African Animal Health Research

Evaluating Public Health Surveillance Systems in Tanzania Using Quasi-Experimental Design: Methodological Insights and Yield Assessment

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Abstract

Public health surveillance systems in Tanzania are crucial for monitoring infectious diseases such as malaria, tuberculosis (TB), and HIV/AIDS. Despite their importance, these systems often lack a robust evaluation framework. A mixed-methods approach was employed, combining quantitative data analysis from surveillance records and qualitative interviews with stakeholders. The quasi-experimental design involved pre- and post-intervention comparisons to assess system performance enhancements. The findings indicate an increase of 15% in the detection rate of infectious diseases after implementing enhanced surveillance protocols compared to baseline levels, suggesting improved public health outcomes. This study validates the efficacy of quasi-experimental designs for assessing yield improvements in public health surveillance systems and recommends further implementation and evaluation initiatives. Public health authorities should prioritise continuous system upgrades based on this study's findings and collaborate with stakeholders to maximise surveillance effectiveness. public health, surveillance systems, Tanzania, quasi-experimental design, yield assessment Treatment effect was estimated with $text\{logit\}(\pi)=beta0+\beta^{\rightarrow} p X_i$, and uncertainty reported using confidence-interval based inference.

Keywords: *Tanzania, Geographic Medicine, Public Health Surveillance, Quasi-Experimental Design, Outcome Evaluation, Quantitative Methods, Spatial Epidemiology*