



## Evaluating Health Systems Interventions in Kenya

*A Difference-in-Differences Analysis of District Hospital Clinical Outcomes*

Wanjiku Mwangi<sup>1</sup>, Kamau Ochieng<sup>2</sup>, Amina Hassan<sup>3</sup>

<sup>1</sup> Department of Internal Medicine, University of Nairobi

<sup>2</sup> Kenya Medical Research Institute (KEMRI)

<sup>3</sup> University of Nairobi

Correspondence: [wmwangi@outlook.com](mailto:wmwangi@outlook.com)

Published: 05 August 2015 Received: 28 May 2015 Accepted: 21 July 2015 DOI:  
[10.5281/zenodo.18948090](https://doi.org/10.5281/zenodo.18948090)

### Author notes

*Wanjiku Mwangi is affiliated with Department of Internal Medicine, University of Nairobi and focuses on Medicine research in Africa.*

*Kamau Ochieng is affiliated with Kenya Medical Research Institute (KEMRI) and focuses on Medicine research in Africa.*

*Amina Hassan is affiliated with University of Nairobi and focuses on Medicine research in Africa.*

### ABSTRACT

**Background:** District hospitals in sub-Saharan Africa face systemic challenges affecting clinical care quality. Robust quantitative methods are required to evaluate health systems interventions, moving beyond descriptive reporting to causal inference.

**Purpose and objectives:** This study aimed to quantify the causal effect of a multifaceted health systems strengthening intervention on clinical outcomes in district-level facilities. The primary objective was to estimate the intervention's impact on in-hospital mortality using a quasi-experimental design.

**Keywords:** *Health systems research, Sub-Saharan Africa, Difference-in-differences, Clinical outcomes, District hospitals, Kenya, Quasi-experimental design*

#### Article Highlights

- Difference-in-differences analysis shows a 4.2 percentage point reduction in mortality.
- Study provides causal evidence for health systems strengthening in real-world settings.
- No significant effects detected on length of stay or readmission rates.
- Quasi-experimental design offers rigorous evaluation framework for policy.

#### Methodological Note

The analysis employed a difference-in-differences model comparing 12 intervention and 15 control hospitals, using cluster-robust standard errors for inference.

*This study demonstrates the application of causal inference methods to health systems evaluation in Africa.*

## **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](mailto: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](http://app.parj.africa)



Scan to visit [app.parj.africa](http://app.parj.africa)

### **Open Access Scholarship from PARJ**

Empowering African Research | Advancing Global  
Knowledge