

## Abstract

Malaria has become a killer disease to children in Kakamega county and children under age of five years are the most vulnerable to malaria. Lack of forecasting using available data on malaria indicators hinders the monitoring of temporal trends, be it in control of disease or evaluation of intervention impacts. The ability to predict malarial incidence accurately is a major milestone in the control and management of the disease. This study therefore sought to model malaria admission cases for children under five years using SARIMA model in Kakamega County Referral Hospital. The objectives of the study were, to fit SARIMA model for malaria case admission cases for children under five and apply the derived SARIMA model to forecast malaria admission cases for children under five years. Secondary data from Kakamega County Referral Hospital record was used. Box Jenkins methodology was used to derive SARIMA model. Adequacy of the SARIMA model generated was checked through normality test. The appropriate model generated was SARIMA (0,2,2)\*(0,2,2)<sub>12</sub>. SARIMA model generated was used to forecast malaria admission cases for children under five years for the period 2017-2022. The forecasts portray a slow decrease in malaria case admission for children under five years at the Kakamega County Referral Hospital. The study recommends this model to be used by the government for planning, designing an effective prevention and control strategy for malaria admission cases for children under five years at the County level. The study further recommends that Kakamega County Referral Hospital management staff should ensure that the hospital has sufficient and effective malaria drugs and screening equipment. This will help them respond to malaria cases that are reported at the hospital for children under five years of age especially from the month of March to August every year when malaria admission cases are on the increase.