

# CHIKUNGUNYA FEVER

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# Chikungunya fever

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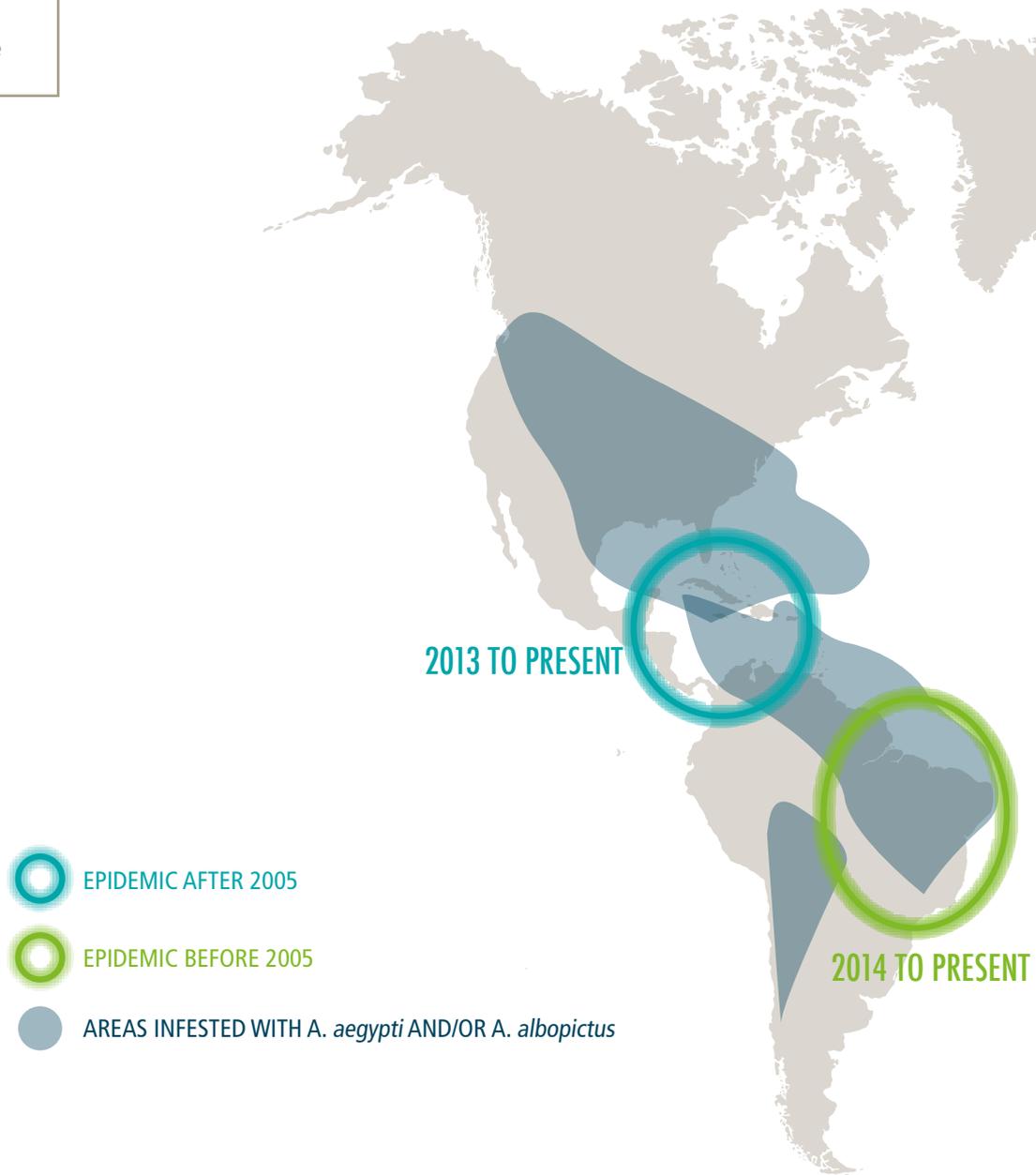
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FIG. 1

