

POTENTIAL RISK OF DENGUE DISEASE OUTBREAKS IN KANDY MUNICIPAL COUNCIL AREA

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The number of vector-borne viral disease of dengue and the potentially fatal dengue hemorrhagic fever cases have been increasing on a global level in recent years. According to current estimates of World Health Organization, at least 100 countries are endemic of dengue and about 2.5 billion people are at risk in tropical and subtropical regions. Dengue is commonly found in South Asia, South East Asia, Africa, USA, Western Pacific, Caribbean regions and particularly in Sri Lanka. The aim of this research is to develop a map of potential dengue risk areas of Kandy Municipal Council which is one of the most urbanized areas in the central part of Sri Lanka. The study is conducted by using secondary data extracted from various government institutions. Climatic data are compared with monthly dengue incidence data to evaluate environmental conditions favorable for dengue fever. The information derived from the socio-economic data are also compared with dengue incidence data. Method of “weights” is observed to be a suitable technique, which would have a combined effect of various social risk factors contributing to the incidence of dengue. Combined social risk level map is generated using GIS. The increasing dengue incident trend was identified during 2002 to 2014. Among climatic factors of dengue disease, rainfall and temperature are only selected for this study and they seem to play an important role in the temporal distribution of dengue in this area. The highest rainfall peaks and slightly high temperature are recorded in first and second Inter-monsoon and later part of the northeast monsoon periods. Dengue incidences were relatively low during the heavy rainfall periods and increase when the rainfall started to decrease. Therefore, high dengue cases were recorded in the southwest and northeast monsoons periods. Especially, June, July, October, November, December, and January are the highest risk months of dengue incidents. Within Suduhumpala Public Health Inspector (PHI) of the area, Gatambe, Bowala, Mulgampola and Nagastanna GN divisions are the highest potential risk of dengue disease outbreaks. These outbreaks are in highly populated areas with high density of houses (e.g. flats, line houses) and solid waste disposal problems. Therefore, to control the transmission of the disease, civilians and authorized people should pay more attention on Suduhumpala PHI area during the first and second Inter-monsoon period and latter part of the northeast monsoon period.

Keywords: Dengue, Vector-borne viral disease, GIS, Risk map, Kandy Municipal Council