

Improving Linkage to Primary Health Care for hospital-diagnosed TB clients

This change package is a practical guide to improving the linkage of hospital-diagnosed TB clients to primary health care (PHC) facilities. The interventions centred on the use of the TB Treatment Action List (TTAL), which helps staff identify TB patients who are out of care, including those diagnosed at the hospital level and digitally allocated to a PHC facility. The document draws on the implementation experience of three Western Cape grant partners who supported district, sub-district, and facility teams at their respective sites. It highlights the core interventions, shared and reviewed across all three sites; partner-specific notes show how to adapt them to the local context (see Appendix).

How This Was Developed

This change package synthesises implementation learning from three Western Cape partner sites: City of Cape Town (Area East and Central), Metro Health Services (Khayelitsha Eastern Substructure), and Drakenstein Rural Sub-district, which implemented TTAL-based hospital-to-PHC TB linkage interventions between 2024 and 2026. Partner experiences were collated through an established Quality Improvement (QI) transversal group using a standardised reporting template and routine programme data. Data included use of SPV-generated TTAL reports, patient care cascade metrics, and data facility QI plans. Implementation followed an iterative QI approach rather than a controlled study design. The findings should be interpreted as practice-based evidence demonstrating feasibility and early programme improvement to support provincial learning, adaptation, and scale-up.

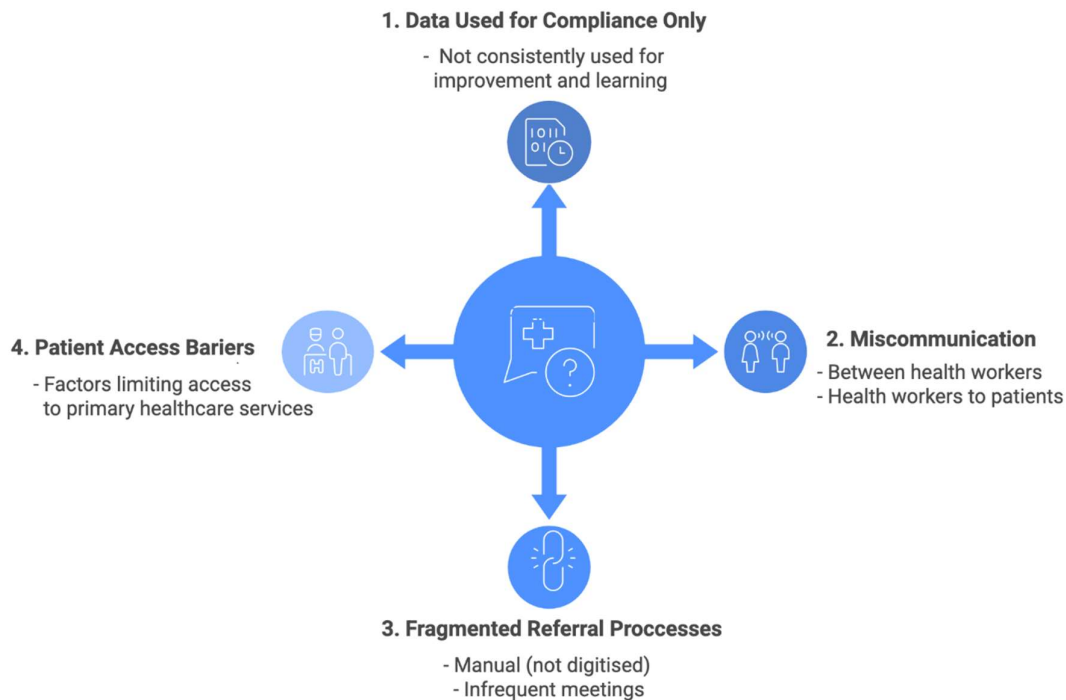
The Care Pathway

The following pathway situates the linkage-to-care problem within the broader TB system, from hospital diagnosis to PHC continuity of care.



