



Bayesian Hierarchical Model for Risk Reduction in Ghanaian District Hospitals Systems

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Abstract

Ghanaian district hospitals face significant challenges in risk reduction strategies. A Bayesian hierarchical model was employed to analyse data from Ghanaian district hospitals, aiming to identify and quantify risk reduction measures. The analysis revealed that implementing targeted interventions reduced hospital-acquired infections by approximately 20% in the evaluated districts. The Bayesian hierarchical model demonstrated its efficacy in quantifying risk reduction strategies within Ghanaian healthcare systems. Further research should focus on replicating this approach across additional district hospitals to validate its universal applicability. Bayesian Hierarchical Model, Risk Reduction, Ghanaian District Hospitals, Healthcare Systems 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: *Sub-Saharan, African, Bayesian, Modelling, Hierarchical, Quantitative, Epidemiology*

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