

Evaluating District Hospital System Interventions in Ethiopia

A Difference-in-Differences Analysis of Clinical Outcomes

Tewodros Gebrelassie¹, Meklit Abebe¹

Department of Public Health, Haramaya University

Correspondence: tgebrelassie@aol.com

Received: 05 December 2025 | Accepted: 21 February 2026 | Published: 20 March 2026 | DOI:

[10.5281/zenodo.18949538](https://doi.org/10.5281/zenodo.18949538)

ABSTRACT

Background: District hospitals are critical nodes in sub-Saharan African health systems, yet robust evidence on the impact of systemic interventions on clinical outcomes remains scarce. Evaluations often lack rigorous counterfactual designs, limiting causal inference.

Purpose and objectives: This study aimed to quantify the causal effect of a bundled health systems intervention—comprising staff training, supply chain reinforcement, and clinical protocol standardisation—on inpatient mortality and length of stay in Ethiopian district hospitals.

Keywords: *health systems strengthening, sub-Saharan Africa, difference-in-differences, clinical outcomes, district hospitals, implementation research, Ethiopia*

Article Highlights

- Bundled intervention reduced inpatient mortality by 3.2 percentage points.
- Effect most pronounced for medical admissions versus surgical cases.
- No significant impact observed on average length of stay.
- Study employs robust difference-in-differences causal inference design.

Methodological Note

Quasi-experimental difference-in-differences analysis of longitudinal data from 24 intervention and 18 control hospitals, with cluster-robust inference.

Provides novel causal evidence on health systems strengthening in a low-resource setting.

ABSTRACT-ONLY PUBLICATION

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

REQUEST FULL PAPER

 **Email:** info@parj.africa

Request your copy of the full paper today!

SUBMIT YOUR RESEARCH

Are you a researcher in Africa? We welcome your submissions!

Join our community of African scholars and share your groundbreaking work.

 **Submit at:** app.parj.africa



Scan to visit app.parj.africa

Open Access Scholarship from PARJ

Empowering African Research | Advancing Global Knowledge