

Information for health practitioners

CHIKUNGUNYA VIRUS



Chikungunya is an arbovirus transmitted mainly by infected *Aedes albopictus* and *Aedes aegypti* mosquitoes (later referred to as *Aedes* mosquitoes). Outbreaks of Chikungunya have been described in Africa, Southeast Asia, the Indian subcontinent and the Indian Ocean, but the increasing presence of especially *Aedes albopictus* in certain regions in Europe implies a risk of local transmission of the virus from imported cases. The risk of outbreaks on the European continent was confirmed in 2007, when 247 cases were reported in the Emilia-Romagna region of Italy during July-September.

As no vaccine or medication is available to prevent or treat the infection, individuals in affected areas should be advised to protect themselves from mosquito bites as well as to contribute to vector control.

DISEASE SURVEILLANCE

The EU Member States where the vector is present have worked on their preparedness in terms of response plans in case an outbreak occurs. The plans are based on considerations around epidemiological as well as entomological surveillance and are aimed to ensure rapid case detection, efficient implementation of control measures, continuous risk assessment, and timely communication with the public.

FACTS ON CHIKUNGUNYA

Chikungunya is an alphavirus of the family of *Togaviridae*, and is a heat-sensitive RNA virus.

Vector

Chikungunya virus is transmitted from human to human mainly by infected *Aedes* mosquitoes, which are characterised by the white stripes on their black bodies and legs. These mosquitoes bite principally during the day and mainly outside, with a peak activity early in the morning or at the end of the day.

Epidemiology

Chikungunya was first identified in Tanzania and Uganda in 1953. Since then, outbreaks have taken place in Africa, Southeast Asia, the Indian subcontinent and the Indian Ocean. On the European continent, an outbreak was reported in Italy in 2007. Please refer to ECDC's website for information on countries that experience outbreaks: http://ecdc.europa.eu/Health_topics/Chikungunya_Fever/Disease_facts.html

Risk of local transmission

In Europe, the vector is currently known to be present in Albania, Croatia, Bosnia and Herzegovina, France, Germany, Greece, Italy, Montenegro, the Netherlands (in greenhouses only), Portugal (in Madeira only), Slovenia, Spain and Switzerland. Although it seems possible that the vector may be present in other European countries as well, no surveillance data are currently available.¹

Clinical presentation

Incubation ranges from 1 to 12 days, with an average of 4 to 7 days. The main clinical symptoms are sudden onset of high fever (>38.5°C), headache, back pain, myalgia and severe arthralgia. The arthralgia mainly involves the extremities (ankles, wrists, phalanges) and can be quite intense. Around half of the cases develop a maculo-papular rash. In children, the rash is more bullous; they may also have localised petechiae and gingivorrhagia. Differential diagnosis with other conditions presenting with flu-like symptoms should be considered.

Symptoms generally resolve within 7 to 10 days, although the joint pain and stiffness may last longer. While recovery without sequelae is the expected outcome, development of a chronic phase is possible, where the arthralgia can continue for several months.

Complications

Possible complications include gastro-intestinal complications, cardiovascular decompensation, or meningo-encephalitis. Chikungunya related mortality has been reported mainly in aged patients or where the patient's immune system was weakened by underlying conditions.

¹ For the latest data on the presence of the vector, please see: "<http://www.eurosurveillance.org/ew/2007/070906.asp#2>"

Diagnosis

Laboratory diagnosis of Chikungunya should be considered for all cases presenting acute onset of fever >38.5°C and severe or incapacitating arthralgia not explained by other medical conditions, and who are residing or have visited endemic areas. The recommended protocol for confirmation of cases is to use RT-PCR on serum from day 1 to 5 after the onset of symptoms, in addition to serological assays for IgM/IgG detection from day 6 onwards.

In countries where the vector is present, timeliness of diagnosis is essential in order to rapidly implement vector control measures around identified cases. For more information, please see the algorithm for ascertainment of a suspected Chikungunya case at the bottom of this page.

Chikungunya case definition for surveillance

The Chikungunya case definition proposed by ECDC uses:

- **Clinical criteria:** acute onset of fever >38.5°C and severe/incapacitating arthralgia not explained by other medical conditions
- **Epidemiological criteria:** residing or having visited epidemic areas, having reported transmission within 15 days prior to the onset of symptoms
- **Laboratory criteria:** at least one of the following tests in the acute phase:
 - virus isolation
 - presence of viral RNA by RT-PCR
 - presence of virus specific IgM/IgG antibodies in single serum sample collected
 - seroconversion to virus-specific antibodies in samples collected at least one to three weeks apart

On this basis, the following categories of cases are to be reported:

- **Possible case:** a patient meeting clinical criteria
- **Probable case:** a patient meeting both the clinical and epidemiological criteria
- **Confirmed case:** a patient meeting the laboratory criteria, irrespective of the clinical presentation

Treatment

In the absence of treatment for Chikungunya fever, focus is set on symptomatic treatment only (non-steroid anti-inflammatories, non-salicylic analgesics) and surveillance of the patient for complications. In order to prevent further transmission, infected persons should avoid being exposed to further mosquito bites (e.g. use of repellents or sleeping under bed nets).

