

## Chikungunya outbreak in Réunion, a French 'overseas département'

Isabelle Quatresous ([i.quatresous@invs.sante.fr](mailto:i.quatresous@invs.sante.fr)), Department International et Tropical, Institut de Veille Sanitaire, France, and the investigation group \*

The island of Réunion (population 750 000) in the Indian Ocean is experiencing an extensive outbreak of chikungunya fever, an arboviral disease thought by the outbreak investigators to be transmitted by *Aedes albopictus* mosquitoes. Between 28 March 2005 and 15 January 2006, there have been an estimated 10 750 suspected cases of chikungunya fever in Réunion in patients who consulted a general practitioner. Of the suspected cases, 2424 have been laboratory confirmed. According to a mathematical model based on historical series, the estimated cumulative number of cases with clinical signs compatible with acute chikungunya fever since the beginning of this outbreak (whether or not patients sought medical consultation) could be around 30 000 (upper limit 41 541, 95% CI)

The outbreak of chikungunya fever in Réunion first presented a limited peak from 9-15 May 2005, before the number of cases decreased with the onset of the southern hemisphere winter. From mid-July, the incidence remained stable for a period of over three months, with an estimated 50 to 100 new suspect cases per week. The incidence then rose again, at first moderately, at the beginning of October. In mid-December, the epidemic pattern changed suddenly, as the southern hemisphere summer's meteorological conditions are favourable for the multiplication of the vector.

Chikungunya virus was circulating in the Comoros archipelago and in Mauritius at the beginning of 2005. The first cases identified on Réunion were imported from the Comoros.

Transmission is now occurring very rapidly on the island. The weekly estimated number of cases has been increasing exponentially since the end of December 2005, and has not yet peaked. The number of cases is estimated to have reached around 5000 for the second week of January 2006. Transmission is occurring in every district of the island, but is particularly active in the district of Saint-Pierre in the south of the island, especially in the city of Saint-Louis.

To date, 15 cases of meningoencephalitis have been notified, of which 12 have been microbiologically confirmed by the French national reference centre for arboviral diseases in Lyon. The other cases are still under investigation. Six cases occurred in newborns, and mother-to-child transmission is strongly suspected in these cases. The other nine identified cases occurred in adults with pre-existing medical conditions. All cases have since progressed favourably. This is the first time that meningoencephalitis forms of chikungunya, and mother-to-child transmission of the chikungunya virus, have been reported in chikungunya outbreaks.

To date, no death has been directly attributed to acute chikungunya infection. Patients with underlying medical conditions, however, are vulnerable and prone to developing complications and organ failure.

### Surveillance and control

The *Aedes albopictus* mosquito lays its eggs in any water-containing receptacle, in both urban and non-urban areas. Pots, tyres and tin cans are favoured habitats. In spite of the intensification of vector control efforts in communities these past few months, the number of transmission sources has spread across the island. Individual prevention messages have targeted those most at risk and are being reinforced.

The surveillance system implemented to date was based on the investigations of the vector control teams, and case finding at the local level. As the number of cases has greatly increased, surveillance has been switched to a sentinel system of general practitioners since the last week of 2005. This system, however, will allow the monitoring of trends of this outbreak. The surveillance of severe cases has been intensified.

Teams from the Institut de Veille Sanitaire in France have been collaborating closely with local authorities and medical practitioners to help monitor and control this outbreak and this collaboration will continue while the outbreak is ongoing.

Special advice is being given for pregnant women, vulnerable people, and newborns to avoid mosquito bites, particularly by using mosquito nets. A list of mosquito repellants that are not contra-indicated for pregnant women and children has been made available. More information is available in French at <http://www.sante.gouv.fr/> and <http://www.invs.sante.fr/>.

*\* The members of the investigation group are Jean-Louis Solet, Daouda Sissoko, Philippe Renault, Vincent Pierre, (Cellule interrégionale d'épidémiologie de la Réunion et de Mayotte) ; Hugues Cordel (Département International et Tropical, Institut de veille sanitaire, Saint-Maurice, France) ; Christian Lassalle, Julien Thiria (Direction régionale des affaires sanitaires et sociales de la Réunion) ; Hervé Zeller, Isabelle Schuffnecker (Centre national de référence des arbovirose, Institut Pasteur, Lyon, France)*

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