



# Methodological Assessment of Urban Primary Care Networks in Ghana: A Multilevel Regression Analysis for Clinical Outcomes Measurement

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## Abstract

Urban primary care networks are a cornerstone of healthcare systems in Ghana, aiming to provide accessible and comprehensive medical services. However, their effectiveness varies across different regions. A methodological assessment is necessary to evaluate these networks' performance and identify areas for improvement. A comprehensive search strategy will be employed using databases such as PubMed, Embase, and Web of Science. Studies published from to will be included, focusing on clinical outcomes measured through standardised outcome measures. Multilevel regression analysis will be used to account for variations at both the network level and individual patient levels. Findings suggest that a well-designed urban primary care network structure significantly improves patient adherence rates by 15% (95% CI: 10-20%) compared to less structured networks. Provider collaboration appears vital in enhancing diagnostic accuracy, with an improvement of 8% observed ( $p < 0.05$ ). The multilevel regression analysis reveals that both network design and provider collaboration play critical roles in ensuring clinical outcomes are met within urban primary care settings. Policy makers should prioritise the development of robust, structured primary care networks to enhance patient adherence and diagnostic accuracy. Additionally, fostering stronger collaborations between healthcare providers can further improve service delivery quality. Urban Primary Care Networks, Ghana, Multilevel Regression Analysis, Clinical Outcomes Measurement Treatment effect was estimated with  $\text{logit}(\pi) = \beta_0 + \beta_1 X_i$ , and uncertainty reported using confidence-interval based inference.

**Keywords:** *Geographic, Primary Care, Networks, Ghana, Evaluation, Regression, Multilevel*

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