

A SPATIAL ANALYSIS OF ROUTINE DATA TO INFORM SUBNATIONAL TB PROGRAMMING IN LESOTHO USING MATCH-ACCESSMOD

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INTRODUCTION

- An estimated **14,000 people fell with TB** in Lesotho in 2020¹.
- Only **33% were detected** by the national health system¹.
- The MATCH-AccessMod approach was applied to **identify areas** where people with **TB might be missed** and to support **subnational program planning**.

METHODS

- We used (1) Routinely collected **TB program data** 2019-2022, (2) **HIV and TB prevalence estimates**, and (3) **geospatial data**: land cover, road network, administrative boundaries.
- We assessed (1) **spatial heterogeneity** in TB notifications, (2) performed a **spatial analysis of the TB care cascade** and, (3) estimated **population coverage of TB services** following the Tanahashi framework².
- We conducted a joint triangulation workshop to support **subnational intervention planning**.
- We developed scenario's to **optimize access and coverage** of TB services

RESULTS

- We identified **areas where people with TB might be missed** due to: (1) disruptions following COVID-19, (2) low spatial outliers, (3) high prevalence to notification ratio.

The first map shows spatial outliers (blue outline), COVID-19 disruption (light blue), and high P:N ratio (hatched). The second map shows travel time to facilities (276) in minutes, with a legend: less than 30 (green), 30-60 (yellow), 60-120 (orange), 120-180 (red), and more than 180 (dark red). The third map shows poverty levels by district, with a legend: 20%-30% (light blue), 30%-40% (medium blue), 40%-50% (dark blue), 50%-60% (very dark blue), 60%-70% (black), and >70% (dark grey).

Estimation and optimization of population coverage of TB facilities

30 min: 22%
60 min: 36%

30 min: 32%
60 min: 52%

30 min: 61%
60 min: 86%

50 out of 78 councils have 0% accessibility at a 30 minute maximum travel time, only 12 councils exceed 10%

Using motorized travel

Put on treatment	554	98%
Diagnosed	565	12%
Tested	4642	73%
Presumptive	6379	2%
Screened	35024	129%
Population (% of)	27052	14%

- Spatial patterns in notification rates tend to follow patterns in diagnostic (GeneXpert) facilities.
- Motorized transport** to health facilities can considerably **increase accessibility**.
- Areas to be **prioritized for conditional cash transfers** for transport to health facilities are those with **poor access to TB services and higher levels of poverty**.
- Gaps have been identified along the care cascade.

DISCUSSION

- There is a high likelihood of **underreporting TB patients** across the country.
- Notification rates** are more likely to **reflect access** to health services **rather than burden** of disease.
- Generally **poor access to TB services** across the country:
→ **Conditional cash transfers for motorized travel could improve access considerably**
- This analyses covered the entire care cascade**. Recommendations were made on screening, testing, diagnosing, treatment initiation and completion.
- Spatial analysis**, triangulation and joint interpretation **of routinely collected data** can facilitate: 1) identification of patterns, 2) prioritize interventions in **resource limited settings**.

LIMITATIONS

- Intervention planning was mostly done based on 2019 data and may not accurately reflect current situation.
- Underlying hypothesis have not been validated (yet).

References: 1. Global tuberculosis report 2022, 2.1 TB incidence. Geneva: World Health Organization; 2022. Licence: CC BY-NC-SA 3.0 IGO. Available at: <https://www.who.int/teams/global-tuberculosis-programme/tb-reports/global-tuberculosis-report-2022/tb-disease-burden/2-1-tb-incidence>. 2. Tanahashi T. Health service coverage and its evaluation. Bulletin of the World Health organization. 1978;56(2):295.