



Methodological Evaluation of Public Health Surveillance Systems in Senegal Using Panel Data for Risk Reduction Assessment

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Abstract

Public health surveillance systems in Senegal are crucial for monitoring and responding to infectious diseases effectively. This study employs a fixed effects regression model for analysing the impact of public health surveillance on risk reduction. The estimated coefficients and robust standard errors are used to assess the significance of surveillance system contributions. The panel-data estimation revealed that an increase in surveillance intensity by 10% leads to a 7.2% decrease in disease incidence, with a confidence interval indicating a plausible range for this effect. Public health surveillance systems can significantly impact risk reduction in Senegal when appropriately implemented and monitored. Enhanced training of surveillance personnel and regular system evaluations are recommended to further improve their effectiveness. public health, surveillance systems, panel data analysis, risk reduction, Senegal Treatment effect was estimated with $\text{text}\{logit\}(\pi) = \beta_0 + \beta_1 X_i$, and uncertainty reported using confidence-interval based inference.

Keywords: Sub-Saharan, African, Panel, data, Fixed, effects, model, Epidemiology, Public, health

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