



# Methodological Evaluation of Community Health Centres Systems in Kenya Using Difference-in-Differences Models for Risk Reduction Measurement

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## Abstract

Community health centres (CHCs) play a critical role in healthcare delivery in Kenya. However, their effectiveness in reducing public health risks has not been extensively evaluated. A comprehensive systematic literature review was conducted, employing rigorous inclusion criteria based on research design, data sources, and outcomes related to CHC effectiveness. Quantitative analysis using difference-in-differences models was applied to assess the impact of CHCs on risk reduction across various health metrics. The findings indicate that incorporating difference-in-differences models into CHC evaluations can effectively measure their contribution to reducing specific public health risks, such as malaria prevalence by an average of 15% in treated areas compared to control sites over a two-year period. This review underscores the utility of difference-in-differences models in evaluating CHCs' impact on risk reduction and provides evidence for their widespread application in similar contexts. Health policymakers should consider using difference-in-differences models as part of their evaluation frameworks to ensure accurate measurement of CHC effectiveness in risk mitigation strategies. Treatment effect was estimated with  $\text{text}\{logit\}(\pi) = \beta_0 + \beta^T p X_i$ , and uncertainty reported using confidence-interval based inference.

**Keywords:** *African geography, community health centres, difference-in-differences, intervention effectiveness, public health, randomized controlled trials, spatial analysis*

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