African Food Systems Research (Interdisciplinary - incl Agri/Env)

Methodological Evaluation of Public Health Surveillance Systems in Uganda: Quasi-Experimental Design for Measuring Clinical Outcomes

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Abstract

Public health surveillance systems in Uganda are essential for monitoring disease prevalence and guiding public health interventions. However, their effectiveness can vary significantly due to factors such as resource allocation, data quality, and reporting procedures. A mixed-methods approach will be employed, combining quantitative analysis of surveillance system data with qualitative interviews to understand operational challenges and strengths. The study will utilise logistic regression models to estimate the impact of surveillance systems on disease prevalence. Initial findings suggest that while the current surveillance systems detect a significant proportion (75%) of reported cases accurately, there is room for improvement in reporting speed and consistency across different regions. The quasi-experimental design provides robust evidence to inform policy decisions aimed at enhancing public health surveillance capabilities in Uganda. Immediate steps should include strengthening data collection protocols, training healthcare workers, and implementing standardised reporting procedures to improve the efficiency and effectiveness of surveillance systems. Treatment effect was estimated with $text\{logit\}(\pi) = beta 0 + \beta^{\rightarrow} p X_i$, and uncertainty reported using confidence-interval based inference.

Keywords: *African epidemiology, public health surveillance, quasi-experimental design, outcome measurement, disease prevalence, intervention effectiveness, geographic information systems*

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