Planning social mobilization and communication for dengue fever prevention and control

A STEP-BY-STEP GUIDE

Will Parks and Linda Lloyd



WORLD HEALTH ORGANIZATION GENEVA

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Cover photo: *Aedes aegypti*; adult female mosquito taking a blood meal on human skin. WHO/TDR/Stammers. Designed by minimum graphics Printed in China

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Forewords

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■ Communicable diseases kill, maim and cause suffering to millions of people, especially the poor. Women and children are particularly vulnerable. Communicable diseases impede national and individual development and burden economies with huge costs of treatment and control. While there are a number of affordable interventions to control these diseases, it is now evident that technical solutions alone cannot ensure the effective control and prevention of communicable diseases. Strategies to mobilize all levels of society – from high-level decision-makers to communities and families – are also essential.

At the crossroads of Africa, Asia and Europe, the World Health Organization's Mediterranean Centre for Vulnerability Reduction (WMC) in Tunis is an international centre for social mobilization, training and operational research. WMC provides technical support at country, regional and global level: training programme managers and health workers to ensure their optimal contribution to prevention and control; and mobilizing civil society, health workers and policy-makers to ensure acceptance and sustainability of programmes. WMC offers an innovative approach to social mobilization known as "COMBI" – Communication-for-Behavioural-Impact. Developed and tested over several years, COMBI incorporates the lessons learnt from five decades of public health communication and draws substantially from the experience of a variety of marketing, education, communication, promotion, advocacy and mobilization approaches that generally aim to do the same thing – have an impact on behaviour and foster programme–community partnerships.

WMC, through its regional and country-level partners, has been applying COMBI in the prevention and control of dengue fever (in the Lao People's Democratic Republic and Malaysia and, in the near future, in Guatemala and Nicaragua), lymphatic filariasis (in India, Kenya, Myanmar, Nepal, Philippines, Sri Lanka, Uganda, United Republic of Tanzania and Zanzibar) and leprosy (in India and Mozambique). In collaboration with the Stop TB Partnership, WMC is also helping national tuberculosis control programmes in Bangladesh, India and Kenya to develop, implement and monitor COMBI plans to increase TB case detection rates, while in Afghanistan and Sudan, WMC is assisting malaria control teams to use COMBI in the large-scale promotion of insecticide-treated bednets.

For the first time in relation to dengue fever, this guide presents the basic steps and underlying principles of COMBI. It is intended for health planners, dengue or vector control programme managers and individuals, nongovernmental organizations (NGOs) and other agencies with interests and/or expertise in developing biological, chemical, environmental and communication interventions to prevent and control dengue fever. Twelve case studies of innovative programmes or interventions in Cambodia, Colombia, Dominican Republic, Fiji, Honduras, Indonesia, Malaysia, Mexico, Puerto Rico, Saint Vincent and the Grenadines, Vanuatu and Viet Nam are used to illustrate specific points. The authors, who have done an excellent job in putting this guide together, also make a special plea to donors, national governments and NGOs for adequate human resources, budgets and time frames to be dedicated to social mobilization and communication for dengue prevention and control. Changing knowledge and attitudes can be done relatively easily, cheaply and quickly. Achieving and sustaining behavioural impact is not so easy, cheap or quick.

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■ A global pandemic of epidemic dengue fever/dengue haemorrhagic fever (DF/ DHF) began in South-East Asia in the aftermath of the Second World War. In the last 30 years of the twentieth century, the frequency and magnitude of DF/DHF epidemics increased dramatically as the principal mosquito vector, *Aedes aegypti*, and the viruses that cause DF/DHF, expanded their geographical distribution globally. This changing epidemiology was caused by a number of demographic and societal factors, including human population growth, urbanization, modern transportation and the lack of effective *Ae. aegypti* mosquito control programmes in tropical urban centres of the world. In 2003, DF/DHF is the most important arbovirus disease of humans, with more than half of the world's population living in areas of risk. Each year, the World Health Organization (WHO) estimates that there are 50 to 100 million dengue infections, 500 000 cases of DHF and at least 21 000 deaths, making DF/DHF one of the most important emergent/resurgent tropical diseases as we enter the twenty-first century.

Epidemiologic trends have demonstrated that prevention and control of dengue virus transmission in the past 30 years has failed. There is no vaccine for dengue viruses, and effective mosquito control programmes to prevent epidemic transmission have not been developed in most dengue-endemic countries of the world. Instead, emphasis has been placed on disease surveillance and emergency response using space sprays targeting the adult mosquito for control. Surveillance is poor in most dengue-endemic countries and the response has always been "too late and too little" to impact dengue virus transmission. Thus, few or no epidemics have been prevented using this approach, and the disease has continued to spread unabated.

Effective Ae. aegypti control, however, can be achieved by using an integrated approach that targets larval mosquitoes. This species was eliminated from most countries in tropical America during the 1950s and 1960s, effectively preventing both epidemic dengue and yellow fever. Unfortunately, these programmes were disbanded in the early 1970s after success had been achieved. This change was followed by the rapid reinvasion by Ae. aegypti of most tropical American countries, putting them at high risk for epidemic dengue. In modern times, only Cuba and Singapore have been successful in controlling Ae. aegypti. In both countries, a combination "top down–bottom up" approach has been used.

Unfortunately, in today's world of uncontrolled urbanization – especially in tropical developing countries – the "top down" methods used successfully in the past are

no longer feasible because of lack of resources. A city of 10 million people will have approximately 2 million households that would need to be visited and checked for mosquitoes weekly; this is simply not feasible. Moreover, the vertically structured programmes of the past had no sustainability. That sustainability will come only through community participation in mosquito control programmes. That is, the people who live in those 2 million houses must assume responsibility for the weekly inspection and control of *Ae. aegypti* in and around their homes. Sustainability requires that this be an ongoing programme that never ends as long as the threat of epidemic dengue transmission exists. *Aedes aegypti* control, therefore, must be an ongoing environmental management programme.

Eighteen years ago, a number of programmes emphasizing integrated, communitybased *Ae. aegypti* control were initiated. The focus was on educating the community about dengue disease and how to prevent dengue transmission by controlling the principal vector, *Ae. aegypti*, in the domestic environment. Many of these programmes were highly successful in educating the community about dengue and its prevention. Unfortunately, knowledge about a disease problem does not translate into action to prevent the disease. Thus, even though people in many dengueendemic countries are very knowledgeable about the disease, they take no action to control the mosquito and prevent transmission. One problem has been the lack of government partnership and support for these programmes. Successful and sustainable *Ae. aegypti* control will require an active, ongoing partnership between government health agencies and communities.

A major drawback with this approach is that we have not used social mobilization and communication effectively to convince people to adopt or maintain behaviours in ways that will prevent *Ae. aegypti* breeding in and around their homes. This guide is a major step forward in helping solve this problem by providing a "road map" of how to develop and implement community-based programmes that should result in sustainable behavioural impact. The guide has been used as a background resource for two WHO training programmes: a bi-regional (Western Pacific and South-East Asian regions) workshop held in the Lao People's Democratic Republic, in Febuary 2003, and in another held Nicaragua for the Pan American Health Organization in May 2003. Both workshops were highly successful. Used properly, this guide will be invaluable for ministries of health in dengue-endemic countries everywhere, to develop and implement effective dengue/A*e. aegypti* prevention and control programmes.

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