The infographic below highlights four interconnected points where the TB patient linkage pathway can break down. First, referral and patient-level data are not always readily available or used effectively to identify patients needing linkage — tools such as TTAL are underutilised, and data may be used primarily for compliance rather than for improvement and learning. Second, communication and coordination between PHC staff, community health workers and patients can be fragmented, with limited platforms for referral handover and follow-up and inadequate communication to patients about the importance of treatment continuity. Third, paper-based referrals and informal email communication can contribute to incomplete or lost referral information. Finally, patients may struggle to attend PHC due to limited transport, severe illness and socioeconomic constraints.

Challenges in TB Patient Linkage



The Problem

TB clients diagnosed in hospital were not consistently and successfully linked to ongoing treatment and care at PHC facilities after discharge. Fragmented and insufficiently monitored hospital-to-PHC TB linkage systems resulted in treatment interruption, poor continuity of care, ongoing transmission risk, and poor outcomes. These gaps highlighted the need for a standardised, integrated hospital-linkage approach across the TB treatment pathway.

Our Aim

To increase the percentage of hospital-diagnosed TB clients linked to PHC care (from the median performance of 74% to 80% across participating partner sites, within 18 months) using the Treatment Action List (TTAL) and other related TB Reports.

What We Did

The primary change idea was to implement the TB Treatment Action List (TTAL), generated through the SPV, as the central tool for identifying, recalling, and monitoring hospital-diagnosed TB clients who require linkage to PHC.

Below are the core interventions built around the TTAL.



What Made It Work

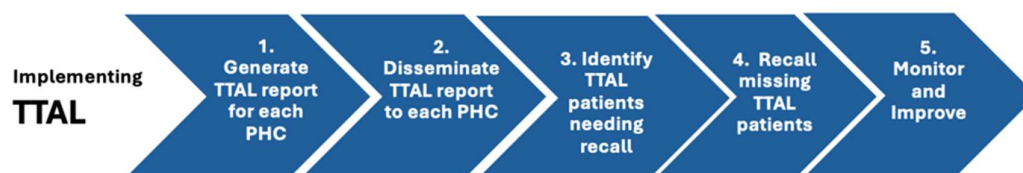
Across all three partner sites, several interconnected factors enabled the success of the TTAL-based linkage intervention:

Use of real-time, patient-level data 	The SPV generates the TTAL, which identifies patients who need action across the TB cascade and enables a proactive response.
QI culture 	Facility-based QI teams, standardised workflows, structured learning, and feedback loops, built consistency and continuous improvement across facilities.
Workforce buy-in 	Engagement across IPC practitioners, facility and sub-district managers, TB staff, CHW networks, and SD HAST teams secured buy-in at every level.

Decentralised operational ownership 	Responsibility shared across hospital, PHC, NGO, and sub-district structures spread the workload and strengthened local accountability.
Multi-disciplinary collaboration 	Clinicians, TB nurses, counsellors and data teams working together strengthened coordination and continuity of care. CHW and NGO involvement enhanced patient tracing, recall, and re-engagement.
Iterative, phased implementation 	Starting small and scaling based on evidence allowed learning, adaptation, and context-sensitive refinement before broader rollout.
Continuous mentoring and support 	Ongoing supportive supervision improved staff confidence, data utilisation, and sustainability.
Embedding process into existing systems 	Using existing provincial tools (SPV/TTAL), platforms (TB support meetings), and governance structures (data review forums), rather than creating parallel systems, supported sustainability.

How We Did It

Each partner site took a stepwise approach to implementing TTAL.



Step 1: TTAL and related TB reports were generated either centrally (e.g. at sub-district or sub-structure level) or locally (at PHC facility-level), at least monthly and more frequently for high-volume facilities.

Step 2: TTAL were then distributed to the PHCs for actioning if centrally generated.

Step 3: Unlinked patients were identified and contact details verified.

Step 4: Clear action plans were developed to recall patients (including telephone recall and home visits), with a named person assigned to follow up with each unlinked patient and document the next action.

Step 5: Real-time monthly linkage data based on the TTAL were locally collated and used to continuously improve the system. These TTAL-based indicators were also integrated into routine monthly data and governance meetings.

