

WOLBACHIA AS A NOVEL APPROACH FOR THE CONTROL OF ARBOVIRUSES TRANSMITTED BY AEDES AEGYPTI

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Current vector control programs are very expensive and ineffective. This situation has led to the search for new approaches to arbovirus disease control. The Eliminate Dengue Program (EDP) uses *Aedes aegypti* mosquitoes carrying the *Wolbachia* bacterium as a biological strategy to control the propagation of arboviruses. The approach is based on the unusual discovery that this bacterium may block the transmission of dengue in the mosquito vector. We have carried out laboratory tests and demonstrated that *Wolbachia* can inhibit the transmission of Zika and chikungunya viruses. In addition, field pilot studies in five countries (Australia, Indonesia, Vietnam, Brazil, and Colombia) indicate that *Wolbachia* can be introduced and established successfully in the mosquito population. These results, combined with the safety record observed for *Wolbachia*-infected mosquitoes in pilot programs, and the declaration of Zika as a global emergency by the World Health Organization provide sufficient argument to propose large scale ups and deployment of *Wolbachia*-infected *Aedes aegypti* to assess their potential to block the widespread continuous spread of Zika virus, dengue and chikungunya.