

Cook Islands enhances its capacity to control dengue

Since mid-2006, Cook Islands has been experiencing a major dengue outbreak. Parts of the population have been concerned about the indiscriminate use of Reslin spraying as a control measure against adult mosquitoes. Regular community-based clean-up operations of larval breeding sites as well as house-to-house inspections by health inspectors have been carried out, but the findings of vector surveillance have only been documented on paper and have not been easily available for systematic analysis.

The Cook Islands Ministry of Health recognised the need for enhanced capacities and methods to control dengue and sought the assistance of SPC during the Joint Country Strategy visit of a multi-divisional SPC delegation to Cook Islands in June 2007. They identified the need for a workshop on surveillance and control methods of vector mosquitoes. The request came at the same time as a consortium of SPC, the Pasteur Institute of New Caledonia (IPNC) and the Malardé Institute (ILM) of French Polynesia obtained funding from the French Pacific Fund for pilot activities in Pacific Island countries and territories regarding vector surveillance (see *Inform'ACTION* 27).

Beyond dengue control, a need for a more general workshop on management and analysis of epidemiological data for Cook Islands public health staff had also been identified by the Cook Islands Ministry of Health, which initially communicated with the WHO Apia office about this in early 2007. Finally the two workshops were scheduled for September 2007, with SPC providing facilitators for both and additional WHO funds making it possible to include participants from outer islands.



Mastering epidemiological data

The first workshop, on mastering epidemiological data, took place in Rarotonga from 10 to 14 September and involved 23 professionals working in different areas of public health: inspectors, statistics officers, nurses, a midwife, a lecturer, a health educator and a nutrition officer. The workshop therefore provided a good opportunity to promote collaboration between different areas of public health.

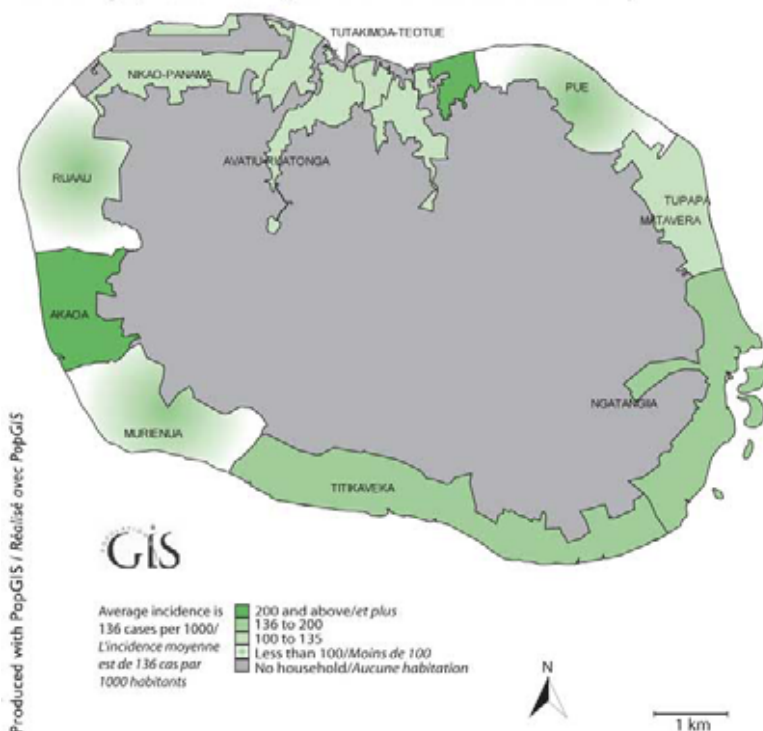
The broad objective of the workshop was to enhance Cook Islands public health staff's technical skills in the principles, methods and techniques of data management and analysis for disease surveillance (especially of communicable diseases) and outbreak investigation.

The workshop was organised by Mr Tuaine Teokotai and Mr Charlie Ave from the Cook Islands Ministry of Health. The facilitators were SPC's Dr Justus Benzler, Communicable Disease Control Specialist, Dr Narendra Singh, Pandemic Preparedness and Training Specialist, and Mr Scott Pontifex, programmer and specialist on the demographic and geographical information system PopGIS.

