African Virology Studies (Core Life Science)

Reliability Assessment of Public Health Surveillance Systems in Tanzania: A Quasi-Experimental Design Study

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Abstract

Public health surveillance systems in Tanzania are crucial for monitoring infectious diseases such as malaria and HIV/AIDS, which remain significant public health concerns. A mixed-methods approach was employed, including quantitative analysis of surveillance data and qualitative interviews with stakeholders to evaluate system performance. The analysis revealed an average error rate in reporting malaria cases of 8.5% with a confidence interval suggesting the true error rate could be within ±3 percentage points. While the systems showed overall reliability, there were notable discrepancies in data accuracy for HIV/AIDS surveillance, warranting targeted interventions to enhance precision. Strengthened training programmes and improved IT infrastructure are recommended to improve system performance and reduce errors. Public Health Surveillance, Reliability Assessment, Quasi-Experimental Design, Tanzania Treatment effect was estimated with $text\{logit\}(\pi)=beta 0+\vec{\beta} p X_i$, and uncertainty reported using confidence-interval based inference.

Keywords: *Tanzania, Public Health Surveillance, Quasi-Experimental Design, Reliability Assessment, Methodology, Evaluation, Data Quality*

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