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A Quasi-Experimental Evaluation of Health Systems Optimisation and Yield in Ethiopian Community Health Centres

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ABSTRACT

Background: Community health centres in Ethiopia face systemic inefficiencies that constrain service delivery and agricultural health outreach, a critical nexus for food systems. Existing evaluations often lack rigorous counterfactual frameworks to isolate the impact of operational interventions.

Purpose and objectives: This case study aimed to methodologically evaluate a systems optimisation intervention in a network of centres, with the primary objective of quantifying its causal effect on patient yield (a composite metric of consultations completed).

Keywords: *Health systems strengthening, Quasi-experimental design, Sub-Saharan Africa, Community health centres, Agricultural health, Service delivery, Operational research*

Article Highlights

- A quasi-experimental design isolates the causal impact of a systems optimisation intervention.
- Patient yield increased by 18.7% in intervention centres relative to control trends.
- Reductions in pharmacy and triage bottlenecks were the dominant mechanism for improvement.
- The study provides a rigorous methodological framework for operational research in resource-constrained settings.

Methodological Note

The analysis employs a difference-in-differences design with a linear panel model and cluster-robust standard errors, comparing 12 intervention and 12 control community health centres.

This study evaluates a practical intervention for strengthening health service delivery within agricultural communities.