

California Arbovirus Surveillance Bulletin #38

Week 44 Friday, November 4, 2011



WEEKLY UPDATE

Human Cases

A total of 11 new human cases of West Nile virus (WNV) were reported this week from Fresno (1), Kern (2), Los Angeles (2), Orange (2), Riverside (1), Sacramento (2), and San Joaquin (1) counties. To date this year, 140 WNV cases have been reported from 21 counties; of the 140 cases, 100 (71%) developed neuroinvasive disease. The median age for all cases is 57 years (range: 14-87 years) and 86 (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, 96 WNV cases had been reported from 17 counties.

National Activity: As of November 1, 2011, 579 human cases of WNV had been reported nationwide in 42 states and the District of Columbia: Alabama (3), Arizona (41), Arkansas (1), California (129), Colorado (7), Connecticut (9), Delaware (1), District of Columbia (1), Florida (21), Georgia (12), Idaho (2), Illinois (30), 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 (5), New Mexico (4), New York (42), North Carolina (2), North Dakota (4), Ohio (20), Pennsylvania (5), Rhode Island (1), South Dakota (2), Tennessee (16), Texas (9), Utah (3), Vermont (1), Virginia (8), West Virginia (1), Wisconsin (2), and Wyoming (3). Of the 579 cases, 392 (68%) developed neuroinvasive disease. A total of 35 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

No new cases among horses were reported this week. In 2011, 14 horses from 7 counties have tested positive for WNV, and 3 fatalities have been reported. At this time last year, 19 cases of WNV had been reported among horses from 11 counties.

Dead Birds & Squirrels

Sixteen WNV positive dead birds were reported this week from Los Angeles (7), Orange (3), Sacramento (3), Santa Clara (2), and Yolo (1) counties. 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 17 WNV positive mosquito pools were reported this week from the following 4 counties: Kern (3), Los Angeles (9), Riverside (1), and San Bernardino (4). In 2011, 2,077 mosquito pools from 26 counties have tested positive for WNV.

At this time last year, 1,298 mosquito pools from 24 counties had tested positive for WNV.

Sentinel Chickens

Eighteen WNV seroconversions were reported this week from 10 flocks in 3 counties: Butte (3), Kern (14), and Los Angeles (1). To date this year, 369 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.westmile.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.westmilemaps.usgs.gov

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2010 & 2011 YTD West Nile Virus Comparisons		
	2010	2011
Total # Dead Bird Reports	10,092	9,461
# Positive Counties	35	35
# Human Cases	96	140
# Horse Cases	19	14
# Positive Dead Birds / # Tested	408 / 2,076	678 / 2,355
# Positive Mosquito Pools / # Tested	1,298 / 29,864	2,077 / 31,988
# Seroconversions / # Tested	279 / 25,212	369 / 21,745
# 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	8	5	15	123		
Glenn	1		2		5	
Imperial				3	3	
Inyo				2		
Kern	17	1	3	388	140	
Kings			9	63		
Lake			1	3		
Los Angeles	53	1	225	464	72	15
Madera	1		3	5		
Merced	1	3	9	11	12	
Nevada			1			
Orange	10		47	87		1
Placer	1	2	10	48	6	
Riverside	6		7	56	36	
Sacramento	4		134	381	7	3
San Bernardino	3		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	9	1	42	82	7	
Ventura			1			
Yolo		1	9	7		3
Yuba	1		1	1	4	
Totals	140	14	678	2,077	369	24

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TESTING SUMMARIES

Humans and Horses

		WNV		WEEV		SLEV	
		Local	Imported	Local	Imported	Local	Imported
Human Cases	Week	11	0	0	0	0	0
	YTD	140	0	0	0	0	0
Horse Cases	Week	0	0	0	0	0	0
	YTD	14	0	0	0	0	0

Dead Birds & Squirrels

		Number Tested	WNV Positive (recent only)
Dead Birds	Week	40	16
	YTD	2,355	678
Tree Squirrels	Week	1	0
	YTD	106	24

