

S070

2-hour Symposium

Dynamics of autochthonous vector-borne viral diseases in Europe

Chikungunya

W. van Bortel¹

¹, Stockholm, Sweden

Chikungunya is a mosquito-borne viral disease caused by an alphavirus from the *Togaviridae* family. The virus is transmitted by the bite of *Aedes* mosquitoes, primarily *Aedes aegypti* and *Aedes albopictus*. The typical clinical signs of the disease are fever and severe arthralgia, which may persist for weeks, months or years after the acute phase of the infection.

Prior to 2005, chikungunya outbreaks occurred mainly in the well-known endemic areas in Africa, south-east Asia and on the Indian subcontinent. From 2005 to 2006, large chikungunya outbreaks were reported from Comoros, Mauritius, Mayotte, Réunion and various Indian states. Chikungunya has been present in the Pacific since 2011. In December 2013, the virus was detected on the French part of the Caribbean island of Saint Martin in the context of a dengue outbreak and has subsequently spread widely in the Americas. Autochthonous transmission in continental Europe was reported for the first time from Emilia-Romagna, Italy, in August 2007 with more than 200 confirmed cases. In France, two confirmed cases were reported in the Var in 2010 and 11 autochthonous cases in Hérault district in 2014. These events show the vulnerability of Europe for autochthonous transmission of chikungunya virus.

For onward transmission to occur, the introduction of this virus into Europe needs to coincide with high vector abundance and activity i.e. during the summer season in the EU for *Aedes albopictus*. This mosquito vector has continuously expanded its distribution in the EU since 1979 when it was first found in Albania. To date this species has colonised almost all Mediterranean countries and can reach high densities from July to September. *Aedes aegypti* has recently established on Madeira and is found around the Black Sea coast. Temporal clusters of chikungunya cases imported in the EU are largely synchronous with large outbreaks in endemic countries. Likewise, as a consequence of the occurrence of chikungunya in the Americas, Europe has seen an important increase in travel related chikungunya in 2014. Consequently, vigilance for the occurrence of imported cases of chikungunya and possible onwards transmission in EU is needed, including awareness among clinicians, travel clinics and blood safety authorities. Further, the introduction and spread of the mosquito vector species need to be followed closely and vector management strategies further developed. In this perspective, ECDC supports the development of a new case definition and performs, through the network for Emerging Imported Viral Diseases, external quality assessments of chikungunya virus detection and serology. Further guidance for the surveillance of invasive mosquito species has been developed and the Centre maintains a database on the distribution of invasive mosquito vectors in Europe (VectorNet project) and publishes updated maps of their distribution every three months.