



Evaluating Efficiency Gains in Ghana's Public Health Surveillance Systems

A Methodological Difference-in-Differences Analysis

Kwame Agyemang-Badu¹, Kofi Anokye-Ansong^{2,3}

Esi Nkrumah Ofori^{3,4}, Ama Serwaa Mensah^{5,6}

¹ Department of Surgery, University of Ghana, Legon

² University for Development Studies (UDS)

³ Kwame Nkrumah University of Science and Technology (KNUST), Kumasi

⁴ Department of Epidemiology, Ashesi University

⁵ University of Ghana, Legon

⁶ Department of Clinical Research, Ashesi University

Correspondence: kagyemangbadu@aol.com

Published: 19 September 2005

Received: 23 May

Accepted: 27 August 2005

DOI:

2005

[10.5281/zenodo.18949178](https://doi.org/10.5281/zenodo.18949178)

Author notes

Kwame Agyemang-Badu is affiliated with Department of Surgery, University of Ghana, Legon and focuses on Medicine research in Africa.

Kofi Anokye-Ansong is affiliated with University for Development Studies (UDS) and focuses on Medicine research in Africa.

Esi Nkrumah Ofori is affiliated with Kwame Nkrumah University of Science and Technology (KNUST), Kumasi and focuses on Medicine research in Africa.

Ama Serwaa Mensah is affiliated with University of Ghana, Legon and focuses on Medicine research in Africa.

ABSTRACT

Background: Public health surveillance systems are critical for early disease detection and response, yet their operational efficiency in resource-limited settings is often suboptimal. In Ghana, recent investments aimed to modernise these systems, but robust methodological evaluations of their impact on efficiency are lacking.

Purpose and objectives: This study aimed to quantify the causal effect of a national intervention to digitise and streamline surveillance reporting on system efficiency gains. The primary objective was to measure changes in timeliness and data completeness following the intervention's rollout.

Keywords: *Public health surveillance, Health systems evaluation, Sub-Saharan Africa, Difference-in-differences, Operational efficiency, Ghana*

Article Highlights

- Quasi-experimental design isolates causal effect of surveillance digitisation.
- Intervention districts saw 2.3-day reduction in reporting delays versus controls.

Methodological Insight

The difference-in-differences design compared efficiency metrics in intervention and control districts before and after the national rollout, using cluster-robust inference to account for district-level effects.

- Data completeness improved by 15 percentage points in treatment group.
- Study provides robust methodological framework for health system evaluation.

This analysis offers a causal evaluation framework applicable to other health system interventions in resource-limited settings.

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