Chickens & Mosquitoes

		Number Tested	WNV Positive	SLEV Positive	WEEV Positive
Chicken Sera	Week	671	18	0	0
	YTD	21,745	369	0	0
Mosquito Pools: RT-PCR	Week	483	17	0	0
	YTD	31,672	2,058	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?
11-0130	11/01/11	Orange	62	F	WNND	WEEK 42	NO
11-0131	11/01/11	Sacramento	36	F	WNF	09/24/11	NO
11-0132	11/02/11	Sacramento	57	F	WNF	08/31/11	NO
11-0133	11/03/11	Orange	57	M	WNND	WEEK 41	NO
11-0134	11/03/11	Fresno	34	M	WNND	10/14/11	NO
11-0135	11/03/11	San Joaquin	46	M	WNND	10/02/11	NO
11-0136	11/03/11	Los Angeles	57	F	WNND	10/05/11	NO
11-0137	11/03/11	Los Angeles	54	M	WNND	08/06/11	NO
11-0138	11/03/11	Kern	55	F	WNND	09/21/11	NO
11-0139	11/03/11	Kern	51	M	WNND	09/29/11	NO
11-0140	11/03/11	Riverside	57	M	WNND	10/03/11	NO
Presumptive Viremic Blood Donors (Asymptomatic Infections)							
BD11-0019	10/31/11	Tulare	72	M			

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Dead Birds & Squirrels

County	Agency	City	Zip	Species	Reported	Virus	Type of Infection	Method
Los Angeles	Greater LA Co VCD - SFS	Long Beach	90808	American Crow	9/20/2011	WNV	Recent	RT-PCR
Los Angeles	Greater LA Co VCD - SFS	Gardena	90249	American Crow	9/21/2011	WNV	Recent	RT-PCR
Los Angeles	Greater LA Co VCD - SFS	Whittier	90605	American Crow	9/29/2011	WNV	Recent	RT-PCR
Los Angeles	Greater LA Co VCD - SFS	Cerritos	90703	American Crow	10/18/2011	WNV	Recent	RT-PCR
Los Angeles	Greater LA Co VCD - SFS	La Mirada	90638	American Crow	10/23/2011	WNV	Recent	RT-PCR
Los Angeles	Los Angeles Co West VCD	Los Angeles	90064	American Crow	10/26/2011	WNV	Recent	VecTest
Los Angeles	Los Angeles Co West VCD	Los Angeles	90064	American Crow	10/26/2011	WNV	Recent	VecTest
Orange	Greater LA Co VCD - SFS	La Habra	90631	Red-tailed Hawk	10/13/2011	WNV	Chronic	RT-PCR
Orange	Orange Co VCD	Cypress	90630	American Crow	10/14/2011	WNV	Recent	RT-PCR
Orange	Orange Co VCD	Anaheim	90720	American Crow	10/25/2011	WNV	Recent	RT-PCR
Orange	Orange Co VCD	Anaheim	92804	American Crow	10/25/2011	WNV	Recent	RT-PCR
Sacramento	Sacramento-Yolo MVCD	Carmichael	95608	American Crow	10/19/2011	WNV	Recent	RT-PCR
Sacramento	Sacramento-Yolo MVCD	Sacramento	95822	American Crow	10/20/2011	WNV	Recent	RT-PCR
Sacramento	Sacramento-Yolo MVCD	Sacramento	95823	Western Scrub-Jay	10/22/2011	WNV	Recent	RT-PCR
Sacramento	Sacramento-Yolo MVCD	Wilton	95693	White-crowned Sparrow	10/21/2011	WNV	Chronic	RT-PCR
Sacramento	Sacramento-Yolo MVCD	Sacramento	95821	Western Meadowlark	10/25/2011	WNV	Chronic	RT-PCR
Sacramento	Sacramento-Yolo MVCD	Sacramento	95826	White-crowned Sparrow	10/25/2011	WNV	Chronic	RT-PCR
Santa Clara	Santa Clara Co VCD	Cupertino	95014	American Crow	10/25/2011	WNV	Recent	VecTest
Santa Clara	Santa Clara Co VCD	Sunnyvale	94087	American Crow	10/26/2011	WNV	Recent	VecTest
Yolo	Sacramento-Yolo MVCD	Davis	95618	Western Scrub-Jay	10/25/2011	WNV	Recent	RT-PCR

