



Methodological Evaluation of Public Health Surveillance Systems in Ghana: Quasi-Experimental Design for Efficiency Gains

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Abstract

Public health surveillance systems are critical for monitoring infectious diseases in Ghana, where resource constraints pose challenges to their effectiveness. A mixed-method approach combining quantitative data analysis with qualitative interviews was employed. The study utilised a pre-post test control group design to assess system improvements over time. The implementation of new surveillance protocols led to a 20% reduction in the detection time for suspected cases, reflecting improved operational efficiency. Enhanced public health surveillance systems are essential for timely disease outbreak response and resource allocation optimization in Ghana. Investment should be prioritised in training personnel and technological upgrades to sustain these improvements. Treatment effect was estimated with $\text{text}\{logit\}(\pi) = \beta_0 + \beta^T p X_i$, and uncertainty reported using confidence-interval based inference.

Keywords: *African, Geographic, Evaluation, Methodology, Surveillance, Quasi-experimental, Efficiency*

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