



# Methodological Validation of Community Health Centre Systems in Ethiopia Using Difference-in-Differences for Clinical Outcome Measurement

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## Abstract

Community health centers in Ethiopia are pivotal to addressing healthcare disparities across rural areas. However, their effectiveness and scalability require rigorous evaluation. A difference-in-differences approach was employed to assess the impact of community health centers on patient clinical outcomes, comparing baseline and post-intervention periods. Analysis revealed a significant improvement in patient recovery rates by 15% (95% CI: 7-23%) after implementation of community health centre systems. The DiD model demonstrated robustness in measuring clinical outcomes, providing evidence for the effectiveness and scalability of community health centers in Ethiopia. Policy recommendations include expanding coverage and integrating feedback mechanisms to enhance service delivery. Treatment effect was estimated with  $\text{text}\{\text{logit}\}(\pi) = \beta_0 + \beta^T X_i$ , and uncertainty reported using confidence-interval based inference.

**Keywords:** Ethiopia, Community Health Centers, Difference-in-Differences, Randomized Controlled Trials, Public Health Metrics, Geographic Information Systems, Outcome Evaluation

## ABSTRACT-ONLY PUBLICATION

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