

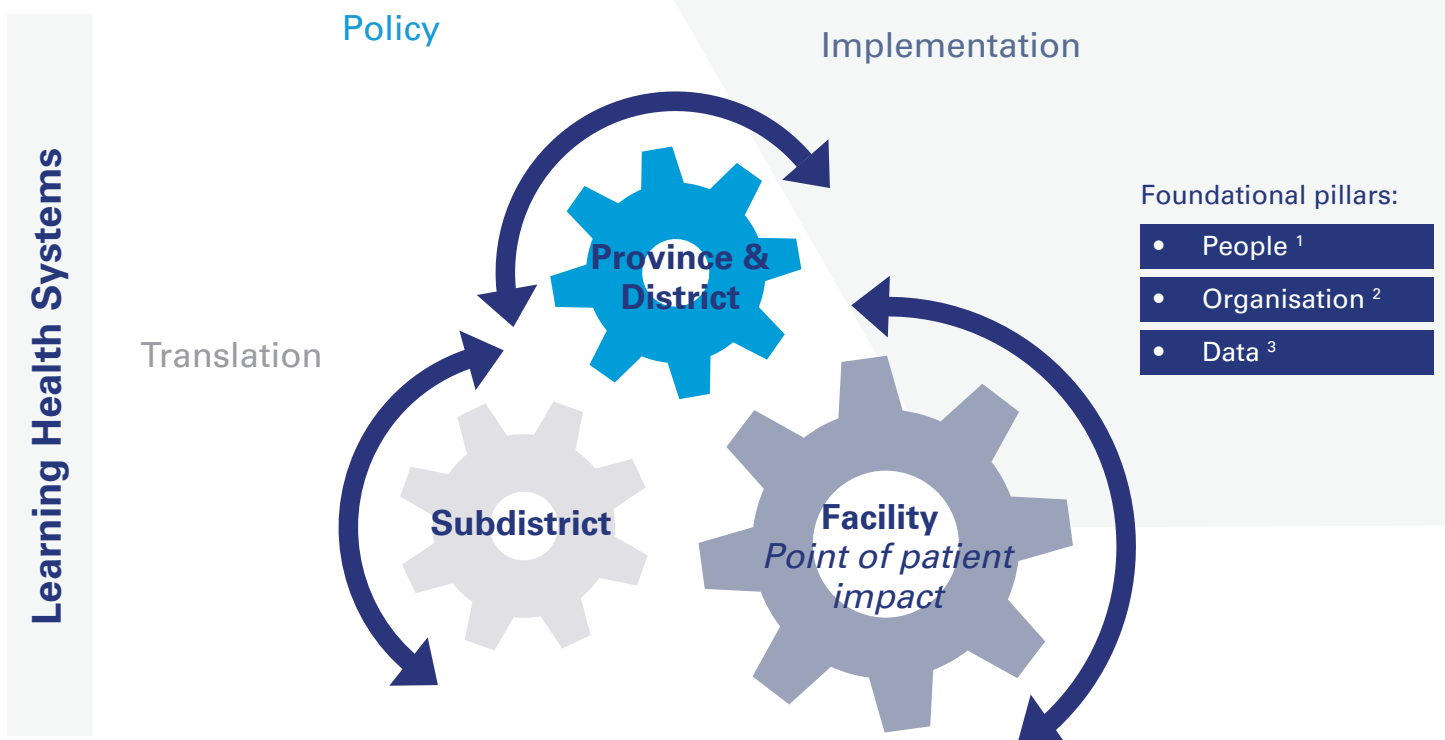
# Scaling use of health data: A decentralised approach



## Quality and Patient Outcomes

In Drakenstein, a peri-urban sub-district of the Western Cape, the health system has faced ongoing challenges in using routine data to inform meaningful clinical and programme decisions. In response, the sub-district, together with the Health Foundation team, implemented a Learning Health System (LHS) approach to improve data quality, information use and patient outcomes for TB, HIV and related programmes.

## Innovation



1. People with curiosity, purpose, and skills.
2. Organisational structures and culture that support continuous data use for improvement and learning.
3. Data systems infrastructure, tools, quality, and access.

Figure 1: The Learning Health System (LHS) implementation approach, represented as interconnected learning communities across levels of the health system and supported by foundational pillars of people, organisation and data.



Figure 2: Facility and sub-district teams engaged in a data quality improvement workshop, Paarl Hospital.

The implementation approach centred on a small, grant-supported team working within government structures to strengthen existing processes and introduce innovation and learning.

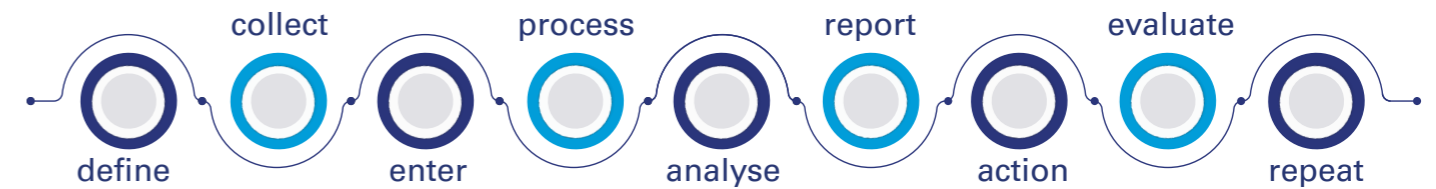


Figure 3: The information chain

### Implementation was guided by three interdependent pillars (Figure 1):



**People:** Stakeholder engagement and relationship-building were prioritised to foster trust, strengthen partnerships, and identify early adopters who could champion data use and innovation within their facilities and at the sub-district level.



