A Comparative Study of Dengue Fever in Taiwan and Singapore Based on Open Data

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Abstract : Dengue fever is a mosquito-borne tropical infectious disease caused by the dengue virus. After infection, symptoms usually start from three to fourteen days. Dengue virus may cause a high fever and at least two of the following symptoms, severe headache, severe eye pain, joint pains, muscle or bone pain, vomiting, feature skin rash, and mild bleeding manifestation. In addition, recovery will take at least two to seven days. Dengue fever has rapidly spread in tropical and subtropical areas in recent years. Several phenomena around the world such as global warming, urbanization, and international travel are the main reasons in boosting the spread of dengue. In Taiwan, epidemics occur annually, especially during summer and fall seasons. On the other side, Singapore government also has announced the amounts number of dengue cases spreading in Singapore. As the serious epidemic of dengue fever outbreaks in Taiwan and Singapore, countries around the Asia-Pacific region are becoming high risks of susceptible to the outbreaks and local hub of spreading the virus. To improve public safety and public health issues, firstly, we are going to use Microsoft Excel and SAS EG to do data preprocessing. Secondly, using support vector machines and decision trees builds predict model, and analyzes the infectious cases between Taiwan and Singapore. By comparing different factors causing vector mosquito from model classification and regression, we can find similar spreading patterns where the disease occurred most frequently. The result can provide sufficient information to predict the future dengue infection outbreaks and control the diffusion of dengue fever among countries.