CHIKUNGUNYA EPIDEMIC OUTBREAKS AND AREAS INFESTED BY AEDES SPP. MOSQUITOES

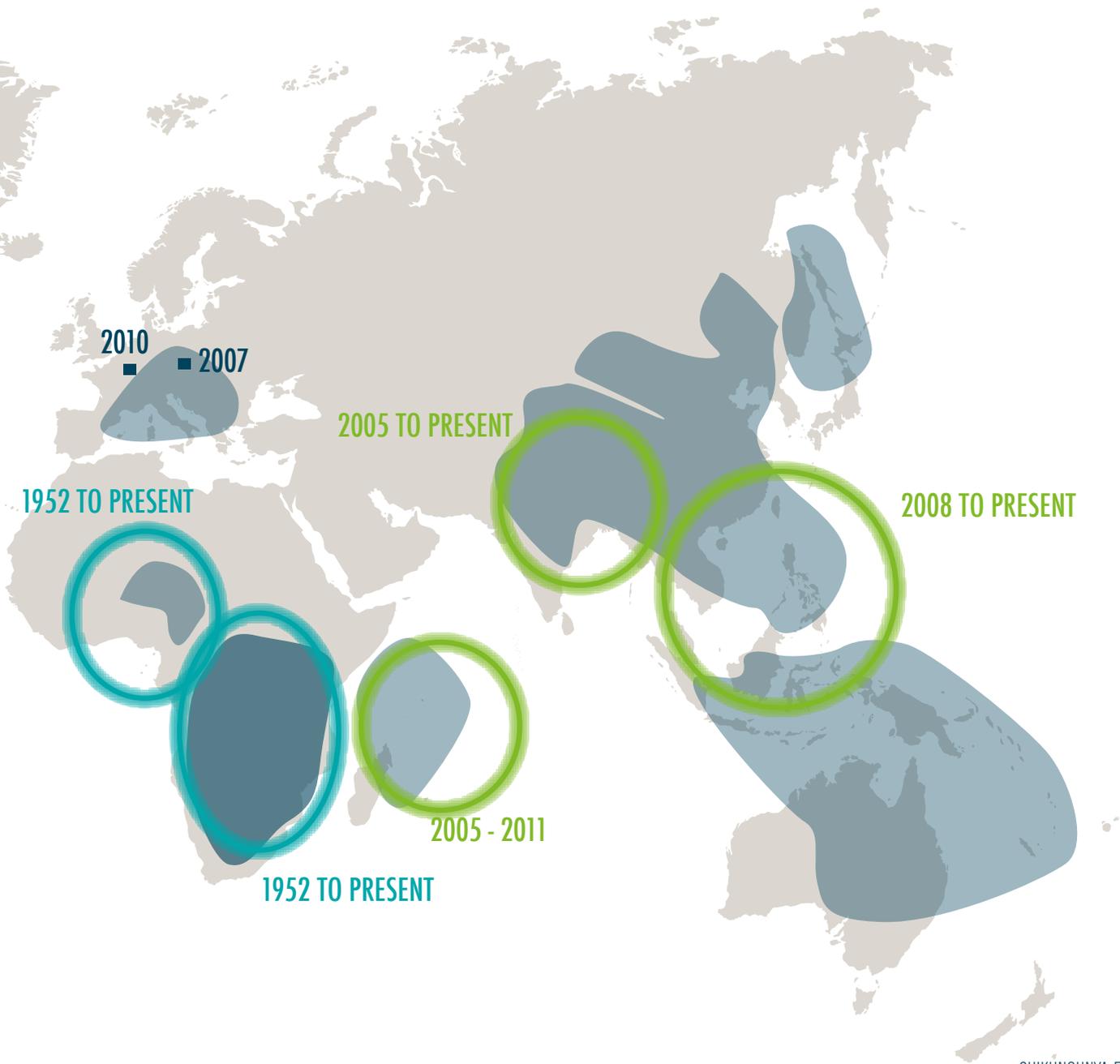


*Chikungunya fever (CHK) is a febrile illness associated with severe arthralgia and rash. CHK was first identified in Tanzania in the early 1952 and has caused periodic outbreaks in Asia and Africa since the 1960s. The virus is transmitted from human to human by vectors, infected *Aedes aegypti* and/ or *Aedes albopictus* female mosquitoes.*

*Aedes albopictus* originating from Southeast Asia can colonize new geographical locations due to its ability to adapt to different climates. During the last 30-40 years it has spread to North, Central and South America, parts of Africa,

northern Australia and several countries in Europe. Since 2005, several epidemic outbreaks have been reported in the mosquito *Aedes spp.* spread regions **FIG. 1**. Chikungunya has been identified in over 60 countries in Asia, Africa, Europe and the Americas.

