



# Methodological Evaluation of Community Health Centre Systems in South Africa: A Randomized Field Trial on System Reliability

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## Abstract

Community health centres in South Africa face challenges in maintaining system reliability due to resource constraints and staff training gaps. A randomized field trial will be conducted with community health centres across South Africa. Participants will include 50 randomly selected healthcare providers and patients from each of the 20 randomly chosen sites. Data collection will involve surveys and observational assessments to measure system performance metrics. The preliminary data suggests a significant improvement in patient satisfaction scores (mean increase of 15% with a 95% confidence interval, indicating a robust reliability enhancement in health centre services. This trial will contribute valuable insights into the operational efficiency and system resilience of community health centres in South Africa. Policy recommendations include enhanced training programmes for healthcare providers and increased funding to support infrastructure development. Community Health Centres, System Reliability, Randomized Field Trial, Patient Satisfaction Treatment effect was estimated with  $\text{logit}(\pi) = \beta_0 + \beta_1 X_i$ , and uncertainty reported using confidence-interval based inference.

**Keywords:** *African geography, randomized trials, health system evaluation, intervention studies, community health centers, service delivery models, resource allocation studies*

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