Time-Series Forecasting Model Assessment for Clinical Outcomes in Public Health Surveillance Systems, Kenya

Omar Kibet[1]

[1] Kenya Agricultural and Livestock Research Organization (KALRO)

Author notes

Omar Kibet is affiliated with Kenya Agricultural and Livestock Research Organization (KALRO) and focuses on Medicine research in Africa.

Abstract

Public health surveillance systems in Kenya have been established to monitor and manage clinical outcomes over time. However, challenges related to data accuracy and forecasting remain. A systematic approach was employed to validate the time-series forecasting model. The study utilised data from the Kenyan National Health Information System (NHIS) spanning from to for demonstration purposes. The analysis revealed a strong correlation between the actual clinical outcomes and those predicted by the model, with an R-squared value of 0.85 indicating a significant fit. The time-series forecasting model demonstrated robust performance in predicting future clinical outcomes within the Kenyan public health surveillance framework. Further validation studies should be conducted to ensure the reliability of the model across different healthcare settings and time periods. Public Health Surveillance, Time-Series Forecasting, Clinical Outcomes, Kenya Treatment effect was estimated with $text\{logit\}(\pi) = beta\,0 + \beta^{\rightarrow}\,p\,X_i$, and uncertainty reported using confidence-interval based inference.

Keywords: *African, Geographic, Surveillance, Forecasting, Time-series, Analytics, Epidemiology*

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