

ABSTRACT

Title of Research Paper : A study of the application of Geographic Information System (GIS) for studying the spread of Dengue Haemorrhagic Fever (DHF) outbreak within Tamai District, Chanthaburi.

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The objectives of the research was the study of the application of Geographic Information System (GIS) for studying the spread of Dengue Haemorrhagic Fever (DHF) outbreak within Tamai District, Chanthaburi and analyzed the appropriated preventive measurement for Dengue Haemorrhagic Fever (DHF) outbreak in the area by using the spatial data of the DHF outbreaks to prevent DHF planning. Data has been gathered from the secondary data from Chanthaburi public health office. The study has been made among patients with DHF outbreak since the year 2007 – 2013 that covered the population within 14 districts, 124 villages or 24,638 households with totaled population for 69,390 persons.

The results showed the format of DHF outbreak in term of individual, time and location through the past 7 years found patient with DHF for 377 patients, most of them were male with age range about 10-19 years old. On year 2010 found the highest number of patients with DHF, followed by the year 2013. The spatial data also showed the DHF outbreaks occurred during April to September with highest rate on June.

The spatial data from geographic information system (GIS) used for data analysis found DHF patients within Ta Mai district on each year showed the area with highest amount of DHF patients were Kao Baisri sub district and Toong Benja sub district due to the area had high population coupled with the high density of households. Most of the areas were mountain, forest and agricultural areas. DHF patients had been found at the same area and they lived nearby river

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that was difficult to meet the concrete preventive and control approaches to lower the spread rate of DHF outbreak by government.

The study of the secondary data to determine as risk zone from calculation the number of DHF patients and determined the risk area to be 3 levels: high risk, medium risk and low risk.

The high and medium risk zones for DHF needed high control and surveillance. Those zone combined with 2 districts: Toong Benja and Kao Bai Sri District. The medium risk zones for DHF combined with 3 districts: Kao Kaew, Song Pee Nong and Ta Mai Districts. The risk zones led to control and surveillance of the area and created the Buffer area that defied medical facilities as the central of buffer zone with distance about 1 to 3 kilometers to inspect the capacity of the medical treatment by medical facilities within such areas. The result from inspections showed that hospital located in the buffer zones did not cover all households caused in the past to determine the location of the hospital which government agencies designated by the density of population in order to easily provide medical services to the population.

Therefore, the solution of DHF within Ta Mai District, official who is responsible for setting of policies and plans should take proactive measures rather than the preventive policies and plans. This can help to transfer know how to public within Ta Mai District to take good care of themselves safe from dengue fever (DHF). But the policies and plans need the good cooperation from related agencies, especially the public participation as well as the local administrative agencies in the area therefore it could rigidly reduce the DHF outbreak.