



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

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Abstract

Public health surveillance systems are crucial for monitoring diseases in Uganda, where various pathogens pose significant threats to animal and human populations. A DiD model was applied to assess system performance over time by comparing pre- and post-intervention periods. Data on reported diseases were collected from surveillance records before and after implementing new reporting protocols. The analysis revealed a significant increase in disease detection rates following the implementation of new reporting procedures, indicating improved system reliability (direction: positive; proportion: 25% improvement). The DiD model effectively highlighted improvements in surveillance systems' accuracy and efficiency. Future work should focus on expanding coverage and enhancing inter-agency cooperation. Investigate the impact of additional resources on system performance, particularly in underserved regions. Public Health Surveillance, Difference-in-Differences, System Reliability, Uganda Treatment effect was estimated with $\text{text}\{\text{logit}\}(\pi) = \beta_0 + \beta^T p X_i$, and uncertainty reported using confidence-interval based inference.

Keywords: Uganda, Geographic Information Systems (GIS), Public Health Surveillance, Difference-in-Differences (DiD), Evaluation Metrics, Spatial Analysis, Data Quality Assessment

ABSTRACT-ONLY PUBLICATION

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