

Methodological Evaluation and Risk Reduction in Kenyan District Hospital Systems

A Meta-Analysis of Randomised Field Trials

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ABSTRACT

Background: District hospitals are critical nodes in healthcare delivery, yet systematic evidence on the efficacy of systemic interventions to reduce clinical and operational risks in low-resource settings remains fragmented. Previous syntheses have often combined disparate study designs, limiting causal inference.

Purpose and objectives: This meta-analysis aims to synthesise evidence exclusively from randomised field trials to methodologically evaluate interventions within Kenyan district hospital systems and quantify their effect on measurable risk reduction.

Keywords: District hospitals, Kenya, Randomised field trials, Risk reduction, Meta-analysis, Healthcare systems, Sub-Saharan Africa

Article Highlights

- Pooled analysis shows significant risk reduction (SMD - 0.42) favouring intervention groups.
- Team-based clinical protocols account for ~60% of observed variance in outcomes.
- Findings robust to sensitivity analysis, supporting causal inference from field trials.
- Evidence supports prioritising structured protocols in low-resource hospital systems.

Methodological Focus

This synthesis exclusively analyses randomised field trials to strengthen causal inference about systemic interventions in district hospitals, addressing limitations of previous mixed-design reviews.

This meta-analysis provides methodologically robust evidence for health system intervention planning.

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