



Multilevel Regression Analysis of Urban Primary Care Networks in Ghana: An Assessment of Clinical Outcomes Systems

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Abstract

Urban primary care networks (UPCNs) in Ghana are critical for addressing healthcare disparities. These systems aim to improve access and quality of care among underserved populations. A multilevel regression model was employed to analyse data from UPCNs across different cities. The model accounts for both patient-level and network-level effects. The multilevel regression analysis revealed that the proportion of patients achieving desired clinical outcomes varied significantly between urban primary care networks (UPCNs). The study highlights significant variations in clinical performance across different UPCNs, emphasising the need for targeted interventions to optimise care delivery. Policy makers should prioritise resource allocation and training programmes tailored to specific network strengths and weaknesses identified through this analysis. Treatment effect was estimated with $\text{text}\{logit\}(\pi) = \beta_0 + \beta_1 X_i$, and uncertainty reported using confidence-interval based inference.

Keywords: *Sub-Saharan, Ghanaian, Urbanization, Multilevel, Hierarchical, Stratified, Regression*

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