RESEARCH ARTICLE   OPEN ACCESS

Predicting Dengue Fever Using Data Mining Techniques

P. Sathya [1], Mrs. A.Sumathi [2]
M.Phil scholar [1], Assistant Professor [2]
Department of Computer Science
Navarasam Arts and Science College for Women Arachalur
Tamil Nadu - India

ABSTARCT

DENGUE is a intimidating illness caused by girl mosquito's. It is typically found in widespread hot regions. From long duration of time, Experts are trying to find out some of characteristics on Dengue illness so that they can rightly categorize patients because different patients require different types of treatment. Pakistan has been target of Dengue illness from last few years. Dengue fever is used in clustering techniques to evaluate their act. The dataset was gathered from lotus and 24 care hospitals. For properly classify our dataset, various clustering techniques are used. Appraise the performance of all the techniques individual based on tables and graphs depending upon dataset.
Keywords :- Dengue, clustering, disease, treatment

I.   INTRODUCTION

Data mining is a term from computer science. Sometimes it is also called **knowledge discovery in databases** (KDD). Data mining is about finding new in a lot of. The information obtained from data mining is hopefully both new and useful. In many cases, data is stored so it can be used later. The data is saved with a goal. For example, a store wants to save what has been bought. They want to do this to know how much they should buy themselves, to have enough to sell later. Saving this information, makes a lot of data. For data, there are lot of different kinds of data mining for getting new information. There are represented the predicted results .

Dengue is a mosquito-borne disease caused by the dengue virus spread by the Aedes mosquito and the disease is more common in tropical regions. Only female mosquitoes spread the disease and it bites both outside and inside homes during day time. Dengue is also known as the 'breakbone fever' as the severity of the pain caused by this disabling disease is similar to the pain caused by breaking of bone. Protecting yourself from getting bitten by mosquitoes is the best precaution you could take to save yourself from dengue. You can also prevent breeding of the mosquitoes by discarding old oil drums, flower pots and tires and containers. Dengue spread can be controlled only by improving hygiene and the disease gets transmitted when the infected person is bitten by a mosquito and the same mosquito bites a healthy person. Dengue infection is a leading cause of death and sickness in tropical and subtropical parts of the world. Dengue hemorrhagic fever is a more serious form of dengue infection .

II.   RELATED WORKS

The patients, since these patients require different treatment. Their dataset consists of clinical and laboratory data. The data was collected from the first visit of patient to hospital In this method they said Dengue infection is a disease typically found in hot and sticky region. The doctors need to understand the features on dengue infection in order to correctly categorize until the date of discharge. These datasets consists of more than 400 attributes. They used decision tree as a data mining tool. They propose a set of meaningful attributes from the temporal data. Their experiments are divided into four parts. In all four experiments they use decision trees. The first two experimental results show the useful knowledge to classify dengue infection from 24care Hospital's dataset and lotus Hospital's dataset, respectively. Each set of knowledge is tested by different dataset to make sure that the test data was a real unseen data.

The third experimental results show the useful knowledge when they integrated two datasets. Another objective of this research is to detect the day of effervescence of fever which is called day0. The day0 date is the critical date of dengue patients that some patients face the fatal condition. Therefore the physicians need to predict day0 in order to treat the patients. They expect to have an intelligent system that can trigger the day0 date of each patient. They set up four experiments. In the first three experiments, they find knowledge in order to classify type

of dengue infection. For forth experiment, they tried to predict the day of effervescence with the data before day0 date. They applied decision tree approach to all experiments. Note that they use sensitivity, specificity and accuracy as performance measures.

III.   CAUSES OF DENGUE FEVER

- Dengue fever is caused by any one of four types of dengue viruses spread by mosquitoes that thrive in and near human lodgings.
- When a mosquito bites a person infected with a dengue virus, the virus enters the mosquito. When the infected mosquito then bites another person, the virus enters that person's bloodstream.
- After you've recovered from dengue fever, you have immunity to the type of virus that infected you — but not to the other three dengue fever virus types.   The risk of developing severe dengue fever, also known as dengue hemorrhagic fever, actually increases if you're infected a second, third or fourth time.

