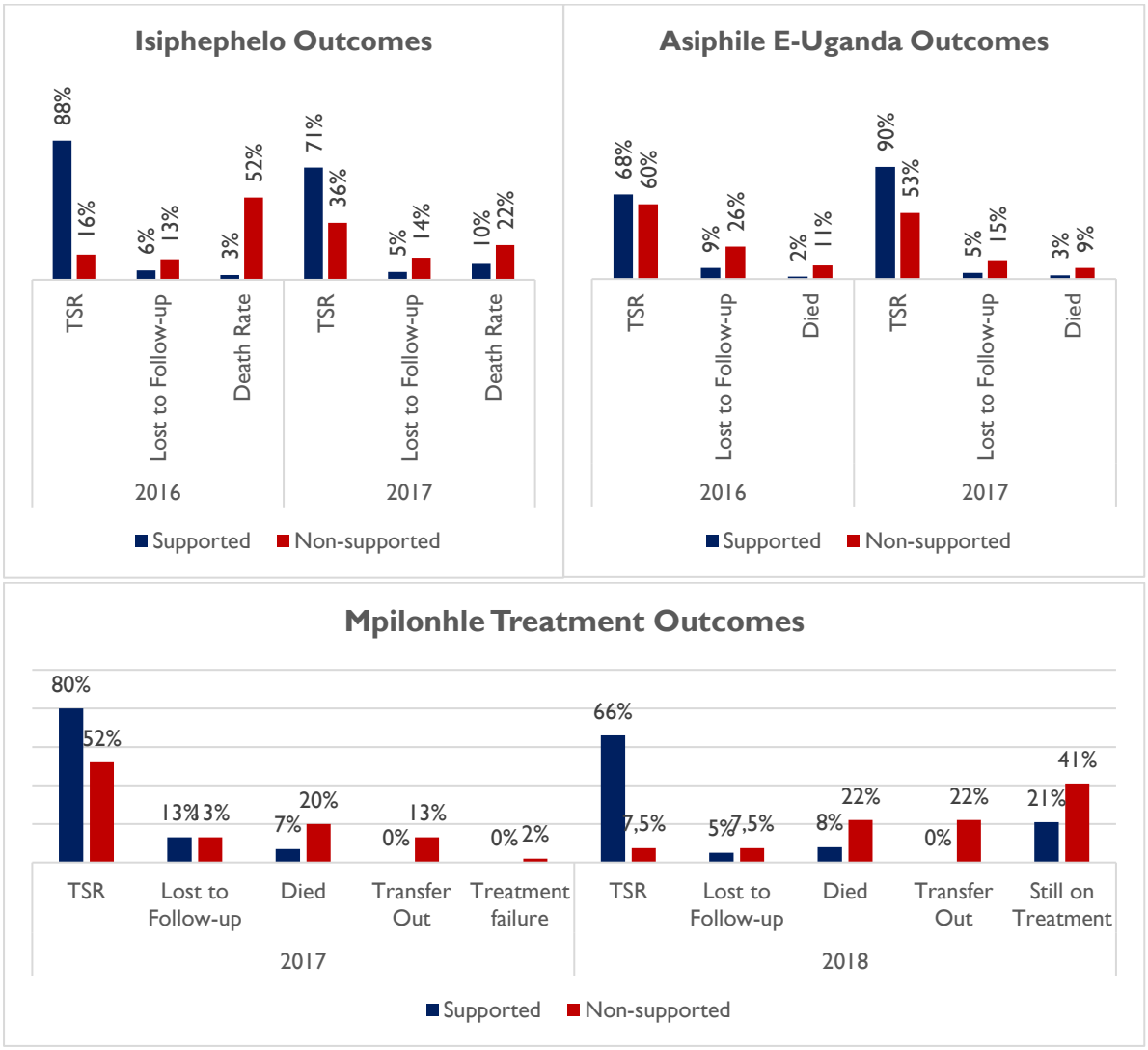


Figure 33: DR-TB treatment outcomes. Source: project monthly/quarterly reports

IR 2.3 Improved data reporting and recording at all levels

The project continued to support the DOH in its efforts to harmonize and standardize the TB recording and reporting system through the role out of TIER.Net.

Build capacity at national and provincial, district and facility levels to collect, analyse and report accurate data in a timely fashion

South Africa has made significant advances with improving data and reporting systems for TB. However, with the progress, unanticipated challenges have emerged which the project work with the NDOH to resolve. Currently, there are three data reporting systems that are in use for TB Management in South Africa (EDR.Web, the WebDHIS and the new electronic THIS). These systems often do not interlink with each other, even though the information generated comes from the same facilities. The previous vertical TB data system has now been integrated through the "THIS" initiative, however, the different data sources report different numbers.

Ensuring the harmonization of the data was a priority for the project in PY03. The NDoH expanded THIS to include the TB module countrywide. ETR.Net was retired in March 2019 with a subsequent rapid expansion to have all districts implementing the new system. The rapid expansion of the new system required capacity building of HCWs to ensure seamless implementation. To this end, the project trained a total of 1,398 HCWs; which is 102% achievement of the set annual target (Table 20). Most of the trainings were on the TB module in TIER.Net.

Table 20: Details of the training numbers by district against targets Q1, Q2, Q3 & Q4 2019: source: project monthly/quarterly reports

District	No Trained Q1	No. trained Q2	No trained Q 3	No trained in Q4	Cumulative no. trained	Annual Target	% achieved
Sarah Baartman	80	63	6	0	149	190	78%
OR Tambo	299	0	40	0	339	299	113%
Nelson Mandela Bay Metro	48	21	24	0	93	53	175%
Fezile Dabi	54	10	18	0	82	70	117%
Mangaung	30	0		21	51	50	102%
eThekwini	3	0	76	0	79	25	316%
uMkhanyakude	0	20	31	157	208	190	109%
Johannesburg Health Metro	23	36	2	0	61	50	122%
Tshwane	10	0	0	0	10	15	67%
Sekhukhune	0	11	9	53	73	190	38%
Waterberg	75	59	25	22	181	190	95%
Cape Winelands	0	0	0		0	20	0%
City of Cape Town (SWSS)	0	2	34	14	50	10	500%
West Coast	0	1	6	15	22	15	147%
Total	**622**	**223**	**271**	**282**	**1398**	**1367**	102%

Implement the ConnecTB application to improve patient management and reporting capabilities among all the 80 NGOs.

The new ConnecTB system is still under development, but parallel testing was initiated in June 2019. The parallel run testing was conducted by Grahamstown Hospice and the testing process highlighted some issues specifically with the daily digest that alerts supervisors about daily visits conducted or missed. The system was reviewed by the project's consultant who concluded that the current vendor was far from delivering a working system and advised that the contract be terminated. The project has been advised to pursue a vendor who developed the Bangladesh system in six weeks. The team members had the opportunity to review the Bangladesh system and concluded it is suitable for our own use with a few modifications to meet our peculiar situation.

Support DOH to utilize information from the TB hotspots identified in the 14 project supported districts using geo-mapping

The project has developed hot spot maps based on the results from the geo-mapping.

Support the DoH to conduct quarterly provincial/district program data reviews

Thirteen quarterly reviews were supported this quarter bringing the cumulative total of 58 supported in the year. The quarterly program reviews are a strategic platform for providing technical assistance to district management teams that are directly responsible for the TB program in supported districts. The reviews focused on key and specific issues that contribute towards poor TB outcomes and the project provided guidance and assists with the implementation of the recommendations and quality improvement plans developed (see an example in Table 21).

Table 21: Fezile Dabi challenges and proposed actions

Key issues and action points	Action points including Support from the project
• Low screening rate of 76.1%. • TB screening not done for fast lane patients that are stable according to Ideal Clinic policy, TB screening not ticked on the PHC register leading to not capturing on DHIS • Low Testing rate due to incomplete recording and reporting on the PHC Tick register • Low Treatment Success Rate (TSR) of 74.1% due to a high Death rate of 15.4%, LTFU rate of 4.3%, T/O of 4.9% • Late presentation and diagnosis due to treatment interrupters not traced back in Metsimaholo sub-districts.	• Facility QI Teams to monitor PHC registers for TB screening, symptomatic and sputum sent daily, weekly and monthly in all facilities and capturing on DHIS. • Conduct monthly data supervisory support visits in all sub-districts • Learning Collaborative: Bi-Monthly, QIPs on data management were developed: Monitoring Monthly • Conduct a CQI Refresher and Learning Collaborative workshops and follow-up on data management during cluster visits • Intensified Case Finding through Door to Door, Contact Management and Awareness campaigns (Monthly) • Follow-up on the generation of line lists for missed appointments during the cluster visits and actions taken • Community Education through radio slots and pamphlet distribution.

Carry out internal data quality audits (DQA) for monthly reported data and for supported NGOs data

The project carried out several data verification and audits across all the supported NGOs with specific results listed below.

Conduct data quality assessments in partnership with the NDOH

Description of Data Clean-up Process

The project in collaboration with the Free State Provincial TB Directorate conducted a data quality assessment for all five districts in the Free State province to compare ETR.Net data to data submitted at the provincial level. The sub districts' ETR.Net data was compared with that housed in the ETR.Net submitted to the district. TB case identification registers for 2017 for each facility were reviewed to ensure that all 2017 presumptive patients diagnosed with TB were registered in TIER.Net and/or ETR.Net. Information recorded on TB patients' files for each facility was verified against information captured in TIER.Net and/or ETR.Net (at sub-district level) for accuracy and completeness. Discrepancies identified were corrected on the spot. To ensure that all patients' information at facility level is the same as what the sub-

district has after the clean-up process, TIER.Net dispatches for each facility were created and loaded onto the relevant Sub-district central TIER.Net database. At sub-district level, ETR.Net export files were generated for each facility from the sub-district TIER.Net central database and imported into the sub-district ETR.Net. To ensure uniformity of sub-district, district and provincial TB information, ETR.Net dispatch files were created from the sub-district central ETR.Net database and uploaded onto the district central ETR.Net database after which another dispatch file was created from the district central ETR.Net database and uploaded onto the provincial central ETR.Net database. Table 22 shows the results before and after clean-up for Free State Province.

Table 22: Free State Province: Treatment Outcomes 2017 (All TB Cases): Source: project reports

DATA VALIDATION				
INDICATOR	**BEFORE**		**AFTER**	
	Number	*Percentage*	*Number*	*Percentage*
Treatment Success	**9196**	**70.2%**	**9007**	**77.7%**
- Cured	2464	18.8%	2471	21.3%
- Treatment completed	6732	51.4%	6536	56.4%
Treatment failure	38	0.3%	37	0.3%
Treatment not completed				
- Died during treatment	1311	10%	1226	10.6%
- Defaulted from treatment	828	6.3%	822	7.1%
Transferred to another unit	521	4%	425	3.7%
Patients not evaluated	**1200**	**9.2%**	**72**	**0.6%**
Total All TB Cases	**13094**	**100.0%**	**11589**	**100.0%**

Challenges Identified in TB Information Management

- Data capturers not well capacitated on how to capture data onto the TB module in TIER.Net.
- Data capturers lack basic TB management knowledge leading to inaccurate and incomplete abstraction of TB information from patients' files into TIER.Net.
- Data capturers not adhering to the *Facility Integrated TB/HIV Data Management Standard Operating Procedure* prescripts leading to data validation and TB line listing reports not being generated and actioned.
- Technical challenges with uploading of ETR.Net dispatch files from the sub-district to the district and to the province leading to incomplete and different data at all levels of the healthcare system. This challenge was however resolved by re-installing ETR.Net on new district and provincial computers.

Challenges Identified in Clinical Management of Patients

- Incomplete clinical records i.e. no notes on first consultation, including counselling.
- Baseline smears not graded (patient file + TIER.Net).
- Monitoring sputa (for smears) collected prior or later than the correct follow-up date.