Prevention

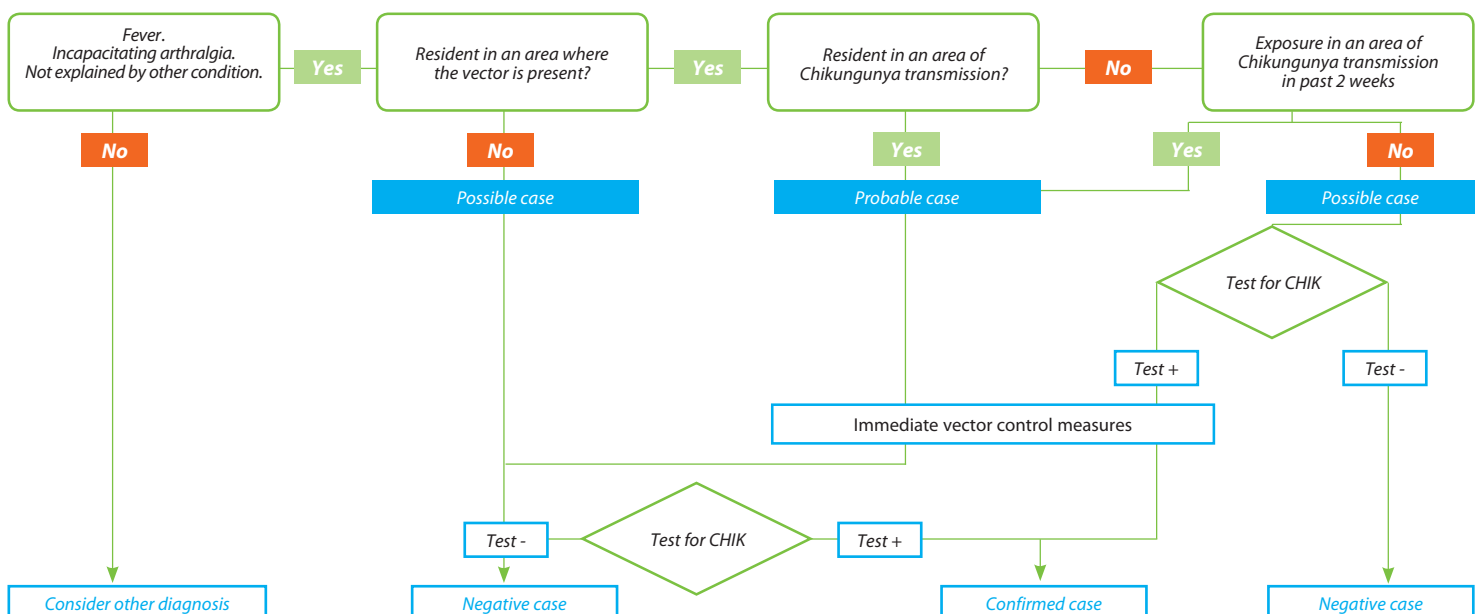
Individuals living in or travelling to endemic regions should take the following protective measures against mosquito bites:

- Wear long-sleeved shirts and long trousers
- Use mosquito repellents, coils or other devices that will help fend off mosquitoes
 - Specific options for protection should be considered for pregnant women, people with immune disorders or severe chronic illnesses, and for children under 12 years as the use of most mosquito repellents are not advised for these
- If possible, sleep under bed nets pre-treated with insecticides
- If possible, set the air-conditioning to a low temperature at night – mosquitoes do not like cold temperatures

Vector control

The vector lives in a wide range of habitats. The presence of water is of great importance for their breeding as the mosquito eggs require water in order to develop into adult mosquitoes. All individuals living in endemic regions should be given advice on how to participate in vector control efforts to avoid water gathering in containers especially in the vicinity of their homes, such as left-over water in flower pots, wading pools, drain pipes and watering cans.

Algorithm for ascertainment of a suspected Chikungunya case ¹



¹ ECDC Mission Report: Chikungunya in Italy