

A Randomised Field Trial Evaluating the Adoption and Methodological Performance of Public Health Surveillance Systems in Rwanda

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ABSTRACT

Background: Public health surveillance systems are critical for early disease detection and response, yet their effectiveness is often limited by low adoption rates among frontline health workers. Methodological rigour in evaluating these systems, particularly in low-resource settings, remains a significant gap in the literature.

Purpose and objectives: This study aimed to conduct a methodological evaluation of two novel surveillance systems to determine their comparative adoption rates and operational performance under field conditions.

Keywords: *Public health surveillance, Randomised controlled trial, Health information systems, Sub-Saharan Africa, Health worker adoption, Methodological evaluation, Field trial*

Article Highlights

- A randomised field trial across 120 health facilities in Rwanda compared two surveillance platforms.
- mHealth system adoption was 78%, significantly higher than the 61% for the web-based system.
- Superior data timeliness was observed in the mHealth intervention arm.
- Study demonstrates the critical role of platform accessibility in successful implementation.

Methodological Note

The primary analysis used a generalised linear mixed model to account for district-level random effects, strengthening causal inference about system performance.

This trial provides robust evidence for platform selection in low-resource surveillance.

ABSTRACT-ONLY PUBLICATION

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