All geographical areas and countries where *Aedes* mosquitoes are found are at risk to epidemic outbreak.





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## CLINICAL MANIFESTATIONS

Chikungunya is rarely fatal. Symptoms appear between 4 and 7 days after the patient has been bitten by the infected mosquito and these include: High fever (40°C/ 104°F), joint pain (lower back, ankle, knees, wrists or phalanges), joint swelling, rash, headache, muscle pain, nausea and fatigue. Symptoms are generally self-limiting and last for 2–3 days. Occasional cases of eye, neurological and heart complications have been reported, as well as gastrointestinal complaints. Patients with severe Chikungunya fever requiring hospitalization tend to be older and to have coexisting conditions such as cardiovascular, neurologic, and respiratory disorders or diabetes, which are independent risk factors for severe disease. Most patients recover fully, but in some cases joint pain may persist for several months, or even years. Serious complications are not common, but in older people, the disease can contribute to the cause of death. Recovery from an infection will confer life-long immunity.

The disease shares some clinical signs with dengue, and can be misdiagnosed in areas where dengue is common.

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## DIAGNOSIS

The virus may be isolated from the blood during the first few days of infection. Serological tests, such as enzyme-linked immunosorbent assays (ELISA), may confirm the presence of IgM and IgG anti-chikungunya antibodies. IgM antibody levels are highest 3 to 5 weeks after the onset of illness and persist for about 2 months.

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## TREATMENT

There is no specific antiviral drug treatment for chikungunya. Treatment is directed primarily at relieving the symptoms, including the joint pain using anti-pyretics, optimal analgesics and fluids. There is no commercial chikungunya vaccine.

## DISEASE OUTBREAK

Chikungunya occurs in Africa, Asia and the Indian subcontinent. Human infections in Africa have been at relatively low levels for a number of years, but in 1999–2000 there was a large outbreak in the Democratic Republic of the Congo, and in 2007 there was an outbreak in Gabon.

Starting in February 2005, a major outbreak of Chikungunya occurred in islands of the Indian Ocean. A large number of imported cases in Europe were associated with this outbreak, mostly in 2006 when the Indian Ocean epidemic was at its peak. A large outbreak of Chikungunya in India occurred in 2006 and 2007. Several other countries in South-East Asia were also affected. Since 2005, India, Indonesia, Maldives, Myanmar and Thailand have reported over 1.9 million cases.

In 2007 transmission was reported for the first time in Europe, in a localized outbreak in north-eastern Italy. There were 197 cases recorded during this outbreak and it confirmed that mosquito-borne outbreaks by *Aedes Albopictus* are plausible in Europe.

In December 2013, France reported 2 laboratory-confirmed locally transmitted cases in the French part of the Caribbean island of St Martin. This was the first documented outbreak of Chikungunya with local transmission in the Americas.

Since then, local transmission has been confirmed in over 43 countries and territories in the WHO Region of the Americas.

As of April 2015, over 1 379 788 suspected cases of Chikungunya have been recorded in the Caribbean islands, Latin American countries, and the United States of America. 191 deaths have also been attributed to this disease during the same period. Canada, Mexico and USA have also recorded imported cases.

On 21 October 2014, France confirmed 4 cases of locally-acquired Chikungunya infection in Montpellier, France. Since late 2014 outbreaks have been reported in the Pacific islands. Currently a Chikungunya outbreak is ongoing in Cook Islands and Marshall Islands.

