# Methodological Assessment of Public Health Surveillance Systems in Uganda: Evaluating Clinical Outcomes Using Difference-in-Differences Analysis

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## Abstract

Public health surveillance systems are essential for monitoring disease prevalence and guiding interventions in Uganda. The study employed DID analysis to compare changes in clinical indicators before and after the implementation of surveillance measures. Data from multiple health facilities were analysed to ensure robustness. Despite variable baseline conditions across different facilities, preliminary results suggest a significant improvement in infection rates following system upgrades ($p < 0.05$). The DID model effectively highlights changes attributable to surveillance improvements, though further research is needed for comprehensive evaluation. Future studies should consider longitudinal data and incorporate qualitative feedback to enhance the comprehensiveness of public health interventions assessment. public health surveillance, clinical outcomes, difference-in-differences (DID), Uganda Treatment effect was estimated with $text\{logit\}(\pi) = beta\,0 + \beta^\rightarrow p\,X_i$, and uncertainty reported using confidence-interval based inference.

**Keywords:** *Uganda, Public Health Surveillance, Methodological Evaluation, Clinical Outcomes, Difference-in-Differences, Epidemiology, Quantitative Methods*

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