The Value of Social Science Research during the Implementation of Dengue Fever Prevention and Control Activities in Fiji

Alumita Bera**, Joe Koroivueta**, Tony Stewart*** and Will Parks****

*Formerly Regional Vector Borne Diseases Project, Suva, Fiji and currently Peace Corps/Fiji, Private Mail Bag, Suva, Fiji
**National Centre for Scientific Services for Virology and Vector Borne Diseases, Ministry of Health, PO Box 2223, Government Buildings, Suva, Fiji
***Centre for International Health, The Macfarlane Burnet Institute for Medical Research and Public Health, Alfred Medical Research and Education Precinct (AMREP), GPO Box 2284, Melbourne 3001, Australia
****WHO Mediterranean Centre for Vulnerability Reduction, Tunis, Tunisia
†JTA International, GPO Box 1080, Brisbane, Queensland 4001, Australia

Abstract

Drawing on experiences in Fiji, this paper illustrates the importance of using social science research both in the planning and during the implementation of dengue prevention and control activities.

Keywords: DF/DHF, Aedes aegypti, social science, planning and implementation, control, Fiji.

Country setting and background

Fiji is an independent Island State in the Southern Pacific. The main islands are Vanua Levu and Viti Levu with the capital Suva located on the eastern side of Viti Levu. Fiji’s population (around 850,000) is ethnically and culturally mixed. Dengue is an emerging threat to Fiji due to increasing urbanization, the adaptability of the principle vector, and inconsistent mosquito control programmes. Since the late 19th century, Fiji has experienced at least 13 recorded dengue outbreaks. The first epidemic was in 1885[1]. The first reported occurrence of dengue haemorrhagic fever (DHF) was in 1974-1975. In 1998 there was a widespread dengue epidemic with 24,000 cases and 13 fatalities[2].

Until recently, the National Vector Control Unit of the Ministry of Health ran a vertical dengue prevention and control programme, consisting of expensive, intermittent and largely ineffective insecticide spraying. The Unit was hampered by budget and manpower constraints, insufficient staff training,
transport and supply limitations. Limited resources also prevented effective community-based action and the development of meaningful partnerships between the Ministry of Health, nongovernmental organizations (NGO’s), businesses, and other government ministries.

Planning innovation for dengue prevention and control

The Pacific Regional Vector Borne Diseases Project (1997-2001) was designed to assist governments and communities in Vanuatu, Fiji and the Solomon Islands in the prevention and control of vector-borne diseases. The project was funded by the Government of Australia’s Agency for International Development (AusAID) and managed by the Secretariat of the Pacific Community. A major project goal was to strengthen national capacity to develop and implement effective vector-borne control and prevention programmes with innovative social mobilization.

The project supported the first national community Knowledge, Attitudes and Practices (KAP) research undertaken on dengue fever in Fiji between September-October 1998. The study’s aim was to gain baseline information and guide recommendations for subsequent behaviour and organizational changes. A team of Fijian and Indo-Fijian researchers visited urban, peri-urban and rural villages and settlements throughout Fiji. This community-based research used a combination of quantitative, qualitative and participatory techniques to investigate why and how householders were dealing with mosquitoes and to gather their views on how local services were addressing the dengue fever problem[3].

The research findings identified important issues that had been previously overlooked. People surveyed took little action in reducing the most productive mosquito breeding sites - in Fiji, these are predominantly used automobile tyres and 44-gallon drums[4]. For example, people did not consider discarded tyres as garbage but used them in flower gardens. Tyres were therefore not removed during ‘clean up’ campaigns and no specific practices focused on the management of tyres in situ[5].

Baseline research findings were presented to representatives of Health and Education Ministries, the National Health Promotion Centre, media and advertising firms, other government departments, and NGOs in a four-day ‘think tank’ in June 1999. Think tank participants used the findings to identify priority behaviours, target groups and potential programme partners. Recommendations were made to build social mobilization and communication activities based on people’s current practices in reducing potential breeding sites. National respect for religion and love of sport, especially rugby, resulted in the Sports Council, Rugby Union and religious groups being identified as important partners for advocating dengue fever prevention and control. Similarly, project and Ministry of Health staff worked with the Ministry of Education’s Curriculum Development Unit and teachers to develop anti-dengue information packages for teachers and primary school children.