Who Does What

Role	Action
IPC nurse/ TB focal nurse-clinician/ clerk 	Extract and action TTAL from SPV; coordinate QIP
TB focal nurse / Facility manager/ SD HAST management 	Facilitate TTAL report management at the identified meeting/ forum; for each unlinked patient, confirm linkage status, assign a named person responsible for follow-up, and record the defined action (call, visit, or clinical recall)
Facility and community- based tracing team 	Conduct telephonic recall; carry out home visits for clients not reached by phone; support linkage to PHC and provide adherence counselling on re-engagement Provide psychosocial support during recall; support clients facing socioeconomic barriers to linkage and refer for further support as necessary
Clinician 	Initiate/re-initiate treatment for returning clients; review clients with complex clinical needs identified at multi-disciplinary team (MDT) meetings
Data capturer/ Clinician 	Verify and clean data for each patient actioned; update records in source data systems and registers following linkage or recall outcome
Operations manager/ facility manager 	Confirm, coordinate and monitor progress through MDT engagements: review linkage performance; escalate persistent non-linkers to sub-district HAST management teams; Oversee linkage indicators; Facilitate and support the development of the QIP
Sub-district HAST & IM team 	Generate and distribute centrally produced reports and line lists (where applicable); conduct facility mentorship visits; Review QIPs; Report linkage indicators at governance meetings

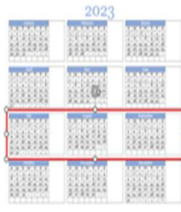
The following training, tools and resources supported these roles:

Training	Tools & Resources	Recommendations
• SPV access and navigation • TTAL extraction and interpretation • QI capacitation and QIP development • Linkage indicator interpretation • Patient tracing workflows • Ongoing mentorship and supportive supervision	• TTAL (SPV-generated) • TB programme reports and line lists • QIP templates • Weekly/monthly reporting templates • Circular H90/2025 (endorsed SPV/TTAL guidance)	• Standardised Operating Procedures (SOPs) for TTAL workflow • Standardised community-based service (CBS)/CHW referral tools need strengthening and refinement

How We Know It Worked

This section presents aggregated and partner-level outcome data covering both a baseline period before the structured intervention and the implementation period, which started in June 2024 and is ongoing. The outcome measure is "% hospital-diagnosed PWTB accessing TB services at a PHC facility within 3 months", an indicator on the Scaling Data Use project dashboard on SPV. Only five quarters of implementation-period data are currently available, as the indicator definition shows the linkage of a cohort diagnosed three quarters earlier, creating a lag in data availability (as per image below). A second limitation concerns reporting frequency: the intention was to reconfigure the indicator to reflect a monthly rather than quarterly reporting period, but this was not achieved, leaving fewer data points available. Because of the reporting lag, the indicator offers retrospective evidence rather than a measure of current performance. The data reflect routine programmatic linkage and should be read as early implementation evidence rather than a definitive measure of intervention effect.

Extract from Scaling Use Data Project Indicator Detailed Definitions, showing Indicator 3: Hospital Linkage to Care Measure

