

BACKGROUND

Jamestown Canyon Virus (JCV) is a mosquito-borne orthobunyavirus first identified in Jamestown Canyon, Colorado, in 1961. JCV is related to other California serogroup orthobunyaviruses, such as La Crosse, Keystone, and Snowshoe hare viruses. JCV is widely distributed throughout North America and can be transmitted by a variety of mosquito vectors, depending on geographic location and time of year. Between 2011-2022 there were 281 confirmed JCV infections in the USA that occurred across 23 states, including some western, midwestern, northeastern, and southern states. Most JCV infections occur from spring to early fall (April through September). There has been one JCV case reported in northeastern PA in 2013. With the ongoing mosquito surveillance program, the PA Department of Environmental Protection detected the first mosquito pools in PA in June 2023 suggesting that JCV is circulating in mosquitoes and human infection is possible.

WHO DOES THE ISSUE IMPACT?

Anyone who is bit by an infected mosquito can be infected with JCV. JCV has been reported in patients of all ages, although most cases have been among adults. It is considered a nationally notifiable disease.

COMPLICATIONS

JCV can cause severe disease, including infection of the brain (encephalitis) or the membranes around the brain and spinal cord (meningitis). About half of the known JCV disease cases have been hospitalized, but deaths have been rare.

SIGNS AND SYMPTOMS

- Many people infected with JCV do not have any symptoms.
- JCV may present as a non-specific febrile illness, initial symptoms could include fever, fatigue, or headache. For people with symptoms, the time from mosquito bite to feeling sick (incubation period) ranges from a few days to 2 weeks.
- Some people reported respiratory symptoms such as cough, sore throat, or runny nose.
- Symptoms of severe disease can include encephalitis or meningitis with possible stiff neck, confusion, loss of coordination, difficulty speaking, and seizures.

CAUSES AND TRANSMISSION

JCV is spread to people through the bite of an infected mosquito in an area where Jamestown Canyon virus is known to circulate. Mosquitoes become infected when they feed on deer or other animals that have the virus in their blood. Infected mosquitoes can then spread the virus to people and other animals by biting them. People do not develop high enough levels of the virus in their blood to infect mosquitoes and further spread the disease. Jamestown Canyon virus is not spread by coughing, sneezing, touching, or other contact with someone who is infected.

TESTS AND DIAGNOSIS

For people who develop symptoms, their healthcare provider can order tests to look for JCV-specific IgM antibodies depending on when symptoms started. Antibody testing can be followed by a confirmatory plaque reduction neutralization test (PRNT). It is not known how long IgM antibodies can be detected in serum following a JCV infection; therefore, a positive IgM antibody test may reflect past infection. Healthcare providers can find more information at [Information for Healthcare Providers | Jamestown Canyon virus | CDC](#)

TREATMENTS

No vaccine or specific antiviral treatments are available for JCV infection. Over-the-counter pain relievers can be used to reduce fever and may relieve some symptoms. In severe cases, patients often need to be hospitalized to receive supportive treatment, such as intravenous fluids, pain medication, and nursing care.

WHAT CAN YOU DO?

To prevent JCV:

- Use EPA approved insect repellent
- Wear long-sleeved shirts and long pants to cover your skin from mosquito bites
- Treat your clothing and gear with an insecticide
- Prevent mosquito bites when traveling: Sleep under a mosquito net if you are outside or when screened rooms are not available (DO NOT sleep directly against the net, as mosquitoes can still bite through holes in the net)
- Take steps to control mosquitoes indoors and outdoors by:
 - Maintaining good screens on windows and doors to keep infected mosquitoes out
 - Regularly emptying any outside containers, or drilling drainage holes in their bottoms
 - Turning over plastic wading pools and wheelbarrows when not in use
 - Cleaning clogged roof gutters that may allow the pooling of rainwater
 - Not allowing water to stagnate in bird baths or ornamental ponds
 - Cleaning and chlorinating swimming pools and removing standing water from pool covers
 - Using landscaping to eliminate standing water that routinely collects on your property
 - Removing discarded tires from your property as they provide habitat for larva when they fill with water
 - Using *Bacillus thuringiensis israelensis* (Bti) tablets for standing water that can't be eliminated, available at any lawn and garden store. The bacteria will infect and kill any mosquito larvae present, but the water will remain safe for people, pets, aquatic life, and plants

If you or a family member might have JCV:

- Talk with your health care provider immediately

RESOURCES FOR MORE INFORMATION

PA DOH Vectorborne Disease webpage: [Vectorborne Diseases](#)

CDC JCV website: [Jamestown Canyon Virus | Jamestown Canyon virus | CDC](#)

This fact sheet provides general information. Please contact your physician for specific clinical information.

If you have any questions, contact us at 1-877-PA-HEALTH.