



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

Tewodros Assefa<sup>1</sup>· Meklit Gebremedhin<sup>2</sup>

<sup>1</sup> Department of Public Health, Addis Ababa Science and Technology University (AASTU)

<sup>2</sup> Ethiopian Institute of Agricultural Research (EIAR)

Correspondence: [tassefa@yahoo.com](mailto:tassefa@yahoo.com)

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### Author notes

*Tewodros Assefa is affiliated with Department of Public Health, Addis Ababa Science and Technology University (AASTU) and focuses on Medicine research in Africa.*

*Meklit Gebremedhin is affiliated with Ethiopian Institute of Agricultural Research (EIAR) and focuses on Medicine research in Africa.*

### 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.*

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