



# Methodological Evaluation and Forecasting Model of Community Health Centres Systems in Kenya,

Wambui Karuri<sup>1</sup>, Eunice Muthomi<sup>2,3</sup>, Agnes Kinyanjui<sup>3,4</sup>, Mwangi Ngina<sup>5</sup>

<sup>1</sup> Department of Epidemiology, Pwani University

<sup>2</sup> University of Nairobi

<sup>3</sup> Moi University

<sup>4</sup> Department of Clinical Research, Pwani University

<sup>5</sup> Pwani University

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**Correspondence:** [wkaruri@outlook.com](mailto:wkaruri@outlook.com)

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## Author notes

*Wambui Karuri is affiliated with Department of Epidemiology, Pwani University and focuses on Medicine research in Africa.*

*Eunice Muthomi is affiliated with University of Nairobi and focuses on Medicine research in Africa.*

*Agnes Kinyanjui is affiliated with Moi University and focuses on Medicine research in Africa.*

*Mwangi Ngina is affiliated with Pwani University and focuses on Medicine research in Africa.*

## Abstract

Community health centres (CHCs) in Kenya have been pivotal for addressing healthcare needs across diverse geographical regions. A comprehensive meta-analysis was conducted using data from multiple studies published within the review window. Data were analysed using a Vector Autoregression (VAR) model with robust standard errors to account for potential multicollinearity among variables. The VAR model revealed an estimated coefficient of  $-0.65$  indicating significant negative correlation between CHC operational efficiency and patient waiting times, suggesting that improvements in operational efficiency could lead to shorter wait periods. This study underscores the importance of systematic evaluation methods for assessing CHCs' reliability and effectiveness, with a time-series forecasting model providing insights into potential system enhancements. Enhanced monitoring systems should be implemented to track key performance indicators such as patient flow, resource utilization, and service quality. Additionally, targeted training programmes could improve staff efficiency.

**Keywords:** *Sub-Saharan, African, Socioeconomic, Qualitative, Ethnicity, Geographic, Variance*

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