African Urban Health Issues (Clinical/Service focus)

Methodological Evaluation of Public Health Surveillance Systems in Rwanda Using Quasi-Experimental Design for Adoption Assessment

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Abstract

Public health surveillance systems are crucial for monitoring and responding to disease outbreaks in Rwanda. However, their effectiveness varies across different regions and contexts. A meta-analysis will be conducted to compare methodologies employed by various surveillance systems. Quasi-experimental designs, including interrupted time series analysis (ITS) with robust standard errors, will be utilised to measure the impact on system adoption. Insights into the methodological approaches suggest a significant variation in how data is collected and analysed across different regions of Rwanda, affecting the overall efficacy of surveillance systems. This study highlights the need for standardization in public health surveillance methodologies. This meta-analysis underscores the importance of adopting consistent methods for evaluating public health surveillance systems to enhance their effectiveness and efficiency in disease monitoring. Future studies should advocate for standardised methodologies across Rwanda's public health surveillance systems to ensure uniform data quality and comparability. Public Health Surveillance, Quasi-Experimental Design, Adoption Rates, Interrupted Time Series Analysis Treatment effect was estimated with $text\{logit\}(\pi) = beta0 + \beta^{\rightarrow} p X_i$, and uncertainty reported using confidence-interval based inference.

Keywords: *Sub-Saharan, geographic, intervention evaluation, mixed-methods, public health, surveillance, validity*