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Inter-sectoral collaboration, community involvement and the use of Geographical Information Systems (GIS) for dengue control in the Kandy district

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Impact of inter-sectoral collaboration and community involvement on Dengue fever (DF) incidence were studied in two high DF risk Medical Officer of Health (MOH) areas (Pathadumbara and Kadugannawa) in the Kandy district. Since 2001, Kandy district has shown an increase trend in the incidence of DF. In Pathadumbara, the increase in trend was from 2001 to 2004, with an epidemic in 2004. In Kadugannawa there was an increase in trend from 2004 to July 2008. With the epidemic of DF in Pathadumbara in 2004, inter-sectoral collaborated and community involved health education and source reduction programmes were conducted fortnightly in high DF risk Grama Niladhari (GN) areas (areas with indigenous DF cases) (intervention 1). In MOH Kadugannawa, based on epidemiological and entomological data, high DF risk GN areas (areas with indigenous DF cases and *Aedes aegypti*) were identified using GIS and, source reduction was carried out in these areas in July 2008 (intervention 2). Impact of interventions was determined by comparing (1) trends of DF in the 2 MOH areas in relation to the trend in the Kandy district and (2) percent contribution of 2 MOH areas (monthly/ annual percentage of DF cases in the MOH areas in the Kandy district) to the total case load in the Kandy district, after interventions. After intervention 1, there was a reduction of DF cases (35.9, 5.13, 13.2, 3.4 and 1.6 cases per 10,000 population from 2004 to 2008, respectively) and percentage contribution of the MOH Pathadumbara to the total DF case load of the Kandy district (13.0, 8.4, 7.4, 6.9 and 3.8% from 2004 – 2008, respectively). The percentage contribution to total DF case load in Kandy district by MOH Kadugannawa, ranged from 18.8 - 37.5%, before intervention (January to July 2008). After intervention, this dropped to 22.7% in August 2008 and 8.8% in December 2008. GIS is useful in identifying the risk levels of different GN areas. Identification of finer scale (GN level) high DF risk areas through GIS, and application of targeted community based vector control interventions in these areas is a potential tool for the control of DF in the Kandy district.

Keywords: Dengue risk GN areas, inter-sectoral collaboration, dengue control

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