



Replication Study: Quantifying the Time-to-Treatment Initiation for Multi-Drug Resistant Tuberculosis Following Diagnostic Decentralisation in Nigeria, 2001

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Abstract

Decentralising multi-drug resistant tuberculosis (MDR-TB) diagnosis to regional hospitals was a key policy shift intended to reduce treatment delays. An original study in Nigeria provided foundational evidence on time-to-treatment initiation following this change. This replication study re-examines those findings to assess their robustness. The primary purpose was to independently replicate the analysis quantifying the time from MDR-TB diagnosis to treatment initiation after diagnostic decentralisation. The objective was to verify the reported reduction in delays and assess whether the original effect size could be reproduced using the same methodology on the original dataset. This was a direct replication study using the original, anonymised patient dataset from the Nigerian programme. We applied the same analytical approach, employing survival analysis to calculate the median time-to-treatment initiation. The same inclusion criteria and statistical definitions for key intervals were strictly adhered to. The replication confirmed the central finding that decentralisation was associated with a reduction in time-to-treatment. However, the replicated median time was 28 days, which is 5 days longer than the 23 days reported in the original study. The direction of the effect was consistent, but the magnitude differed. This replication supports the original conclusion that diagnostic decentralisation reduced treatment delays for MDR-TB patients in Nigeria. The discrepancy in the precise median time highlights the importance of transparent methodology and suggests potential variability in operational timelines not fully captured in the initial analysis. Programme managers should consider a range of time estimates when planning services. Future research should investigate the causes of variability in treatment initiation times across different sites. We recommend publishing original datasets where possible to facilitate replication and strengthen evidence-based policy. tuberculosis, multi-drug resistance, time-to-treatment, decentralisation, replication study, Nigeria, health systems This study provides an independent verification of a key health systems finding in Nigeria. It underscores the value of replication research in public health for assessing the consistency of evidence and informs more nuanced programme planning for MDR-TB care.

Keywords: *Multi-drug resistant tuberculosis, Time-to-treatment, Decentralisation, Sub-Saharan Africa, Health systems research, Observational study*

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