

Methodological Evaluation of District Hospital Systems in Ghana

A Multilevel Regression Analysis of Clinical Outcomes

**Ama Serwaa Mensah^{1,2} Kwame Asare^{1,3} Esi Abena Ofori⁴
Kofi Agyeman-Badu⁴**

University of Cape Coast • Department of Public Health, Noguchi Memorial Institute for Medical Research •
Department of Surgery, Accra Technical University • Water Research Institute (WRI)

Correspondence: amensah@gmail.com

Received: 11 May 2024 | Accepted: 07 September 2024 | Published: 25 October 2024 | DOI:

[10.5281/zenodo.18951138](https://doi.org/10.5281/zenodo.18951138)

ABSTRACT

Background: District hospitals are critical nodes in Ghana's healthcare system, yet systematic, quantitative evaluations of their systemic performance on clinical outcomes are limited. Existing assessments often lack methodological rigour in accounting for hierarchical patient data and varying hospital-level factors.

Purpose and objectives: This study aimed to develop and apply a robust methodological framework for evaluating district hospital systems by quantifying the influence of hospital-level system factors on risk-adjusted inpatient mortality.

Keywords: *district hospitals, health systems evaluation, multilevel regression analysis, clinical outcomes, sub-Saharan Africa, Ghana*

Article Highlights

- Multilevel modelling isolates hospital system effects from patient factors.
- Drug availability index linked to 15% reduction in mortality odds.
- Framework enables targeted resource allocation in district hospitals.
- Quantitative approach for health systems in resource-constrained settings.

Methodological Insight

The study employs a two-level hierarchical logistic regression model to partition variance between patient characteristics and hospital system factors, providing a robust analytical framework for health systems evaluation.

This analysis offers a replicable methodological framework for health systems research.

ABSTRACT-ONLY PUBLICATION

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