Background
• Mosquito-borne viral disease characterized by acute onset of fever and severe polyarthralgia
• Often occurs as large outbreaks with high attack rates
• Outbreaks have occurred in countries in Africa, Asia, Europe, and the Indian and Pacific Oceans
• In late 2013, first local transmission in the Americas was reported on islands in the Caribbean

Chikungunya virus
• Single-stranded RNA virus
• Genus Alphavirus; Family Togaviridae

Mosquito vectors
• Aedes aegypti and Aedes albopictus are the primary vectors (above)
• Both are aggressive daytime biting mosquitoes

Animal hosts
• Humans are the primary host of chikungunya virus during epidemic periods

Clinical findings
• Majority of infected people become symptomatic
• Incubation period usually 3–7 days (range 1–12 days)
• Acute onset of fever and polyarthralgia are the primary clinical findings
• Joint symptoms usually symmetric and often occur in hands and feet; they can be severe and debilitating
• Other symptoms: Headache, myalgia, arthritis, conjunctivitis, nausea/vomiting, maculopapular rash
• Lymphopenia, thrombocytopenia, elevated creatinine, and elevated hepatic transaminases are the most common clinical laboratory findings

Countries with reported local transmission of chikungunya virus (as of July 2014)

Laboratory testing
• Evaluate serum or plasma by:
  o Viral culture to detect virus in first 3 days of illness
  o RT-PCR to detect viral RNA in first 8 days of illness
  o Serology to detect IgM, IgG, and neutralizing antibodies that develop toward the end of the first week of illness (≥4 days post illness onset)
• Chikungunya testing is performed at CDC, several state health departments, and one commercial laboratory
• Contact your state health department for more information and to facilitate testing

Clinical course and outcomes
• Acute symptoms typically resolve within 7–10 days
• Rare complications include uveitis, retinitis, myocarditis, hepatitis, nephritis, bullous skin lesions, hemorrhage, meningoencephalitis, myelitis, Guillain-Barré syndrome, and cranial nerve palsies
• Persons at risk for severe disease include neonates exposed intrapartum, older adults (e.g., > 65 years), and persons with underlying medical conditions (e.g., hypertension, diabetes, or cardiovascular disease)
• Some patients might have relapse of rheumatologic symptoms (e.g., polyarthralgia, polyarthritis, tenosynovitis) in the months following acute illness
• Studies report variable proportions of patients with persistent joint pains for months to years
Chikungunya and dengue

- Difficult to distinguish chikungunya and dengue based on clinical findings alone
- Chikungunya and dengue viruses are transmitted by the same mosquitoes
- The viruses can circulate in the same area and cause occasional co-infections in the same patient
- Chikungunya virus more likely to cause high fever, severe polyarthralgia, arthritis, rash, and lymphopenia
- Dengue virus more likely to cause neutropenia, thrombocytopenia, hemorrhage, shock, and deaths
- Patients with suspected chikungunya should be managed as dengue until dengue has been ruled out
  - Proper clinical management of dengue reduces the risk of medical complications and death
  - Aspirin and other NSAIDs can increase the risk of hemorrhage in patients with dengue

Differential diagnosis

- Depends on residence, travel history, and exposures
- Consider dengue, leptospirosis, malaria, rickettsia, group A streptococcus, rubella, measles, parvovirus, enteroviruses, adenovirus, other alphavirus infections (e.g., Mayaro, Ross River, Barmah Forest, O’nyong-nyong, and Sindbis viruses), post-infections arthritis, and rheumatologic conditions

Surveillance and reporting

- Chikungunya virus infection should be considered in patients with acute onset of fever and polyarthralgia, especially travelers who recently returned from areas with known virus transmission
- Healthcare providers are encouraged to report suspected chikungunya cases to their state or local health department to facilitate diagnosis and mitigate the risk of local transmission
- Health departments should perform surveillance for chikungunya cases in returning travelers and be aware of the risk of possible local transmission in areas where Aedes species mosquitoes are active
- State health departments are encouraged to report confirmed chikungunya virus infections to CDC

Treatment and clinical management

- No specific antiviral therapy; treatment is symptomatic
- Assess hydration and hemodynamic status and provide supportive care as needed
- Evaluate for other serious conditions (e.g., dengue, malaria, and bacterial infections) and treat or manage appropriately
- Collect specimens for diagnostic testing
- Use acetaminophen or paracetamol for initial fever and pain control
  - If inadequate, consider using narcotics or NSAIDs
  - If the patient may have dengue, do not use aspirin or other NSAIDs (e.g., ibuprofen, naproxen, toradol) until they have been afebrile ≥48 hours and have no warning signs for severe dengue*
- Persistent joint pain may benefit from use of NSAIDs, corticosteroids, or physiotherapy

*Warning signs for severe dengue include severe abdominal pain, persistent vomiting, mucosal bleeding, pleural effusion or ascites, lethargy, enlarged liver, and increased hematocrit with decrease in platelet count

Prevention and control

- No vaccine or medication is available to prevent chikungunya virus infection or disease
- Reduce mosquito exposure
  - Use air conditioning or window/door screens
  - Use mosquito repellents on exposed skin
  - Wear long-sleeved shirts and long pants
  - Wear permethrin-treated clothing
  - Empty standing water from outdoor containers
  - Support local vector control programs
- People suspected to have chikungunya or dengue should be protected from further mosquito exposure during the first week of illness to reduce the risk of further transmission
- People at increased risk for severe disease should consider not traveling to areas with ongoing chikungunya outbreaks

FOR MORE INFORMATION VISIT: www.cdc.gov/chikungunya/