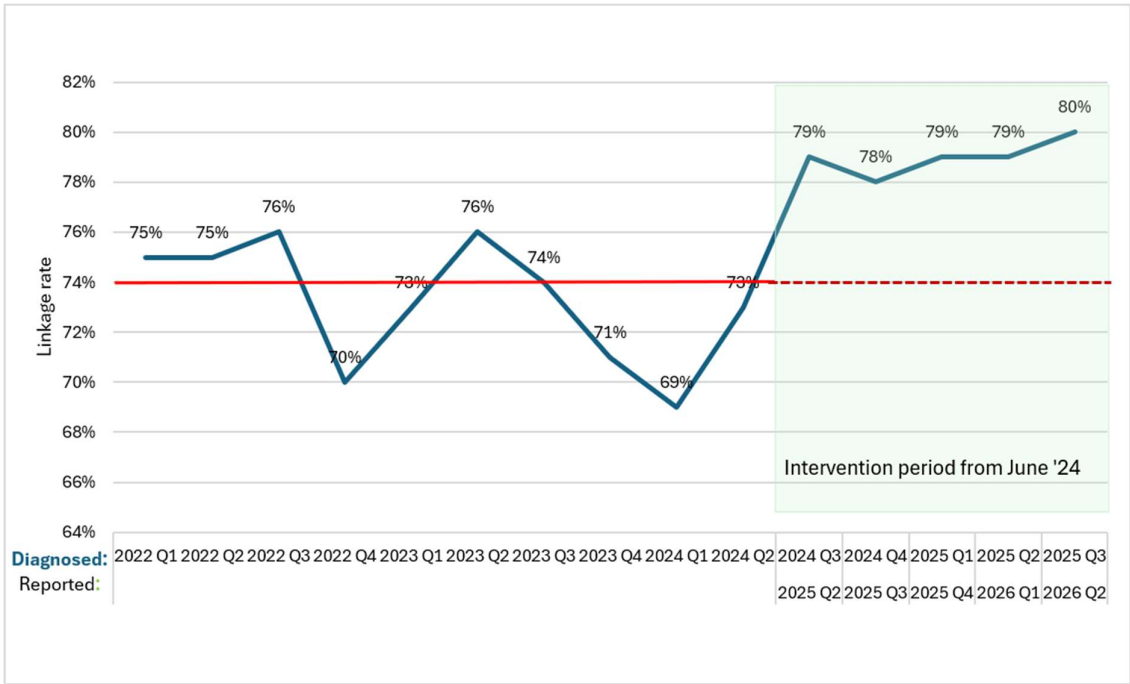
Indicator	Time lag	Numerator	Denominator	Notes	Time lag examples: If today were 20 May 2024, we would report on this cohort:
3. % hospital diagnosed PWTB and accessing TB services at a PHC facility within 3 months	Indicator can be drawn by 7th of second month of each quarter, for all PWTB diagnosed during the quarter three calendar quarters ago	#High Confidence TB episodes with 1st evidence at any hospital (as an in-patient or out-patient) and any evidence of TB treatment at a PHC within 3 months of 1st evidence (out patient) or 3 months of discharge from hospital. People not discharged from hospital prior to 5 completed months ago are excluded.	# High Confidence TB episodes with 1st evidence at any hospital (in-patient or out-patient) minus the number not yet discharged from hospital prior to 5 completed months ago.	*Tracking linkage to care; "Accessing TB services at a PHC facility" includes PWTB who may have received some initial TB medication in hospital; indicator includes unallocated patients at sub-district and higher levels. The unallocated patients have been grouped into their own facility in each sub-district (ie: Khayelitsha SD Unallocated)	

During the QI intervention, teams generated their own regular (minimum monthly) TTAL-linked process and outcome linkage data (data elements include the number of verified unlinked patients, the number of these patients contacted for recall, the number of recalled patients who present to the clinic (i.e. who are linked to on-going care). This 'agile', more real-time data allowed teams to

immediately reflect on current performance at each step of the recall process that month, to identify and address gaps, and drive data-based discussions during monthly meetings.

Aggregate Performance

Figure 1: Hospital Linkage to Care Across the Three Partner Sites



Red solid and dashed line: baseline median (10 points: Q1 2022- Q2 2024) = 74%

Aggregated data across all three partner sites show an upward trend in hospital-to-PHC TB linkage rates after the intervention began. The peak in Q3 2025 reached the combined target of 80%. The five quarters of available intervention-period data are all above the baseline median of 74%.