- Patients were wrongly classified in most files (ICD10 coding).
- Outcomes not well understood.
- Diagnostic algorithm and monitoring not adhered to – Sputum for Culture and Sensitivity are requested frequently and all GXP negative clients are all referred for CXR.
- Most re-treatment patients are categorized as retreatment after failure.

Recommendations

- Data Capturers must be trained and mentored on how to capture on the TIER.Net TB module.
- Data Capturers must be orientated on Basic TB Management.
- Hard copies of the *Facility Integrated TB/HIV Data Management Standard Operating Procedure* must be printed and distributed to facilities; and Data Capturers orientated.
- Clinicians must be orientated on TB management including correct allocation of outcomes.
- Print and distribute TB diagnostic algorithms and orientate clinicians.

IR 3: Care and Treatment of Vulnerable Populations improved

The project continued to focus on marginalized, vulnerable populations, as well as those most at-risk, through contact tracing, management and TB case-monitoring; expanding community involvement in and links with the PHC system for DOTS delivery; and increasing formal and informal linkages with organizations and institutions that work with these populations.

IR 3.1 Increased contact tracing of key populations

Implement contact management for all 6,000 TB index cases supported by NGOs to contribute towards finding missing TB cases

At the end of PY03, a total of 30 grantees supported 7,254 TB patients and contact management was done for 7,092 index patients. 96% of contacts were screened for TB. Of those screened, 27% were presumptive for TB and 80% were tested for TB with 12% being diagnosed for TB and 88% of them initiated on treatment (Figure 25).

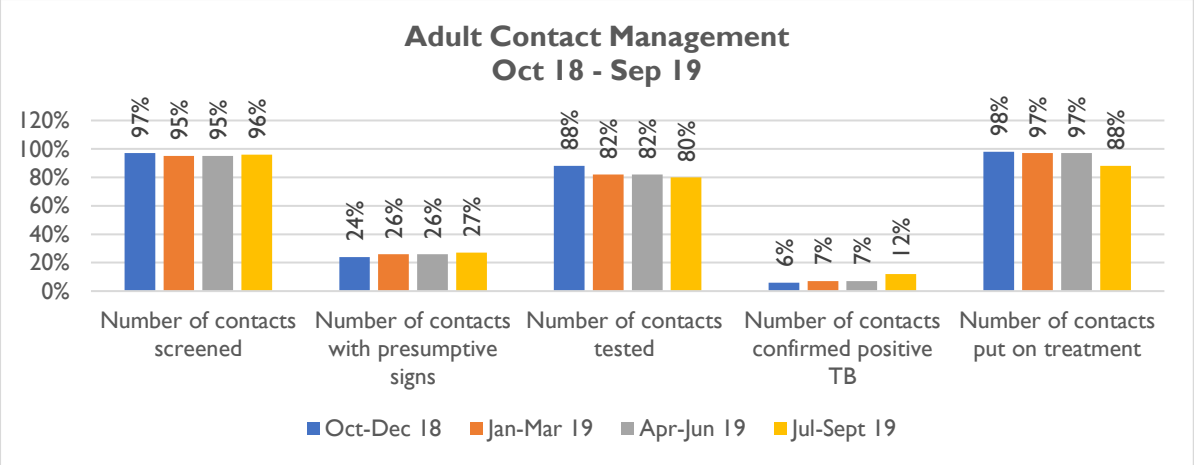


Figure 34: Adult Contact Management: Oct 18 - Sep 19. Source: project monthly/quarterly reports

On child contact management, throughout the year, the grantees reached 1,427 children, diagnosed 27 and initiated 23 on treatment. Commutative data for PY03 showed that the grantees managed to reach the 90% target on the screening rate only. The treatment initiation rate was slightly below the 90% target at 85%, whereas the testing rate was significantly low at 59% for the year. Figure 26 below shows data for each quarter in PY03.

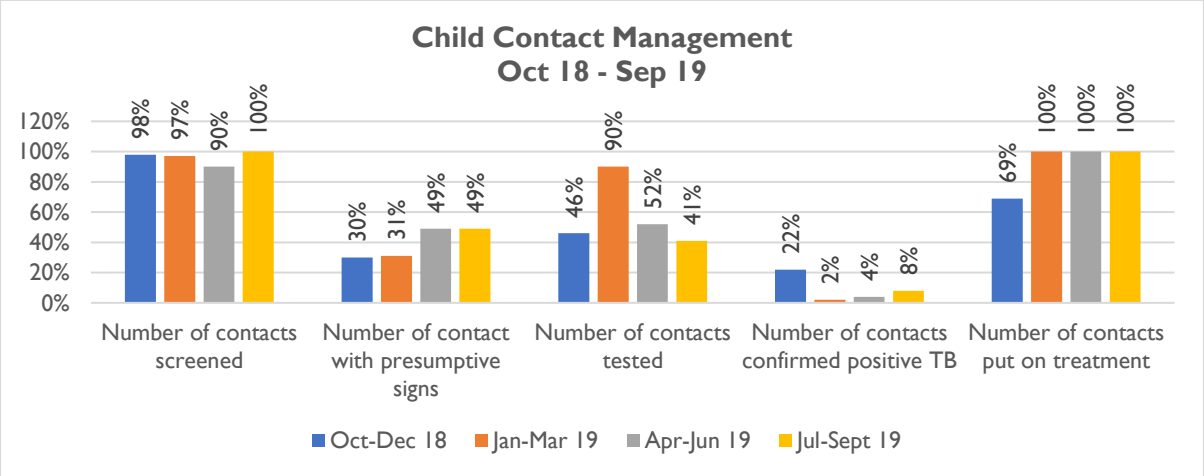


Figure 35: Child Contact Management: Oct 18 - Sep 19. Source: project monthly/quarterly reports

Scale up use of ConnecTB among Ward Based Outreach Teams (WBOTs) to integrate TB management into their activities

Implementation of ConnecTB was put on hold in this reporting period due to the technical problems that were encountered by the grantees, that compromised the integrity of the data. The project focused on finalising the new platform, and it is still under testing and review.

IR 3.2 Improved TB case management among key populations

Number of Key Populations Screened, Tested and Initiated treatment for TB: During the PY03, a total of 810,454 people (KPs) were reached and screened for TB of which 5,962 were diagnosed with TB and 5,543 (93%) initiated on treatment**.** Through the NGO program alone focusing on awareness and door to door campaigns conducted, the grantees reached

97,097 people and screened 94,209 (97%) out of which 10,485 (11%) were TB presumptive as illustrated in the graph below. Of those presumptive, 8,035 (77%) were tested for TB and 319 (4%) were diagnosed for TB and 294 (92%) were linked to care (Figure 27).

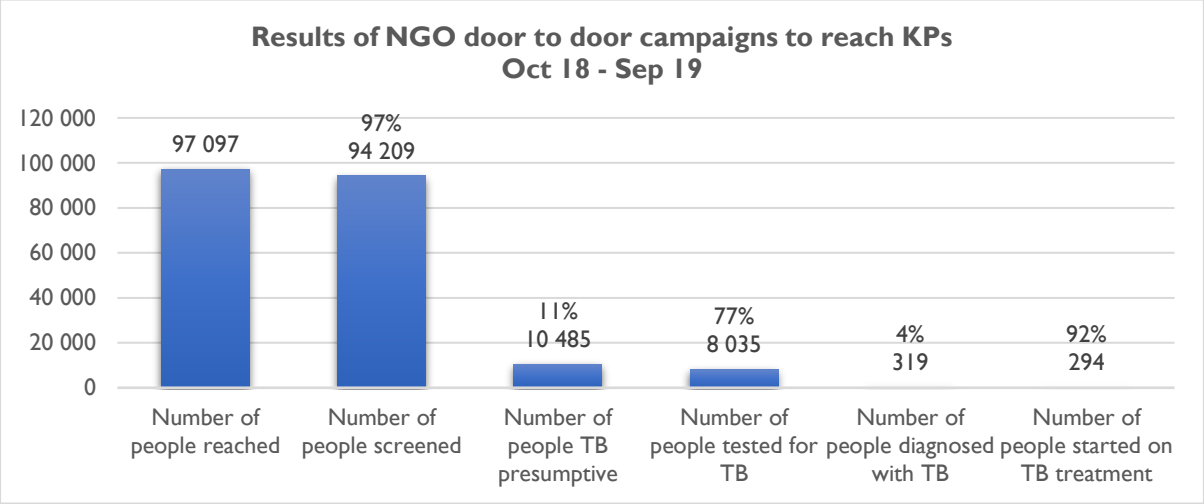


Figure 36: Results of campaigns conducted from October 2018 to September 2019: Source: project monthly/quarterly reports

A major challenge with measurement of project progress is that the official national and micro-level estimates of KPs statistics is not available for TB programming. Further, since the project's inception in 2016, only 49 (out of the anticipated 60) local NGOs have been contracted to provide community-based TB care services while ensuring a seamless linkage between facility level care and treatment and ongoing community-household based support.

These NGOs provide a comprehensive package (including screening for KPs) of support through a continuum of care starting from prevention and care, diagnosis and treatment all the way to follow up care and support at the household level. The projects contact management package and approach has prompted the government to include contact management as a key component of its package of interventions for reducing community level transmission. The success of the key populations programming has been due to door to door and community campaigns.

TB/HIV Co-infected patients who initiated ART: The national ART initiation rate among TB co-infected patients is 86%. This ranges from as high as 99% uMkhanyakude, above 90% for all districts in EC, Limpopo and Free state districts to 87% in Gauteng. The 79% coverage in eThekwini with large absolute numbers impact greatly on the overall performance of the country. The Western Cape is at 77.4% (ranging from 56% -West Coast to 83% City of Cape Town) mainly attributed to the reporting systems. The project continues to advocate for a change in the reporting processes in the Western Cape. The project has impressed on the province that mortality among TB patients who are HIV positive can be reduced if they are timeously identified and put on ART early. In PY03, the project will continue strengthening the CQI processes in the facilities to address management of co-infected patients. In the western cape, the project will influence policy change advocacy at national and provincial level

Treatment Success Rate: The main challenge is with the DS-TB treatment success rate as well as the ART coverage. These indicators have declined over the last three years, owing to several factors including the introduction of new data and reporting systems for TB. Prior to the introduction of the TIER.Net the TSR for DS-TB dropped to 75% against the anticipated

85% for 2018 across both the supported and non-supported districts. Whilst the ART initiation rate sits at 82%, which is lower than the anticipated 90%, it is important to note that most districts are doing very well with ART initiation, from as high as 99% uMkhanyakude, above 90% for all districts in Eastern Cape, Limpopo and Free State districts to 87% in Gauteng. The 79% coverage in eThekwini with large absolute numbers impact greatly on the overall performance of the country; The Western Cape also negatively affects the average performance with an ART ignition rate which sits at 77.4% (ranging from 56% -West Coast to 83% City of Cape Town – mainly attributed to the reporting systems. A key focus of the remaining project period will be to target the districts that have low treatment outcomes, particularly DS-TB treatment success as well as ART coverage to ensure that the project achieves the targets set by the department of health by the end of the contract period.

Appoint additional local NGOs to increase screening and finding missing cases among prioritized key populations

In PY04, a total of 60 local NGOs will be contracted to provide community-based TB care services while ensuring a seamless linkage between facility level care and treatment and ongoing community-household based support. All the NGOs will provide a comprehensive package of support through a continuum of care starting from prevention and care, diagnosis and treatment all the way to follow up care and support at the household level.

Expansion and access to reliable, linked TB services for key populations will be prioritized including tailoring of program elements to the specific conditions and different issues of each KP population category.

Conduct ongoing technical and financial management capacity development activities for appointed NGOs

A total of 161 participants from six grantees were trained on Basic TB Management (Table 23).

