

AN ICT-BASED REAL-TIME SURVEILLANCE SYSTEM FOR CONTROLLING DENGUE EPIDEMIC IN SRI LANKA

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Abstract

Dengue is a notifiable communicable disease in Sri Lanka since 1996. Dengue fever spread rapidly among people living in most of the districts of Sri Lanka. The present notification system of dengue communicable diseases which is enforced by law is a passive surveillance system carried out by the public health care professionals. The present notification of communicable disease system is manual, slow, inefficient, and repetitive all of these lead to handle the dengue related health problems ineffectively. Thus it is less effective in preventing a spreading epidemic, public health care professionals and others require an operational support system to help for managing day-to-day public health responsibilities as well as a method to effectively detect and manage health problems such as Dengue. On the other hand the Information and Communication Technology (ICT) in medical world has been widely used. To give the information technology touch, a complementary web based open source software application environment has been developed with minimum implementation and recurrent costs critical for developing countries like Sri Lanka and named as eDCS: **e** Dengue **C**ontrol **S**ystem based on the same principles of manual disease surveillance system while taking steps to provide timely, accurate information in a reliable and useable manner. The eDCS helps to manage outbreaks through early detection, rapid verification, and appropriate response to Dengue. It allows health care professionals and citizens to get early awareness about the dengue disease via Internet or mobile phone and bring them for performing Dengue prevention and controlling operation through the social media acceleration. The system is initially limited to dengue communicable disease. It can be easily expanded to other communicable diseases, and non communicable disease surveillance in future.

Keywords: *dengue communicable disease, dengue surveillance, rapid response, web technologies, short messaging service*

1. INTRODUCTION

Sri Lanka is classified as a “Category A” country by World Health Organisation (WHO), which means dengue fever is a leading cause of hospitalization and death among children; there are cyclical epidemics in urban areas; and the virus is a

major public health concern. The disease has become a huge threat to health of Sri Lankans' and to the social-economic stability as well. During the last 12 months of the year 2012, 44456 dengue cases have been reported to the Epidemiology Unit from all over the island (Epidemiology Unit,

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