In addition to improved linkage, the interventions have delivered system changes across all partner sites:

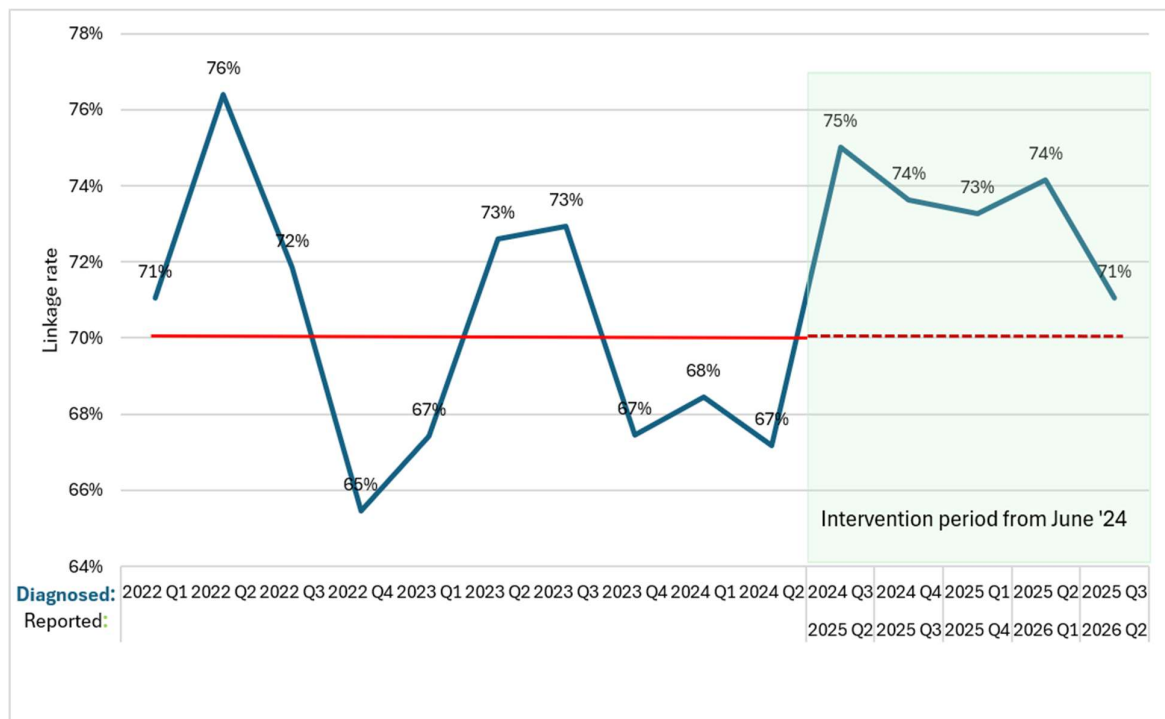
1. Improved data quality and routine use of programme data at the facility level
2. Strengthened patient tracing and recall systems
3. Functional, facility-based, TB-focused quality improvement teams: established and operational
4. Improved collaboration between hospital, PHC, community, and sub-district team
5. Increased facility ownership and accountability for TB outcomes

Partner Performance

Element	Area East and Central (CCT)	KESS (MHS)	Drakenstein (Rural)
Number of PHC facilities	10	8	14
Baseline linkage rate (median Q1 2022 - Q2 2024)	73%	70%	79%
Target	85%	75%	82%
Highest intervention-period quarterly linkage rate	83% (114/137 Q3 2025)	75% (141/188 Q3 2024)	92% (120/130 Q3 2025)

The partner-level graphs below present site-specific performance. Continued monitoring will allow a more complete assessment of progress toward targets and help determine whether the system has changed significantly.

