Using Quality Improvement Method to Improve TB Program: A Pilot Project of 10 Sub-Districts of South Africa

N Ramawela*, L Mvusi and NE Ramarumo

National TB Program - NDoH, Pretoria, South Africa

*Corresponding author
N Ramawela, National TB Program - NDoH, Pretoria, South Africa.

Background

The 2017-2022 National TB Program's strategic plan calls for a 50% reduction in TB deaths by 2022 and a 30% reduction in TB incidence. To achieve these ambitious targets, the SA health system needs to build a reliable system to find, test, diagnose, start treatment, and retain patients in care. The health system also needs to develop unprecedented convergence of the TB and HIV care systems that are currently managed separately. These goals can be achieved through a health systems design that improves the reliability of a discrete set of processes along the cascade of care in the primary health sector, community as well as in hospitalized patients.

Importantly, we know that some 70% of presumed TB cases do engage the public health service at some point during their illness but, for DS-TB it is estimated that less than 50% of symptomatic patients successfully move from detection to completed treatment. This treatment failure results from leakages occurring at each step of the treatment cascade (screening, testing, communicating results, timely initiation of treatment and retention in care) presenting a major opportunity for improving South Africa's poor TB outcomes.

What was needed was a fast-moving implementation plan, based on Quality Improvement (QI) methods, that informs the health system on how to deploy resources, political will and new knowledge to rapidly improve TB outcomes. The National Department of Health adopted QI methodology as an approach to close the gaps in the TB care cascade by creating learning networks of clinics, hospitals, and communities in sub-districts, identify and test implementation strategies as demonstration for Phase 1 in 10 sub-districts located in South Africa.

The Key Elements of the TB Quality Improvement Initiative Included
- Capitalizing on technical rigor and ambition of the National TB Program, the political will, strong public-NGO collaboration, technical innovations, and existing implementation experience.
- Simplify the TB-HIV cascade of processes and handoffs that bring focus to a national initiative
- Develop a simplified set of indicators and measurement system closely linked to the process cascade that empowers front line staff to improve care using right information at the right time
- Use learning approach to implementation (innovation testing and rapid scale up of lessons learned) tied to the QI method that creates the necessary space for front line staff to develop the best solutions for their context
- Secured a well-funded initiative, led by highly visible dedicated NDOH team, with strong technical support provided at national, provincial and district level.

Methodology Simplified Process Map

Key processes for case finding timely initiation of treatment and retention in care. Upstream processes (screening, early initiation of treatment require reliability rates of >95% required to achieve population treatment completion rates of >80%).
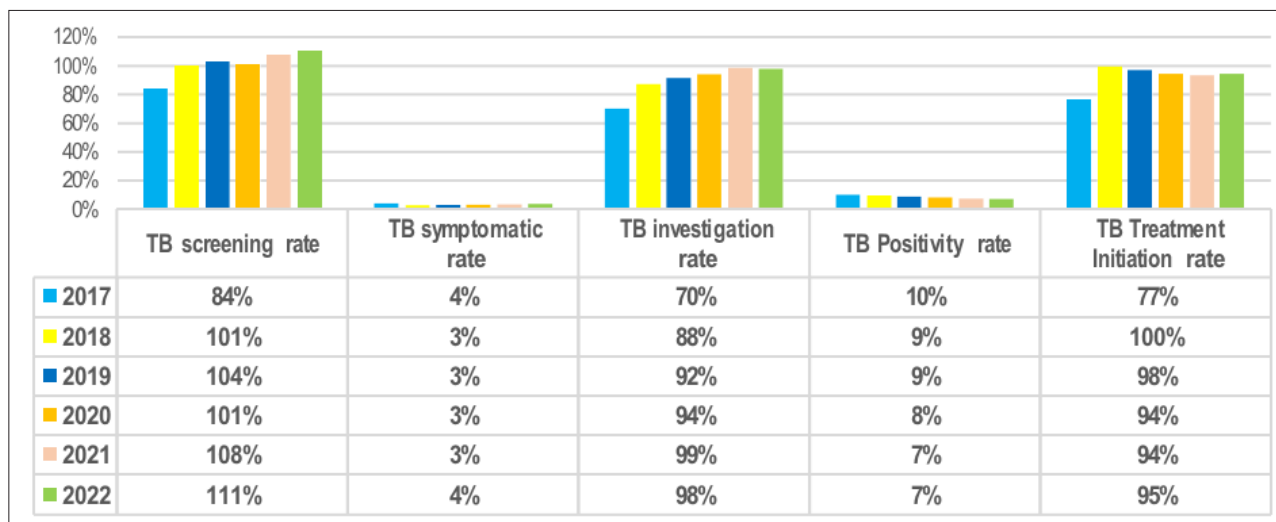
Simplified Set of Indicators and Measurement System Closely Linked to The Process Cascade

An important part of the initial set up and pre-scale-up phases, was to develop indicators that map closely the key interventions in the process map above. The processes were made accurate and timely, measuring and gave feedback of the indicators to the managers and frontline staff. As much as possible these indicators were aligned to the routinely collected indicators as reported in the DHIS or ETR.net. This minimised the need to add new data collection tools at facility level.

Learning Approach to Implementation

The initiative was implemented using the QI approach which uses a combination of measurements, testing of ideas and standardisation of processes which is driven by District Health Management Teams (DMTs) who are capacitated to use QI methods to implement, scale up effective implementation strategies within their districts. This approach required a culture of change by leadership and management with much more accountability placed both with managers and at the front lines of care, with supportive supervision and encouragement from leadership. The lessons learned on a small scale from this process were rapidly incorporated into designs for national scale up.

Results

	TB screening rate	TB symptomatic rate	TB investigation rate	TB Positivity rate	TB Treatment Initiation rate
2017	84%	4%	70%	10%	77%
2018	101%	3%	88%	9%	100%
2019	104%	3%	92%	9%	98%
2020	101%	3%	94%	8%	94%
2021	108%	3%	99%	7%	94%
2022	111%	4%	98%	7%	95%

The QI pilot showed improved variable results from 2017 baseline until 2022 in 10 pilot sub-districts. There was increase in TB screening from a baseline of 84% in 2017 to 111% in 2022, outliers are due to the TB screening done in the communities, TB investigation increased from 70% in 2017 to 98% in 2022 with TB positivity reduced from 10% in 2017 to 7% in 2022 due to the increase TB screening rate. TB treatment initiation rate showed increase from 77% in 2017 to 95% in 2022 [1-6].

Conclusions

The results from the pilot have provided NDoH with keys lessons to inform the implementation design for the national scale up. There is need to strengthen data analysis and reporting when implementing QI. The initial 9 Districts were selected for learning the high functioning District managers, adequate staffing and supply chains, and District support from NGO's familiar with QI methods. These initial sub-districts then informed the implementation design for the national scale up, the scale up within Districts was then undertaken by District teams who will were capacitated with QI methods and improved data tools during the pre-scale up phase.

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