



Methodological Evaluation of Public Health Surveillance Systems in Senegal: Quasi-Experimental Design for Yield Improvement Analysis

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Abstract

Public health surveillance systems are crucial for monitoring infectious diseases in developing countries like Senegal. However, their effectiveness and efficiency need rigorous evaluation. A mixed-method approach was employed, combining quantitative analysis with qualitative interviews to assess system functionality and user feedback. Analysis revealed that the current reporting delay for disease outbreaks is approximately 10 days compared to ideal operational standards (5 days), indicating a need for process optimization. The quasi-experimental design provided insights into yield improvement potential, suggesting opportunities for system enhancements and resource allocation. Implementing real-time data processing tools and enhancing training programmes are recommended to reduce reporting times and improve surveillance accuracy. Public health surveillance, Senegal, Quasi-experimental design, Yield improvement analysis Treatment effect was estimated with $\text{logit}(\pi) = \beta_0 + \beta_1 X_i$, and uncertainty reported using confidence-interval based inference.

Keywords: *Sub-Saharan, surveillance, evaluation, methodology, yield, intervention, randomized*

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