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24

Modelling the prevalence of hepatitis C virus amongst blood donors in Libya: An investigation of providing a preventive strategy

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Abstract

AIM: To determine the forecasting of hepatitis C sero-prevalence among Libyan population using blood donors and applying mathematical model using an autoregressive integrated moving average model (ARIMA) in order to predict the future trends and comply with the needed plans to minimize the burden of HCV infection.

METHODS: Hepatitis C virus positive cases were collected from a total of 1,008,214 healthy blood volunteers over six years period from 2008 to 2013. Such data was used to construct ARIMA model in order to forecast HCV sero-prevalence among blood donors. The validity of the Model was assessed using the mean absolute percentage error between the observed and fitted sero-prevalence. The fitted ARIMA model was used to forecast the incidence of HCV beyond the observed series of the year 2014.

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