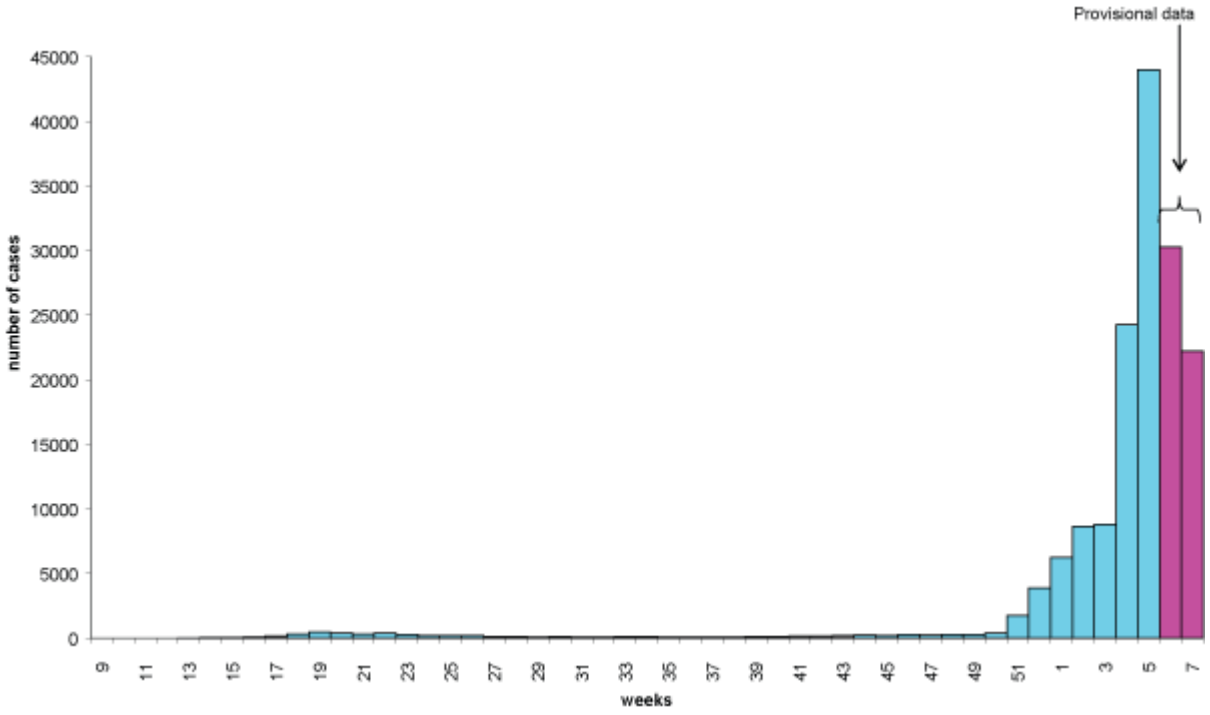
Chikungunya outbreak on Réunion: update

Hugues Cordel (h.cordel@invs.sante.fr), Département International et Tropical, Institut de Veille Sanitaire, France, and the investigation group*

The current outbreak of chikungunya on Réunion Island is still spreading extensively (except in areas above 1000m altitude), despite the intensified vector control measures being applied. Transmission on Reunion began following the occurrence of cases in people travelling from the Comoros islands in March 2005 [1].

Between March 2005 and 19 February 2006, there have been an estimated cumulative 157 000 suspected cases with clinical signs compatible with chikungunya infection. More than 140 000 of these cases are estimated to have occurred since 1 January 2006. The weekly incidence for the most recent three weeks in 2006 (weeks 5, 6 and 7) is around 40 000 taking account of the provisional nature of the data in the two most recent weeks (Fig 1). The hospital admission rate remains stable around 35 – 40%. The number of self declarations of illness to a free call centre, after a three week increase, has been decreasing in the last two weeks.

Figure 1. Estimated chikungunya cases on Réunion Island*, March 2005-February 2006.



*based on an estimated mathematical extrapolation

Surveilllance and case estimates

A sentinel surveillance system is providing data. The surveillance system uses indicators such as number of consultations and hospital admissions for chikungunya symptoms in hospital emergency departments, and self declarations to the free call centre. The surveillance system also includes data on serious clinical presentations in patients admitted to hospital intensive care units. In addition, since the beginning of the outbreak, mortality certificates have been systematically studied when 'chikungunya' is mentioned as a diagnosis.

Combining the surveillance data with a mathematical model provides an estimate of the full impact of the evolving epidemic (Fig 1). The method, however, is not robust for the most recent two week period.

Epidemiological and clinical features

The estimated attack rate by age group based on the GP notifications indicates the rate of

infection has been greater in older people compared to younger (3.8% >65y vs 1% <30y).

To date, 27 serious infections have been notified in newborns, acquired either by mother-to-baby transmission or by mosquito bites in newborns aged > nine days.

A total of 77 death certificates mention 'chikungunya' as the diagnosis, all in 2006. The mean age of these deceased patients was 78 years, and most had underlying medical conditions. The possible relation between chikungunya and death is still under investigation by a scientific committee with clinicians, epidemiologists and virologists.

Of the 58 suspected cases, resulting in patient admission to hospital intensive care units (occurring in adults and children (age > 28 days)), 27 have been laboratory confirmed as chikungunya. Clinical manifestations were meningoencephalitis in 12 cases, acute liver failure in 5 cases and multi-organ failure in 10 cases, although the direct relationship between chikungunya infection and this multi-organ failure is still under investigation.

Discussion

The estimated weekly incidence, is around 40 000 new cases since the beginning of February 2006. There are many indications that the outbreak progression is stabilising. The delay for data consolidation means it is still unknown whether the epidemic peak has been reached.

Chikungunya virus has also been circulating in the whole Indian Ocean region since early January, as weather conditions are favourable for mosquito breeding.

As the chikungunya virus is extensively circulating and sporadic cases of dengue usually occur in Reunion, there is the possibility of co-circulation of these two arboviruses transmitted by the same vector.

More than 140 cases imported from Réunion have been identified in continental France since March 2005. As the responsible vector, Aedes albopictus, has also been previously identified in some limited places in southern France, the risk of autochthonous transmission from imported cases has to be evaluated before the summer of 2006.

**The members of the investigation group are : Isabelle Quatresous (Département International et Tropical, Institut de Veille Sanitaire, France), Daouda Sissoko, Jean-Louis Solet, Philippe Renault, Elsa Balleydier, Vincent Pierre, Morgane Dominguez, Assimoula Economopoulo, Jet de Valk, (Cellule Interrégionale d'épidémiologie de la Réunion et de Mayotte, France) .*

References:

1. Quatresous I. Chikungunya outbreak in Réunion, a French 'overseas département'. Eurosurveillance 2006: 11(2): 02/02/06 (http://www.eurosurveillance.org/ew/2006/060202.asp#1)