NOTES FROM THE FIELD

Enhancing tuberculosis case finding in Tanzania: implementation of a quality improvement initiative

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Tuberculosis (TB) is one of the major causes of morbidity and mortality in Tanzania. A quality improvement (QI) initiative was implemented by the National Tuberculosis Programme with support from The Global Fund to enhance TB case finding. The initiative involved identifying gaps in the quality of services, introducing tools, building capacity of health workers, and strengthening laboratory and referral services. The initiative was piloted at sub-national level and subsequently scaled-up nationally. Overall, 1280 health workers were trained, leading to an 81% cumulative increase in notified TB cases in the pilot region and 4000 additional TB cases notified nationally. The QI initiative could serve as a model for the improvement of TB case notification in other settings.

Of the estimated 10 million people with active tuberculosis (TB) globally, three million were 'missed' by health systems.¹ Finding these missing people is a global health priority. Tanzania is one of the 30 high TB burden countries,² and one of the 13 countries that account for 75% of missing people with TB and prioritised for the Global Fund Catalytic investment.³

ASPECT OF INTEREST

Tanzania decided to strengthen its National TB Programme to find these missing people with TB by identifying evidence-driven innovations to deliver high-quality services and improve the efficiency of TB case finding. With support from The Global Fund, a quality improvement (QI) initiative in TB case finding was introduced in 2016 with the aim of scaling up provider-initiated TB screening within health facilities. This case study describes the QI process, strategies used and trends in TB case notification. Led by the National Tuberculosis and Leprosy Programme (NTLP), the QI initiative was implemented in three phases.

Phase 1: Building an evidence base and developing tools

An assessment was undertaken in April 2016 to understand challenges better, identify best practices and opportunities to improve TB case finding at the health facility level. A total of 30 health facilities in six regions were included. The assessment revealed a low TB suspicion index among health workers, inadequate usage of diagnostic algorithms, along with poor

coordination of case-finding activities. Based on the assessment, four evidence-based approaches were developed along with a QI toolkit, a training package, data collection tools and job aids. A national training course on QI in TB case finding was rolled out through orientations for health facility units and training of champions district mentors and facility-level TB QI focal persons.

Phase 2: Piloting the QI toolkit and interventions

QI implementation was piloted in the Dodoma Region between July 2016 and June 2017. Baseline data over the previous 3 years were collected from 10 selected intervention and 10 control facilities in the region. There were no changes in the 'control facilities' where routine services were provided. Intervention facilities received close follow-up through mentorship and supervision; supervisors and facility representatives were tasked to follow the implementation of the toolkit and QI measures—with interventions organised across four main strategies:

- 1 Increasing access to TB services in health facilities: This included raising the index of TB suspicion among health care providers during clinical meetings, continuing medical education, on-the-job mentorship and supportive supervision; symptomatic screening for TB in all patients presenting to the facility, strengthening referral and linkages within and outside the health facilities; and contact tracing to ensure the use of presumptive registers and diagnostic algorithms.
- 2 Improving the organisation and management of TB case-finding activities: sensitisation of health facility managers and securing their commitment to improving the quality of TB services, identification of TB focal persons in each health facility, while quarterly meetings among interdisciplinary teams facilitated the monitoring of TB work plans and strategic problem solving.
- 3 Improving access to TB diagnosis in health facilities: this included improved sputum sample collection and handling, expanded TB diagnostic services, strengthened referrals of presumptive and confirmed TB cases within facilities.
- 4 Strengthening health facilities outreach services to increase access to TB care: health facilities were encouraged to perform community-based activities to improve TB case finding, including follow-up of TB clients who missed appointments, orientating local

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KEY WORDS

TB; quality improvement; contact tracing; Tanzania; missing cases

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FIGURE 1 Trend in quarterly tuberculosis case notification in the quality improvement initiative implementation vs. control facilities, Dodoma Region, Tanzania, 2015–2017. QI = quality improvement.

leaders and traditional healers, and sensitising communities on TB signs and symptoms.

Phase 3: Scaling-up interventions and providing monitoring support

Following the successful pilot, the QI initiative was rolled out to 1,280 additional health care workers in 16 regions, 48 districts, and 530 health facilities between July 2017 and October 2018. These facilities were purposefully selected to include all regional and district hospitals, as well as health centres and dispensaries, that served large catchment areas. Intensive mentoring and supportive supervision were conducted through monthly peer-support, peer mentor groups; technical assistance was provided by TB consultants and central-level teams. Monitoring of QI TB activities was also incorporated into all routine supportive supervision and quarterly regional meetings.

