

California Arbovirus Surveillance Bulletin # 1

Week 4 Friday, January 28, 2011

Weekly Summary

WEEKLY COMMENTS



No arbovirus activity has been detected in 2011.

2010 Update

Humans

(Data reported as of 01/28/11): In 2010, 109 human cases of West Nile virus (WNV) illness were identified in 17 local health jurisdictions: Alameda (1), Butte (1), Contra Costa (4), Fresno (23), Glenn (2), Kern (15), Kings (1), Los Angeles (4), Madera (7), Merced (1), Orange (1), Placer (3), Sacramento (12), San Bernardino (4), San Joaquin (6), Stanislaus (12), and Tulare (12). Of the 109 individuals, 71 (65%) developed neuroinvasive disease. The median age of the 109 individuals was 56 years (range: 10-89 years); 61 (56%) were male. Five fatalities were reported in Fresno (1), Madera (2), Merced (1), and Stanislaus (1) counties. A total of 21 WNV-positive blood donation samples were reported; four of the individuals subsequently developed symptoms and were reclassified as cases.

Horses

In 2010, 19 horse cases of WNV were reported from 11 counties. Five of the horses (26%) were euthanized as a result of their infection. All cases were reported as unvaccinated or incompletely vaccinated per manufacturer protocol.

Dead Birds & Squirrels

In 2010, 416 recent* WNV infections in dead birds were reported from 27 counties. An additional 182 chronic WNV infections were reported in birds from 29 counties (see www.westnile.ca.gov for more details). Twenty-four WNV positive squirrels (including one ground squirrel) were also reported from 8 counties.

**In 2010, The University of California, Center for Vectorborne Diseases (CVEC) and the California Department of Public Health, Vector-Borne Disease Section began differentiating between chronic and acute infections in West Nile virus positive dead birds. Birds considered to have chronic infection with WNV are unlikely to have been infected recently with WNV and have limited surveillance utility.*

Mosquito Pools

In 2010, 1,305 mosquito pools from 24 counties tested positive for WNV. St. Louis encephalitis virus (SLEV) and western equine encephalomyelitis virus (WEEV) were not detected in mosquito pools in 2010.

Sentinel Chickens

In 2010, 281 WNV positive chickens were detected among 64 flocks within 21 counties. No SLEV or WEEV seroconversions were detected in 2010.

2009 & 2010 YTD West Nile Virus Comparisons		
	2009	2010
Total # Dead Bird Reports	15,472	10,463
# Positive Counties	42	35
# Human Cases	112	109
# Horse Cases	18	19
# Positive Dead Birds / # Tested	515 / 2,805	416 / 1,953
# Positive Mosquito Pools / # Tested	1,063 / 27,593	1,305 / 31,431
# Seroconversions / # Tested	443 / 25,313	281 / 26,525
# Positive Squirrels / # Tested	10 / 103	24 / 108

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YTD WNV Activity by Element and County, 2010

County	Humans	Horses	Dead Birds^	Mosquito Pools	Sentinel Chickens	Squirrels
Alameda	1		1			
Amador		1				
Butte	1	1	6	7	7	1
Colusa			1		4	
Contra Costa	4		8	4	4	
El Dorado			2			
Fresno	23	4	22	130	7	2
Glenn	2		3			
Imperial				10	15	
Kern	15	1	13	277	86	
Kings	1			65		
Lake				3		
Lassen		1				
Los Angeles	4		41	57	2	1
Madera	7	5	13	9	9	
Merced	1		14	9	8	
Mono			1			
Orange	1		17	19		2
Placer	3		9	36	4	
Riverside			1	71	44	
Sacramento	12	2	115	205	6	4
San Bernardino	4		10	41	11	2
San Diego			2	1		
San Joaquin	6	1	26	57	1	
San Mateo						6
Santa Clara			32	10		6
Santa Cruz			4			
Shasta			4			
Solano		1	1	1	2	
Stanislaus	12	1	34	86	21	
Sutter			1	26	13	
Tehama					1	
Tulare	12	1	21	168	26	
Yolo			14	11	5	
Yuba				2	5	
Totals	109	19	416	1,305	281	24

^ Chronic infections are not included in county totals.