Table 23: Capacity building activities for NGOs

Grantee	Type of Training	No. of participants Trained
Care Ministry, Kgatelopele HBC and Wagon of Hope	Post award workshop	10
Care Ministry	Basic TB Management focusing on DR-TB and risk stratification	18
Wagon of Hope Foundation	Basic TB Management	40
Kgatelopele HBC	Basic TB Management focusing on DR-TB and risk stratification	18
CMAN, HAT and SPF	Post award workshop	10
CMAN	Basic TB Management	18
HAT	Basic TB Management focusing on risk stratification	25
SPF	Basic TB Management focusing on risk stratification	22
6 NGOs and 2 post award trainings		**161**

Risk Stratification Model

Risk stratification is a new model of implementation for the funded grantees, that focuses on prioritization of DR-TB patients and DS-TB patients that are likely to default on treatment. The objective of the model is to improve DR-TB DOT support coverage and reduce the lost to follow rate in TB patients in the 14 USAID TB supported districts. Prior to implementation, the project developed, and concept note, and conducted a consultative process in two provinces, Eastern Cape and Limpopo to establish the referral practices of patients by facilities to the DOT support grantees (NGOs). A patient referral form was developed for patient assessment and categorization. The model put emphasis on providing DOT support to patients who fall into the following four categories:

1. TB treatment (patient with ILTFU, previous Treatment failure, patients with relapse)
2. Co-morbidity (co-infected with HIV, co-infected with Diabetes mellitus)
3. Socio economic (history of substance abuse, unemployed or homeless, mental illness)
4. Gender (males, children)

By the end of the reporting year, nine out of 11 active grantees were implementing the model. These grantees are offering support to 501 DR-TB patients. The target for DR-TB support in PY04 is 4,938.

Data Quality Assessments

During the reporting period, Data Quality assessment were conducted at nine grantees in five supported districts, Mangaung, eThekwini, Vhembe, Sarah Baartman, and Fezile Dabi. Table 24 below summarises the best practices and key challenges observed during these Data Quality Assessments.

Table 24: Data Quality Assessments Results

Best Practices	Challenges
• Community healthcare workers have a good working relationship with the clinics they are supporting. • Grantee has a strong management team including the Project Manager, Coordinator and M&E Officer OR Data Capturers. • Data Capturers with knowledge of data management basics.	• Poor recording of DOT visits contact, management and clinical management data. • Lack of knowledge on TB treatment outcomes definitions. • Unconventional and data security compromised reporting platforms such as WhatsApp used as a reporting tool. • No paper-based recording tools for recording of contact management screening, sputum collection and results. • Lack of community healthcare workers support by the grantee coordinator. • Lack of DOT registers.

IR 3.3 Strengthened comprehensive systems and partnerships for care

The private sector and other DOH public sector partners play an important role in providing TB services and in reaching out to communities at risk. The project continued to foster complementary partnerships with these sectors to strengthen outreach and access to high quality patient support and care for TB services as we close gaps in the TB care and management cascade.

Key Results

The project has successfully implemented key partnerships with private, quasi-governmental and non-DOH public sectors who play an important role in providing health and TB services and in reaching out to key and vulnerable populations. Establishment of key partnerships and interventions targets were met and surpassed during the year. Additional partnerships have been established to ensure key population dominated institutions are supported with establishment of TB services.

However, the changes in the DSPs with new funding mechanisms coming into play during the year, delayed active engagement with DSPs. In the last quarter, Global fund partners were introduced to four of the project-supported districts (City of Johannesburg, OR Tambo, City of Cape Town – South West Sub Structure and eThekwini) – thus need to forge a new partnership framework to ensure complementarity of interventions.

Key Partnerships established

- *Right to Care and University of Pretoria* - The project, in collaboration with Right to Care and University of Pretoria, is working together on a campaign to 'close the gap' by finding missing TB patients in Region 6 (Mamelodi), City of Tshwane.
- *Anova Health* - focusing on information on men's health and assisted with HIV counselling and testing as well as distribution of condoms.
- *Match, Aurum, Health Systems Trust (HST) and South Africa Catholic Bishops Conference (SACBC)* - In collaboration with the DSPs Match, Aurum, HST and SACBC, the project developed a TB/HIV integrated work plan, which services both eThekwini district and municipality.
- *Aurum, Humana People to People, Childline Limpopo and Zakheni Training and Development Centre* - The project capacitated Aurum Institute staff, together with other district partners (Humana People to People, Childline Limpopo and Zakheni Training and Development Center) on the CQI the FAST Approach.
- *TB in Farms Initiative* –to scale-up implementation of a model of support for farms and farming communities.
- *Engagement with Government Departments* - Department of Agriculture, Forestry and Fisheries; Department of Transport; Department of Social development; Department of Basic Education to identify opportunities to strengthen TB responses.
- *Engagement with public agencies* - SAMA, Public Health Association South Africa and South African National AIDS Council to identify opportunities for partnership to strengthen TB and TB/HIV collaborated response.
- *National Institute for Communicable Diseases* - An MOU was signed between the USAID TB South Africa Project and National Institute for Communicable Diseases on April 24th, 2018. The MOU documents the respective roles and responsibilities of the two parties in

relation to the following activities: The Interferon Gamma Release Assay (IGRA) study and Linkage to care, initial lost to follow-up (ILTFU).

- *South African National AIDS Council* (SANAC)- To get buy in and commitment from local councilors on initiatives to the finding missing TB patients project and for them to assist with mobilizing communities to participate and create awareness on the project.

Details of results from the new and continuing partnerships are provided in Annex 4.

In PY04, the project will continue to strengthen outreach and access to high quality patient support and care for TB services in a range of settings, develop new and stronger partnerships with the health service, across government agencies, local organizations and health service providers in the private sector. Partnership with private GPs will be scaled up in eThekwini and Sarah Baartman districts. The project will also operationalize complementary partnership with the Global fund partners in eThekwini, City of Cape Town, City of Johannesburg, and OR Tambo districts.

Annexures

Annex 1: Finding Missing TB Patients

In 2017, South Africa notified 227,224 TB cases against the estimated 322,000 missing cases. Identifying missing TB patients remains a government priority. According to the "Think Tank" it is estimated that 163,456 TB patients are missing of which 75,840 are in the supported districts. "Find missing TB patients" activities have been integrated with the National Health Screening and Testing Campaign, which aims to diagnose people with HIV, TB, diabetes and hypertension as the first step to initiating them on appropriate treatment.

The government during this reporting period committed to finding 80,000 (approximately 50% of all the missing patients in South Africa) which correlates to 37,920 (50%) missing patients in the project supported districts for the period March 2019 to April 2020. The project has committed to finding 50% of these cases (18,960) and placing them on treatment. In six months of implementation, the project is on track and surpassed its target (at six months) by finding 12,738 of the estimated 18,960 missing patients. These patients have been linked to the TB care cascade as illustrated in the table below.

The project has been leading the implementation of the missing TB patients' activities, providing technical leadership at the NDOH and by implementation of the FAST approach to strengthen TB diagnosis and management in hospitals; improved contact management through project supported grantees; targeted active case finding in identified TB hot spots; active case finding initiatives among the farming communities; and, partnership with laboratory and community based HCWs to ensure all diagnosed TB patients are linked to care using Rif alerts results and strengthening the strategic information systems through CQI initiatives.

Table 25: Project's contribution to the finding of Missing TB Patients in the 14 Supported Districts, October 1, 2018 to September 30, 2019. *Source: project monthly/quarterly reports*

Strategy	Number of new cases	
	For reporting month / quarter (Jul-Sep 2019)	Cumulative from Oct 2018 to date
1. FAST Approach	1,333	10,021
2. Community mobilization, including door-to-door campaigns	649	1,491
3. Contact management	105	301
4. Key population (TB in Farms Initiative and Pregnant women)	65	224
5. Diagnostics tests (Urine-LAM)	15	925
6. Linkage to care – Initial lost to follow-up (ILTFU)		
7. Updating of records and data clean-up		
Total	**2,167**	**12,738**

Annex 2: PMP results from PY01 to PY03

Indicator	Indicator Definition and Disaggregation	Baseline (Year 0) Year 2015/16	Year 1 Target FY 2017	Year 1 Actual FY 2017	Year 2 Target FY 2018	Year 2 Actual FY 2018	Year 3 Target FY 2019	Year 3 Actual FY 2019	Comments
USAID/SA DO1: Health outcomes for South Africans improved									
Number of TB-related deaths	Number of TB-related deaths Source: WHO country report	15,850 (6,6%)							
USAID TBSAP Outcome indicator									
Treatment Success Rate	Number of all, GXP/sputum positive cases that were cured and completed treatment / Number of new GXP/sputum positive cases that were put on treatment Disaggregated by type of TB-DS or DR	82,4% (97, 771/ 118, 662) DS-TB 2015 Cohort 53,7% (1524/2838) 2014 Cohort DR-TB	84% (DS-TB) 70% (DR-TB)	82,6% (118,181/ 143,067) DS-TB-2016 Cohort 53,0% (2933/5535) 2015 Cohort DR-TB	85% (DS-TB) 73% (DR_TB)	75% (87,886/117,792) DS-TB 2017 Cohort 68% (523/76) 2016 Cohort BDQ Long Regimen 52,6% (1065/2025) 2016 Injectable Regimen Cohort Long 75% (747/993) 2017 Cohort BDQ Short Regimen 66% (439/665) 2017 Cohort Injectable Short Regimen	87%	2018 outcomes not yet available	
USAID TBSAP IR1: TB infections reduced									
Number of people screened for TB	Total number of people screened for DS TB or DR TB at community and facility levels	7,361,809 out of 10,716,802 (68,7%)	85%	25,862,359 out of 34, 506, 708 (75%)	87%	27,720,295 out of 33, 734, 369 (82%)	90%	2019 annual notifications not yet available	

Indicator	Indicator Definition and Disaggregation	Baseline (Year 0) Year 2015/16	Year 1 Target FY 2017	Year 1 Actual FY 2017	Year 2 Target FY 2018	Year 2 Actual FY 2018	Year 3 Target FY 2019	Year 3 Actual FY 2019	Comments
	Disaggregated by sex Data not available at country level disaggregated by sex								
Number of people tested for TB	Total number of people tested (by any method-GXP/sputum) for DS TB or DR TB at community and facility levels Disaggregated by sex Data not available at country level disaggregated by sex	194,563 out of 231,071 presumptive cases	90%	655,670 out of 867, 637 presumptive cases (76%)	95%	619,627 out of 703, 902 presumptive cases (88%)	90%	2019 annual notifications not yet available	
TB testing rate	Total number of people tested (by any method-GXP/sputum) for DS TB or DR TB at community and facility levels / Total number of people screened for DS TB or DR TB at	84,2% (194,563/231, 071)	90%	76% (655,670/867,637)	95%	88% (619,627/703,902)	90%	2019 annual notifications not yet available	

Indicator	Indicator Definition and Disaggregation	Baseline (Year 0) Year 2015/16	Year 1 Target FY 2017	Year 1 Actual FY 2017	Year 2 Target FY 2018	Year 2 Actual FY 2018	Year 3 Target FY 2019	Year 3 Actual FY 2019	Comments
	community and facility levels Disaggregated by sex	Data not available at country level disaggregated by sex							
Percentage of TB patients started on TB treatment	Total number of people who tested positive for DS-TB or DR TB and started on TB treatment / Total number of people who tested positive for DS-TB or DR - TB at community and facility levels Disaggregated by type of TB-DS or DR	94% (N= 13,921) DS TB 59% (N= 11, 192) DR-TB 2016 Cohort Data not available at country level disaggregated by sex	95%	96 % (N= 46, 933) DS-TB 64% (N= 10 259) DR-TB 2017 Cohort	97%	96% (N= 59, 177) DS-TB 72% (N= 9, 558) DR-TB 2018 Cohort	100%	2019 annual notifications not yet available	
Percentage of TB patients who completed TB treatment	Total number of people who completed full-course of DS or DR TB / Total number of people who started DS TB or DR TB at community and facility levels	6.1% for new smear positive cases for 2015 cohort Data not available for the 2014 DR Cohort	85%	69,5% (99, 426/143,067) DS-TB 2016 Cohort 11% (607/5535) 2015 DR-TB Cohort	87%	54,3% (63, 934/117,792) DS-TB 2017 Cohort Data not available for the 2014 DR Cohort	90%	2019 outcomes not yet available	

