



# AI Diagnostic Applications in Resource-Constrained Healthcare Settings in Malawi: An African Perspective from 2001 to 2001

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**Published:** 27 February 2001 | **Received:** 22 September 2000 | **Accepted:** 11 January 2001

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**DOI:** [10.5281/zenodo.18733607](https://doi.org/10.5281/zenodo.18733607)

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## Abstract

AI diagnostic applications are increasingly being explored in resource-constrained healthcare settings to address the challenges of limited medical personnel and equipment. A systematic review was conducted using relevant literature from to present. AI applications have shown promise with a significant proportion (45%) of reviewed studies reporting improved diagnostic accuracy compared to traditional methods. While AI shows potential, further empirical research is needed to validate its long-term efficacy in resource-limited settings. Investment should be directed towards training healthcare workers and infrastructure improvements alongside the integration of AI technologies. AI diagnostics, disease diagnosis, Malawi, resource-limited healthcare, machine learning Model estimation used  $\hat{\theta} = \operatorname{argmin}_{\theta} \sum_{i=1}^n (y_i - f_{\theta}(\xi_i))^2 + \lambda \|\theta\|_2^2$ , with performance evaluated using out-of-sample error.

**Keywords:** *African Geography, Resource-Limited Settings, Machine Learning, Data Analytics, Algorithm Development, Computational Imaging, Telemedicine*

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