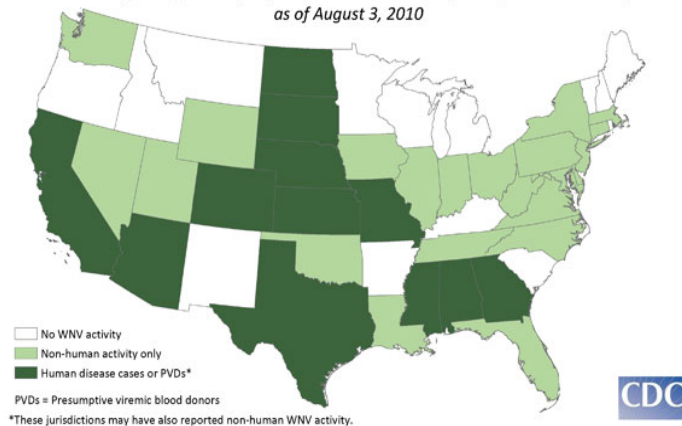


- West Nile Virus – Update for Clinicians

## West Nile Virus – Update for Clinicians

**The first West Nile Virus (WNV) positive mosquitoes of the 2010 season have been identified in Washoe County.** The positive mosquitoes were trapped in the Damonte Ranch area. The Washoe County Health District's (WCHD) Vector Borne Disease staff has begun spraying for adult mosquitoes in that area. Staff will continue nighttime spraying as well as capturing and testing adult mosquitoes until that area no longer tests positive for WNV. Other locations in Nevada have also seen the appearance of the virus. As of August 3, 2010, 45 human cases have been reported to CDC in 12 states (See map). Thus far, Nevada has not received a positive human case report in 2010.

West Nile virus (WNV) activity reported to ArboNET, by state, United States, 2010 as of August 3, 2010



### HIGHLIGHTS OF WNV FOR CLINICIANS

#### Clinical Description

- ◆ The incubation period for WNV infection ranges from 3 to 14 days after a bite from an infected mosquito. Incubation periods may be longer for immuno-suppressed individuals.
- ◆ Clinical syndromes can range from febrile headache, aseptic meningitis, encephalitis or acute flaccid paralysis. Rash, myalgia, lymphadenopathy and weakness may also be prominent.

- ◆ Approximately 80% of individuals who become infected do not develop any symptoms.

#### When should testing for WNV be done?

- ◆ Usually summer - early fall for patients presenting with:
  - Encephalitis;
  - Aseptic Meningitis;
  - Acute flaccid paralysis; atypical Guillain Barre Syndrome; transverse myelitis, or
  - Febrile illness (T ≥ 100.4 for > 7 days), other symptoms may include headache, rash, swollen lymph nodes, eye pain, nausea or vomiting.

#### Diagnostic Testing

- ◆ Diagnosis is made by serology or detection of IgM antibody in CSF for patients with severe disease.
- ◆ When using the serology method, paired acute and convalescent-phase serum samples should be acquired. The acute-phase specimen should be obtained during initial clinical presentation and the convalescent-phase specimen 7-14 days later. Both samples should be tested using the ELISA test. **Although a single acute serum may provide evidence of recent infection, a negative acute serum does not necessarily rule out infection, which is why the paired method is preferred.**
- ◆ The most conclusive diagnostic method to identify persons with WNV infection of the CNS is detecting WNV-specific IgM antibody in CSF using ELISA. Because IgM antibody does not readily cross the blood-brain barrier, a positive IgM antibody in CSF strongly suggests acute CNS infection.

- ◆ Patients who have been recently vaccinated against or recently infected with related flaviviruses (e.g., yellow fever, Japanese encephalitis, dengue, etc.) may have positive WNV ELISA results.
- ◆ WNV tests are available through Labcorp, Quest, and ARUP. The Nevada State Public Health Laboratory (NSPHL) performs WNV antibody testing on serum only. CSF specimens for WNV can be sent by the NSPHL to the California State Health Laboratory for testing.

### Required Specimens

- ◆ **Acute and Convalescent Serum:** ≥ 2cc (red-top tube) – Send refrigerated
- ◆ **Cerebrospinal fluid (CSF):** 1-2 cc if lumbar puncture is performed.

### Treatment

- ◆ No specific treatment is available.
- ◆ In severe cases, treatment consists of supportive care that often involves hospitalization, intravenous fluids, respiratory support and prevention of secondary infections.

### HOW TO REPORT WNV CASES

- ◆ Report WNV human cases to the WCHD by calling (775) 328-2447 or faxing a case report form to (775) 328-3764. Case report form can be found at <http://www.co.washoe.nv.us/repository/files/4/Blank%20Reporting%20Form.pdf>

### EDUCATION

Please help educate your patients, friends, and family members about WNV prevention:

- ◆ Use insect repellants that contain an EPA-registered ingredient such as DEET, Picaridin, Oil of Lemon Eucalyptus or PMD, or IR3535. Be sure to follow label precautions.
- ◆ Clear the yard of any free-standing water that may become a mosquito breeding-ground such as wading pools, flower pots, buckets and barrels.

- ◆ Mosquitoes are most active at dusk and dawn. Be sure to use insect repellent and wear long sleeves and pants at these times or consider staying indoors.
- ◆ Install or repair window and door screens to help keep mosquitoes out.

### RECOMMENDED RESOURCES

- ◆ WCHD Vector-Borne Disease Control Program: <http://www.washoecounty.us/health/ehs/vbdp.html>
- ◆ Centers for Disease Control and Prevention: <http://www.cdc.gov/ncidod/dybid/westnile>
- ◆ California Department of Public Health <http://www.cdph.ca.gov/HealthInfo/discond/Pages/WestNileVirus.aspx>

### NATIONAL AND LOCAL STATISTICS

#### Reported WNV Cases, USA, 1999-2009\*

Year	Neuro-invasive disease	West Nile Fever	Total Human Cases	Deaths	Case fatality Ratio (%)
1999	59	3	62	7	11.3
2000	19	2	21	2	9.5
2001	64	2	66	9	13.6
2002	2,946	1,160	4,156	284	6.8
2003	2,866	6,830	9,862	264	2.7
2004	1,142	1,269	2,539	100	3.9
2005	1,294	1,607	3,000	119	4.0
2006	1,459	2,616	4,269	177	4.1
2007	1,213	2,347	3,623	124	3.4
2008	687	624	1,356	44	3.2
2009	373	322	720	32	4.4

\* Data source: [www.cdc.gov](http://www.cdc.gov)

#### Reported WNV Cases, Nevada State and Washoe County, 1999-2009\*

Year	Nevada # cases	Washoe County		
		# WNV Neuroinvasive Disease	# WNV Fever	Total
1999-2002	0	0	0	0
2003	2	1	0	1
2004	44	1	2	3
2005	31	0	2	2
2006	124	7	10	17**
2007	12	0	1	1
2008	16	0	0	0
2009	12	0	0	0

\*WNV cases were likely under-reported. Data source: Washoe County CD Program and [www.health.nv.gov](http://www.health.nv.gov) for Nevada Stats

\*\* 16 of the cases for Washoe County in 2006 were considered probable.