# West Nile Virus (WNV)

West Nile Virus first appeared in the United States in 1999 in New York and since then has spread across the country. It is caused by a flavivirus that infects several species of birds and is transmitted to humans, horses, and a few other mammals by mosquitoes. Rarely transmission occurs by transfusion, transplant, transplacentally, or via breast milk. The blood supply is now screened for WNV. The incubation period after mosquito bite ranges from 3 to 14 days. WNV is not transmitted from person to person.

## Symptoms

Infection with WNV is usually asymptomatic. Approximately 20% of infections result in West Nile Fever, a mild to moderate nonspecific febrile illness. Less than 1% of infections lead to severe neurological illness.

■ **West Nile Fever** is a syndrome characterized by headache and fever (T ≥ 100.4F). Other symptoms include rash, swollen lymph nodes, eye pain, nausea or vomiting. Symptoms generally last 3 to 6 days but may continue for weeks. There is no specific treatment. Individuals recover fully.

■**West Nile Encephalitis/West Nile Meningitis** is a severe illness with headache, high fever, neck stiffness, stupor, disorientation, coma, tremors, convulsions, muscle weakness, and paralysis. Symptoms of severe disease (encephalitis or meningitis) may last several weeks, and neurological effects may be permanent. The most significant risk factor for developing severe neurological disease is age ≥ 50 years. I.

■**Acute Flaccid Paralysis;** atypical Guillain-Barré syndrome or transverse myelitis.

**West Nile Virus Can Cause Long-term Sequelae**

Survivors of WNV encephalitis/ meningitis may face a long road to recovery. In New York City, only 33% were ambulatory and only 50% were at their previous level of mental function at hospital discharge. One year later, 67% still experienced fatigue, 50% had persistent problems with memory, 49% had difficulty walking, 44% had muscle weakness and 38% had depression.

## Testing

Virus-specific IgM can be detected in nearly all cerebrospinal fluid (CSF) and serum specimens received from WNV-infected patients at the time of their clinical presentation. Serum IgM antibody may persist for more than a year, but IgM antibody in CSF strongly suggests acute infection. Consider testing individuals with:

- Encephalitis
- Aseptic meningitis (if < 18 yrs, also work up for enteroviruses)
- Acute Flaccid Paralysis, Atypical Guillain Barré Syndrome, or Transverse myelitis
- West Nile Fever lasting ≥ 7 days

## Prevention

Since almost all cases of West Nile Virus are the result of a bite from an infected mosquito, preventing mosquito bites is the best protection. Advise all your patients:

- **Drain** all standing water so mosquitoes won't have breeding sites
- **Dawn** and dusk are the main times for mosquito activity, so stay inside or use effective mosquito repellents
- **DEET** or Picaridin repellents should be used
- **Dress** appropriately – with long sleeves and pants
- **Doors** and windows should have screens to keep mosquitoes out

Wild birds are often the first victims when West Nile Virus reaches an area. To report a dead bird during West Nile Virus season, call

**1-877-WNV-BIRD**

**(1-877-968-2473)**

## Reporting WNV

**All cases of WNV infection must be reported by phone, fax or mail within 1 day**

**(650) 573-2346**
**(650) 573-2919 fax**
**Disease Control and Prevention**
**San Mateo County Health Dept.**
**225 37th Avenue**
**San Mateo, CA 94403**

To coordinate processing of specimens by the Public Health Lab, contact the Disease Control Unit. **A West Nile Virus Specimen Submittal Form is required for testing – see next page.** If a case is confirmed by laboratory testing, a West Nile Case History Form will be needed.

For questions about mosquito control, contact:

**San Mateo County Mosquito Abatement District (MAD)**

**(650) 344-8592 or visit www.smcmad.org**