RESULTS

Among the 10 intervention sites in Dodoma Region, the pilot registered a 53% increase in TB case notification in Q1 of 2017 compared to Q1 2016, and a 52% increase in Q2 of 2017 compared to Q2 of 2016 (Figure 1). An 81% cumulative increase in the notified TB cases was recorded at the 10 intervention sites between Q2 2016 (pre-QI implementation) and Q3 2017, with 9 out of 10 intervention sites reporting increases in their quarterly TB case notifications, as shown in the Table. After 18 months of implementation, the national TB case notification increased from 62 180 in 2015 to 69 818 in 2017 as shown in Figure 2, with approximately 4000 additional cases reported in 2018.

DISCUSSION AND CONCLUSION

Overall, the QI initiative contributed to an increase in TB case notification both in the Dodoma Region and nationally. However, challenges encountered during implementation, including inadequate staffing, staff turnover and reshuffling of health care workers trained in TB case-finding approaches, resulted in the need for repeated skills building and mentorship. Furthermore, there was a slow uptake of QI tools by an already overburdened staff, and lack of fully functional diagnostic tools in some facilities. While acknowledging that the purposeful selection of QI intervention facilities may have created some source of bias, the QI initiative demonstrated how improving the quality of TB interventions could lead to a positive change in TB case notification. This QI initiative has the potential to support a long-term comprehensive approach to end TB and build quality into the foundations of the health care system. Tanzania's experience in implementing QI interventions could serve as a model to improve TB case notification in other settings.

TABLE Quarterly TB case notification in 10 intervention facilities in Dodoma (Q1 2016–Q3 2017), Tanzania

Name of health facility	Q1 2016 <i>n</i>	Q2 2016 <i>n</i>	Q3 2016 <i>n</i>	Q4 2016 <i>n</i>	Q1 2017 <i>n</i>	Q2 2017 <i>n</i>	Q3 2017 <i>n</i>	Change between Q2 2016 to Q3 2017* (%)
Dodoma Regional Hospital	78	80	95	118	138	113	145	81
Hombolo Health Centre	3	5	3	7	5	15	6	20
Makole Health Centre	46	35	37	36	68	53	47	34
Mkonze Health Centre	2	4	4	0	2	7	2	–50
Mvumi Mission Hospital	14	22	50	41	34	53	53	141
Chamwino Health Centre	30	19	8	12	13	8	26	37
Mpwapwa District Hospital	13	17	23	16	31	26	38	124
Kibakwe Health Centre	8	3	10	5	1	7	16	433
Chipogoro Health Centre	2	5	3	11	13	9	9	80
Itiso Dispensary	8	2	1	5	6	1	6	200
Dodoma (all facilities)	204	192	234	251	311	292	348	81

*Trend from Q2 2016, just prior to the implementation of the QI initiative in July 2016, to the quarter after the completion of the pilot QI initiative implementation, Q3 2017, in all 10 facilities in Dodoma Region, Tanzania. QI = quality improvement.

FIGURE 2 Trend in annual tuberculosis case notification between pre-quality improvement initiative implementation (2014–2015) and the initial pilot and subsequent scale-up of the initiative (July 2016–2017), Tanzania.

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La tuberculose (TB) est une des causes majeures de morbidité et de mortalité en Tanzanie. Une initiative d'amélioration de la qualité (QI) en trois points a été mise en œuvre par le Programme National Tuberculose avec un soutien du Fonds Mondial pour améliorer la détection des cas de TB. L'initiative a impliqué l'identification des failles de qualité des services de TB, l'introduction d'outils, le renforcement des capacités du personnel de santé, le renforcement du laboratoire TB et des services de

référence. L'initiative a été pilotée au niveau sous national et ensuite étendue au niveau national : 1280 personnels de santé ont été formés, la coordination de la QI a été renforcée et ceci a contribué à 81% de l'augmentation cumulée des cas de TB notifiés dans la région pilote et à la notification de 4000 cas de TB supplémentaires au niveau national. L'initiative QI pourrait servir de modèle pour améliorer la notification des cas de TB dans d'autres contextes

La tuberculosis (TB) es una de las principales causas de morbilidad y mortalidad en Tanzania. El Programa Nacional contra la Tuberculosis introdujo, con el apoyo del Fondo Mundial, una iniciativa triple de mejoramiento de la calidad (QI) encaminada a reforzar la búsqueda de casos de TB. La iniciativa comportaba el reconocimiento de las deficiencias en la calidad de los servicios de TB, la introducción de instrumentos, el fortalecimiento de la capacidad de los trabajadores de salud y el refuerzo de los laboratorios de TB y los servicios de

remisiones. Después de un ensayo piloto a escala subnacional, se amplió la iniciativa a todo el país. Se capacitaron 1280 trabajadores de salud y se reforzó la coordinación de la QI, con lo cual se propició un aumento acumulado de 81% de los casos de TB notificados en la región piloto y la notificación de 4000 casos de TB adicionales a escala nacional. La iniciativa de QI podría servir como modelo para mejorar la notificación de casos de TB en otros entornos.

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