



Solar Powered Outposts' Longitudinal Evaluation of Malaria Rapid Diagnostic Test Accuracy in Rural Senegal,

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Abstract

Malaria remains a significant public health issue in rural Senegal, necessitating accurate diagnostic tools for effective control and treatment strategies. A longitudinal study design was employed to assess RDT performance using a standardised malaria antigen detection test (enzyme-linked immunosorbent assay - ELISA). During the study, an overall accuracy rate of 95% for detecting Plasmodium falciparum infections was observed. The solar-powered outposts' RDTs demonstrated high diagnostic performance in rural Senegal, with a reliability margin of error within $\pm 2.5\%$ confidence intervals. Further validation and integration of these findings into existing healthcare systems could lead to more effective malaria control efforts in the region. Treatment effect was estimated with $\text{text}\{logit\}(\pi) = \beta_0 + \beta^T p X_i$, and uncertainty reported using confidence-interval based inference.

Keywords: Sub-Saharan, Senegalese, longitudinal, diagnostic, accuracy, rural, evaluation

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