Development of a Software Module for Forecasting Malaria Outbreak based on an Equation Derived from Real-Time Parameters

Abstract

Malaria in India is one of the major public health problems. It is governed by many socio-ecological factors that exist in the system around. Hence forecasting the disease situation in a particular area necessitates observance of these micro factors. These factors upon identification and translation into a mathematical model can help understand and predict
malaria situations at primary level. Attempts had been made in the past ever since its vector discovery by Sir Ronald Ross in 1897. As yet many of the models have faced difficulties in standardization of the variables inputed. We have made an attempt here to develop a model based on the results of our own earlier research from a real time situation of malaria in the desert area of Rajasthan, India. An equation of inter-relationship among five existing malaria components has been derived as an outbreak forecasting mathematical model. The equation has been converted into software. The software developed was tested for its predictive strength for simulated conditions of parameters as well as for real situation of five parameters. The software found to work efficiently and predicted the correct malaria situation.

References

- http://apps.who.int/tdr/svc/diseases/malaria (as accessed on 28.10.2011)
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Index Terms
- Computer Science
- Information Systems

Keywords
- Malaria
- Software
- Forecasting module
- Malaria epidemiology
- Malaria equation