Overview of epidemics

During the last 50 years, the four dengue viruses have caused epidemics in the islands of French Polynesia. In 1944, Tahiti was affected by an outbreak due to the first identified dengue virus, DEN-1. The next epidemic took place in 1964, caused by DEN-3, following the opening of the international airport. Dengue fever has become endemic in the country with successive epidemics due to different serotypes: DEN-3 in 1969; DEN-2 in 1971; DEN-1 in 1975; DEN-4 in 1979, and DEN-1 in 1988. During these epidemics, fatal cases and cases with shock syndrome or haemorrhagic manifestations have relatively been rare. Only one serotype of virus is transmitted during and between epidemics, except at the beginning of epidemics when the old endemic virus and the new one introduced are both present in overlapping circulation during a few months.

In 1990, a new epidemic due to DEN-3 was responsible for more serious cases, with about 250 hospitalizations and 11 deaths. *Aedes aegypti* is the quasi-exclusive vector.

1996-1997 Epidemic

The first case of DEN-2 was detected by the clinical and virological surveillance system in August 1996. This system has got together 18 physicians of private clinics and public hospitals and the virological laboratory of the Institute de Recherches Medicales, Louis Malarde. The virological identification was made quickly by Reverse Transcriptase Polymerase Chain Reaction (RT-PCR).

Until November 1996, the epidemiological surveillance was settled on virological diagnosis by RT-PCR or cell cultures and serology. Afterwards, a weekly surveillance of suspected clinical cases was concurrently added, with the participation of 40% of all the physicians in the country. The hospitalizations were also reported.
The peak of this epidemic occurred in January 1997, with 2131 suspected cases, 564 confirmed cases and 219 hospitalizations during the month. Between August 1996 and April 1997, the total suspected cases was estimated at about 13,000. With symptomatic cases, 30% to 60% of the susceptible population has been estimated as infected. Six children were hospitalized: two for shock syndrome, one for haemorrhage and three for viral encephalitis. A 22-year-old man died with staphylospecticaemia due to post-viral aplasy. The transmission is still on, but is at a low level.

Control activities

The preceding epidemic of DEN-2 took place in 1971 and the serotype disappeared in 1976. In 1996, all the young people under 20 years, more than half the total population, were susceptible to the disease. So, as soon as the first case of DEN-2 was confirmed by the laboratory, a countrywide strategy was defined by the Dengue Control Committee and applied with two main objectives:

To minimize the impact of the new epidemic in order to avoid socio-economic perturbations, and

To develop the efficiency of health services in the management of serious cases by information and sensitization of medical staff and the community.

An intensive health education campaign was supported by the media and the teaching profession in schools. An educational file was elaborated for this purpose. On the ground, ULV and aerosol sprays, with permethrin and malathion insecticides, were used in urban areas where *Aedes aegypti* densities are known to be high. In other areas, insecticides were used in and around such places as schools, clinics, hospitals, assembly rooms, etc. Vector control teams visited dwellings and gathering places to search for mosquito breeding sites and to promote appropriate individual and community actions.

The administrations, municipalities, schools, religious groups, environmental associations and youth and women associations actively participated to fight the epidemic and to destroy *Aedes aegypti* breeding sites. Messages to families and physicians were broadly spread to recognize the first symptoms of the disease and to provide appropriate care.

References

1. Laigret J, Pare F and Rosen L. Dengue Type 4 - French Polynisie. MMWR, 4 May 1979 : 194-201