The proceedings included theoretical sessions in which the basic concepts of epidemiology, communicable disease surveillance, descriptive medical statistics and geographical information systems were introduced. They were interposed with practical sessions in which the basic functionality of MS Excel, Epi Info and PopGIS software was explained and then applied to practical examples illustrating the theoretical concepts (see illustration below).

At the end of the sessions, the majority of participants said they felt confident using the software. However, some felt that there had not been enough time and suggested allocating more time for such workshops in future.

Dengue incidence per 1000 persons in Rarotonga, 2006–2007, by census district / Incidence de la dengue pour 1000 habitants, Rarotonga, 2006–2007 (par district de recensement)



A great opportunity to train national EpiNet teams
 Outbreak investigations require smooth collaboration between the different members of a national EpiNet team, i.e. public health staff, clinicians, laboratory staff, health data managers and statisticians, and decision-makers. An important aspect of this concerns the collection, management, exchange and collaborative analysis and interpretation of data. Due to their different daily commitments, members of national EpiNet teams have few possibilities to work and train together. Workshops like this one are a good opportunity to do so.

Vector surveillance and control

The workshop on vector surveillance and control that took place the following week was a good opportunity for many of the participants to apply their newly acquired knowledge to 'real-life' issues in their daily work.

In all, 17 health inspectors attended the course. The same strategy as in the first workshop was applied, with theoretical sessions being interposed with practical sessions.

Participants particularly enjoyed the practical laboratory sessions, in which they learned to handle and identify immature and adult mosquitoes, and the field trips, during which immature and adult mosquitoes were collected using different techniques, and house-to-house surveys were conducted.

The theoretical sessions covered the basic concepts of vector biology, vector-borne diseases, vector surveillance, and control methods for immature and adult mosquitoes.

The coordination of this workshop was also done by Mr Tuaine Teokotai and Mr Charlie Ave from the Cook Islands Ministry of Health. The facilitators were Mr Laurent Guillaumot, entomologist at

IPNC, Mr Jerome Marie, entomologist at ILM, Dr Justus Benzler and Dr Narendra Singh from SPC, and Mr Lucien Swillen, consultant.

The workshop was a success and the collaboration between SPC, IPNC and ILM is likely to continue. A five-year project on vector surveillance and control for the Pacific Island region, developed by SPC and IPNC, is currently being fine-tuned in collaboration with Pacific Island countries and territories.

Public awareness

During the second workshop, a public meeting was held with concerned members of the community. Additionally, on one evening the team gave a lecture on vector-borne diseases with subsequent discussion, at the invitation of the local Rotary Club. The event acknowledged the support given by the Rotary Club to the Cook Islands Department of Public Health and also raised the awareness of club members and other interested individuals of challenges and avenues for continuing support.

The two meetings revealed a high level of community interest and participation. In order to make the most of this, it seems important to put more emphasis on regular and transparent communication between public health decision-makers and concerned interest groups, as well as the general population.

Dr Justus Benzler and Christelle Lepers

SPC

Mr Tuaine and Mr Charlie Ave

Ministry of Health, Cook Islands



The '**Fay-Prince trap**', named after its inventors, is designed specifically to catch mosquitoes from the genus *Aedes*, subgenus *Stegomyia*, such as *Ae. aegypti*, *Ae. albopictus* and *Ae. polynesiensis*. These daytime mosquitoes are not attracted by light traps. However, it seems that they are attracted by the contrast between the light and dark surfaces of the Fay-Prince trap. The lamp, which can emit either white light or black light (UV), is used to attract other species such as *Culex*, night-time *Aedes* and even *Anopheles*. In the cylinder located behind the black surface there is a fan that sucks up the insects and blows them into a net. After killing them, usually by freezing, the mosquitoes are separated from the other insects (butterflies, other Diptera, etc.) and identification can be carried out.

Mr Laurent Guillaumot, IPNC
