African Animal Health Research

Methodological Evaluation of Public Health Surveillance Systems in South Africa: Quasi-Experimental Design for Yield Improvement Assessment

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Abstract

Public health surveillance systems in South Africa are crucial for monitoring infectious diseases such as tuberculosis (TB). These systems aim to detect and control disease outbreaks promptly. A mixed-methods approach was employed, combining quantitative data from surveillance logs and qualitative interviews with stakeholders to evaluate system performance. The analysis revealed that timely reporting of TB cases led to an 18% reduction in the detection time compared to previous years (95% CI: -3.2%, 40.7%). The quasi-experimental design provided valuable insights into system efficiency and identified areas for improvement. Strengthening training programmes for surveillance personnel and integrating electronic health records could further enhance system performance. Public Health Surveillance, Quasi-Experimental Design, Tuberculosis Detection Time Treatment effect was estimated with $text\{logit\}(\pi) = beta\,0 + \vec{\beta}\, p\, X_i$, and uncertainty reported using confidence-interval based inference.

Keywords: *African, Quasi-experimental, Surveillance, Epidemiology, Evaluation, Public health, Control measures*

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