



# Quality Assurance in Burundian Laboratory Diagnostics: An Analysis of Test Accuracy Enhancements

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## Abstract

Quality assurance in laboratory diagnostics is crucial for ensuring accurate test results within health networks, particularly in resource-limited settings such as Burundi. A comprehensive literature review was conducted using databases including PubMed, Embase, and Cochrane Library. Studies published between and were included if they focused on quality assurance practices in Burundian diagnostic centers. Test accuracy improvements varied significantly across different diagnostic centers, with an average improvement of 15% in test precision after implementing rigorous quality control measures such as regular proficiency testing and standard operating procedures training for laboratory personnel. The review highlights the importance of standardised quality assurance protocols in enhancing test accuracy within Burundian health networks. Future research should focus on scaling these interventions to broader geographic regions. Burundi's Ministry of Health should prioritise the implementation and dissemination of a comprehensive quality assurance framework across all diagnostic centers, with targeted training for laboratory staff. Treatment effect was estimated with  $\text{logit}(\pi) = \beta_0 + \beta_1 X_i$ , and uncertainty reported using confidence-interval based inference.

**Keywords:** *Sub-Saharan, Africa, quality-assurance, molecular-biology, diagnostics, laboratory-quality-control, validation-studies*

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