



Maternal Care Facility Systems Evaluation in Senegal: A Randomized Field Trial for Clinical Outcomes Measurement

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Abstract

Maternal care facilities in Senegal are critical for infant health outcomes but vary significantly in quality and accessibility. A multi-site, randomized controlled trial was conducted with 50 facilities divided into intervention and control groups over 12 months. Key variables included quality of care, patient adherence to protocols, and infant health metrics. In the intervention group, there was a statistically significant decrease in neonatal mortality rates by 24% (95% CI: -36%, -8%) compared to controls, indicating improved clinical outcomes. The trial demonstrated that enhanced maternal care systems can lead to substantial improvements in infant health metrics, particularly reducing neonatal mortality. Implementing these findings into policy and practice could further reduce neonatal deaths in Senegal's under-resourced facilities. Maternal Care Facilities, Clinical Outcomes, Randomized Field Trial, Neonatal Mortality, Quality Improvement Treatment effect was estimated with $\text{logit}(\pi) = \beta_0 + \beta_1 X_i$, and uncertainty reported using confidence-interval based inference.

Keywords: *African healthcare systems, Maternal health outcomes, Randomized controlled trial, Facility quality assessment, Clinical efficacy measurement, Geographic epidemiology, Community-based interventions*

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