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Evaluating Health Systems Interventions in Kenya

A Difference-in-Differences Analysis of District Hospital Clinical Outcomes

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ABSTRACT

Background: District hospitals in sub-Saharan Africa face systemic challenges affecting clinical care quality. Robust quantitative methods are required to evaluate health systems interventions, moving beyond descriptive reporting to causal inference.

Purpose and objectives: This study aimed to quantify the causal effect of a multifaceted health systems strengthening intervention on clinical outcomes in district-level facilities. The primary objective was to estimate the intervention's impact on in-hospital mortality using a quasi-experimental design.

Keywords: *Health systems research, Sub-Saharan Africa, Difference-in-differences, Clinical outcomes, District hospitals, Kenya, Quasi-experimental design*

Article Highlights

- Difference-in-differences analysis shows a 4.2 percentage point reduction in mortality.
- Study provides causal evidence for health systems strengthening in real-world settings.
- No significant effects detected on length of stay or readmission rates.
- Quasi-experimental design offers rigorous evaluation framework for policy.

Methodological Note

The analysis employed a difference-in-differences model comparing 12 intervention and 15 control hospitals, using cluster-robust standard errors for inference.

This study demonstrates the application of causal inference methods to health systems evaluation in Africa.