



# Methodological Evaluation of Maternal Care Facilities Systems in Kenya: A Randomized Field Trial for Clinical Outcomes Assessment

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## Abstract

Maternal care systems in Kenya are crucial for improving maternal health outcomes. However, there is a need to evaluate and refine these systems through methodological studies. A randomized field trial was conducted across ten hospitals in Kenya, with baseline assessments followed by intervention periods where different systems were implemented. Data collection included clinical records and patient feedback surveys to measure outcomes such as maternal mortality rates, neonatal survival rates, and hospital readmission rates. Statistical analysis used a mixed-effects logistic regression model to account for clustering within institutions. Maternal care facilities in the intervention group showed a statistically significant decrease in hospital readmissions by 25% (95% CI: -30%, -19%) compared to controls, indicating improved system effectiveness. However, there was no discernible impact on maternal mortality rates or neonatal survival. The study highlights the potential of randomized field trials for evaluating and improving maternal care systems in Kenya, particularly in reducing hospital readmissions. Health authorities should prioritise interventions that target system improvements aimed at reducing hospital readmissions to improve overall patient outcomes. Treatment effect was estimated with  $\text{text}\{\text{logit}\}(\pi) = \beta_0 + \beta^T p X_i$ , and uncertainty reported using confidence-interval based inference.

**Keywords:** African, randomized, evaluation, intervention, health systems, clinical, outcomes

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