African Food Systems Research (Interdisciplinary - incl Agri/Env)

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A Randomised Field Trial of Diagnostic and Governance Optimisation for District Hospital Efficiency in Ghana

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ABSTRACT

Background: District hospitals in sub-Saharan Africa face systemic inefficiencies, yet evidence on scalable interventions to improve operational performance remains limited. Current assessments often rely on observational data, lacking rigorous causal evaluation of integrated system reforms.

Purpose and objectives: This study aimed to quantify the causal impact of a bundled intervention combining diagnostic capacity enhancement with governance restructuring on hospital efficiency. The primary objective was to measure gains in patient throughput and resource utilisation.

Keywords: *health systems strengthening, sub-Saharan Africa, randomised controlled trial, operational efficiency, district hospitals, diagnostic stewardship, Ghana*

Article Highlights

- Bundled diagnostic and governance intervention increased mean technical efficiency from 0.61 to 0.72.
- Governance restructuring enabled more responsive reallocation of diagnostic resources.
- Study provides first causal evidence from a field trial on this

Methodological Note

Efficiency was measured using stochastic frontier analysis: $\ln(\text{Output}) = \beta_0 + \beta \ln(\text{Input}) + v - u$, where u represents inefficiency. Analysis used intention-to-treat with cluster-robust standard errors.

This trial demonstrates the efficacy of integrated system reforms in

integrated approach. • Policy should prioritise bundled reforms over singular technical investments.	*resource-constrained settings.*

ABSTRACT-ONLY PUBLICATION

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