Cost-Effectiveness Evaluation of Public Health Surveillance Systems in Uganda: A Randomized Field Trial

Kawuki Nabattera[1,2]**, Otombe Nsubuga**[3]**, Musoke Muhumuza**[2,4]

[1] Department of Internal Medicine, Kyambogo University, Kampala

[2] Makerere University, Kampala

[3] Uganda Christian University, Mukono

[4] Department of Pediatrics, Uganda Christian University, Mukono

Author notes

Kawuki Nabattera is affiliated with Department of Internal Medicine, Kyambogo University, Kampala and focuses on Medicine research in Africa.
Otombe Nsubuga is affiliated with Uganda Christian University, Mukono and focuses on Medicine research in Africa.
Musoke Muhumuza is affiliated with Department of Pediatrics, Uganda Christian University, Mukono and focuses on Medicine research in Africa.

Abstract

Public health surveillance systems are crucial for monitoring disease outbreaks and managing health risks in Uganda. A randomized field trial was conducted to assess different configurations of public health surveillance systems. Participants were randomly assigned to one of several intervention groups, each with varying levels of resources and personnel deployment. The analysis revealed significant cost savings when the system configuration included real-time data analytics software (direction: 20% reduction in operational costs) and increased community engagement through targeted health education campaigns (proportion: 15% decrease in hospital admissions for preventable diseases). The randomized field trial demonstrated that optimised public health surveillance systems can lead to substantial cost savings without compromising effectiveness. Implementing real-time data analytics software and integrating community engagement strategies are recommended to enhance the efficiency of future public health surveillance efforts in Uganda. Public Health Surveillance, Cost-Effectiveness, Randomized Field Trial, Real-Time Analytics, Community Engagement Treatment effect was estimated with $text\{logit\}(\pi) = beta\,0 + \beta^{\rightarrow} p\,X_i$, and uncertainty reported using confidence-interval based inference.

Keywords: *Sub-Saharan, surveillance, randomized, effectiveness, evaluation, control, logistics*

ABSTRACT-ONLY PUBLICATION

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

✉ REQUEST FULL PAPER

Email: info@parj.africa

Request your copy of the full paper today!

SUBMIT YOUR RESEARCH

Are you a researcher in Africa? We welcome your submissions!

Join our community of African scholars and share your groundbreaking work.

Submit at: app.parj.africa

Scan to visit app.parj.africa

Open Access Scholarship from PARJ

Empowering African Research | Advancing Global Knowledge