African Performing Arts Research

Methodological Evaluation of Public Health Surveillance Systems in South Africa Using Quasi-Experimental Design: A Longitudinal Study

Zephaniah Ngwenya[1], **Sipho Mngomezu**[1,2]

[1] Council for Geoscience

[2] Department of Public Health, Agricultural Research Council (ARC)

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Correspondence: zngwenya@gmail.com

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Author notes

Zephaniah Ngwenya is affiliated with Council for Geoscience and focuses on Medicine research in Africa.
Sipho Mngomezu is affiliated with Council for Geoscience and focuses on Medicine research in Africa.

Abstract

Public health surveillance systems in South Africa have been established to monitor and respond to infectious diseases effectively. However, their efficiency and potential for improvement remain under scrutiny. A mixed-methods approach combining quantitative and qualitative analysis will be employed to assess system performance over time, ensuring robustness against potential confounding variables. Initial analysis suggests that the surveillance systems have shown a moderate improvement (around 20%) in detection rates for common respiratory infections compared to baseline data from previous years. The quasi-experimental design has demonstrated promising results in identifying areas where system efficiencies can be enhanced, providing actionable insights for policy makers and healthcare practitioners. Based on the findings, it is recommended that targeted interventions are implemented to further optimise public health surveillance systems, particularly focusing on improving detection rates of respiratory infections. Public Health Surveillance, Quasi-Experimental Design, Efficiency Gains, South Africa Treatment effect was estimated with $text\{logit\}(\pi) = beta\,0 + \vec{\beta}\ p\,X_i$, and uncertainty reported using confidence-interval based inference.

Keywords: *Geographic, Surveillance, Quasi-experimental, Evaluation, Methodology, Public health, Epidemiology*

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