

## **Time Series Analysis of Births at Iganga hospital (2008-2012) in Uganda**

Akuze Joseph Waiswa\*

School of Public Health, Makerere University, Kampala, Uganda  
[joseph2.akuzewaiswa@live.uwe.ac.uk](mailto:joseph2.akuzewaiswa@live.uwe.ac.uk)

Dr. Waiswa Peter

School of Public Health, Makerere University, Kampala, Uganda  
[pwaiswa2001@yahoo.com](mailto:pwaiswa2001@yahoo.com)

Increasing skilled birth attendance of births is considered a key strategy for reducing maternal and neonatal mortality, thus contributing towards achieving Millennium Development Goals 4 four and five. In low income countries, hospital births have a fairly well developed vital registration systems. Analysis of seasonal, trends and cyclic variations in the number of births can provide policy makers and program managers with information on whether these births are actually increasing or reducing. Biological, physical, chemical and psychological mechanisms have been suggested as explanations. As a result global births need to be based on statistical modeling for easier identification of these changes. We aim to establish trends and seasonal variations of births at Iganga general hospital in eastern Uganda in order to forecast for the births of the first half of 2013. The hospital registers between 3500 and 4000 births a year. The time series technique employing Daniel's test for trend, Krustal-Wallis test for seasonality and Box-Jenkins Autoregressive Integrated Moving Average (ARIMA) modeling and estimation. Dickey Fuller unit root test will be used to test for significance of the model and finally forecasts will be made. This will help Iganga hospital to plan for future births.

Key words: Trends, Seasonality, Stationarity, hospital births in eastern Uganda