

Challenges for dengue control in the Pacific

Currently, pandemic preparedness is receiving a lot of attention in the Pacific along with considerable funding. But in the rush to protect Pacific Island countries and territories from new and emerging diseases, dengue, the real pandemic disease affecting the region, is forgotten. Although countries and territories in the Pacific recognise that dengue can have a major impact on the health of their populations and put a severe strain on their fragile health systems, they fall short of the resources needed to control the disease. Dengue can also have significant negative impacts on economies that are heavily dependent on tourism. When there is an outbreak, resources are quickly mobilised, but interventions, including clean-up campaigns, awareness raising and vector control are generally applied too late to really make a difference. Once an outbreak runs its course, dengue is usually forgotten about until the next outbreak occurs. This cycle is seen time and again, not only in the Pacific but also in Asia.

Part of the reason for the lack of interest in dengue between outbreaks is the perceived lack of effective tools for preventing and controlling it. There is no vaccine. There have been claims made that an effective vaccine is just around the corner but nothing has eventuated to date. Diagnosis is often difficult. Rapid diagnostic tests are available but these are not always reliable, meaning that blood samples have to be sent overseas for proper testing. When dengue is diagnosed there is no cure as there is for malaria. Instead, patients need supportive care such as adequate fluids, pain relief and transfusion of platelets if serious complications occur. These tools are far from perfect but when applied as part of a well-planned and well-resourced programme, there is ample evidence that, at a minimum, the severity of dengue outbreaks can be reduced.

Laboratory-based surveillance and effective vector control are the two essential elements that Pacific countries and territories need to really make a difference in preventing dengue. Good national surveillance systems that can provide early warnings together with evidence-based vector control could reduce the impact and possibly even the frequency of outbreaks. Achieving this will require a strengthened network of public health laboratories capable of providing rapid confirmation of dengue diagnoses. These laboratories would not have to be established in each country but could be set up in key countries as part of a subregional network of laboratories capable of carrying out a wide range of tests, including those needed for detecting and identifying new and emerging infections.

Even though vector control is recognised as the main tool available for dengue control and prevention, most countries in the Pacific do not have the trained personnel needed to properly plan and execute effective vector control activities. There are three principal vectors of dengue in the Pacific: *Aedes aegypti*, *Ae. albopictus* and *Ae. polynesiensis*. The first two can be effectively controlled by 'container sanitation'. This means reducing or eliminating mosquito breeding sites by targeting the types of containers they use for breeding. In the case of *Ae. aegypti*, these containers are usually old tires, empty tins and other containers found in and around homes, schools and even hospitals. There is still no effective way of controlling the breeding of the third main vector, *Ae. polynesiensis*, which breeds in crab holes and has been responsible for major outbreaks, especially in the Cook Islands where the estimated economic loss linked to a dengue outbreak in 2002 was around AUD 5.5 million.



Photo courtesy of Dr Kevin Palmer

On small islands, it should be possible for health departments to work together with communities to identify and eliminate most if not all the containers that produce *Ae. aegypti* and *Ae. albopictus*. However, these actions require political commitment and operational funding that countries and territories seem to lack. There are potential donors but they have not come forward due to the low priority that countries and territories place on dengue. With all the interest being focused on adaptation for climate change, now is the time for countries and territories to press their case for urgent investment by donors in mosquito-borne diseases, especially dengue. An investment now to develop national and regional capacities for dengue control and prevention would be a good investment in the health of the people of the Pacific. We should not pass up this chance.

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