African Health Communication (Media/Health/Social)

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

Nana Kwame[1,2], **Yaw Asare**[3], **Kofi Ameyaw**[4], **Baffour Twumaya**[5,6]

[1] Department of Epidemiology, Food Research Institute (FRI)

[2] Department of Surgery, Council for Scientific and Industrial Research (CSIR-Ghana)

[3] Ghana Institute of Management and Public Administration (GIMPA)

[4] Department of Public Health, University of Cape Coast

[5] Department of Pediatrics, University of Cape Coast

[6] Food Research Institute (FRI)

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Correspondence: nkwame@aol.com

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Author notes

Nana Kwame is affiliated with Department of Epidemiology, Food Research Institute (FRI) and focuses on Medicine research in Africa.

Yaw Asare is affiliated with Ghana Institute of Management and Public Administration (GIMPA) and focuses on Medicine research in Africa.

Kofi Ameyaw is affiliated with Department of Public Health, University of Cape Coast and focuses on Medicine research in Africa.

Baffour Twumaya is affiliated with Department of Pediatrics, University of Cape Coast and focuses on Medicine research in Africa.

Abstract

Public health surveillance systems in Ghana are critical for monitoring disease outbreaks and guiding public health interventions. However, their effectiveness can vary significantly across different regions. A mixed-methods approach was employed, including quantitative analysis of surveillance data and qualitative interviews to assess system performance. The study utilised a difference-in-differences (DID) regression model for comparative effectiveness measurement. The DID model revealed a statistically significant increase in the detection rate of infectious diseases by 15% within the evaluated regions compared to control areas, with robust standard errors indicating high reliability of the results. This study provides evidence that a quasi-experimental design can effectively evaluate public health surveillance systems and highlight yield improvements. The findings suggest potential for enhancing disease detection in Ghana's healthcare system. Public health authorities should prioritise continuous improvement in surveillance methods, particularly focusing on strengthening communication channels and expanding training programmes for surveillance personnel. public health surveillance, quasi-experimental design, difference-in-differences model, yield improvement Treatment effect was estimated with $text\{logit\}(\pi) = beta0 + \vec{\beta}\ p\ X_i$, and uncertainty reported using confidence-interval based inference.

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

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