Indicator	Indicator Definition and Disaggregation	Baseline (Year 0) Year 2015/16	Year 1 Target FY 2017	Year 1 Actual FY 2017	Year 2 Target FY 2018	Year 2 Actual FY 2018	Year 3 Target FY 2019	Year 3 Actual FY 2019	Comments
	Disaggregated by sex	Data not available at country level disaggregated by sex							
Sub IR1.1: Increase public awareness of the TB epidemic									
Number of people reached with public awareness activities	Total number of people reached by advocacy, communication and social mobilization (ACSM) Disaggregated by type	Community Outreach = 9, 500 Social Media = 13,498 Total = 22, 998	4 million	Community Outreach = 11, 289 Social Media = 13, 498 Mass Media = 33, 204, 800 **Total = 33, 330, 735**	8 million	Community Outreach = 95, 601 Social Media = 254, 677 Mass Media = 8, 256, 600 **Total = 8, 606, 878**	16 million	Total: 5,342,490 (This is not annual data)	

Indicator	Indicator Definition and Disaggregation	Baseline (Year 0) Year 2015/16	Year 1 Target FY 2017	Year 1 Actual FY 2017	Year 2 Target FY 2018	Year 2 Actual FY 2018	Year 3 Target FY 2019	Year 3 Actual FY 2019	Comments
Number of NGOs providing ACSM	Total number of project-supported NGOs providing ACSM Disaggregated by location	Total = 3 Buffalo City = 1 Nelson Mandela Bay = 1 Gert Sibande = 1	Total= 60	Total = 22 Buffalo City = 1 Nelson Mandela Bay = 3 OR Tambo = 1 Mangaung = 1 eThekwini = 1 uMkhanyakude = 1 Waterberg = 2 Ehlanzeni = 2 Gert Sibande = 1 Dr Kenneth Kaunda = 1 Frances Baard = 2 JTG = 1 Cape Winelands = 1 West Coast = 2 Sarah Baartman = 2	Total= 60	Total = 42 Nelson Mandela Bay = 4 Sarah Baartman = 5 OR Tambo = 2 Fezile Dabi = 2 Mangaung = 3 eThekwini = 4 uMkhanyakude = 1 Vhembe = 2 Sekhukhune = 1 Waterberg = 6 Cape Winelands = 3 National = 1 Gert Sibande = 1 Ehlanzeni = 3 Dr Kenneth Kaunda = 1 Frances Baard = 2 JTG = 1	Total= 60	Total = 30 Nelson Mandela Bay = 3 Sarah Baartman = 4 OR Tambo = 2 Fezile Dabi = 2 Mangaung = 1 eThekwini = 4 uMkhanyakude = 1 Vhembe = 2 Sekhukhune = 1 Waterberg = 5 Cape Winelands = 3 West Coast = 1 National = 1	
Sub IR1.2: Effective implementation of infection prevention and control (IPC)									
Number/percent of sites with IPC compliance according to	Number of project-supported sites meeting IPC compliance	Not available		300	200	177	1237		•

Indicator	Indicator Definition and Disaggregation	Baseline (Year 0) Year 2015/16	Year 1 Target FY 2017	Year 1 Actual FY 2017	Year 2 Target FY 2018	Year 2 Actual FY 2018	Year 3 Target FY 2019	Year 3 Actual FY 2019	Comments
national IPC standards	according to national IPC standards / Number of project-supported sites Disaggregated by location and type								
Number of healthcare workers trained on IPC	Total number of healthcare workers trained on IPC tools, approaches, IPC quality improvements tools Disaggregated by location and type	41	1000	1473	1000	806	4000	3441	•
Number of health facilities supported on IPC	Total number of health facilities provided with IPC tools/ equipment/ IPC quality improvements tools/ IPC training Equipment: Sputum booth, CO2 monitors, Qualitative Fit Testing Kits Disaggregated by location and type		300	56	200	102	595	146 Health facilities provided with IPC tools/CO2 monitors/sputum booths/Qualitative Fit Testing Kits **EC** Hospitals=29 PHCs= **GP** Hospitals=17 **FS** Hospitals=10 PHCs=72 **KZN**	

Indicator	Indicator Definition and Disaggregation	Baseline (Year 0) Year 2015/16	Year 1 Target FY 2017	Year 1 Actual FY 2017	Year 2 Target FY 2018	Year 2 Actual FY 2018	Year 3 Target FY 2019	Year 3 Actual FY 2019	Comments
								Hospitals=17 PHCs=27 **WC** Hospitals=3 PHCs: 47	
Percentage of health facilities using IPC tools	Number of health facilities using IPC tools / Total number of health facilities health facilities supported on IPC Disaggregated by location and type		**50%**	34%	**75%**	73%	**90%**	24%	
Sub IR1.3: Improved TB screening, including key populations									
Number of key populations screened for TB	Total number of key populations screened positive for DS TB or DR TB / Total number of key population eligible for TB screening Disaggregated by key populations		2 – 10 %	9 716 / 70 784 = 14% Number of people TB presumptive / Number of people screened Adult Contact Management	2 - 10%	169 700/ 71 9134 = 24% Number of people TB presumptive / Number of people screened Adult Contact Management 6 622 / 33 801 = 20%	2 - 10%	39 987 / 273 138 = 15% Number of people TB presumptive / Number of people screened Adult Contact Management 3 981 / 14 162 = 28%	

Indicator	Indicator Definition and Disaggregation	Baseline (Year 0) Year 2015/16	Year 1 Target FY 2017	Year 1 Actual FY 2017	Year 2 Target FY 2018	Year 2 Actual FY 2018	Year 3 Target FY 2019	Year 3 Actual FY 2019	Comments
				2 342 / 11 414 = 21% Under 5 Child Contact Management 803 / 1 409=57% TB in Farms 1 121 / 4 373= 26% Campaigns 5 450/53 588=10%		Under 5 Child Contact Management 1 088 / 2 968 =37% TB in Farms 402 / 2 466= 16% Transport Sector 2 020/15 087=13% Finding TB Missing cases 159 568/664 812=24%		Under 5 Child Contact Management 480 / 1 276 =38% TB in Farms 1 710 / 6 908= 25% Private Practitioners 21 267 / 124 439=17% Transport sector 2 198/ 33 392=7% Finding TB Missing cases 10 351/92 961=11%	
Number of key populations tested for TB	Total number of key populations tested (by any method-GXP/sputum) for DS TB or DR TB / Total number of key populations screened positive for DS TB or DR TB Disaggregated by type of key population		90%	5 698 / 9 716 = 59% Number of people tested / Number of TB presumptive Adult Contact Management 1 507 / 2 342 = 64%	90%	121 557 / 169 700 = 72% Number of people tested / Number of TB presumptive Adult Contact Management = 5 973/ 6 622 = 90%	90%	32 438 / 39 987 = 81% Number of people tested / Number of TB presumptive Adult Contact Management = 3 261/ 3 981 = 82%	

Indicator	Indicator Definition and Disaggregation	Baseline (Year 0) Year 2015/16	Year 1 Target FY 2017	Year 1 Actual FY 2017	Year 2 Target FY 2018	Year 2 Actual FY 2018	Year 3 Target FY 2019	Year 3 Actual FY 2019	Comments
				Under 5 Child Contact Management 447 / 803 =56% TB in Farms 1 026 / 1 121 = 92% Campaigns 2 718 / 5 450 =50%		Under 5 Child Contact Management 582 / 1 088 =53% TB in Farms 354 / 402 = 88% Transport Sector 635 /2 020=31% Finding TB Missing cases 114 013 / 159 568=71%		Under 5 Child Contact Management 273 / 480 =57% TB in Farms 1 656 / 1 710 =97% Private Practitioners 18 506 / 21 267 =87% Transport sector 786 / 2 198=36% Finding TB Missing cases 7 956 / 10 351=77%	
Percentage of key populations with TB started on TB treatment	Total number of key populations who tested positive for DS TB or DR TB and started on TB treatment / Total number of key populations who tested positive for DS-TB or DR-TB Disaggregated by key population		90%	671/ 695 = 97% Number started on treatment / Number tested positive Adult Contact Management 201 / 212 = 95%	90%	4 368/ 4 669= 94% Number started on treatment / Number tested positive Adult Contact Management 568 / 586 = 97% Under 5 Child Contact Management 76/ 76 =100%	90%	1 834/ 2 000 = 92% Number started on treatment / Number tested positive Adult Contact Management 222 / 235 = 94% Under 5 Child Contact Management 24 / 27 =89%	

Indicator	Indicator Definition and Disaggregation	Baseline (Year 0) Year 2015/16	Year 1 Target FY 2017	Year 1 Actual FY 2017	Year 2 Target FY 2018	Year 2 Actual FY 2018	Year 3 Target FY 2019	Year 3 Actual FY 2019	Comments
				Under 5 Child Contact Management 67 / 71 =94% TB in Farms 32 / 32 = 100% Campaigns 371 / 380 =98%		TB in Farms 31 / 40 = 78% Transport Sector 63 / 63=100% Finding TB Missing cases 3 630 / 3 904=93%		TB in Farms 132 / 141 = 94% Private Practitioners 1 084 / 1 172 =92% Transport sector 73 / 91=80% Finding TB Missing cases 299 / 334=90%	
Number of national and provincial meetings supported by evidence -based planning and performance	Number of national and provincial meetings supported by TB SAP where project implementation, lessons learned, performance discussed for evidence-based planning	-	20 (4 national and 16 provincial) Provincial targets EC=1 GP=4 FS=2	Total=17 2 National quarterly meetings and 15 provincial meetings RTC Provincial stakeholder meetings EC=2 GP=4 FS=1 LP=2	20 (4 national and 16 provincial) Provincial targets EC=1 GP=4 FS=2 LP=2 KZN=4	Total=15 2 National and 13 Provincial 2 Provincial (FS and LP) 11 RTC Provincial stakeholder meetings EC=0 GP=4	20 (4 national and 16 provincial) Provincial targets EC=1 GP=4 FS=2 LP=2 KZN=4	Total 21 1 National 10 Provincial (2 EC, 1 FS, 1 GP, 1 KZN, 3LP, 1 WC) 10 RTC Provincial stakeholder meetings EC=0 GP=4	•

Indicator	Indicator Definition and Disaggregation	Baseline (Year 0) Year 2015/16	Year 1 Target FY 2017	Year 1 Actual FY 2017	Year 2 Target FY 2018	Year 2 Actual FY 2018	Year 3 Target FY 2019	Year 3 Actual FY 2019	Comments
			LP=2 KZN=4 WC=1	KZN=4 WC=2	WC=1	FS=1 LP=2 KZN=4 WC=0	WC=1	FS=1 LP=1 KZN=4 WC=0	
Number of stakeholder meetings to review progress and use data to plan	Number of stakeholder meetings held to review progress and use data to plan Stakeholder includes at national, region, districts levels, DOH, PPP, TB patients	-	Not tracked	Not tracked	28	7 district (EC)	28	13 District meetings (6 EC, 1 FS, 2 in GP, 2 1 in LP and 2 in KZN,	•
Number of managers trained in DS TB and DR TB program management	Total number of managers trained in DS TB and DR TB program management	-	Not tracked	Not tracked	2 000	1 291	2 000	3 532	○
Number/percent of project supported districts using new tools/approaches related to QI and program management	Total number of project supported districts using new tools/approaches related to QI and program management/ Total number of project-supported districts	16	14	14	14	14	14	14	•

