

WEST NILE VIRUS

In San Diego County



West Nile virus, a mosquito-borne *fla* virus, was initially isolated in Uganda in 1937. The first human cases of West Nile virus infection transmitted in the western hemisphere were recognized in New York City in late August 1999 in a cluster of encephalitis cases. A total of 59 hospitalized cases and seven deaths were recorded. Since that time the virus has been found in mosquitoes (the vector), birds, horses, humans, and other mammals.

Table I. Human WNV Disease, Reported Cases, 1999–2008

YEAR	SAN DIEGO	CALIFORNIA	UNITED STATES
1999	0	0	62
2000	0	0	21
2001	0	0	66
2002	0	1	4,156
2003	1	3	9,862
2004	2	779	2,539
2005	1	880	3,000
2006	2	278	4,269
2007	16	381	3,598
2008	36	441	1,338

Table II. WNV Activity, San Diego County, 2003–2008

SOURCE OF POSITIVE RESULT	NUMBER POSITIVE FOR WNV BY YEAR					
	2003	2004	2005	2006	2007	2008
DEAD BIRDS	5	34	162	19	118	563
SENTINEL CHICKENS	0	0	0	0	1	17
MOSQUITO POOLS	0	0	0	0	6	40
HORSES	1	2	0	3	4	5
HUMANS	1*	2**	1*	2***	16***	36****

*Case was not locally acquired
 **Includes one case that was not locally acquired and one case that could not be determined
 ***Includes one case that was not locally acquired
 ****Includes two cases that were not locally acquired

The spread of West Nile virus (WNV) by migratory birds rapidly progressed westward. The first case in a San Diego County resident was in 2003. The case was not exposed in San Diego County. Nationally, there were 9,862 cases diagnosed in 2003 (Table I). The first human case of West Nile infection with exposure in San Diego County was in 2006.

The clinical spectrum of West Nile virus infection ranges from asymptomatic (in the majority of infections) to encephalitis. West Nile fever characterized by fever, headache, body aches, nausea, vomiting, and rash may occur in 20 percent of those infected. Fewer than 1 percent develop neurological illness aseptic meningitis, flaccid paralysis, Guillain-Barré Syndrome, or encephalitis. The frequency of severe symptoms increases with age.

In San Diego County, the County Department of Environmental Health Vector Control conducts surveillance for WNV in dead birds, sentinel chicken flocks, mosquito pools, and horses. In 2007, Environmental Health identified mosquitoes at the home location of all locally acquired cases. In 2008 “green” pools (untreated swimming pools) were frequent sites of mosquito breeding (Table II).

Serologic testing for WNV is available through the San Diego County Public Health Laboratory for patients who meet clinical criteria, including: viral encephalitis, aseptic meningitis, acute flaccid paralysis, and compatible febrile illness lasting seven or more days.

WNV infection was made reportable in California on August 19, 2004. All cases are interviewed to determine potential sites of exposure. Laboratory-confirmed cases are reported to Vector Control so that enhanced mosquito surveillance and control measures can be implemented.

A total of 36 cases of WNV were reported in San Diego County residents in 2008. Dates of onset ranged from July 3 to November 20. Of all the cases, 27 (75 percent) were neuro-invasive: 10 cases of encephalitis, 16 cases of meningitis, and one case of myelitis. There were five cases of West Nile fever, and four cases had symptoms including rash. Twenty-eight (28) patients were hospitalized, and 14

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reported underlying/chronic medical conditions, including hypertension and diabetes.

The 36 2008 cases ranged in age from 3 to 80 years (median 52.5): 23 males, 13 females; 29 whites and 7 Hispanics. Thirty-four (34) of the 36 cases were exposed locally. Only 14 recalled mosquito bites within two weeks of symptom onset.

There is no specific treatment for West Nile virus infection. Preventing infection involves personal protection and reducing mosquitoes in the environment. Advise patients to avoid being outdoors at dawn and dusk or wear long sleeves and long pants. Use an insect repellent that contains an EPA-registered active ingredient. Recommend elimination of all standing water in birdbaths and kiddie pools and have intact screens on all doors and windows.

If you wish to make information about West Nile available in your office you may request material at no charge:

Telephone: (858) 694-2888

Email: vector@sdcounty.ca.gov

Web: SDFightTheBite.com +

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