

California Arbovirus Surveillance Bulletin #39

Week 45 Monday, November 14, 2011



WEEKLY UPDATE

Human Cases

A total of 4 new human cases of West Nile virus (WNV) were reported last week from Fresno (1), Madera (1), San Bernardino (1), and Tulare (1) counties. To date this year, 144 WNV cases have been reported from 21 counties; of the 144 cases, 103 (72%) developed neuroinvasive disease. The median age for all cases is 57 years (range: 14-87 years) and 88 (61%) are male. Five fatalities have been reported from Los Angeles (3) and Kern (2) counties. Additionally, 24 WNV-positive blood donors have been reported this year; 8 of the individuals subsequently developed symptoms and were reclassified as cases.

At this time last year, 98 WNV cases had been reported from 17 counties.

National Activity: As of November 8, 2011, 606 human cases of WNV had been reported nationwide in 42 states and the District of Columbia: Alabama (3), Arizona (44), Arkansas (1), California (140), Colorado (7), Connecticut (9), Delaware (1), District of Columbia (1), Florida (21), Georgia (12), Idaho (2), Illinois (31), Indiana (9), Iowa (9), Kansas (4), Kentucky (3), Louisiana (10), Maryland (20), Massachusetts (5), Michigan (33), Minnesota (2), Mississippi (48), Missouri (7), Montana (1), Nebraska (27), Nevada (16), New Jersey (6), New Mexico (4), New York (43), North Carolina (2), North Dakota (4), Ohio (21), Pennsylvania (5), Rhode Island (1), South Dakota (2), Tennessee (17), Texas (17), Utah (3), Vermont (1), Virginia (8), West Virginia (1), Wisconsin (2), and Wyoming (3). Of the 606 cases, 416 (69%) developed neuroinvasive disease. Thirty-five WNV-related fatalities had been reported in Alabama (1), Arizona (4), California (5), Florida (2), Georgia (3), Illinois (3), Indiana (1), Kansas (1), Michigan (2), Minnesota (1), Mississippi (4), Nevada (1), New York (2), Ohio (1), Pennsylvania (1), Tennessee (1), Texas (1), and Virginia (1).

Horses

One equine case of WNV was reported last week from Yolo County; the horse was euthanized as a result of his illness. 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

No WNV positive birds or squirrels were reported last week. To date this year, 678 dead birds from 26 counties and 24 tree squirrels from 6 counties have tested positive for WNV. An additional 122 birds have tested positive for chronic* WNV infection from 28 counties. At this time last year, 408 birds from 27 counties, and 23 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

A total of 6 WNV positive mosquito pools were reported last week from 3 counties: Kern (1), Los Angeles (1), and Orange (4). In 2011, 2,083 mosquito pools from 26 counties have tested positive for WNV.

At this time last year, 1,302 mosquito pools from 24 counties had tested positive for WNV.

Sentinel Chickens

A total of 12 WNV seroconversions were reported last week from 5 flocks in 2 counties: Los Angeles (10) and Riverside (2). To date this year, 381 WNV positive chickens have been detected among 69 flocks in 15 counties.

At this time last year, 279 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	10,153	9,624
# Positive Counties	35	35
# Human Cases	98	144
# Horse Cases	19	15
# Positive Dead Birds / # Tested	408 / 2,076	678 / 2,363
# Positive Mosquito Pools / # Tested	1,302 / 30,190	2,083 / 32,324
# Seroconversions / # Tested	279 / 25,655	381 / 22,059
# Positive Squirrels / # Tested	23 / 106	24 / 106

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	17	1	3	389	140	
Kings			9	63		
Lake			1	3		
Los Angeles	53	1	225	465	82	15
Madera	2		3	5		
Merced	1	3	9	11	12	
Nevada			1			
Orange	10		47	91		1
Placer	1	2	10	48	6	
Riverside	6		7	56	38	
Sacramento	4		134	381	7	3
San Bernardino	4		32	148	41	
San Diego				1		
San Joaquin	5		27	51		
Santa Barbara	1					
Santa Clara	1		32	16		1
Shasta				1		
Solano			1		1	
Sonoma				2		
Stanislaus	10		24	100	7	
Sutter			2	26	8	
Tehama			1			
Tulare	10	1	42	82	7	
Ventura			1			
Yolo		2	9	7		3
Yuba	1		1	1	4	
Totals	144	15	678	2,083	381	24

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TESTING SUMMARIES

Humans and Horses

		WNV		WEEV		SLEV	
		Local	Imported	Local	Imported	Local	Imported
Human Cases	Week	4	0	0	0	0	0
	YTD	144	0	0	0	0	0
Horse Cases	Week	1	0	0	0	0	0
	YTD	15	0	0	0	0	0

Dead Birds & Squirrels

		Number Tested	WNV Positive (recent only)
Dead Birds	Week	8	0
	YTD	2,363	678
Tree Squirrels	Week	0	0
	YTD	106	24

Chickens & Mosquitoes

		Number Tested	WNV Positive	SLEV Positive	WEEV Positive
Chicken Sera	Week	314	12	0	0
	YTD	22,059	381	0	0
Mosquito Pools: RT-PCR	Week	336	6	0	0
	YTD	32,008	2,064	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?
11-0141	11/04/11	San Bernardino	66	F	WNND	09/13/11	No
11-0142	11/04/11	Madera	71	M	WNND	09/08/11	No
11-0143	11/08/11	Tulare	65	M	WNND	10/11/11	No
11-0144	11/09/11	Fresno	40	F	WNF	09/10/11	No

Mosquitoes

County	Site Code	Pool #	Species	# in Pool	City	Collected	Virus	Method
Kern	KERN2011	3041	Cx. quinquefasciatus	49	Bakersfield	10/26/2011	WNV	RTPCR
Los Angeles	GRLA2100	1687	Cx. quinquefasciatus	50	Norwalk	11/2/2011	WNV	RTPCR
Orange	ORCO0170	1479	Cx. quinquefasciatus	34	Anaheim	11/1/2011	WNV	RTPCR
Orange	ORCO0050	1489	Cx. quinquefasciatus	50	Buena Park	11/3/2011	WNV	RTPCR
Orange	ORCO0050	1492	Cx. quinquefasciatus	50	Buena Park	11/3/2011	WNV	RTPCR
Orange	ORCO0007	1447	Cx. quinquefasciatus	16	Seal Beach	10/27/2011	WNV	RTPCR

Sentinel Chickens

County	Site Code	City	Date Bled	Virus	Band 01	Band 02	Band 03	Band 04
Los Angeles	GRLA2223	Rowland Heights	11/9/2011	WNV	3633	3638		
Los Angeles	GRLA2615	Newhall	11/9/2011	WNV	1554	1558	1559	1560
Los Angeles	LACW1010	Los Angeles	11/7/2011	WNV	1831	1834		
Los Angeles	LACW1049	Inglewood	11/8/2011	WNV	1883	1887		
Riverside	COAV0200	Mecca	11/9/2011	WNV	1243	1246		

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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.