**Organisation:** The initiative focused on strengthening existing platforms to incorporate data analysis, quality improvement (QI) and structured discussions for learning. Facility teams were supported to apply QI methodology by using their data to identify problems, develop clear aim statements, generate change ideas, and test the most feasible ones in practice. Teams monitored data to assess impact and course-corrected where needed. The data sign-off process – a transversal platform between sub-district and facility levels – evolved to support this shift, which was reinforced through continual awareness and engagement. These efforts helped to normalise reflection and learning as part of routine management processes.



**Data:** Work focused on strengthening the entire information chain (Figure 2) by expanding access to the Single Patient Viewer (SPV) – the province’s advanced health information system – reducing fragmented source systems through migration, and improving data quality by cleaning historical backlogs and ensuring accurate capture across services. These improvements resulted in more reliable and actionable information for decision-making.

## Results and Impact

### Systems and process improvements

#### Access and training

- All Drakenstein facilities actively use SPV (3,000–5,000 monthly patient searches) and routinely draw TB Treatment Action Lists.
- Over 140 staff across clinical and clerical cadres have been trained in data-driven decision-making using quality improvement methodology.

#### Source Systems

- All facilities migrated from TIER.net to PHCIS within five weeks, reducing duplicated data capture across HIV and TB programmes and enabling timely automated data flows to the Provincial Health Data Centre.

#### Projects and platforms

- All facilities have implemented quality improvement projects, with data analysis and QI discussions now embedded into routine management platforms.

### Population outcomes

- TB testing volumes increased from ~700 per month in 2023 to >2,000 per month in 2025, while positivity decreased from 18% to 11%.
- TB linkage to care improved (PHC: 86% to 92%; hospital: 71% to 83%), with 50% of facilities achieving >80% linkage in 7 days.

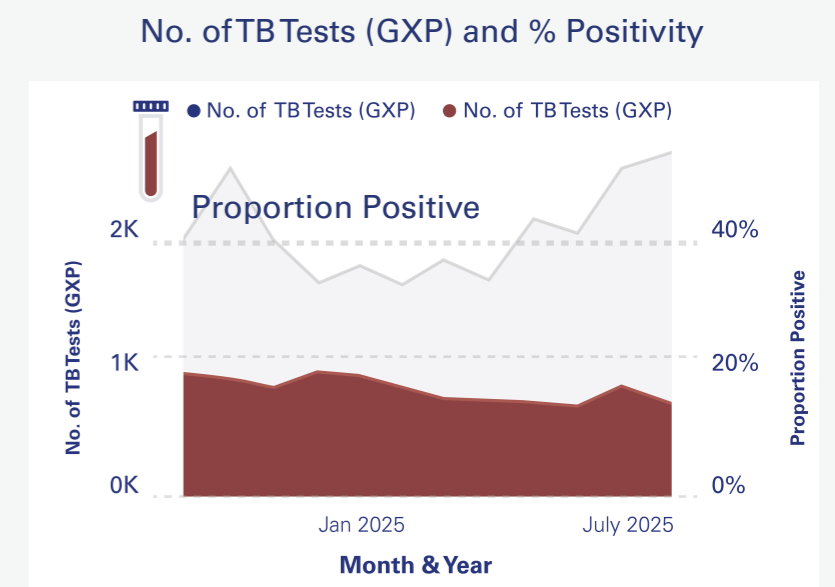


Figure 4: Drakenstein subdistrict: increasing TB testing and declining positivity (SPV TB dashboard)

# Lessons and future implications

Building a Learning Health System is not a quick fix but a long-term process that requires patience, persistence and cultural change. Embedding learning in routine practice rather than high-level strategy proved essential for sustaining engagement. Critical success factors included committed local leadership, peer-led training, co-design to ensure relevance and simple data visuals that encouraged frontline use. Progress relied on moving beyond episodic support towards systematic accountability, enabling people at all levels to become active participants in their own improvement. Sustained success will depend on continued mentorship, investment in technological infrastructure, and further integration of data systems to enable learning at scale.

## Challenges



Data cleaning is laborious and data-driven decision making may not come naturally to many.



There can be resistance to change, technology and taking ownership.



Infrastructure (enough fast computers with connectivity).



Facility staff can have limited capacity beyond direct patient care.

## Opportunities



Clean data reflects the true burden and ability to analyse and act on this has important policy, operational and resource allocation implications.



There are always innovators and early adopters that can carry implementation forward.



Engagements, collaboration and mentoring can invigorate relationships that sustain implementation.

Figure 5: LHS challenges and opportunities