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Imported cases of Chikungunya and Dengue fever in Emilia Romagna region, Italy

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Background: Chikungunya virus (CHIKV) was introduced in Emilia-Romagna, Italy, in 2007, when a man highly viraemic came back from India. A local transmission occurred involving 205 cases and CHIKV RNA was detected in human blood and in *Ae. albopictus* mosquitoes. *Ae. Albopictus*, which is well-established in the region, is competent also for the transmission of Dengue virus (DENV) and the prevention of CHIKV and DENV was based on mosquitoes' control and on early detection of human cases. A patient with a clinical suspicion and positive epidemiological criteria (travelling to an endemic or epidemic area for these diseases) was considered a suspected case and the laboratory diagnosis was performed. From April to November 2008 eight patients resulted serologically positive and one was viraemic for CHIKV, over 157 cases. About DENV, NS1 antigen was detected in three patients and six were serologically positive, over 50 suspected cases. Because of these data the surveillance system was carried on in order to identify each imported case.

Methods: From December 2008 to October 2009, 35 suspected cases of CHIKV were analyzed; 22 were tested only for the detection of IgM/IgG antibodies by immunofluorescence, 3 for CHIKV RNA by Real Time RT-PCR and 10 samples were evaluated by both tests. Moreover, 47 suspected cases of Dengue were collected, 23 sera were analyzed by immunofluorescence for the detection of antibody response, 5 were tested for NS1 antigen detection and 19 samples were evaluated by both tests.

Results: About CHIKV, one patient was IgM/IgG positive and two patients IgG positive; none was positive in PCR. About DENV, in the sera of 6 patients NS1 antigen was detected. Two samples NS1 negative were respectively IgM/IgG positive and IgG positive.

Conclusion: From December 2008 to October 2009 a lower number of suspected and positive cases of Chikungunya and Dengue fever were observed in comparison to the last year. Four of the six DENV viraemic patients were collected on January and February when *Ae. Albopictus* in Emilia Romagna is not active. In conclusion, we observed a decrease of Dengue fever imported cases which could be a risk for a local outbreak.

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Importance of the animal/human interface in events of international concern for the Americas

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Background: Diseases have increased their potential to cross geopolitical boundaries through international travel and trade. Zoonoses represent 75% of human pathogens emerging during the past decade. The International Health Regulations (IHR) are a binding global legal instrument that includes all the World Health Organization (WHO) Member States, which aim to ensure public health through prevention and respond to acute public health risks. The objective of this study is to understand the importance of diseases common to man and animals in events of public health importance reported to, or identified for follow up by the Organization, in an effort to reduce the risk of infectious diseases at the human/animal interface.

Methods: This study analyzes events recorded in the databases for the Americas region from the implementation of the IHR (June 2007) until the end of 2008. The main source of data was the WHO Event Management System (EMS). The criterion for inclusion in human/animal interface was, "considered a zoonoses or communicable disease common to man and animals," using the third edition of the book, *Zoonoses and Communicable Diseases Common to Man and Animals* published by the Pan American Health Organization. Subgroups were also created and percentages were calculated.

Results: During the period studied, 110 events were recorded in the EMS for the region of the Americas. 86/110 were communicable diseases. Among these, 77/110 (70.0%) were zoonoses and communicable diseases common to man and animals (human/animal interface); 9/110 (8.2%) were considered not common to animals; 16/110 (14.5%) were syndromes with unknown etiologies; 8/110 (7.3%) were related to products. Among the 77 events considered human/animal interface related, 48 were designated "substantiated" at time of event closure.

Conclusion: This analysis demonstrates approximately 70% of events are either zoonoses or communicable diseases common to man and animals, confirming previous publications and the importance of the animal/human interface. Analysis also supports "One World, One Health" framework, and the necessity of collaboration between science and other sectors. An early warning system that quickly identifies events that pose a risk to international public health may also support the countries in identifying events that are exceeding expected numbers and require an emergency response.

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