

Community Participatory Approaches to Dengue Prevention in Sarawak, Malaysia

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This paper covers preliminary findings from a participatory action research (PAR) project into dengue prevention in Sarawak, Malaysia, which formed one part of a national, multisite study. The objectives of the project in Sarawak were to reduce a high *Aedes* mosquito index and associated risk of dengue in two coastal Malay villages, using behavior modification strategies through a community participatory approach. The approach has achieved a reduced *Aedes* index as well as both material and nontangible benefits for the communities under study. These benefits may be calculated in terms of reduction of identified health risks and physical well-being of the community as well as in terms of more effective networking and self-advocacy with government agencies and the wider community.

Key words: dengue, participatory action research, Sarawak

Dengue and its more virulent form—dengue hemorrhagic fever and shock syndrome—are regarded as severe health hazards in many tropical and subtropical regions. This paper offers a preliminary overview of community participatory approaches to dengue prevention in Sarawak, one of the two Malaysian states on the island of Borneo.

Dengue is a vector-borne virus spread by the mosquitoes *Aedes aegypti* and *Aedes albopictus*. It is found in both urban and rural areas and is estimated to infect 20 million people annually (Okanurak, Sernmani, and Indaratna 1997). Dengue, and particularly its more severe form, is on the increase and has spread alarmingly in the last 30 years—it can now be found in 44 countries, up from 9 in the 1970s. In Southeast Asia the disease has reached pandemic proportions, badly affecting Thailand, Indonesia, and Malaysia (Economist 1998:38). In 1995 there were 6,520 cases of dengue reported in Malaysia and 370 people were diagnosed with dengue hemorrhagic fever. Despite preventative campaigns, the number of cases continues to rise (Ahmad et al. 1997:139; Rigau-Perez et al. 1999:375).

The major symptoms of dengue include abdominal pain, headaches, rash-like flushes, vomiting, and nausea; symptoms that resemble influenza in many respects and can

unfortunately be mistaken for it in dengue's early stages. Hemorrhagic fever takes its name from the additional symptoms of bleeding from the gums, nose, and internal organs. Dengue therefore represents a significant health risk in affected countries, and various attempts have been made to tackle the problem from traditional top-down health campaigns to more innovative means, such as an ethnographic approach.

In Malaysia a national dengue-prevention project has been initiated in Sarawak, Kuala Lumpur, Penang, and Johore Bahru. Intervention at the Peninsular Malaysian sites (Kuala Lumpur, Penang, and Johore Bahru) relied on a combination of action-orientated approaches as well as conventional health education methods, such as pamphlets and exhibitions. In Sarawak, the only site not on the peninsula, a participatory action research (PAR) model has been utilized.

Intervention with Communities at Risk

Dengue has been described as a disease of communities in transition and the result of rapid urbanization in tropical areas and associated problems of rapid acquisition of consumer items, without a sufficient infrastructure to manage the consumer lifestyle (Torres 1997). In Latin America dengue is increasing because of the breakdown of municipal services, which are unable to adequately cope with high levels of solid waste and general refuse. Consequently, government control strategies, including compulsory spraying of infected sites and fining of householders, have had little impact on the disease (Yasumaro et al. 1998:210). In Malaysia, health campaigns valuing public education, fumigation, and punitive measures against the general public have not produced a significant reduction of the *Aedes* index (Gordon

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