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Methodological Evaluation of Public Health Surveillance Systems in South Africa: A Randomized Field Trial Approach

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Abstract

Public health surveillance systems in South Africa are crucial for monitoring infectious diseases and managing outbreaks effectively. A systematic literature review will be conducted using predefined inclusion criteria. The review will employ a mixed-methods approach combining quantitative analysis with thematic synthesis. The systematic review identified key themes such as the reliance on traditional surveillance methods and gaps in real-time data collection, with an emphasis on the need for digital integration to enhance yield. Current surveillance systems in South Africa require significant improvements to ensure they are robust and effective in providing timely public health information. Implementing a randomized field trial could be used to evaluate new methods of data collection, particularly focusing on integrating digital technologies for real-time monitoring. Treatment effect was estimated with $text\{logit\}(\pi)=beta0+\vec{\beta} p X_i$, and uncertainty reported using confidence-interval based inference.

Keywords: *Public health, South Africa, surveillance systems, methodology, evaluation, randomized trials, outbreak management*

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