Indicator	Indicator Definition and Disaggregation	Baseline (Year 0) Year 2015/16	Year 1 Target FY 2017	Year 1 Actual FY 2017	Year 2 Target FY 2018	Year 2 Actual FY 2018	Year 3 Target FY 2019	Year 3 Actual FY 2019	Comments
Number of health workers trained	Total number of health workers trained by TB SAP Disaggregated by sex and type of training	**3 000**	3 500	4 359	3 500	4 183	4 000	3 247	○
Number of TOT conducted	Total number of TOT conducted by TB SAP Disaggregated by sex and type of training	**N/A**	5	5	5	8	15	16	•
Number of post-training follow-up or monitoring or mentoring visits conducted	Number of post-training follow-up or monitoring or mentoring visits conducted on those trained by TB SAP	**N/A**	2 000	1 374	2 000	1 847	2 000	1 364	
Sub IR 2.3: Improved data reporting and recording systems at all levels									
Number of health facilities that meet data quality requirements	Total number of health facilities that meet data quality requirements / Total number of health facilities supported by TB SAP	N/A	N/A		N/A		N/A		•

Indicator	Indicator Definition and Disaggregation	Baseline (Year 0) Year 2015/16	Year 1 Target FY 2017	Year 1 Actual FY 2017	Year 2 Target FY 2018	Year 2 Actual FY 2018	Year 3 Target FY 2019	Year 3 Actual FY 2019	Comments
Number of districts and health facility staff trained in data recording/reporting/MEL	Number of staffs trained on data recording/reporting/ MEL functions supported by TB SAP	60 Facility staff trained on recording and reporting	50	416 Facility staff trained on recording and reporting	400	560 Facility staff trained on recording and reporting	1367	1343	
TBSAP IR 3: Care and Treatment of Vulnerable Populations Improved									
Sub IR 3.1: Increased contact tracing among communities, including key populations									
Number of eligible index cases for whom contact tracing conducted	Number of index cases for who contact tracing was performed/ Total number of TB cases registered		2 725	5 624	3 730	8 369	6 000	5 735	
Number of successful contact investigations	Number of contacts confirmed TB positive put on TB treatment / Total number of contacts confirmed TB positive during contact investigations		90%	201/ 212 = 95%	90%	568/ 586 = 97%	90%	222 / 235 = 94%	•
Number of NGOs/CSOs participating in contact tracing	Number of TB SAP supported NGOs/CSOs participating in contact tracing	Total = 3 Buffalo City = 1 Nelson Mandela Bay = 1	Total=60	Total = 22 Buffalo City = 1 Nelson Mandela Bay = 3 OR Tambo = 1 Mangaung = 1	Total=60	Total = 42 Nelson Mandela Bay = 4 Sarah Baartman = 5 OR Tambo = 2 Fezile Dabi = 2	Total=60	Total = 30 Nelson Mandela Bay = 3 Sarah Baartman = 4 OR Tambo = 2 Fezile Dabi = 2	

Indicator	Indicator Definition and Disaggregation	Baseline (Year 0) Year 2015/16	Year 1 Target FY 2017	Year 1 Actual FY 2017	Year 2 Target FY 2018	Year 2 Actual FY 2018	Year 3 Target FY 2019	Year 3 Actual FY 2019	Comments
		Gert Sibande = 1		eThekwini = 1 uMkhanyakude = 1 Waterberg = 2 Ehlanzeni = 2 Gert Sibande = 1 Dr Kenneth Kaunda = 1 Frances Baard = 2 JTG = 1 Cape Winelands = 1 West Coast = 2 Sarah Baartman = 2		Mangaung = 3 eThekwini = 4 uMkhanyakude = 1 Vhembe = 2 Sekhukhune = 1 Waterberg = 6 Cape Winelands = 3 National = 1 Gert Sibande = 1 Ehlanzeni = 3 Dr Kenneth Kaunda = 1 Frances Baard = 2 JTG = 1		Mangaung = 1 eThekwini = 4 uMkhanyakude = 1 Vhembe = 2 Sekhukhune = 1 Waterberg = 5 Cape Winelands = 3 West Coast = 1 National = 1	
Sub IR 3.2: Improved TB case management among key populations									
Number (proportion) of TB client defaulted or lost to follow-up	Total number of all TB patient who initiated treatment but were lost to follow-up / Total number of TB cases registered in the cohort	(7, 986/118,662) 6,7% 2015 Cohort DS-TB (534/2,838) 18,8% 2014 Cohort DR-TB	**<5%**	(8, 559/143, 067) 6% 2016 Cohort DS-TB (1191/5535) 21,5% 2015 Cohort DR-TB	**<5%**	(11,068/117,792) 9,4% 2017 Cohort DS-TB (117/765) 15% 2016 Cohort BDQ Long Regimen (469/2025) 23% 2016 Injectable Regimen Cohort Long	**<5% (DSTB)** **<15% (DRTB)**		•

Indicator	Indicator Definition and Disaggregation	Baseline (Year 0) Year 2015/16	Year 1 Target FY 2017	Year 1 Actual FY 2017	Year 2 Target FY 2018	Year 2 Actual FY 2018	Year 3 Target FY 2019	Year 3 Actual FY 2019	Comments
						(107/993) 11% 2017 Cohort BDQ Short Regimen (97/665) 15% 2017 Cohort Injectable Short Regimen			
Number of MDR-TB cases diagnosed	Total number of people who confirmed positive for MDR TB	19 073 MDR-TB Confirmed cases	**N/A**	15, 986 MDR-TB Confirmed Cases	**N/A**	13, 199 MDR-TB Confirmed Cases	**N/A**		
Percentage of MDR-TB started on TB treatment	Total number of people who diagnosed with MDR TB and started on MDR-TB treatment / Total number of people diagnosed with MDR-TB	11, 192 out of 19 073 (58,7%) MDR-TB Started on Treatment	100%	10, 259 out of 15, 986 (64,2%) MDR-TB Started on Treatment	100%	9, 558 out of 13, 199 (72,4%) MDR-TB Started Treatment	100%		
Number of XDR-TB cases diagnosed	Total number of people who confirmed positive for XDR TB	967 XDR-TB Confirmed Cases	N/A	747 XDR-TB Confirmed Cases	N/A	553 XDR-TB Confirmed Cases	N/A		
Percentage of XDR-TB started on TB treatment	Total number of people who diagnosed with XDR TB and started on XDR-TB treatment / Total	628 out of 967 (64,9%) XDR-TB Started on Treatment	100%	463 out of 747 (62,0%) XDR-TB Started on Treatment	100%	539 out of 553 (97,5%) XDR-TB Started on Treatment	100%		•

Indicator	Indicator Definition and Disaggregation	Baseline (Year 0) Year 2015/16	Year 1 Target FY 2017	Year 1 Actual FY 2017	Year 2 Target FY 2018	Year 2 Actual FY 2018	Year 3 Target FY 2019	Year 3 Actual FY 2019	Comments
	number of people diagnosed with XDR-TB								
Number/percent of TB patients tested for HIV	Number of TB cases tested for HIV / Total number of TB cases registered	115,461/120,523 (95,8%)	90%	96,291/102,004 (94,4%)	90%	57,459/69,317 (82,9%)	90%		•
Number/percent of TB-HIV co-infected patients who initiated ART	Number of co-infected TB patients started on ART / Total number of TB with HIV	63,216/70,748 (91,0%)	100%	45,826/53,565 (85,6%)	100%	28,077/34,291 (81,9%)	100%		•
Number of DR-TB client lost to follow-up	Total number of all DR-TB patient who initiated treatment but were lost to follow-up / Total number of DR-TB cases registered in the cohort	(534/2,838) 18,8% 2014 Cohort DR-TB	<5%	(1191/5535) 21,5% 2015 Cohort DR-TB	<5%	(117/765) 15% 2016 Cohort BDQ Long Regimen (469/2025) 23% 2016 Injectable Regimen Cohort Long (107/993) 10% 2017 Cohort BDQ Short Regimen (97/665) 12% 2017 Cohort Injectable Short Regimen	<15%		•

Indicator	Indicator Definition and Disaggregation	Baseline (Year 0) Year 2015/16	Year 1 Target FY 2017	Year 1 Actual FY 2017	Year 2 Target FY 2018	Year 2 Actual FY 2018	Year 3 Target FY 2019	Year 3 Actual FY 2019	Comments
Sub IR 3.3: Strengthened comprehensive systems and partnerships for care									
New partnerships and entry points established in public or private sector to facilitate, screen, deliver TB programs	Number of new group (private providers, private companies, NGOs, community groups, employers etc.) engaged to provide TB prevention, diagnosis, treatment services Describe qualitatively: Type of services, type of provider, location Number of agreements with organizations or meetings held *In addition, describe qualitatively: Type of services, type of provider, location*		NA	-*Farms (agricultural sector):* 30 privately owned farms engaged and partnered with for active TB screening, testing and treatment initiation in Sarah Baartman district and West Coast district, WC. One MOU was signed with the farms in Sarah Baartman district -*Mines (mining sector):* Active TB screening, testing and treatment initiation in Dr Kenneth Kaunda district, NW - Anglo Gold Ashanti mine and West Vaal mine. There was one terms of reference (TOR) between the project and the mines	NA		10 private GPs 5 DSPs	-*11 private GPs*: Conducted active TB screening, testing and treatment initiation in OR Tambo district -TB/HIV Care: collaborated on trace and linkage to care of TB patients who were categorized as unconfirmed loss to follow up. -*MatCH and IH, HST and BroadReach:* collaborate with the two DSPs in eThekwini district on the roll-out and implementation of the FAST strategy in districts supported by MatCH and IHI in KwaZulu-Natal province. -*Kheth'Impilo*: Collaborated with them during health screening campaigns targeting farm workers as a key population	

Annex 3: Post-training assessments findings

Province	District	Findings	Remedial Action
Gauteng	City of Johannesburg	Gaps identified in the FAST data cascade Follow-up visits have shown significant improvement from an average of 45% TB screening rate to an average of 90%	Onsite trainings conducted to address identified gaps & QIPs developed and were reviewed monthly Sustain monthly mentorship visits
	Tshwane	Gaps identified in the FAST data cascade Follow-up visits have shown significant improvement from an average of 45% of TB screening rate to an average of 90%, except for Bronkhorstspruit hospital despite the project support on monthly basis	Onsite trainings conducted to address identified gaps QIPs developed and were reviewed monthly Sustain monthly mentorship visits
Limpopo	Waterberg	Screening for TB contacts was not done even though the contacts for patients were listed in the blue folder	Facilities were linked with Community Care Givers who will screen contacts in the community
		There was no documentation of results in the case identification register	TB focal persons were mentored on the importance of documenting results in the register
		TB screening was above 90%, however there was no record of screening of HCWs at the facilities	IPC Coordinators and TB focal persons to prioritize screening of HCWs, at least twice year as outlined in the guidelines
		IPC practices were being implemented (door & window stickers, open windows), except for Abbortspoort clinic	Additional IEC material on IPC was delivered at Mahwereleng clinic 1. IPC committee to be reconstituted at Abbortspoort clinic
		TPT for eligible patients was done	Sustain the practice
		Data audits at facility were working well in most facilities except for Shongoane and Mahwereleng clinic 1 8107	Sustain the practice in the facilities already implementing but this was strengthened at Shongoane and Mahwereleng clinic 1
	Sekhukhune	Good IPC practices were implemented in most of the facilities supported, expect for Philadelphia gateway clinic	The IPC committee at Philadelphia hospital was reconstituted and the hospital management was advised to conduct data audit before submission to the sub-district office

Province	District	Findings	Remedial Action
		Clinical management of TBHIV co-infected patients was within acceptable standards in all facilities visited	
Western Cape	Cape Winelands	QA/QI support visits conducted, and data management of TB cascade and TB cascade data flow and management is a challenge.	Revised QIP on data quality, flow and management to be reviewed in February 2019
	South Western Sub-Structure	Sputum taken from TB presumptive patients not recorded on the TB Case Identification Register Focus area is the comment column for all sputum positive patients that are initiated on treatment. These should be followed up and treatment registration number and initiation date should be recorded in the TB Case Identification Register Recording per column as well as the totalling of each column was discussed All patients should be followed up on treatment-initiated date, even if referred to another facility for treatment initiation. TB screening rate was not improving in the facilities being supported	TB Case Identification Register will be fully implemented and used for all TB suspects smears obtained from by nurse Follow up of TB Case Identification Register will be done with next visit in March. Routine monthly report (RMR) data for TB elements will also be perused for February (once captured on Sinjani) and outliers will be discussed with HCWs in question with support visit in March. Project provided the screenings stamps so that all screenings can be recorded
	West Coast	Low TB screening rate (1%) being the lowest at Lapa Munnik hospital	Onsite trainings conducted at respective facilities for quality TB screening, TB screening guidelines were articulated
		Initial Lost to follow-up rate was high (100% being the highest at Lapa Munnik hospital & Radie Kotze clinic)	Linkage to care referral pathways between hospitals and surroundings facilities were established. QIPs for respective facilities developed and

