

A Randomised Field Trial Evaluating the Reliability of Public Health Surveillance Systems in Uganda

A Methodological Assessment

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ABSTRACT

Background: Public health surveillance systems are critical for early detection and response to disease outbreaks, yet their operational reliability in low-resource settings is often assumed rather than rigorously measured. There is a paucity of empirical evidence on the consistency of data capture and reporting within these systems.

Purpose and objectives: This study aimed to conduct a methodological assessment of the reliability of routine public health surveillance systems in Uganda, using a randomised field trial to quantify measurement error and system consistency.

Keywords: *Public health surveillance, Sub-Saharan Africa, Randomised controlled trial, Health systems research, Operational reliability, Uganda, Field trial*

Article Highlights

- Overall system reliability measured at 68.2% (95% CI: 62.1% to 73.8%).
- Facilities with dedicated surveillance officers had 2.3 times higher odds of correct reporting.
- Reliability varied significantly by disease type and facility level.
- Central hospitals outperformed lower-level health centres in reporting accuracy.

Methodological Note

Employed a randomised field trial introducing synthetic case reports into routine surveillance workflows across 120 health facilities to quantify measurement error.

This study provides empirical benchmarks for surveillance system performance in low-resource settings.

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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