



Diagnostic Delays for Multidrug-Resistant Tuberculosis in Pastoralist Communities: A Case Study from Afar, Ethiopia

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Abstract

Multidrug-resistant tuberculosis (MDR-TB) is a major public health concern in Ethiopia. Pastoralist communities, like those in the Afar region, experience heightened vulnerability due to their mobile livelihoods, constrained access to healthcare, and socio-cultural context, which may contribute to prolonged diagnostic delays. This case study analysed the scale and root causes of diagnostic delays for MDR-TB among pastoralist communities in the Afar region. It sought to identify specific barriers operating at patient, community, and health system levels. A qualitative, single-case study design was utilised. Data were gathered through in-depth interviews with MDR-TB patients, their family members, community leaders, and healthcare workers. This was supplemented by a review of patient records and field observations. Data underwent thematic analysis. Substantial diagnostic delays were documented, with the patient delay phase—from symptom onset to first healthcare contact—being the longest. A predominant theme was the initial attribution of symptoms to non-TB illnesses, leading to extended use of traditional remedies. A majority of patients first consulted informal providers. Health system delays were exacerbated by the necessity for repeated referrals to distant diagnostic centres. Diagnostic delays for MDR-TB in Afar are prolonged and multifactorial, stemming from pastoralist lifestyles, health-seeking behaviours, and a health system not tailored to mobile populations. Such delays elevate risks of disease transmission, increased severity, and poorer treatment outcomes. Integrate TB awareness into existing livestock health extension programmes to engage pastoralists. Strengthen the capacity of primary healthcare units for improved symptom recognition and referral. Develop community-based diagnostic outreach, potentially employing mobile technologies, to lessen the travel burden for patients. Multidrug-resistant tuberculosis, diagnostic delay, pastoralist, health systems, Ethiopia, case study This study provides an in-depth analysis of the complex factors driving MDR-

TB diagnostic delays in an understudied pastoralist setting, offering context-specific evidence to inform the adaptation of national TB programmes for mobile populations.

Keywords: *Multidrug-resistant tuberculosis, Pastoralist communities, Diagnostic delay, Sub-Saharan Africa, Case study, Health systems access, Vulnerable populations*

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