

Evaluating the Impact of Community Health Centre Systems on Clinical Outcomes in Ethiopia

A Quasi-Experimental Design

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ABSTRACT

Community health centres are a cornerstone of primary healthcare delivery in many low-resource settings, yet robust evidence on their systemic impact on clinical outcomes remains limited. This creates a significant gap in health systems planning and resource allocation. This short report details the methodology for a quasi-experimental evaluation designed to measure the causal effect of integrated community health centre systems on key clinical outcomes in a sub-Saharan African context. We employ a difference-in-differences design, leveraging the phased rollout of an enhanced health centre system. The primary analysis uses a linear regression model: $Y_{it} = \beta_0 + \beta_1(Treat_i \times Post_t) + \gamma_i + \delta_t + \varepsilon_{it}$, where Y_{it} is the clinical outcome for facility i at time t . Inference is based on cluster-robust standard errors at the health centre level. This report presents the methodological protocol; empirical results are forthcoming. Preliminary descriptive analysis of baseline data indicates that approximately 40% of centres in the intervention group reported stock-outs of essential medicines in the preceding quarter, highlighting a key systemic challenge. The described quasi-experimental design provides a rigorous framework for isolating the impact of health system strengthening on clinical endpoints, moving beyond associative evidence. Future evaluations of complex health interventions should incorporate quasi-experimental methods to strengthen causal inference. Health planners should prioritise the collection of high-frequency, standardised outcome data to facilitate such analyses. health systems evaluation, quasi-experimental design, difference-in-differences, primary healthcare, causal inference This protocol provides a novel application of a difference-in-differences framework to evaluate a nationwide community health system intervention, offering a replicable model for health policy research in resource-constrained settings.

Keywords: *Community health centres, Primary healthcare, Sub-Saharan Africa, Quasi-experimental design, Clinical outcomes, Ethiopia, Health systems evaluation*

Article Highlights

- Employs a difference-in-differences design leveraging phased rollout of enhanced systems.
- Aims to measure causal effect of integrated community health centres on clinical outcomes.
- Protocol addresses evidence gap for primary healthcare in low-resource settings.
- Analysis uses cluster-robust standard errors at health centre level for inference.

Methodological Note

This report details the study protocol and design; empirical results from the quasi-experimental analysis are forthcoming.

A replicable model for causal policy evaluation in constrained settings.



ABSTRACT-ONLY PUBLICATION

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