

Methodological Evaluation and Adoption Rates of Public Health Surveillance Systems in Nigeria

A Randomised Field Trial

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ABSTRACT

Background: Public health surveillance systems are critical for early disease detection and response in sub-Saharan Africa. However, their effectiveness is often limited by low adoption and inconsistent use by frontline health workers, with a paucity of rigorous field evidence on interventions to improve uptake.

Purpose and objectives: This case study aimed to methodologically evaluate and compare the adoption rates of two distinct surveillance system interfaces among primary healthcare workers in a Nigerian state, using a randomised field trial design.

Keywords: *Public health surveillance, Sub-Saharan Africa, Randomised controlled trial, Implementation science, Health information systems, Nigeria*

Article Highlights

- Mobile-first design increased mean submission completeness by 28 percentage points.
- Rigorous cluster-randomised trial across 60 primary healthcare centres.
- Adjusted odds ratio for complete reporting was 2.45 (95% CI: 1.78 to 3.36).
- Evidence supports human-centred design before system-wide rollout.

Field Trial Impact

Intervention centres achieved 89% submission completeness versus 61% in control centres over six months.

This study provides robust field evidence for interface redesign in low-resource health systems.

ABSTRACT-ONLY PUBLICATION

This is an abstract-only publication. The complete research paper with full methodology, results, discussion, and references is available upon request.

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