Figure 2: MHS Hospital Linkage to Care

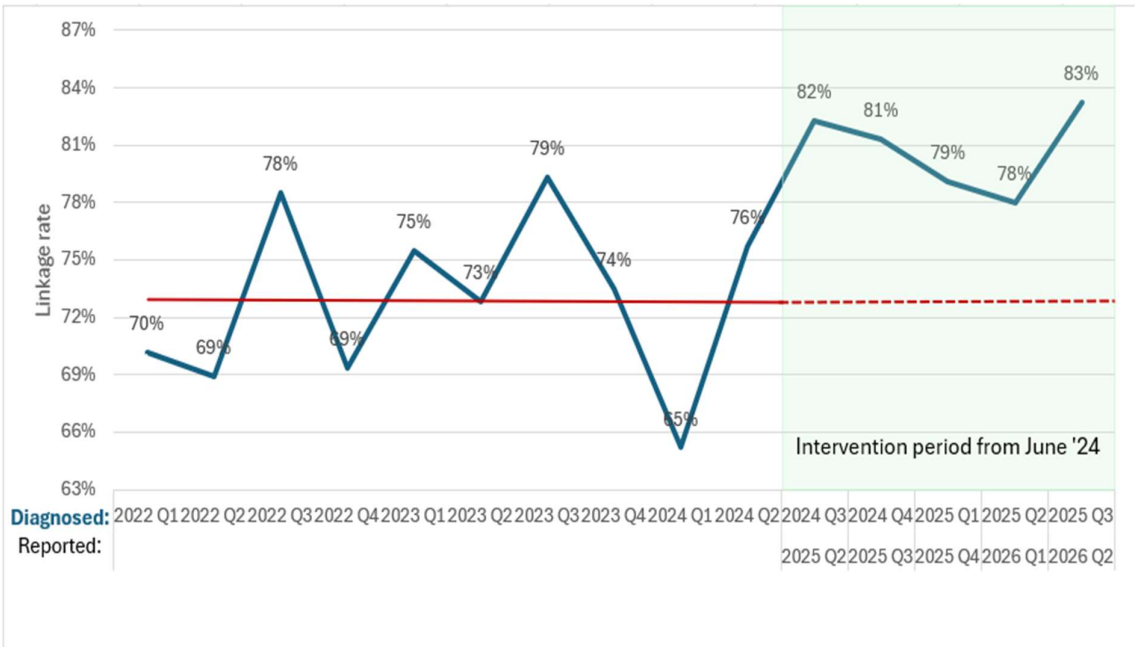


Red solid and dashed line: baseline median (10 points: Q1 2022- Q2 2024) = 70%

Metro KESS: The data demonstrate an upward trend in hospital-to-PHC TB linkage rates after the intervention period began. Performance has remained above the baseline median for five consecutive

quarters. Ongoing monitoring over the next quarter will determine whether this pattern meets the criteria for a confirmed shift.