Province	District	Findings	Remedial Action
			were monitored during monthly support visits
		Newly appointed staff at supported facilities were not fit tested for N95 respirators	Fit test sessions were conducted and skill transfer to facility staff
		Incomplete TB clinical stationery	In-service training conducted and records now completed
		High lost to follow up rate for supported facilities was identified as a gap	CQI intervention was adopted by the respective facilities, including onsite mentoring

Annex 4: Details of results from the new and continuing partnerships under IR3.3

Engage private practitioners in community settings to improve TB case finding and linkage to care:

This intervention contributes towards finding missing patients and reducing the burden of TB in the supported districts. The project engages private practitioners as one of the approaches to expand access to quality TB services through referrals and direct services. This approach enables the project to reach people, regardless of where they choose to seek healthcare. These population represents a proportion of people who are missed by the public health system. During the reporting period, private GP's, three professional nurses (PN) and 38 community healthcare workers (CHW) were engaged across seven sites in the four sub-districts of King Sabata Dalindyebo, Nyandeni, Port St John and Ingquza Hill in OR Tambo District. The project provided ongoing capacity building and mentorship on basic TB management, sputum collection, Interpersonal Communication and Counselling (IPCC) and Infection, Prevention and Control (IPC) was provided to continuously enhance the skills and quality of TB services provided by the project team.

The staff distribution over the implementing sites was follows;

- Mthatha and Mqanduli in King Sabata Dalindyebo sub-district was covered by one PN, five GPs and 15 CHWs
- Libode, Flagstaff and Nqgeleni in Mhlontlo sub-district was covered by one PN, one GP and 13 CHWs
- Port St John and Lusikisiki in Port St John/Ingquza Hill sub-district was covered by one PN, four GPs and ten CHWs

While the main activities of the private GP partnership entailed active case finding at household level by the CHW, throughout the year the team also participated in awareness and health screening campaigns, including TB day commemoration and engaged other stakeholders in the district for a collaborated effort in TB management. In Q4, a partnership was formed between the project and a correctional facility in Mthatha, namely Wellington Correctional Service Centre. The purpose of the collaboration was to extend TB services to key populations (inmates) and other TB hotspots in the district. In the same quarter NEXT2People Foundation activities have been linked with other two projected funded NGOs; Hospice Association of Transkei (HAT) and Small Projects Foundation (SPF) to ensure a continuum of response in complementary manner.

During PY03, a total of 124,439 people were reached, all (100%) were screened for TB, 21,267 (17%) presumptive clients were identified and 18,506 (87%) were tested for TB, 1,172 (6%) people tested positive for TB (32 being DR-TB patients) and 1,044 (89%) were initiated on appropriate treatment (24 being DR-TB patients). Eleven (1%) patients died before treatment initiation.

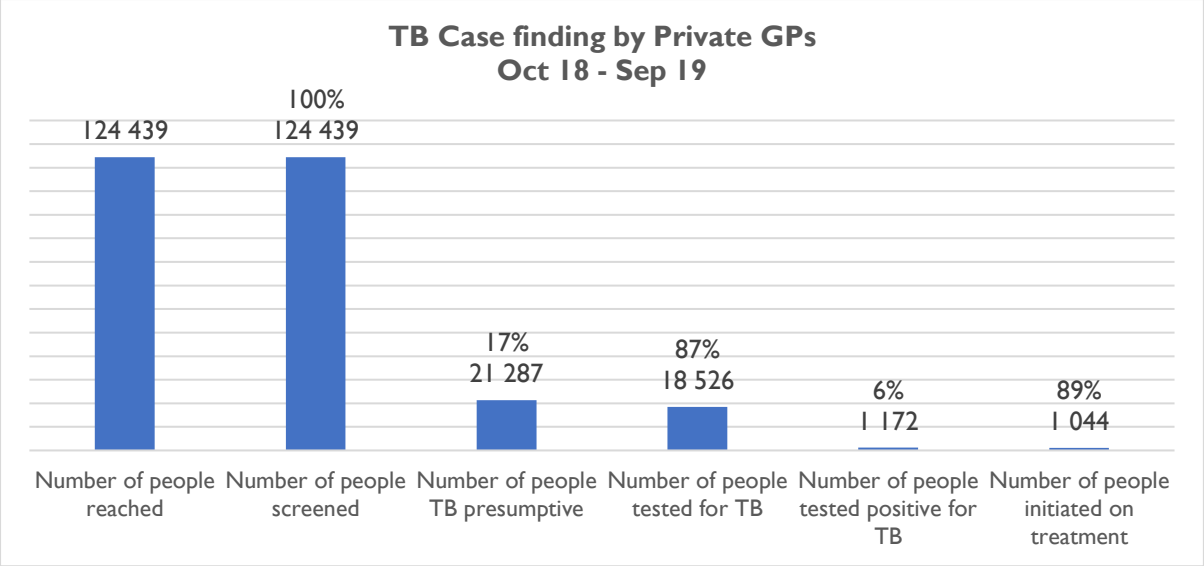


Figure 37: TB care cascade among patients identified and managed by the private GPs in OR Tambo District, Oct 18 – Sept 19. Source: project monthly/quarterly reports

Case finding activities by private GPs commenced in December 2018 and a consistent increase had been observed over the quarters in terms of number of people reached. A total of 124,439 people was reached over the four quarters, ranging from 1,535 in Q1 to 57,892 in Q4 with a maintained screening rate of 100%. However, the testing rate fluctuated over the quarters between 100% in Q1 and 85% in Q4, dropping from 93% reported in Q3 due to patients being unable to produce sputum at community level and not reaching the facilities after being referred. The treatment initiation also fluctuated between 100% in Q1 and 90% in Q4. The below 90% target for treatment initiation rate observed in Q2 and Q3 was due to patients not returning to the private GPs for treatment initiation due to lack of transportation money in some instances. An ongoing increase of patients dying before treatment initiation was observed over the quarters, ranging from one (1) patient in Q2 to eight in Q4. However, the death rate remained at 1% throughout the quarters which is within the national target of 5%. The project has contributed valuably to case finding in OR Tambo district diagnosing a total of 1,172 new TB patients in FY 3 and initiating 89% (1,044) on appropriate treatment. While the testing (87%) and treatment initiation rate were below the 90% target, it is worth noting that the patients who were identified would have possibly been missed by the system and remained missing.

Collaborate with PEPFAR District Support Partners to improve TB case-finding, linkage to care and treatment outcomes

Part of the USAID TB South Africa Project's implementation for PY03 focused on entering into and leveraging strategic partnerships with other project supported district stakeholders to improve access and availability of TB/HIV services. To maximize programmatic synergies and coordination between the project and DSPs working in the same districts, the project engaged with nine DSPs (TB/HIV Care, AIDS Foundation South Africa, Aurum Institute, Wits Reproductive Health and HIV Institute, Maternal Adolescent and Child Health, Institute for Health Improvement, Kheth'Impilo BroadReach and Health Systems Strengthening) across six project supported districts (OR Tambo, Sarah Baartman, eThekwini, Sekhukhune, City of

Johannesburg and Tshwane). Some collaborative engagements were a once off while others were more ongoing in nature depending on the type of the activities conducted. The areas of collaboration included;

- Collaborative meetings for TB/HIV programmatic and performance reviews.
- Patient tracing and linkage to care.
- Capacity building, mentorship and technical assistance on; a) FAST strategy and implementation and b) clinical management of TB/HIV co-infected patients and c) capturing of TB data on TIER.Net and generating TB reports.
- Roll-out and implementation of the THIS in hospitals.
- Qualitative research on key populations to inform policies and implementation.
- Health screening campaigns targeted at key populations and commemoration of national health days.

Below are the collaborative activities implemented with the various DSPs during the reporting period;

a) TB/HIV Care, OR Tambo district, Eastern Cape

The project is collaborating with TB/HIV Care on various activities in the Eastern Cape province, predominantly in OR Tambo district between Q1 to Q3 and on one once off activity in Sarah Baartman in Q1.

In Sarah Baartman district, the collaboration was on a qualitative research study with farm workers led by TB/HIV Care on behalf of SANAC. The study was part of a bigger key populations study that was investigating human rights-related barriers to HIV and TB services in the country. The project assisted with facilitating access to farm workers affected and/or infected with TB through the project led TB in Farms intervention model implemented in the district. A Memorandum of Understanding (MOU) was developed to formalise the collaboration and outline the roles and responsibilities of each partner. Focus group discussions were conducted in November 2018 and preliminary findings were shared the same month in a meeting that was convened and led by SANAC. Information on the findings are reported below, under IR 3.3.5.

In OR Tambo district, TB/HIV Care participated in a Treatment Retention Acceleration Plan (TRAP) review meeting that was led by the district in collaboration with the project held in Q1. The meeting reviewed the TRAP facilities in the district, focusing on the TB and HIV indicators. TB/HIV Care reviewed the HIV related indicators while the project reviewed the TB indicators and identified gaps were addressed. The project also assisted all TB/HIV Care nurse mentors with the clinical management of DR-TB/HIV co-infected patients by indicating which ARV tablets to administer to DR-TB patients who were also co-infected with HIV.

The project further collaborated with TB/HIV Care, through their linkage officers on a tracing and linkage to care activity that started in Q3 to Q4. The project through the district nurse mentor drew TB line-lists and shared them with TB/HIV Care's linkage officers based in facilities. The linkage officers assisted with tracing patients who missed their appointments and those who were classified as unconfirmed loss to follow up (uLTFU), including TB patients with unknown HIV statuses. The collaboration was implemented in Mthatha Gateway clinic, Civic Centre clinic, Standford Terrace, Ngangelizwe CHC and Goso clinic which were the

facilities supported by the linkage officers. The opportunity was also used to capacitate TB/HIV Care data capturers on how to generate TB reports and capture TB data in TIER.Net. During the reporting period, 153 uLTFU TB patients were identified and only 70 (46%) were successfully traced and linked back to care. Thirty-three (33) (47%) of the patient that were linked back to care had unknown HIV statuses recorded. TB/HIV Care counsellors provided counselling and testing and 32 (97%) patients got tested for HIV. The other 83 (54%) patients (from the 153) could not be found when they were traced. The linkage officers continued to try and trace them with no success.

Table 26: Linkage to Care data for OR Tambo district for PY03: October 2018 to September 2019. Source: project reports

FACILITY	uLTFU	TRACKED BACK TO CARE	NO HIV STATUS	TESTED
Mthatha Gateway clinic	9	6	3	3
Civic Centre clinic	66	18	2	2
Stanford Terrace clinic	37	25	24	23
Ngangelizwe CHC	26	20	4	4
Goso clinic	15	1	-	-
Total	153	70	33	32

The project also assisted all TB/HIV Care nurse mentors with the clinical management of DR-TB/HIV co-infected patients by indicating which ARV tablets to administer to DR-TB patients who are also co-infected with HIV. A training will be conducted in the next quarter for the district on DR-TB and DR-TB/HIV integration and the nurse mentors from TB/HIV Care will be invited to participate, along with the district DOH personnel.

b) AIDS Foundation South Africa (AFSA), eThekwini district, KwaZulu-Natal province

The project had a meeting with the AIDS Foundation South Africa (AFSA) and eThekwini's district manager in Q1 on 11th October 2018, to identify areas of collaboration to avoid duplication of services in eThekwini district, as AFSA was new to the district. During the meeting both partners presented activities conducted to support the district. It was observed that some of the proposed activities to be implemented by AFSA were already being implemented by the project through funded NGOs at community level and the implementation of FAST in hospitals. AFSA intended to support Prince Mshiyeni Hospital (FAST implementing site) with onsite screeners to be placed at all hospital entry points to conduct TB screening. They also funded a project funded NGO in the district namely, Muslim AIDS Program (MAP) to conduct community screening and testing in Georgedale – an area not covered under the project's contract. It was agreed in the meeting that the collaborative activities would be implemented at Prince Mshiyeni Hospital only as;

i) The project,
- Continue with active case finding through the FAST intervention.
- Share list of diagnosed patients with AFSA for linkage to care, which was an identified gap.

ii) AFSA,

- Fast-track linkage to care of patients diagnosed with TB.
- Contact tracing and management of patients that had been traced and linked to care.
- Share reports of linkage to care and contact management with the project.

