

A Randomised Field Trial Evaluating the Cost-Effectiveness of Community Health Centre Systems in Rwanda

A Methodological Appraisal

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ABSTRACT

Background: Community health centres are a cornerstone of primary healthcare delivery in many African nations, yet robust evidence on their cost-effectiveness remains limited. Rigorous methodological approaches for evaluating such complex, system-level interventions in real-world settings are needed to inform health policy and resource allocation.

Purpose and objectives: This study aimed to appraise the methodological rigour and feasibility of a randomised field trial designed to measure the cost-effectiveness of a community health centre system in Rwanda. The primary objective was to evaluate the trial's design for generating unbiased estimates of incremental cost per disability-adjusted life year averted.

Keywords: *Randomised controlled trial, Cost-effectiveness analysis, Community health centres, Sub-Saharan Africa, Health systems evaluation, Primary healthcare, Field trial methodology*

Article Highlights

- Cluster-randomised trial design successfully generated comparable intervention and control groups.
- Incremental cost-effectiveness sensitive to analytical perspective, varying by 22%.
- Bootstrapped confidence intervals for primary outcome indicated substantial uncertainty.
- Trial proved methodologically viable but resource-intensive for system evaluation.

Analytical Note

Cost-effectiveness estimated using a generalised linear mixed model with cluster random effects. Uncertainty characterised via non-parametric bootstrapping.

This appraisal focuses on methodological rigour and feasibility rather than clinical outcomes.

ABSTRACT-ONLY PUBLICATION

This is an abstract-only publication. The complete research paper with full methodology, results, discussion, and references is available upon request.

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