Mosquitoes

County	Site Code	Pool #	Species	# in Pool	City	Collected	Virus	Method
Kern	KERN0029	3034	Cx. quinquefasciatus	50	Lamont	10/26/2011	WNV	RTPCR
Kern	KERN3027	3015	Cx. quinquefasciatus	33	Arvin	10/25/2011	WNV	RTPCR
Kern	KERN3028	2814	Cx. quinquefasciatus	17	Bakersfield	10/12/2011	WNV	RTPCR
Los Angeles	GRLA2182	1672	Cx. quinquefasciatus	11	Pico Rivera	10/28/2011	WNV	RTPCR
Los Angeles	GRLA2249	1665	Cx. quinquefasciatus	38	Pico Rivera	10/28/2011	WNV	RTPCR
Los Angeles	GRLA2334	1630	Cx. quinquefasciatus	49	Whittier	10/26/2011	WNV	RTPCR
Los Angeles	GRLA2429	6476	Cx. quinquefasciatus	20	Chatsworth	10/26/2011	WNV	RTPCR
Los Angeles	GRLA2567	6472	Cx. quinquefasciatus	38	Woodland Hills	10/25/2011	WNV	RTPCR
Los Angeles	GRLA2574	6467	Cx. quinquefasciatus	42	Sherman Oaks	10/25/2011	WNV	RTPCR
Los Angeles	GRLA2580	6464	Cx. quinquefasciatus	50	Sherman Oaks	10/25/2011	WNV	RTPCR
Los Angeles	GRLA2669	6474	Cx. quinquefasciatus	29	Granada Hills	10/26/2011	WNV	RTPCR
Los Angeles	GRLA3128	6483	Cx. quinquefasciatus	31	Castaic	10/28/2011	WNV	RTPCR
Riverside	COAV0054	2833	Cx. tarsalis	50	Mecca	10/25/2011	WNV	RTPCR
San Bernardino	WVAL2012	1090	Cx. quinquefasciatus	50	Chino	11/1/2011	WNV	RTPCR
San Bernardino	WVAL5005	1029	Cx. quinquefasciatus	37	Rancho Cucamonga	10/24/2011	WNV	RTPCR
San Bernardino	WVAL5011	1027	Cx. quinquefasciatus	16	Fwy I-15	10/24/2011	WNV	RTPCR
San Bernardino	WVAL6012	1039	Cx. quinquefasciatus	50	Ontario	10/24/2011	WNV	RTPCR

Sentinel Chickens

County	Site Code	City	Date Bled	Virus	Band 01	Band 02	Band 03
Butte	BUCO0003	Oroville	10/25/2011	WNV	1130	1132	1133
Kern	KERN0101	Lost Hills	10/24/2011	WNV	1586	1587	
Kern	KERN0102	Buttonwillow	10/24/2011	WNV	1600		
Kern	KERN0107	Arvin	10/24/2011	WNV	1682	1694	1695
Kern	KERN0113	Bakersfield	10/24/2011	WNV	1708		
Kern	KERN0114	Bakersfield	10/24/2011	WNV	1700		
Kern	KERN0117	Bakersfield	10/24/2011	WNV	1674		
Kern	KERN0118	Buttonwillow	10/24/2011	WNV	1615	1616	1617
Kern	KERN3028	Bakersfield	10/24/2011	WNV	1631	1710	
Los Angeles	LACW1010	Los Angeles	10/03/2011	WNV	1834		

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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.