Working parties were formed with identified partners to develop educational materials and mobilization activities for their respective constituents. Multimedia and communication specialists, graphic designers and experts in the production of print materials and advertising assisted the National Centre for Health Promotion in the
Implementing the new social mobilization and communication campaign

To build towards a national-scale campaign, new partnerships and communication activities were first piloted in Suva City in 1999. The lessons learnt from this trial, including the need to focus more on behaviours rather than just knowledge, were used to plan for a national campaign in all major cities between October 2000-March 2001. These months coincide with the rainy season and period of maximum dengue risk, when locals also perceive mosquitoes as a problem. The national campaign concentrated first on behaviour changes relating to tyre management in households. The main messages were:

“Fill tyres used for plants right up to the top with soil to make your plants grow well and punch holes in tyres in holes used for other purposes. If you can’t do that, places tyres under cover out of the rain”.

Monitoring and evaluation of the approach

Feedback between the Ministry of Health and the project staff was facilitated by phonecalls, letters, meetings and reports. Regular field reports were sent to the project office from the medical sub-division managers monitoring activities, especially monthly larval indices carried out by environmental health officers.

Social mobilization and communication activities were evaluated in several ways. First, random interviews with people in the street were conducted on a regular basis using a short, standard questionnaire to assess people's exposure to key messages and any subsequent action taken to manage tyres. Results were used to modify certain messages, channels, and activities. A structured observation survey on tyre management in 100 randomly selected households in two different urban areas (Lautoka and Suva) was also conducted before the national campaign (September 2000). Eighty-two of these households were revisited after the national campaign ended (July 2001). The number of tyres in the yard were counted and assessed as to whether they had been modified in any way. While the total number of tyres did not change, there was a significant shift in their usage. Before the campaign, 34% of the total tyres were ‘well managed’ (i.e. filled to the top with soil, punctured with holes or stored under cover). This percentage had increased to 61% ($P<0.001$) when the survey was repeated at the end of the campaign. This particular survey reinforced the importance of focusing on key breeding sites and keeping behaviour changes simple.

Lessons learned

There were many lessons from this project but two can be highlighted. First, social science research should be ‘pulsed’ throughout a community driven-programme in order to make ongoing modifications and mobilize partners. Traditional use of research with baseline studies that are repeated at the close of a project or programme with no research ‘in-between’ leaves little if any room for fine-tuning during implementation. The frequent use...
of participatory research also transformed this project and allowed new networks to be created during research planning, research presentations and ‘think-tanks’.

Second, the KAP survey revealed a lack of knowledge about dengue fever and concern about mosquito breeding in key containers. Behaviour change communication was approached with only a few behaviours and small incremental changes as campaign objectives. Communication during 2000-2001 only focused on management of tyres and prompted simple modifications to the existing behaviours. These lessons have been applied in subsequent dengue prevention and control initiatives in Fiji[7].

Acknowledgements

This work was supported by the Ministry of Health, Fiji and the Government of Australia’s Agency for International Development. The views of the authors do not necessarily reflect those of either the Government of Fiji or the Government of Australia. We acknowledge the many communities who have participated in our studies and the hard work of the Social Research and Health Promotion Team: Mere Basu; Apisai Bavadra; Arun Knaicker; Manju Lata; Makarita Maria; Atu Qiolevu; Leba Silivale; Lui Silivale; William Walker; and Temo Sasau. Paula Rabotnikof led the team in the conduct of the July 2001 tyre follow-up survey and data analysis as part of her London School of Hygiene and Tropical Medicine Masters thesis. Our thanks also go to Gyan Prakash of the National Vector Control Unit of the Ministry of Health, staff at the Secretariat of the Pacific Community, Dr Scott Ritchie (Tropical Health Unit, Queensland Health) and Harry Standfast.

References