

A Randomised Field Trial of a Diagnostic Framework for Operational Efficiency in Kenyan District Hospitals.

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ABSTRACT

Background: Operational inefficiencies in district hospitals across sub-Saharan Africa impede service delivery and resource utilisation. Existing diagnostic tools are often complex and not tailored for rapid, actionable assessment in low-resource settings.

Purpose and objectives: To evaluate the efficacy of a novel, structured diagnostic framework in identifying and rectifying systemic inefficiencies, with the primary objective of quantifying resultant gains in operational throughput.

Keywords: *Randomised controlled trial, Health systems research, Sub-Saharan Africa, Operational efficiency, District hospitals, Diagnostic framework, Kenya*

Article Highlights

- Intervention hospitals achieved an 18.7% reduction in median patient processing time.
- Greatest efficiency gains were observed in outpatient triage and pharmacy logistics.
- The framework enables context-specific, actionable assessments for hospital managers.
- Study provides first experimental evidence for a practical, hospital-level diagnostic tool.

Methodological Note

A parallel-group randomised trial in 24 hospitals used a mixed-effects linear model with cluster-robust standard errors to quantify uncertainty.

This trial demonstrates how structured operational diagnostics can strengthen health systems in resource-limited settings.

ABSTRACT-ONLY PUBLICATION

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