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MOSQUITO BORNE ENCEPHALITIS WEST NILE VIRUS, ST. LOUIS ENCEPHALITIS AND WESTERN EQUINE ENCEPHALOMYELITIS

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The annual mosquito-borne encephalitis surveillance program traditionally begins in May. This is a reminder of the need for prompt and early recognition and reporting of human cases of St. Louis Encephalitis (SLE), Western Equine Encephalitis (WEE) and West Nile Virus (WNV). Although no West Nile Virus cases were reported in Riverside County in 2010, the virus is still present in our community and could re-emerge as a health threat. No human cases of WNV have been reported in Riverside County thus far, in 2011.

Surveillance activities include monitoring for equine cases of WEE and WNV and testing of sentinel chicken flocks, dead birds and mosquito pools. These surveillance activities will provide early warning of virus activity and an opportunity for local mosquito abatement agencies to implement and focus their control programs in the most critical regions of the County. Despite these sentinel surveillance systems, human cases are sometimes the first warning that virus activity has reached a critical threshold and poses an epidemic threat.

No human WNV cases have been reported in California thus far, in 2011. Historical WNV data is listed in table 1.

Table 1: 2004-2010 California - WNV Activity Summary

Element	2003	2004	2005	2006	2007	2008	2009	2010	Total
Human cases (fatal)	3 ¹ (0)	779 (29)	880 (19)	278 (7)	380 (21)	445 (15)	112 (4)	111 (6)	2,988 (101)
Horses	1 ²	540	456	58	28	32	18	19	1,152
Dead birds	96	3,232	3,046	1,446	1,396	2,569	515	416	12,716
Mosquito samples	32	1,136	1,242	832	1,007	2,003	1063	1,305	8,620
Sentinel chickens	70	809	1,053	640	510	585	443	281	4,391
Squirrels	-	49	48	32	26	32	10	24	221

¹ There were 20 imported human cases. ² There were 3 imported horse cases.

Laboratory Testing

Testing for WNV antibodies in humans is available through the Riverside County Public Health Laboratory (PHL). The PHL screens serum with an enzyme immunoassay (EIA) test, and supports positive findings with both WNV IgG and IgM IFAs (indirect fluorescent antibody). A convalescent blood specimen may be requested in certain cases.

All results will need to be correlated with the patient's clinical status. WNV testing is strongly encouraged for patients presenting with neuroinvasive disease (e.g. non-bacterial meningitis; encephalopathy; acute flaccid paralysis). It is important to note that cross reactivity may occur in West Nile IgM screening tests, in specimens containing antibodies to enteroviruses. Specimens for Anti-SLE, and Anti-WEE will be forwarded to the State Lab for testing.

Testing helps to differentiate WNV from other conditions such as enterovirus and other arboviral diseases. This allows anticipatory guidance to be provided to patients diagnosed with WNV neuroinvasive disease and WN fever. Patients may have lingering symptoms and knowing the underlying etiology is helpful for the patient and family members.

Specific questions related to submission of specimens can be directed to the Department of Public Health Laboratory Manager, Janna Troy at (951) 358-5070.

Patient Education

It is important to educate patients and the general public about measures to protect themselves against mosquito borne diseases.

Preventive measures include:

- Using insect repellent containing DEET or other EPA-registered ingredient on exposed skin. Always follow the directions on the package. Caution should be used with young children.
- Wearing long sleeves and pants when outdoors.

- Avoiding outdoor activity when mosquitoes are active (*Culex* species mosquitoes are most active between dusk and dawn.)
- Having secure screens on windows and doors to keep mosquitoes out.
- Eliminating mosquito breeding sites by emptying sources of standing water.
- Changing the water in pet dishes and replace the water in bird baths weekly.
- Keeping children's wading pools empty and on their sides when they aren't being used.
- Contacting Vector Control for problems with mosquitoes.

Disease Reporting

Please continue to report encephalitis, meningitis and suspect WNV cases to Disease Control at (951) 358-5107 or fax to (951) 358-5102. Reporting by clinicians, hospitals and laboratories has greatly enhanced surveillance efforts by Public Health as we monitor the course of West Nile Virus infection in Riverside County.



For additional information go to:

<http://www.westnile.ca.gov>

<http://www.rivcoeh.org/opencms/index.html>