



Electronic Data Tracking Enhances Rapid Diagnostic Test Accuracy in Malaria Diagnosis in Rural Kenyan Communities,

Kibet Mutua^{1,2}, Mugisha Ochieng^{3,4}

¹ Egerton University

² University of Nairobi

³ Department of Epidemiology, Egerton University

⁴ Department of Surgery, University of Nairobi

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Correspondence: kmutua@yahoo.com

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Author notes

Kibet Mutua is affiliated with Egerton University and focuses on Medicine research in Africa.

Mugisha Ochieng is affiliated with Department of Epidemiology, Egerton University and focuses on Medicine research in Africa.

Abstract

Malaria remains a significant health issue in rural Kenyan communities, necessitating accurate diagnostic tools to guide treatment decisions. The study employed a mixed-method approach including field observations, RDT testing, and electronic data collection through mobile health applications. Data were analysed using statistical software to evaluate diagnostic performance. Electronic data tracking improved the consistency and timeliness of malaria diagnosis by reducing errors from manual record-keeping processes. The integration of electronic data systems significantly enhanced the reliability of RDTs in rural settings, particularly in diagnosing early-stage cases. Continued use of electronic health records is recommended to maintain and improve diagnostic accuracy across different healthcare facilities. Treatment effect was estimated with $\text{logit}(\pi) = \beta_0 + \beta_1 X_i$, and uncertainty reported using confidence-interval based inference.

Keywords: *Malaria, Kenya, Rapid Diagnostic Tests, Electronic Data Tracking, Geographic Information Systems, Community Health Surveillance, Clinical Trials*

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