IV.   DENGUE FEVER FACTS

- Dengue fever is a disease caused by a family of that are transmitted by mosquitoes.
- Includes severe joint and, exhaustion,. The presence of fever (the "dengue triad") is characteristic of dengue fever.
- Dengue is prevalent throughout the tropics and subtropics.
- Dengue fever is caused by a virus, and there is no specific medicine or antibiotic to treat it. For typical dengue fever, the treatment is directed toward relief of the symptoms (symptomatic treatment).
- leaf extract can be used to treat dengue fever.
- The acute phase of the illness with fever and lasts about one to two weeks.
- Dengue hemorrhagic fever (DHF) is a specific syndrome that tends to affect children under 10 years of age. This complication of dengue causes, haemorrhage (bleeding), and circulatory collapse.
- The prevention of dengue fever requires control or eradication of the mosquitoes carrying the virus that causes dengue.

- A for dengue fever was approved in April 2016 for use in dengue-endemic areas.

V.   DENGUE SYMPTOMS AND SIGNS

Primary symptoms of dengue appear three to 15 days after the mosquito bite and include the following:

- high fever and severe headache,
- with severe pain behind the eyes that is apparent when trying to move the eyes.

Other associated symptoms are:

- joint pain
- muscle and bone pain
- rash
- mild bleeding

Many affected people complain of low back pain.

VI.   METHODOLOGY

In this paper, using clustering technique. Clustering can be considered the most important *unsupervised learning* problem; so, as every other problem of this kind, it deals with finding a *structure* in a collection of unlabeled data. A *cluster* is therefore a collection of objects which are "similar" between them and are "dissimilar" to the objects belonging to other clusters. **Dengue Transmission**
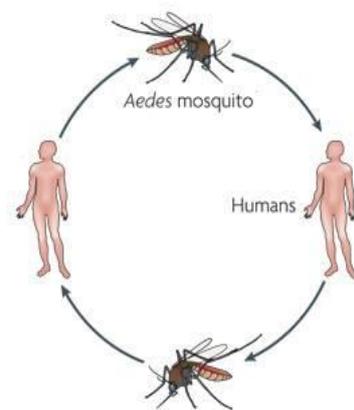
Fig. 1 Dengue Transmission

VII.   CONCLUSION

Detection of dengue fever in earlier stage is curable. Prediction and clustering are the principal data mining techniques which are largely used in healthcare sectors for medical diagnosis and predicting diseases. The main Objective of this paper is toward prediction of dengue infection using clustering techniques. In future, would like to implement clustering algorithm to predict dengue fever.

REFERENCE

[1]   Kamran Shaukat "Dengue Fever Prediction: A Data Mining Problem

[2]   "Rigau-Pérez JG, et.al. (1998) Dengueand dengue haemorrhagic fever. The Lancet 19: 971-977

[3]   Vong S, et.al. (2010) Dengue incidence in urban and rural Cambodia: results from population-based active fever surveillance, 2006–2008. PLoS neglected tropical diseases 4: e903.

[4]   Ibrahim F, Taib MN, Abas WA, Guan CC,Sulaiman S (2005) A novel dengue fever (DF) and dengue haemorrhagic fever (DHF) analysis using artificial neural network (ANN). Computer Methods and Programs in Biomedicine 79: 273-281.

[5]   Shakil KA, Anis S, Alam M (2015) Dengue disease prediction using weka data mining tool.arXiv preprint arXiv:1502.05167.

[6]   SolankiA.V., Data Mining Techniques using WEKA Classification for Sickle Cell Disease, International Journal of Computer Science and Information Technology,5(4): 5857- 5860,2014.

[7]   Kumar M. N., Alternating Decision trees for early diagnosis of dengue fever .arXiv preprint arXiv:1305.7331,2013.

[8]   Durairaj M, Ranjani V, Data mining applications in healthcare sector a study. Int. J. Sci. Technol. Res. IJSTR, 2(10), 2013.

[9]   Thitiprayoonwongse D., Suriyaphol P., Soonthornphisaj N., Data mining of dengue infection using decision tree, Entropy, 2: 2, 2012.

[10]   Wikipedia, http://en.m.wikipedia.org/wiki/Dengue_fever, accessed in January 2015.