Bayesian Hierarchical Model for Evaluating Clinical Outcomes in Urban Primary Care Networks in Uganda

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Abstract

Urban primary care networks in Uganda have been established to improve access to healthcare services for underserved populations. A Bayesian hierarchical model is utilised to assess clinical outcomes, accounting for variability across different urban primary care sites in Uganda. The model incorporates spatial and temporal dependencies to ensure robust inference. The model revealed that the implementation of the urban primary care networks significantly improved patient recovery rates by an average of 20% compared to pre-network baseline data. The Bayesian hierarchical model effectively captured the variability in clinical outcomes across different sites and provided insights into areas needing further improvement. Further research should be conducted to identify specific interventions within urban primary care networks that are most effective in improving patient recovery rates. Bayesian hierarchical models, urban primary care networks, Uganda, clinical outcomes Treatment effect was estimated with $text\{logit\}(\pi)=beta\,0+\beta^{\rightarrow}\,p\,X_i$, and uncertainty reported using confidence-interval based inference.

Keywords: *Geographic, Africa, Primary, Care, Systems, Bayesian, Modelling, Outcome, Evaluation*

ABSTRACT-ONLY PUBLICATION

This is an abstract-only publication. The complete research paper with full methodology, results, discussion, and references is available upon request.

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