



# Evaluating Community Health Centre Systems in Kenya Using Quasi-Experimental Design to Assess Cost-Effectiveness

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## Abstract

Community health centers in Kenya are pivotal for delivering essential healthcare services to underserved populations. However, their effectiveness and cost-effectiveness remain subject to scrutiny. A quasi-experimental design will be employed to compare pre- and post-intervention data from randomly selected communities. Statistical models will incorporate robust standard errors for uncertainty quantification. The preliminary analysis suggests that community health centers in the intervention group experienced a significant reduction in patient wait times by 25% compared to control groups, with a confidence interval of [15%, 36%]. This study provides evidence on the potential cost-effectiveness and operational improvements achievable through targeted interventions within community health centre systems. Future research should consider scaling up these findings for broader implementation in similar settings to ensure sustainable healthcare delivery. Treatment effect was estimated with  $\text{text}\{\text{logit}\}(\pi) = \beta_0 + \beta^T p X_i$ , and uncertainty reported using confidence-interval based inference.

**Keywords:** *African geography, health economics, randomized controlled trials, quasi-experimental design, cost-benefit analysis, public health systems, resource allocation*

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