## MORTALITY AND MORBIDITY, ESPECIALLY POST-CHIKUNGUNYA SYNDROME

Deaths from CHK are rare and usually occur in elderly people or people with comorbidities. The mortality rate is low (0.4 - 1%), but is higher in babies less than 1 year old (2.8%) and increases in the elderly with concurrent diseases. Following the acute phase of the illness, some patients develop prolonged symptoms, lasting several weeks to months, including fatigue, incapacitating joint pain, and tenosynovitis or oedematous polyarthritis of their digits.

Arthralgia can be persistent or relapsing, it may be associated with arthritis and may mimic rheumatoid arthritis (chronic inflammatory arthritis and rarely deforming polyarthritis) in up to 50% of patients (Post-Chikungunya syndrome).

Studies have also noted carpal or cubital tunnel syndrome and Raynaud phenomenon after the acute illness.

Chronic arthralgia can lead to persistent incapacitation requiring long-term treatment with nonsteroidal anti-inflammatory and immunosuppressive drugs such as methotrexate.

In long-term follow up studies, up to 64% of patients with chikungunya fever reported joint stiffness and/or pain >1 year after the initial infection, and 12% still reported symptoms 3–5 years later.

The disease importance and economic burdens of chikungunya fever result from the high attack rate and severity of acute infection but mainly from the chronic rheumatic symptoms that are frequently disabling.

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## RISK ASSESSMENT OR CONSEQUENCES FOR REINSURANCE INDUSTRY

Heraclitus of Ephesus was a Greek philosopher, known for his doctrine of change being central to the universe, and for establishing the term Logos (λόγος) in Western philosophy as meaning both the source and fundamental order of the Cosmos. It was he who has been quoted as saying that "the only thing constant is change", and as managers of risk in the Australian and New Zealand markets, it is our responsibility to be aware of changes, and react pro-actively to ensure the ongoing profitability of our books of business.

Over the last few years, we have seen new disorders arise ranging from Mad Cow Disease, Swine Flu and Bird Flu. Chikungunya Fever is of similar concern, given the potential particular ramifications to our already unprofitable Income Protection claims experience within the market, should it not be appropriately managed.

Recent coverage within the media would indicate that this potentially debilitating condition, endemic in south Asia, epidemic in the Americas is on Australia and New Zealand's doorstep, and we should expect to see this from our potential clients, and claimants. By recognizing and properly handling the risks of this unusual disease, yours and SCOR Global Life's risks will be appropriately managed.

### Risk management approach

#### People at high risk for Chikungunya:

The risk is higher especially in people traveling to tropical and subtropical areas (Asia and Africa) where *Aedes aegypti* and *Aedes albopictus* mosquitoes, the main vectors of Chikungunya, are seasonally abundant.

#### Impact of Chikungunya:

In view of evidence of Chikungunya cases (including imported cases) in various parts of the globe (not restricted to tropical and subtropical areas) and with contributing modes of transmission, we feel this illness could have global impact not limited to SCOR Global Life Asia-Pacific.

#### Mortality and Disability:

Death due to Chikungunya is uncommon; however deaths in relatively older population and in people with medical conditions (e.g. Hypertension, Diabetes mellitus, other complications etc.) are seen. In severe cases, the recovery (with persistent joint pains, relapse of rheumatologic symptoms) may take months to years.

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## IN THE PRACTICE

### Identify

Life assured or family member with acute onset of fever and polyarthralgia.  
Life assured or family members who are traveling to or recently returned from areas with known virus transmission, disease prevalence or epidemic.

### In persons at high risk

For living benefits, the applicants must be postponed for at least 3 months starting from the day they were last exposed to the risk.

### If confirmed or in probable cases

For living benefits, the applicants must be postponed at least 12 months after the date of discharge from hospital or the date of cure, with an attending physician statement on the impact of the infection, any disability, any complications and prognosis. Underwriters also need to pay attention to some rare complications.

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SCOR Global Life urges all of you to review this document with care, as whilst this rather unusually named condition may seem of little relevance, without the appropriate review and adherence of the Chikungunya guidelines outlined in SOLEM, there could be considerable impact on the claims we are given the responsibility to protect and manage.

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