Unfortunately, the collaboration never took off after several attempts by the project district staff to set up follow up meetings to agree on a term of reference and reporting framework for the collaboration. AFSA had since transitioned out of the district.

c) The Aurum Institute, Sekhukhune district, Limpopo province

In Q1 the project collaborated with Aurum Institute during the build-up activities for World AIDS Day commemoration which were conducted from 26th to 29th November 2019. The project provided TB screening services while Aurum provided HIV testing Services.

d) Wits Reproductive Health and HIV Institute, Tshwane district, GP

The project in collaboration with Wits Reproductive Health Institute (WRHI) supported Tshwane district to conduct the roll-out of THIS in the hospitals in Q3. Baseline assessments were conducted in six identified hospitals (Odi, Jubilee, Pretoria West, Bronkhorstspruit and Tshwane district hospitals as well as Mamelodi Regional Hospital), which aimed to identify the gaps and implement interventions to address them in preparation of the roll-out of THIS. All the hospitals were FAST implementing sites and directly supported by the project. During these assessments the identified challenges were;

- Lack of systems in support of the THIS implementation.
- No standardized TB clinical stationery in the hospitals.
- Disintegration of HIV and TB services in the hospitals.
- Data captures not trained on TIER.Net TB module.
- Challenges with patient folder flow to support capturing of TB data on TIER.Net

Post implementation of the recommended interventions to address the gaps, feedback was provided to the hospitals management teams and THIS was rolled out in the subsequent quarters.

e) MatCH and IHI, eThekwini district, KwaZulu-Natal province

In eThekwini district, KwaZulu-Natal province the project collaborated with Maternal Adolescent and Child Health (MatCH) and Institute for Healthcare Improvement (IHI) on the roll-out and implementation of FAST, as well as TB-QI learning sessions.
In Q2 the project facilitated a TOT training on FAST orientation and implementation from 14th to 15th February 2019 where MatCH and IHI participated. The outcomes of the meeting were that both partners would roll out the FAST strategy in their supported facilities in the district.

- MatCH agreed to incorporate the FAST strategy into their training curriculum and cascade it to other colleagues in that way.
- IHI agreed to incorporate the FAST strategy and principles during their TB Quality Improvement (QI) activities at their supported CHC's.

An additional FAST orientation and implementation TOT training was facilitated in Q3 from 13th to 14th March 2019 by the project for uGu, uMgungundlovu and Harry Gwala district managers and partners; Health Systems Trust (HST), Broad Reach and IHI. Each district received support by a partner to roll out FAST and monitor implementation. Broad Reach supported uGu, HST and IHI supported uMgungundlovu and Harry Gwala was indirectly supported by the project as the district had no partner.

Another collaborative engagement the project had with MatCH and IHI was through a TB-QI learning session held for the North Service area. The session was attended by 104 participants from two hospitals (Mahatma Ghandi and Osindisweni) and five community health centres (Tongaat, Inanda, Phoenix, KwaMashu and Newton A). Participants were orientated on the FAST strategy during the learning session which had to be rolled out and implemented in the represented facilities. Facilities also identified poor performing indicators along the TB care cascade and QI plans were developed for the identified gaps.

f) Keth'Impilo, Sarah Baartman district, Eastern Cape province

The project collaborated with Kheth'Impilo during the farms pre-citrus season health screening campaign conducted in Addo farming area in Q3, during the week of 20th to 24th May 2019. While the project was providing TB related services, Kheth'Impilo provided HIV counselling and testing services. Of the 380 farms workers that were seen that week, 292 (77%) were counselled and tested for HIV, 22 (8%) tested positive and they were all (100%) linked to care for treatment initiation. Keth'Impilo has since transitioned out of the district.

Continue to support Department of Health to scale-up implementation of a model of support for farms and farming communities

The project continued to strengthen comprehensive systems and partnerships for care through continued support and implementation of the TB in Farms intervention model. While the purpose remained to improve the care and treatment of key and vulnerable populations (farm workers), the project was also able to contribute towards finding the missing TB patients among this population. The package of services included, TB screening, HIV counselling and testing, treatment initiation and adherence support.

TB in Farms activities were implemented in four supported districts during the reporting period; Sarah Baartman in Eastern Cape province, uMkhanyakude in KwaZulu-Natal province, Waterberg in Limpopo province and West Coast in Western Cape province. The nature of implementation varied in each district as the support was tailored according to the needs of the districts and other stakeholders involved (farms owner, farm workers and DOH), as well as available resources.

Health services in Sarah Baartman were provided by three enrolled nurses daily in the allocated farms and farming communities covering the Gamtoos, Addo and Kirkwood. Both uMkhanyakude and Waterberg district implementation were done in the form of health screening and awareness campaigns in collaboration with project funded NGOs and DOH.

In uMkhanyakude, the campaigns were conducted in collaboration with Mpilonhle (project funded NGO), DOH tracer teams and DOH community healthcare workers, while in Waterberg they were implemented in collaboration with the department of health mobile unit and project funded NGO – Kgatelopele. For West Coast district, case finding was also conducted in the form of health screening and awareness campaigns implemented by project funded NGO, Cederberg Matzikama AIDS Network (CMAN). The NGO also provided DOT support for TB patients on treatment and contact management within the farms and farming communities in Cederberg sub-district. Implementation of activities varied throughout the year in the respective districts; activities in Sarah Baartman were implemented from Q1 to Q4, in uMkhanyakude implementation started in Q2 2019 to Q4 2019, and for Waterberg and West Coast implementation only started in Q4 2019.

A total of 88 farms were reached across the respective districts during PY03; 71 in Sarah Baartman, five in uMkhanyakude, five in Waterberg and seven in West Coast district. Collectively, excluding West Coast district (data reported with NGO data under IR3.1), a total of 9,988 farm workers were reached, 9,969 (99%) were screened for TB, 2,297 (23%) presumptive patients were identified, 2,195 (96%) people were tested, 224 (10%) tested positive for TB (3 DR-TB patients) and 207 (92%) patients were initiated on treatment, including the DR-TB patients.

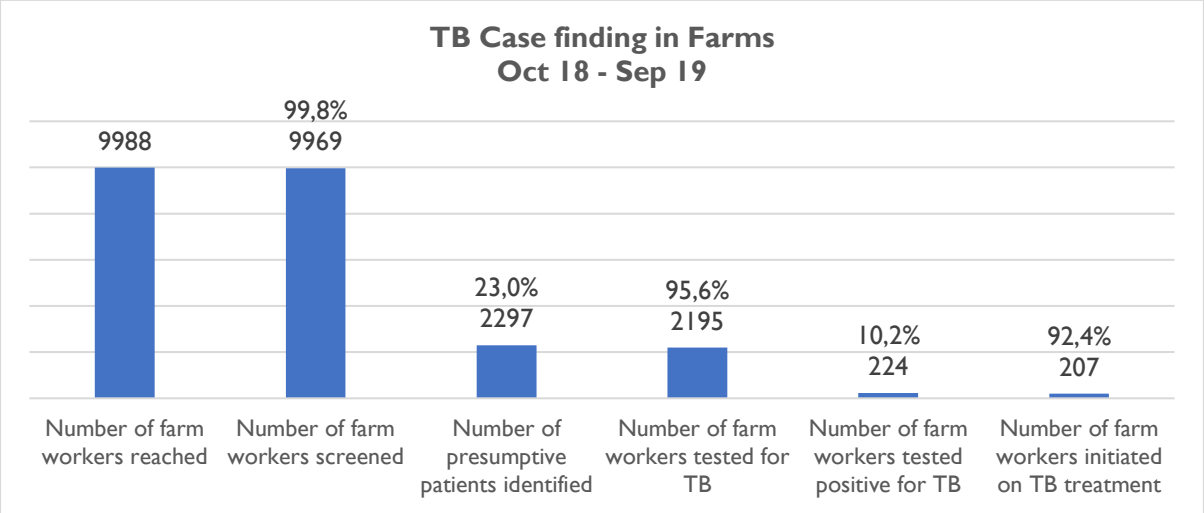


Figure 38: TB Case finding in Farms: Oct 2018 – Sep 2019: source project quarterly reports

Case finding through the TB in Farms intervention has consistently increased over the quarters. A total of 9,988 farm workers were reached over the year, ranging from 2,466 in Q1 to 3,454 in Q4 2019 with a maintained average screening rate of 100%. The testing rate has remained above 90% across the quarters except for Q1 at 88%, and it did improve in the last quarter from 95% in Q3 to 99% in Q4 2019.

The treatment initiation rate has also been above 90% across the quarters with exception of Q1 at 88% and it also increased in the last quarter from 90% in Q3 to 94% in Q4 2019. The below target performance for both tested and treatment initiation rate in Q1 is due to the quarter falling over the festive season and many people move around during that time of the year. The TB in Farms intervention has contributed towards finding missing TB patients at a

community level, diagnosing a total of 224 new TB patients in FY 3 and initiating 92% (207) on appropriate treatment.

Below are the district level TB in Farms activities conducted during the reporting period.

Sarah Baartman district, Eastern Cape province

In Sarah Baartman district, Eastern Cape province, TB in Farms activities were implemented by three project contracted enrolled nurses located in Kirkwood, Addo and Gamtoos areas respectively in Kouga sub-district. The enrolled nurses provide daily TB screening in the farms and farming communities they supported. In Q1, on 27th November 2018 an MOU was signed between San Miguel farms and the Eastern Cape provincial Department of Health. The MOU aimed to strengthen relations between the two entities. The formalization of this public-private partnership enabled the farm-based clinics to be earmarked as pick up points for the Centralised Chronic Medicine Dispensing and Distribution (CCMDD) to improve access to TB and HIV services and strengthen adherence and patient retention in care. A CCMDD readiness assessment was conducted by the project's district coordinator and Kouga sub-district's pharmacist at all three San Miguel's farm clinics, and they were recommended to be pick up points.

A pre-citrus season health screening campaign was conducted in Q3 from 20th to 24th May 2019 in the farms in Addo. Health services for the campaign included HIV counselling and testing, glucose testing, high blood pressure and medical male circumcision referrals in addition to the TB screening and sputum collection. Project funded NGO, Isipho Charity Trust participated during the campaign, assisting with TB health education and services. Six new TB patients were identified and initiated on treatment during that week.

During the FY 3 reporting period health services were provided to a total of 71 farms and farming communities namely; Sun Orange, Sunnybank, Ponders End, Mfuleni, Khangela, Bershibe, Valencia, Nomathamsanga, Sanland, Tuinplaas, Lutia, Looper, Beginsel, Lekkerbly, Christo Meiring, Whyte Citrus, Stenhope, Miskraal, Woodridge, Buffersbos, Eluhlaza Citrus, Lonetree, Ellerton, Kouga Dam, Chighwell, Kwagga 1, Fairview 1, Paksaam, Fairview 2, Kwagga 2, Rooidaai, Kwagga 3, Cambria, Fairview 3, Dimest 1, Ventershoek, Demist 2, Endulini, Invertlog, Dimeskraal, Ntabeni, Kudu Kaya, Msengeni, Platini, Bontrug, Qolweni, Nosini village, Eluhlaza citrus, Suntule, San Miguel, Fairview 4, Stimmie, Waverly, Luthando, Woodoll, Habata, Penihome, Sontule, Miskraal, Sunland, Hermon, Elim, Bersheba, Renonkel, Langbos, Imithi, Dimest 3, Andrieskraal, Lolo village, Chris Hani and Eno Beshuba.

