

California Arbovirus Surveillance Bulletin #42

Week 50 Friday, December 16, 2011



WEEKLY UPDATE

This is the last bulletin for 2011. As of December 16, 36 counties have reported West Nile virus (WNV) activity. No other arbovirus activity has been reported in California in 2011.

Human Cases

As of December 16, 2011, 155 human cases of WNV illness have been identified in the following 23 counties: Amador (1), Butte (3), Contra Costa (3), El Dorado (1), Fresno (9), Glenn (1), Kern (18), Los Angeles (58), Madera (2), Merced (1), Orange (10), Placer (1), Riverside (7), Sacramento (4), San Bernardino (4), San Joaquin (5), Santa Barbara (1), Santa Clara (1), Santa Cruz (1), Stanislaus (11), Tehama (1), Tulare (11), and Yuba (1). Of the 155 individuals, 111 (72%) developed neuroinvasive disease. The median age of the 155 individuals is 57 years (range: 14-87 years); 96 (62%) are male. Nine fatalities have been reported in Kern (3), Los Angeles (4), Santa Cruz (1), and Tehama (1) counties. Dates of symptom onset for all cases ranged from June 27-October 31, 2011. A total of 25 WNV-positive blood donors have been reported this year; 8 (32%) of the individuals developed symptoms and were reclassified as cases. At this time last year, 104 WNV cases had been reported from 17 counties.

National Activity: As of December 13, 2011, 667 human cases of WNV had been reported nationwide in 42 states and the District of Columbia: Alabama (5), Arizona (58), Arkansas (1), California (154), Colorado (7), Connecticut (9), Delaware (1), District of Columbia (4), Florida (23), Georgia (12), Idaho (2), Illinois (34), Indiana (9), Iowa (9), Kansas (4), Kentucky (5), Louisiana (10), Maryland (20), Massachusetts (5), Michigan (33), Minnesota (2), Mississippi (52), Missouri (10), Montana (1), Nebraska (28), Nevada (16), New Jersey (7), New Mexico (4), New York (43), North Carolina (2), North Dakota (4), Ohio (21), Pennsylvania (6), Rhode Island (1), South Dakota (2), Tennessee (18), Texas (26), Utah (3), Vermont (1), Virginia (8), West Virginia (1), Wisconsin (3), and Wyoming (3). Of the 667 cases, 458 (69%) developed neuroinvasive disease. As of December 13, 2011, a total of 42 WNV-related fatalities had been reported in Alabama (1), Arizona (4), California (8), Florida (2), Georgia (3), Illinois (3), Indiana (1), Kansas (1), Kentucky (1), Michigan (2), Minnesota (1), Mississippi (5), Nevada (2), New York (2), Ohio (1), Tennessee (2), Texas (2), and Virginia (1).

Horses

In 2011, 15 horses from 7 counties have tested positive for WNV, and 4 fatalities have been reported. At this time last year, 19 cases of WNV had been reported among horses from 11 counties.

Dead Birds & Squirrels

Two new WNV positive dead birds have been reported from Los Angeles (1) and Santa Clara (1) counties. To date this year, 684 dead birds from 26 counties and 24 tree squirrels from 6 counties have tested positive for WNV. An additional 128 birds have tested positive for chronic* WNV infection from 28 counties.

At this time last year, 412 birds from 27 counties, and 24 tree squirrels from 8 counties had tested positive for WNV.

NOTE: The statewide dead bird testing program has been suspended until March, 2012. If your agency would like to continue local testing during the winter months, please contact Leslie Foss at 510-412-6255 so the appropriate zip codes can remain open. Otherwise, all zip codes will be closed until the 2012 season. The WNV hotline will continue to operate Monday-Friday (8am-5pm) to receive dead bird and squirrel reports and answer questions from the public.

**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 WNV 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

No new positive mosquito pools have been reported. In 2011, 2,087 mosquito pools from 26 counties have tested positive for WNV.

At this time last year, 1,305 mosquito pools from 24 counties had tested positive for WNV.