Figure 3: CCT Hospital Linkage to Care

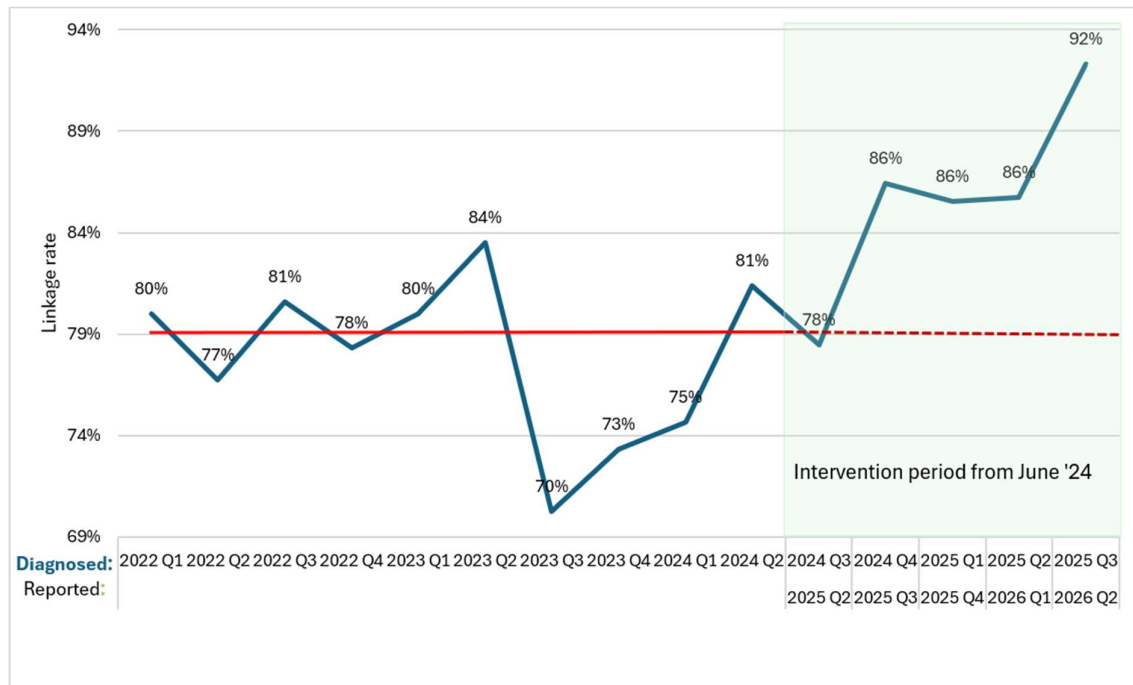


Red solid and dashed line: baseline median (10 points: Q1 2022- Q2 2024) = 73%

Area East and Central (CCT)

The data show five consecutive data points above the baseline median following implementation, reaching an unprecedented 83% linkage for patients diagnosed with TB in Q3 2025. Ongoing monitoring over the next quarter will determine whether this pattern meets the criteria for a confirmed shift

Figure 4: Drakenstein Hospital Linkage to Care



Red solid and dashed line: baseline median (10 points: Q1 2022- Q2 2024) = 79%

Drakenstein RHS:

In RHS, four consecutive data points have remained above the baseline median to date, a positive trend. Linkage reached an unprecedented 92% for patients diagnosed with TB in Q3 2025.

The key **transversal reflection** was that success required time and adaptation from planning onward.

The challenges encountered, and the adaptations made in response, are highlighted below.

Element	Area East & Central (CCT)	KESS (Metro)	Drakenstein (Rural)
Challenges encountered	Inconsistent CHW availability	Weak CBS referral tool uptake	Maturation time for NGO tracing workflows
Key adaptations made	Refresher training embedded in implementation support cycle	Report collation centralised at substructure/provincial level is required for sustainability	Continuous support and engagement

Conclusion

The collective experience of these three Western Cape grant partners demonstrates that a structured, action-list-driven approach to hospital-to-PHC TB linkage is feasible, impactful, and scalable across diverse operational settings.

A quality improvement approach enabled success through continuous QI cycles. Scaling requires operational champions with clinical and data skills, clear ownership at each system level, functioning MDT platforms with structured linkage agendas, sustained mentorship, and digital integration to ease data-capture burden.

Success depended on a combination of data use, operational ownership, multidisciplinary collaboration, community integration, and the embedding of the TTAL within existing governance structures. These were not implemented as parallel-system interventions but as health system strengthening activities that build capacity and accountability where it already exists.

Appendix

The following highlights context-specific interventions or adaptations adopted by individual partners that are not universal across all sites but may be relevant for settings with similar operational contexts. Each note includes specific role, action, frequency, and location detail to support direct replication.

 PARTNER-SPECIFIC NOTE: Metro East: City of Cape Town
Weekly Cycle — Who Does What
▶ TB focal nurse: Extracts TTAL from SPV every week; categorises clients into four groups — hospital treatment only / PHC visit but no treatment / no PHC visit and no treatment / LTFU or treatment interruption.
▶ Data capturer: Verifies each patient on the TTAL against PREHMIS, patient folders, registers, and laboratory information before the MDT meeting. This step is done before, not during, the MDT.
▶ MDT (TB focal nurse, MO, counsellor, CHW): Reviews verified TTAL weekly. For each unlinked patient: confirms current status, assigns a named individual responsible for follow-up, and records whether the action is a telephone call, home visit, or clinical recall to facility.
▶ Counsellor and CHW: Execute assigned actions (telephonic recall first; home visit if not reached; adherence counselling provided on re-engagement.)
▶ Medical Officer: Clinically re-initiates treatment for clients who return; reviews complex cases flagged at MDT.
▶ Facility manager: Confirms the MDT meeting occurs; escalates clients who remain unlinked after two or more follow-up attempts.
▶ MONTHLY: sub-district HAST coordinator reviews facility-level linkage performance and provides mentorship and QI support. ▶ Process Measures: TTAL Uptake: Number of times TTAL drawn per facility per month. TTAL Use: Number of eligible patients appearing on TTAL, Number of patients attempted recall, number of patients successfully contacted, number of clients relinked to care
▶ SCALE-UP NOTE: Piloted in 6 Khayelitsha facilities first — use this phased approach when replicating; do not attempt full-facility rollout simultaneously.
▶ SUSTAINABILITY: SPV & TTAL institutionalised in City TB Data Flow SOP. TTAL training manuals, mentorship plans, and data quality monitoring tools embedded in facility mentoring files. Request these resources before starting.

