



# Reliability Assessment of Public Health Surveillance Systems in Senegal: A Quasi-Experimental Study

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## Abstract

Public health surveillance systems are crucial for monitoring infectious diseases in Senegal. However, their reliability needs to be rigorously assessed. A quasi-experimental study was conducted, employing statistical analysis with robust standard errors to assess system performance. The preliminary findings suggest that the detection rate for notifiable diseases is 85% (95% confidence interval: 78-92%). This study provides a methodological framework for evaluating public health surveillance systems, contributing to their improvement in Senegal. Further studies should include cross-validation and explore system scalability across different regions of Senegal. Public Health Surveillance, Reliability Assessment, Quasi-Experimental Design, Senegal Treatment effect was estimated with  $\text{text}\{\text{logit}\}(\pi) = \beta_0 + \beta_1 p X_i$ , and uncertainty reported using confidence-interval based inference.

**Keywords:** *African epidemiology, Quasi-experimental design, Health system evaluation, Surveillance effectiveness, Data quality assurance, Public health metrics, Spatial analysis methods*

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