A total of 9,352 farm workers were reached, 9,348 (99%) were screened for TB, 2,094 (22%) presumptive clients were identified, 1,992 (95%) were tested for TB, 178 (9%) tested positive (three DR-TB patients) and 161 (90%) were initiated on treatment, including the three DR-TB patients.

uMkhanyakude district, KwaZulu-Natal province

Since the introduction of the TB in Farms intervention to uMkhanyakude district in January 2019, services were provided in the form of health screening and awareness campaigns. The

nature of the support was tailored to the needs of the district stakeholders involved (DOH, farm owners and farm workers).
Health screening campaigns were conducted periodically from Q2 to Q 4 reaching five farms; Monzi, Umfolozi Sugar Milling, KwaSbhakela, Senekal and Mkhuze. Health services were provided through a collaborated effort between project funded NGO Mpilonhle, district DOH tracer teams and community healthcare workers that were trained by the project on basic TB management.

Collectively during PY03, a total of 305 farms workers were reached, 290 (95%) were screened for TB for TB, 134 (46%) presumptive clients were identified, all (100%) were tested for TB, 44 (32%) tested positive and all (100%) were initiated on treatment.

Waterberg district, Limpopo province

The project introduced the TB in Farms intervention to Waterberg district during a provincial TB review performance meeting held in Q3. Since then, TB services have been strengthened in the farms with support from the project through the TB in Farms model of care in Q4. Support was provided in the form of health screening and awareness campaigns targeting various farms in the district. The nature of the support was also structured to the needs of the district stakeholders involved (DOH, farm owners and farm workers).

During the reporting period, four health screening campaigns were conducted reaching five farms; Sondela, Buffland, Buffelshoek, Daagkraal and Caradel Tweefontein Ground. Activities were implemented in collaboration with the project funded NGO – Kgatelopele and the district department of health mobile health unit. Kgatelopele assisted with TB health information/education, TB screening and sputum collection while the mobile unit provided other health services. Collectively, a total of 331 farm workers were reached, all (100%) were screened for TB, 69 presumptive clients were identified, and they were all (100%) tested for TB. Two (3%) patients tested positive for TB and they were both (100%) initiated on treatment.

West Coast district, Western Cape province (data has not been included in the consolidated TB in Farms data to avoid double reporting – data for these activities have been reported with NGO case finding data under IR3.1)
TB in Farms activities commenced in West Coast district since the appointment of the project funded NGO, CMAN in Q4. The NGO was funded to provide DOT services for TB patients on treatment, contact management and active case finding activities in the Cederberg sub-district. Five health screening and awareness campaigns were conducted during the reporting period reaching seven farms; Parysberg, Danckeart, Groeneveld, Nu-season, Karnemelkvlei, Cederbergtrees and Elandskloof. Six of the campaigns were pre-season campaigns targeted at seasonal farm workers even though the health services were free accessible and offered to everyone. The one campaign conducted at Elandskloof farm was targeted at women as part of commemoration of women's month, however health services were also made accessible and offered to everyone. During the campaigns, health services provided included TB screening, HIV counselling and testing as well as screening for hypertension.

Collectively, 177 farm workers were reached, 159 (90%) farm workers were screened, 11 (7%) presumptive patients were identified and all (100%) were tested for TB. Two patients tested positive for TB and they were both (100%) initiated on treatment.

Continue to engage the Department of Agriculture, Forestry and Fisheries; Department of Transport; Department of Basic Education to expand and strengthen collaborated TB and TB/HIV integrated responses in the respective sectors

During PY03 the project engaged with other government departments; department of basic education and department of transport, to expand and strengthen collaborated TB and TB/HIV integrated responses in the respective sectors;

Department of Basic Education (DBE):
The project had two engagements with the Department of Basic Education during the reporting period in Q4. The first was a school-based health screening campaign and the other a partnerships meeting with the DBE national office.

In collaboration with the Department of Basic Education (DBE), DOH and National Institute for Communicable Diseases (NICD) the project participated in a three-day (29th to 31st July 2019) school-based health screening campaign at Dr Bohmer special school in Mangaung district, Free State province because of a TB outbreak of five learners and one employee that were diagnosed with TB. Operation Cheka'Impilo was launched during the campaign and all learners, teachers and other employees of the school were provided with comprehensive health screening services which included; health education, TB screening and testing, screening for hypertension, and diabetes. Dental and eye tests were also provided. All presumptive TB cases were managed as contacts and sputum was taken for culture testing to determine the strain of TB instead of the normal GeneXpert due to the outbreak. The campaign was so well received that the DBE requested that the campaign be rolled out to other schools in the district. Data on the activity is reported under IR1.1.

On 20th August 2019, the project had a meeting with the National Department of Basic Education to discuss continued partnership during the next financial year (FY4). The areas of collaboration were identified as:

- Reviewing and revision of '*Tackling TB in schools*' materials to determine relevance of content for the target audience and redesign the graphics and artwork to be more representative of the South African population
- Development of new materials in the form of poster relating to:
    - Learner awareness on TB, including signs and symptoms.
    - TB Infection Prevention and Control (IPC) for both primary and secondary levels.
- Capacity building for educators and learners support agents on basic TB management.
- Awareness creation and screening campaigns in schools in and adjacent to TB hotspots in communities.

- Develop a partnership terms of reference outlining the areas of collaboration, activities, expected outcomes and timeframes.

Department of Transport

The project strengthened its efforts to target men as a key population by engaging sectors that are male dominated such as the transport sector. Under the umbrella of the DOH's PHILA Taxi Industry Health and Wellness campaign, the project, through funded NGO FFL Development expanded TB related health services and support to identified taxi ranks in City of Johannesburg and City of Tshwane district in Gauteng province and eThekwini district in KwaZulu-Natal province.

Activities included ACSM as well as active case finding and linkage to care within the taxi industry, targeting taxi drivers, owners, queue marshals and the whole taxi value chain. The team also participated in national health days commemorative events led by the DOH such as World AIDS Day in December 2018 and World TB Day in March 2019. Activities were only implemented over two quarters (Q1 and Q2) during PY03 because the funded NGO's contract ended at the end of Q2 in March 2019, as it was a 12-months funded contract from April 2018 to March 2019, overlapping between PY02 and PY03.

During the reporting period, TB educational and health services were provided to 11 taxi ranks, seven in City of Johannesburg; (Orange farm, Dobsonville, Bramfischer, Jabulani, Meadowlands, Kliptown and Lanseria), three in eThekwini; (Umyandu, Umlazi and KwaMashu) and one in Tshwane; (Kolonade) across the three districts. Collectively, a total of 33,380 people was reached, 33,392 (99%) were screened for TB, 2,198 (7%) presumptive patients were identified, 786 (36%) were tested for TB, 91 (12%) tested positive and 73 (80%) were initiated on treatment. While the testing and treatment initiation rates were below the 90% target, the activities contributed towards finding the missing TB patients among this population which would have remained missing.

Engage with public agencies to identify opportunities for partnership to strengthen TB and TB/HIV collaborated response

South African Medical Association (SAMA)

The project engaged with the South African Medical Association (SAMA) to advocate for the increased profile and strengthen efforts of TB management among private healthcare providers. SAMA had since submitted a proposal for funding which was approved in Q4 under the Small Grants portfolio to implement a public-private partnership model of care with private GPs in Nelson Mandela Bay Health Metro in the Eastern Cape province and eThekwini in KwaZulu-Natal. Activities are proposed to focus on active TB screening by private GPs in their consulting rooms as well as case finding among the doctors and other healthcare workers themselves as a key population. By the end of Q4 the grants team was still in the process of finalising their contract.

Furthermore, a project insert was published in the SAMA *Insider magazine* November 2018 issue in Q1. The Insider magazine is one of the tools SAMA uses to communicate with internal and external stakeholders. The insert gave a brief description of the project and project objectives. The insert may be found on p.20 on the link provided: http://hmpgjournals.co.za/issues/si/201811/

South African National AIDS Council (SANAC)

The project engaged with SANAC at both a national and provincial/district level. The national level engagement facilitated opportunities for the project to contribute towards policy and guidelines development related to TB and TB/HIV management in the country. The provincial/district level engagements provided opportunities for the project to influence the inclusion and prioritization of TB and TB/HIV related activities within the local SANAC structures.

National level;

During the reporting period in Q1, the project participated in a two-day (21st to 22nd November 2018) meeting which was a multi-stakeholder engagement to ensure a comprehensive response to human rights-based related barriers to HIV and TB services in South Africa led by SANAC. During the meeting, the preliminary findings of the research study which investigated the human rights-related barriers to accessing and receiving HIV and TB services among key populations (for both TB and HIV) in the country were presented. Some of the common findings for barriers related to TB services were identified as:

- Insufficient counselling.
- Insufficient understanding about TB.
- Public messaging related to TB has been simplistic and focused on cure rather than prevention.
- Pervasive TB related stigma and discrimination at community level.
- Gender-related barriers.
- Poverty-related barriers.
- Punitive laws, policies and practices.
- Harmful working conditions and exploitation.
- Insufficient knowledge about TB in the communities.
- Challenges with providing services in remote areas, particularly for farm workers.

The findings of the research were used to inform a five-year strategic planning document of a comprehensive response to Gender and Human Right-Related Barriers to HIV and TB which the project contributed to.

Provincial/district level

The project participated in commemorations of national World AIDS day and World TB Day led by SANAC. The national World AIDS Day commemoration event was held on the 30th November 2018, at Nelson Mandela Bay Metro district and the national World TB Day commemoration event was hosted on 28th March 2019, at Buffalo City district Eastern Cape province. During both events, the project participated in the build-up activities and the main events providing TB screening services through funded NGOs.

In uMkhanyakude district, KwaZulu-Natal, the project participated in a District AIDS Council (DAC) meeting that was held on 9th July 2019. The meeting was attended by stakeholder representatives from Star for Life, Africa Health Research Institute (AHRI), Department of Art and Culture, Department of Police Services, Department of Education, Mpilonhle, Department of Social Development, Department of Health, Ward Councillor, Management of Mtubatuba Municipality, CoGTA, Ilanga Newspaper, Mtuba rise FM and uMkhanyakude district DOH.

During the meeting, the project was formally introduced to the forum and the project's district coordinator gave a presentation on the project and the support provided in the district.

Convene TB symposium on key populations to highlight effective strategies to address TB amongst key populations

The project hosted its annual TB symposium at the side-lines of the Public Health Association of South Africa (PHASA) which was hosted on 16th to 18th September 2019 in Cape Town. The symposium aimed to highlight key issues prioritized towards improved TB management in South Africa.

The symposium objectives were to; a) highlight the challenges and advances in the management of TB in South Africa, b) show case high impact interventions related to TB management which are bending the curve on the TB epidemic, and c) mapping a way forward on the priority interventions that the public health community should focus on in TB management.

Presentation topics were focused on high impact interventions and innovations implemented in the TB space; ranging from pediatric TB management to active TB case finding to contribute towards finding the missing TB patients, and TB IPC. Among the speakers was Dr Yogan Pillay, Deputy Director General: National Department of Health who gave a key note address on the challenges and advances in the management of TB in South Africa. In his conclusion, he emphasized five key points for consideration in prioritizing interventions to end TB; 1) we have the political will and capacity to eliminate TB before 2030, 2) we have the necessary tools to manage TB (data, cascades, quality improvement processes), 3) there is a greater need to focus on men and children/adolescents with targeted interventions, 4) we need greater focus on both demand and supply sides to ensure that the investments and outcomes are realised, and 5) consider how the TB programme will function within the upcoming National Health Insurance (NHI) model.