



Evaluating a mobile phone-based clinical decision support algorithm for improving malaria diagnosis by drug shop vendors in the Busoga sub-region, Uganda

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Abstract

In Uganda, drug shop vendors are frequently the first point of care for febrile illnesses. Inaccurate malaria diagnosis at this informal sector level contributes to inappropriate treatment and drug resistance. The Busoga sub-region carries a high malaria burden, necessitating interventions to improve diagnostic accuracy. This short report evaluated the impact of a mobile phone-based clinical decision support algorithm on the correctness of malaria diagnosis made by drug shop vendors in the Busoga sub-region, Uganda. A pre-post intervention study was conducted. Vendors were trained to use a mobile application containing an algorithm that prompted systematic history-taking, symptom assessment, and a recommendation for malaria rapid diagnostic testing (RDT). The primary outcome was the change in the proportion of correct malaria diagnoses, verified by RDT. The study also included observations and vendor interviews. Following implementation, the proportion of correct malaria diagnoses increased substantially. Vendor adherence to the diagnostic algorithm was high. Interviews indicated improved vendor confidence in differentiating malaria from non-malarial fevers. The mobile clinical decision support algorithm improved the accuracy of malaria diagnosis by drug shop vendors in this setting, demonstrating the potential of such tools to enhance care quality in the informal health sector. Scale-up of this mobile decision support tool should be considered for drug shop vendors in similar high-burden settings. Integration with national malaria control programmes and further evaluation of cost-effectiveness are advised. malaria, diagnosis, clinical decision support, mHealth, drug shop vendors, Uganda This report provides evidence for the utility of a mobile health tool in improving frontline malaria diagnosis within the informal private sector in a high-burden African region.

Keywords: *Malaria diagnosis, Clinical decision support system, Drug shop vendors, Sub-Saharan Africa, Point-of-care testing, Uganda*

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