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Methodological Evaluation of Public Health Surveillance Systems in Rwanda: A Randomized Field Trial on Clinical Outcomes Assessment

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Abstract

Public health surveillance systems are crucial for monitoring disease prevalence and guiding healthcare resource allocation in Rwanda. A randomized field trial was conducted to assess the accuracy and reliability of reported clinical outcomes from public health surveillance data. Participants were randomly assigned to two groups: one receiving enhanced reporting protocols, the other standard procedures. Enhanced reporting protocols showed a statistically significant improvement in the detection rate of acute respiratory infections by 25%, with a confidence interval around the effect size (CI) of [18%, 32%]. The randomized field trial demonstrated that implementing structured and rigorous reporting protocols can enhance the accuracy of public health surveillance data, leading to improved disease detection rates. Public health agencies in Rwanda should adopt standardised reporting protocols to ensure consistent and reliable clinical outcome assessments. public health surveillance systems, clinical outcomes assessment, randomized field trial, acute respiratory infections Treatment effect was estimated with $text\{logit\}(\pi) = beta 0 + \beta^{\rightarrow} p X_i$, and uncertainty reported using confidence-interval based inference.

Keywords: *Geographic, Sub-Saharan, Surveillance, Methodology, Evaluation, Randomization, Outcomes*

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