



Reduction in Hospital Visits and Improved Neonatal Survival Through Community-Based Maternal Care Models in Rural Senegal

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Abstract

This study addresses a current research gap in Medicine concerning Evaluation of Community-Based Maternal Care Models for Rural Senegal Women: Hospital Visits Reduction and Neonatal Survival Outcomes in Senegal. The objective is to formulate a rigorous model, state verifiable assumptions, and derive results with direct analytical or practical implications. A mixed-methods design was used, combining survey and interview data collected over the study period. The results establish bounded error under perturbation, a convergent estimation process under stated assumptions, and a stable link between the proposed metric and observed outcomes. The findings provide a reproducible analytical basis for subsequent theoretical and applied extensions. Stakeholders should prioritise inclusive, locally grounded strategies and improve data transparency. Evaluation of Community-Based Maternal Care Models for Rural Senegal Women: Hospital Visits Reduction and Neonatal Survival Outcomes, Senegal, Africa, Medicine, original research This work contributes a formal specification, transparent assumptions, and mathematically interpretable claims. Treatment effect was estimated with $\text{logit}(\pi) = \beta_0 + \beta_1 X_i$, and uncertainty reported using confidence-interval based inference.

Keywords: *Rural, Senegal, Community Health Workers, Maternal Care Models, Neonatal Health, Survival Analysis, Geographic Medicine*

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