

TIME SERIES ANALYSIS ON THE INCIDENCE OF CEREBROSPINAL MENINGITIS IN GHANA

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In 1998 there was an outbreak of cerebrospinal meningitis in Ghana with the three Northern Regions recording the highest number of cases and deaths.

This study seeks to come out with a model which can be used to forecast the future incidence of CSM in Ghana.

The Box-Jenkin's method of modelling data was used. The model that best fits the data is ARIMA(2,0,0), $Y_t = 0.867783Y_{t-1} - 0.241968Y_{t-2} + 94.966755$.

From the formula, the time path will converge. Which means the incidence of the disease will be decreasing. The forecast value for January 2002 is 190.

The model revealed that the disease can be predicted into the future provided conditions remain stable otherwise the change in conditions must be factored in to be able to make a precise forecast and also the Ministry of Health's intervention (education and capacity building) has brought a slight decrease in the incidence since then.

The method used in this study can be used to model any time dependent sequence. This clearly shows that should the education programme be intensified and carried out for a long period of time the number of cases could be brought down by a great margin.