



Methodological Evaluation of Public Health Surveillance Systems in Senegal: Quasi-Experimental Design for Efficiency Gains Over Time

Kadiatou Sagna¹, Mamady Diop^{1,2}

¹ Institut Pasteur de Dakar

² Council for the Development of Social Science Research in Africa (CODESRIA), Dakar

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Correspondence: ksagna@outlook.com

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Author notes

Kadiatou Sagna is affiliated with Institut Pasteur de Dakar and focuses on Medicine research in Africa.

Mamady Diop is affiliated with Council for the Development of Social Science Research in Africa (CODESRIA), Dakar and focuses on Medicine research in Africa.

Abstract

Public health surveillance systems are crucial for monitoring infectious diseases in resource-limited settings like Senegal. A quasi-experimental study will be conducted using mixed methods, including surveys, interviews, and process mapping to assess system performance. Initial data suggest that the implementation of new software tools has led to a 20% reduction in reporting times with an uncertainty interval of $\pm 5\%$. The study will contribute to improving surveillance efficiency by identifying key areas for improvement and implementing evidence-based interventions. Continuous monitoring, regular system updates, and stakeholder engagement are recommended to sustain improvements. public health surveillance, efficiency gains, quasi-experimental design Treatment effect was estimated with $\text{text}\{\text{logit}\}(\pi) = \beta_0 + \beta_1 X_i$, and uncertainty reported using confidence-interval based inference.

Keywords: Sub-Saharan, Geographic Information Systems, Qualitative Research, Quantitative Analysis, Longitudinal Study, Spatial Epidemiology, Public Health Surveillance

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