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Evaluating the Impact of Diagnostic Decentralisation on Time to Treatment Initiation for Multi-Drug Resistant Tuberculosis in Nigeria: A Retrospective Cohort Analysis,

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Abstract

Multi-drug resistant tuberculosis (MDR-TB) is a major public health challenge in Nigeria. Historically centralised diagnosis contributed to delays in care. A policy decentralising diagnostic confirmation to regional hospitals was implemented to reduce the time between presumptive diagnosis and treatment initiation. This study aimed to quantify the change in time-to-treatment initiation for MDR-TB patients following the decentralisation of diagnostic services to regional hospitals in Nigeria. A retrospective cohort analysis was conducted using national programme data. Patients diagnosed with MDR-TB before decentralisation were compared with those diagnosed after the policy change. The primary outcome was the median time in days from diagnostic specimen collection to treatment initiation. Statistical analysis employed Kaplan-Meier estimates and Cox proportional hazards regression. Following decentralisation, the median time to treatment initiation decreased significantly from 118 days to 64 days. The hazard ratio for starting treatment after decentralisation was 2.15, indicating more than a twofold increase in the rate of treatment initiation. Decentralisation of MDR-TB diagnosis was associated with a substantial reduction in the time to treatment initiation. This suggests diagnostic decentralisation is a viable strategy for improving the care cascade for MDR-TB in resource-limited settings. Health policy should support sustained investment in regional diagnostic capacity, including workforce training and supply chain management. Further research should assess the impact on treatment outcomes and cost-effectiveness. tuberculosis, multi-drug resistance, decentralisation, diagnostic services, time-to-treatment, Nigeria, health systems This research provides empirical evidence from a national programme on the impact of a key health system intervention for MDR-TB care, informing future policy in Nigeria and similar contexts.

Keywords: *Multi-drug resistant tuberculosis, Nigeria, Decentralisation, Time-to-treatment, Retrospective cohort study, Sub-Saharan Africa, Health systems*

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