



Methodological Evaluation of Public Health Surveillance Systems in Uganda Using Difference-in-Differences Analysis

Semedi Okokoruka^{1,2}, Nakuru Musinguzi¹

¹ Busitema University

² Medical Research Council (MRC)/UVRI and LSHTM Uganda Research Unit

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Correspondence: sokokoruka@hotmail.com

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Author notes

Semedi Okokoruka is affiliated with Busitema University and focuses on Medicine research in Africa.

Nakuru Musinguzi is affiliated with Busitema University and focuses on Medicine research in Africa.

Abstract

Public health surveillance systems in Uganda are essential for monitoring disease prevalence and implementing timely interventions. However, their reliability varies among different regions and over time. A meta-analysis was conducted using data from four districts in Uganda. The DiD model will be employed to assess system reliability over time and between regions. The analysis revealed a significant improvement in surveillance accuracy in one district compared to the baseline period, indicating potential enhancements in local health management practices. Our findings suggest that applying the DiD model can enhance our understanding of public health surveillance systems' performance in Uganda, particularly in terms of regional disparities and temporal trends. Further research should be conducted to validate these results across more districts and over longer periods. Policy makers could use this information to improve system design and resource allocation. Public Health Surveillance, Difference-in-Differences Analysis, Uganda, System Reliability Treatment effect was estimated with $\text{text}\{ \text{logit} \}(\pi) = \beta_0 + \beta_1 X_i$, and uncertainty reported using confidence-interval based inference.

Keywords: *Sub-Saharan, geographic, public health, surveillance systems, evaluation methodologies, econometric, spatial analysis*

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