

## DHF VECTOR CONTROL THROUGH ENVIRONMENTAL SANITATION MONITORING IN SUKAMBUMI, WEST JAVA PROVINCE, INDONESIA

by

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### 1. EXECUTIVE SUMMARY

Dengue haemorrhagic fever is one of the public health problems in Indonesia. The Directorate General for Communicable Disease Control (DG CDC & EH) has reported an average of 8 443 cases and 344 deaths per year since 1968. In 1988, 28 481 cases were reported with 758 deaths and a case-fatality rate of 2.7 (Suroso 1988).

The use of insecticides, including adulticides and larvicides, is effective, but of late vector resistance and operational cost problem have been encountered (WHO, 1984). For this reason, DG CDC & EH has applied an integrated DHF vector control programme using a combination of insecticides and health education campaign.

The present study was carried out to provide a better strategy in the DHF vector control programme. This study was carried out in Sukabumi municipality, West Java province from October 1988 to March 1989.

### 2. OBJECTIVE

The objective of the study was to identify the effectiveness of several integrated DHF vector control methods.

### 3. METHODS

The study consisted of three activities including basic survey, intervention activities, and follow-up survey. The purpose of the basic survey was to provide baseline data about community knowledge, attitude and practice on DHF and its prevention, and *Aedes aegypti* larva indices, i.e., house index. The survey was conducted in the first week of October 1988.

Four types of intervention activities were applied in 15 villages. They consisted of a combination of mass fogging using malathion (500 cc malathion 96 per cent technical grade/ha), temephos larviciding at a dosage of 1 per cent (1 gram/10 litre of water), and health education campaign in four villages. A combination of larviciding and health education campaign was applied in four villages; health education campaign was applied in five villages, and environmental sanitation monitoring in two villages. Monitoring activities consisted of regular home visits by trained cadres for education and sanitation inspection, including all possible breeding sites of A. aegypti. Intervention activities were conducted from the last week of October 1988 to March 1989.

The follow-up survey was conducted to provide data on community knowledge, attitude and practice and larva indices as well as on the basic survey. It was conducted six months after the intervention.

#### 4. RESULTS

Before the intervention, of the 382 households representing 80 per cent of the systematic random sample, 79.5 per cent housewives had good knowledge, 83.7 per cent had a positive attitude, and 53.2 did source reduction. Another 400 households, representing 100 per cent sample, indicated a house index of 12.3, container index of 4.0 and Breteau index of 10.9.

Six months after the intervention, of the 456 households representing 91 per cent of the sample, 88.5 per cent had good knowledge, 86.4 per cent had positive attitude and 69.8 did source reduction. The house index was 10.6, container index 5.1 and Breteau index 15.0.

Effective percentage change (EPC) of the community knowledge was 40.7, attitude 15.9, and practice 35. Reduction of the house index was 1.7; however, no reduction in the container index or the Breteau index was observed.

Environmental sanitation monitoring demonstrated the most effective intervention compared to the total intervention or other interventions. The EPC of community knowledge was 71.2, attitude 39.8, and practice 46.5. The EPC of environmental sanitation monitoring was 1.8, 2.5 and 1.3 times higher than the EPC of the total integrated intervention. The reduction of house index was 13.3, container index 1.0 and Breteau index 13.4. The other intervention did not demonstrate better EPC and lower reduction of indices.

In conclusion, environmental sanitation monitoring is the most effective DHF vector control in Sukabumi. The possible application of these findings to other provinces should be explored, and further study conducted to find out another model of intervention and its efficacy.

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