 PARTNER-SPECIFIC NOTE: Metro - KESS

Monthly Cycle — Who Does What (report-and-line-list model)

- ▶ SS/SD Information Management team: Generates the TB programme report and accompanying line list centrally each month using routine data; emails directly to operations managers and key TB programme staff at facility level. Facilities do not generate their own reports.
- ▶ TB clerk (facility): Receives line list; uses it to identify and correct data capturing errors in facility records; flags clients who do not appear in local facility data despite being allocated to that facility.
- ▶ TB clinician / TB nurse (facility): Reviews the line list specifically to identify hospital-diagnosed clients allocated to their facility who have not yet presented; initiates recall for each identified patient.
- ▶ Operations manager: Receives monthly report; is accountable for ensuring facility staff engage with the data before the next TB support meeting; raises unresolved cases at the meeting.
- ▶ HAST management team: Facilitates the monthly TB support meeting with a standardised agenda covering: policy updates, stock and stationery updates (practice incentivises attendance), data review against report, QIP report-back from each facility.
- ▶ QI support visit team by substructure HAST and IM team: Conducts facility visits for TTAL, report training; facilitates QI workshops and QIPs
- ▶
- ▶ IDENTIFIED GAP — CBS referral tool uptake: Uptake of the existing community referral tool use is currently insufficient for reliable CHW-to-PHC communication.
- ▶ FUTURE: Strengthening MDT support forums and formalising an IPC-to-PHC communication pathway remain outstanding improvement actions. Consider factoring this into replication planning.

 PARTNER-SPECIFIC NOTE: Drakenstein — Rural Health Sub-District (Rural Setting)

Weekly Cycle at Hospital— Who Does What:

► IPC nurse: Extracts TTAL from SPV weekly, filtered to hospital-diagnosed clients not yet linked to PHC; clinically validates each entry against patient records; produces a POPIA-compliant patient list (Excel) for sharing.

► IPC nurse: Shares the validated list with NGO/CHW tracing teams. This is the only mode of communicating clients requiring linkage.

► NGO tracing teams and CHWs (community and household level): Receive the weekly list; trace each patient (telephonic contact first, home visit if not reached) support the patient to present at their allocated PHC facility; conduct household contact tracing simultaneously.

► PHC TB nurses (PHC TB room): Review TTAL independently at facility level each week to identify clients who should have linked but have not yet presented; cross-reference with NGO tracing list to avoid duplication. Follow up and re-allocate persistent non-linkers to relevant sub-districts

► Sub-district Comprehensive Health Coordinator: Reviews TTAL on a routine cycle specifically for out-of-area clients -those diagnosed at the hospital but residing in a different catchment area. Coordinates referral to the appropriate facility or sub-district.

► MONTHLY — All teams: Linkage indicators reviewed at monthly governance meeting; QI processes and targets reviewed; IPC, PHC, NGO, and sub-district teams all present.

► Process measure: TTAL uptake: % facilities drawing TTAL at least 4 times per month (proxy for weekly use)

► TRANSITION NOTE: The NHLS-based email process and TTAL process ran in parallel during the maturation phase. Do not discontinue existing processes abruptly; allow the new workflow to stabilise before removing the old one.

► GOVERNANCE: Sub-district HAST IM SOPs updated to embed TTAL workflows. Circular H90/2025 provides provincial endorsement — cite this, if possible, when establishing the intervention in new sites.