African Animal Breeding and Genetics (Agri/Animal Science)

Methodological Evaluation of Public Health Surveillance Systems in Ghana: A Randomized Field Trial on Adoption Rates

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Abstract

Public health surveillance systems in Ghana are crucial for monitoring diseases and implementing effective interventions. However, their effectiveness varies significantly across different regions. A mixed-method approach combining quantitative data analysis from existing surveillance systems with qualitative interviews to assess system strengths and weaknesses. Randomized field trials were conducted in two regions, with 100 randomly selected healthcare facilities as study sites. In the randomized trial, there was a significant difference ($p < 0.05$) in adoption rates between the control group (using standard procedures) and the intervention group (enhanced surveillance protocols), indicating that improved systems can significantly increase adoption rates by up to 30%. The findings suggest that enhancing public health surveillance systems through targeted interventions leads to higher adoption rates, which is critical for effective disease management in Ghana. Public health authorities should prioritise the implementation of enhanced surveillance protocols based on the observed success in both qualitative and quantitative evaluations. public health surveillance, randomized field trial, adoption rates, Ghana 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, Geographic Variation, Randomization, Evaluation Framework, Surveillance Systems, Public Health, Methodology*

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