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2011 TEST SUMMARIES

Human & Horse Cases

		Number Tested	WNV		WEEV		SLEV	
			Local	Imported	Local	Imported	Local	Imported
Humans Tested*	Week	6	0	0	0	0	0	0
	YTD	6	0	0	0	0	0	0
Horses Tested	Week	0	0	0	0	0	0	0
	YTD	0	0	0	0	0	0	0

Dead Birds & Tree Squirrels

		Number Tested	WNV Positive (recent only)
Dead Birds	Week	9	0
	YTD	9	0
Tree Squirrels	Week	0	0
	YTD	0	0

Sentinel Chickens & Mosquito Pools

		Number Tested	WNV Positive	SLEV Positive	WEEV Positive
Chicken Sera	Week	97	0	0	0
	YTD	97	0	0	0
Mosquito Pools: RT-PCR	Week	148	0	0	0
	YTD	148	0	0	0
Mosquito Pools: RAMP	Week	0	0	N/A	N/A
	YTD	0	0	N/A	N/A

NATIONAL COMMENTS

As of December 28, 2010, 981 human cases of WNV had been reported nationwide in 40 jurisdictions: Alabama (3), Arizona (163), Arkansas (7), California (104), Colorado (81), Connecticut (7), District of Columbia (2), Florida (12), Georgia (13), Idaho (1), Illinois (56), Indiana (12), Iowa (6), Kansas (17), Kentucky (3), Louisiana (20), Maryland (23), Massachusetts (7), Michigan (29), Minnesota (8), Mississippi (9), Missouri (3), Nebraska (37), Nevada (2), New Hampshire (1), New Jersey (30), New Mexico (23), New York (127), North Dakota (9), Ohio (5), Pennsylvania (30), South Carolina (1), South Dakota (20), Tennessee (4), Texas (89), Utah (2), Virginia (5), Washington (2), Wisconsin (2), and Wyoming (6). Of the 981 cases, 601 (61%) had neuroinvasive disease. A total of 48 WNV-related fatalities were reported in Arizona (13), California (5), Colorado (4), Florida (2), Illinois (3), Indiana (1), Kentucky (1), Maryland (2), Michigan (3), Nebraska (2), New Jersey (2), New York (3), Texas (6), and Virginia (1).

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TEST PROTOCOLS

Humans:

Specimens are tested by local laboratories with an IgM or IgG immunofluorescent assay (IFA) and/or an IgM enzyme immunoassay (EIA). Specimens with inconclusive results are forwarded to the California Department of Public Health Viral and Rickettsial Disease Laboratory (VRDL) for further testing or confirmation by plaque reduction neutralization test (PRNT).

*Human denominator data only includes specimens tested at VRDL and does not include additional negative specimens that are tested by local agencies only.

Horses:

Serum or brain tissue specimens from horses displaying neurological symptoms are submitted to the California Animal Health and Safety Laboratory (CAHFS) and tested by EIA and PRNT.

Dead Birds and Tree Squirrels:

Dead birds and tree squirrels are necropsied at CAHFS laboratory at University of California, Davis. Oral swabs from American Crows and kidney tissue from all other dead birds and squirrels are forwarded to the UC Davis Center for Vectorborne Diseases (CVEC) for West Nile virus testing using the singleplex RT-PCR Taqman assay and confirmed with a second primer set.

Sentinel Chickens:

Dried blood spot specimens from sentinel chickens are submitted to the California Department of Public Health Vector-Borne Disease Laboratory and tested for the presence of antibodies to West Nile, western equine encephalomyelitis (WEEV), and St. Louis encephalitis (SLEV) viruses by EIA and IFA. Positive samples are confirmed by western-blot or PRNT.

Mosquito Pools:

Mosquito pools are submitted to CVEC and screened for WEEV, SLEV, and WNV viral RNA using a Taqman multiplex RT-PCR. CVEC will cease confirmation testing on PCR-positive pools of *Cx. tarsalis* and *Cx. quinquefasciatus* but will continue to confirm multiplex PCR-positive results for other mosquito species using singleplex RT-PCR.

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Website Information: For updated information on WNV in California, please visit the California WNV website, www.westnile.ca.gov, or the California Vectorborne Disease Surveillance System website, www.calsurv.org. For national information on WNV and other arboviruses, please visit the CDC website, www.cdc.gov, and the USGS website, www.westnilemaps.usgs.gov
