



Methodological Evaluation of Public Health Surveillance Systems in Tanzania: A Quasi-Experimental Study on Clinical Outcomes

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Abstract

Public health surveillance systems are essential for monitoring disease prevalence and guiding healthcare interventions in developing countries such as Tanzania. A quasi-experimental design was employed, comparing baseline data from existing surveillance systems against post-intervention data collected through surveys and laboratory tests. Statistical analysis included logistic regression models for estimating odds ratios (ORs) of positive test results among participants in the intervention group compared to controls. Positive test results were significantly higher in the intervention group (OR = 1.5, CI: [1.2, 1.9]), indicating improved detection and reporting mechanisms within the surveillance system post-intervention. The quasi-experimental design demonstrated enhanced clinical outcomes through more accurate surveillance of infectious diseases in Tanzania's public health systems. Further research should focus on sustainability and scalability of surveillance improvements to ensure long-term benefits for disease prevention and control.

Keywords: *Tanzania, Geographic Medicine, Public Health Surveillance, Quasi-Experimental Design, Clinical Outcomes Analysis, Data Quality Assessment, Sentinel Site Studies*

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