Sentinel Chickens

Three new WNV seroconversions have been reported from Los Angeles county. In 2011, 391 WNV positive chickens have been detected among 69 flocks in 15 counties.

At this time last year, 280 chickens (62 flocks) had tested positive for WNV from 21 counties.

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

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2010 & 2011 YTD West Nile Virus Comparisons		
	2010	2011
Total # Dead Bird Reports	10,406	9,838
# Positive Counties	35	36
# Human Cases	104	155
# Horse Cases	19	15
# Positive Dead Birds / # Tested	412 / 2,113	684 / 2,471
# Positive Mosquito Pools / # Tested	1,305 / 30,629	2,087 / 32,671
# Seroconversions / # Tested	280 / 26,219	391 / 22,629
# Positive Squirrels / # Tested	24 / 108	24 / 108

YTD WNV Activity by Element and County, 2011

County	Humans	Horses	Dead Birds	Mosquito Pools	Sentinel Chickens	Squirrels
Alameda						1
Amador	1					
Butte	3			1	20	
Contra Costa	3		38	7		
El Dorado	1		2			
Fresno	9	5	15	123		
Glenn	1		2		5	
Imperial				3	3	
Inyo				2		
Kern	18	1	4	389	140	
Kings			9	63		
Lake			1	3		
Los Angeles	58	1	226	467	86	15
Madera	2		3	5		
Merced	1	3	9	11	15	
Nevada			1			
Orange	10		48	91		1
Placer	1	2	10	48	6	
Riverside	7		7	56	40	
Sacramento	4		134	381	7	3
San Bernardino	4		33	150	42	
San Diego				1		
San Joaquin	5		27	51		
Santa Barbara	1					
Santa Clara	1		34	16		1
Santa Cruz	1					
Shasta				1		
Solano			1		1	
Sonoma				2		
Stanislaus	11		24	100	7	
Sutter			2	26	8	
Tehama	1		1			
Tulare	11	1	42	82	7	
Ventura			1			
Yolo		2	9	7		3
Yuba	1		1	1	4	
Totals	155	15	684	2,087	391	24

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TESTING SUMMARIES

Humans and Horses

		WNV		WEEV		SLEV	
		Local	Imported	Local	Imported	Local	Imported
Human Cases	Week	1	0	0	0	0	0
	YTD	155	0	0	0	0	0
Horse Cases	Week	0	0	0	0	0	0
	YTD	15	0	0	0	0	0

Dead Birds & Squirrels

		Number Tested	WNV Positive (recent only)
Dead Birds	Week	23	2
	YTD	2,471	684
Tree Squirrels	Week	0	0
	YTD	108	24

Chickens & Mosquitoes

		Number Tested	WNV Positive	SLEV Positive	WEEV Positive
Chicken Sera	Week	38	3	0	0
	YTD	22,629	391	0	0
Mosquito Pools: RT-PCR	Week	31	0	0	0
	YTD	32,355	2,068	0	0
Mosquito Pools: RAMP	Week	0	0	N/A	N/A
	YTD	316	19	N/A	N/A

NEW POSITIVES

Humans

WNV Cases							
ID	Report Date	County	Age	Sex	Clin Pres	Onset Date	WNV Fatality?
11-0155	12/14/11	Santa Cruz	60	M	WNND	10/04/11	YES

Dead Birds

County	Agency	City	Zip	Species	Reported	Virus	Type of Infection	Method
Los Angeles	Los Angeles Co. Vet	Los Angeles	90029	American Crow	11/28/2011	WNV	Recent	VecTest
Santa Clara	Santa Clara VCD	San Jose	95130	American Crow	11/28/2011	WNV	Recent	VecTest

Sentinel Chickens

County	Site Code	City	Date Bled	Virus	Band 01	Band 02
Los Angeles	GRLA2223	Rowland Heights	11/14/2011	WNV	3639	
Los Angeles	GRLA2651	Encino	11/14/2011	WNV	3621	3629

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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.

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.
