African Radiology Technology

Implementing Early Warning Systems for Malaria in Rural Villages of Madagascar: A Systematic Review

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Abstract

Malaria remains a significant public health issue in Madagascar, particularly affecting rural populations living in endemic areas. A comprehensive literature search was conducted across multiple databases including PubMed, Web of Science, and Google Scholar. Studies were included if they involved implementation of EWS for malaria control, had quantitative data on child mortality outcomes, and reported results from rural Madagascar. Quality assessment was performed using the Cochrane Risk of Bias tool. The review identified several studies that implemented EWS in rural villages, with reductions in child mortality ranging from a 10% to 25%, depending on local malaria prevalence and intervention specifics. Early warning systems appear effective in reducing child mortality related to malaria when appropriately tailored to the specific contexts of rural Madagascar. Further research should focus on replicating successful EWS models, evaluating their scalability, and identifying optimal parameters for different regions within Madagascar. Treatment effect was estimated with $text\{logit\}(\pi) = beta 0 + \vec{\beta} p X_i$, and uncertainty reported using confidence-interval based inference.

Keywords: *Sub-Saharan, African, geographic, distribution, socio-economic, factors, malaria, epidemiology, publichealth, interventions, communitybased, casefinding, triage, screening, preventive, infrastructure, accessibility, qualitycare, compliance, impactassessment, innovation, researchmethodologies, systematicreviews*

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