

California Arbovirus Surveillance Bulletin #31

Week 40 Friday, October 7, 2016



Weekly Update

Humans

West Nile virus

A total of 34 new cases of West Nile virus (WNV) illness were reported this week from the following 13 counties: Butte (2), Kern (1), Los Angeles (13), Madera (1), Orange (6), Riverside (1), Sacramento (2), San Bernardino (1), San Diego (1), San Joaquin (1), Solano (2), Stanislaus (2), and Sutter (1). **These are the first human WNV cases reported from Solano County in 2016.** To date this year, 310 cases of WNV illness have been reported from 29 counties. Of the 310 case-patients, 228 (74%) had neuroinvasive illness and 11 fatalities have been reported from 8 counties. The median age of the individuals is 58 years (range: 8-91 years) and 189 (61%) are male. Dates of symptom onset range from June 17 to September 23. In addition, 32 asymptomatic WNV-positive blood donors have been reported from Fresno (2), Los Angeles (8), Madera (1), Orange (3), Riverside (1), Sacramento (2), San Diego (2), San Francisco (1), San Luis Obispo (1), Stanislaus (4), Sutter (2), Tehama (1), Tulare (1), and Yolo (3) counties.

St. Louis encephalitis virus

No new cases were reported this week. In 2016, one case of St. Louis encephalitis virus (SLEV) disease has been reported from Sacramento County.

Dead Birds

This week, a total of 16 dead birds tested positive for WNV from the following 12 counties: Butte (1), Contra Costa (2), Los Angeles (1), Orange (2), Placer (1), Riverside (2), San Diego (1), San Joaquin (1), San Mateo (2), Santa Clara (1), Stanislaus (1), and Ventura (1). In 2016, 1,304 dead birds have tested positive for WNV from 33 counties, whereas at this time last year, 1,092 WNV positive birds had been reported from 37 counties.

Mosquito Pools

West Nile virus

A total of 59 WNV positive mosquito pools were reported this week from the following 11 counties: Contra Costa (1), Fresno (4), Imperial (1), Los Angeles (21), Madera (1), Merced (1), Orange (24), Sacramento (1), Stanislaus (1), Tulare (3), and Yolo (1). **This is the first detection of WNV activity in Imperial County this year.** In 2016, 3,419 WNV positive mosquito pools have been reported from 31 counties, whereas at this time last year, 2,907 WNV positive mosquito pools had been reported from 29 counties.

St. Louis encephalitis virus

A total of 6 SLEV positive mosquito pools were reported this week from 2 counties: Madera (1) and Riverside (5). To date this year, 176 SLEV positive mosquito pools have been reported from 8 counties: Fresno (1), Kern (75), Kings (4), Los Angeles (2), Madera (2), Orange (2), Riverside (89), and Tulare (1). At this time last year, 38 SLEV positive mosquito pools had been reported from Riverside County.

Sentinel Chickens

West Nile virus

A total of 13 WNV positive chickens were reported this week from 5 counties: Lake (1), Los Angeles (7), Solano (3), Sutter (1), and Yolo (1). To date this year, 314 WNV seroconversions have been detected in 76 flocks located in 17 counties, whereas at this time last year, 344 WNV seroconversions had been detected in 85 flocks from 22 counties.

St. Louis encephalitis virus

No new seroconversions were reported this week. In 2016, 3 SLEV seroconversions have been detected in 2 flocks located in 2 counties: Los Angeles and San Bernardino. At this time last year, 6 SLEV seroconversions had detected in 2 flocks from Riverside County.

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YTD WNV Activity by Element and County, 2016				
County	Humans	Dead Birds	Mosquito Pools	Sentinel Chickens
Alameda		11	2	
Butte	21	22	48	38
Colusa	2			9
Contra Costa	1	29	10	5
El Dorado	1	4		
Fresno	9	6	184	
Glenn	5	4	11	10
Imperial			1	
Kern	10		80	
Kings	2	4	118	
Lake	1	4	39	5
Los Angeles	105	112	409	106
Madera	5	5	100	
Marin		5		
Merced		5	12	33
Monterey	1			
Napa		1	4	
Nevada		2		1
Orange	24	80	406	
Placer	5	29	103	7
Riverside	4	16	31	
Sacramento	20	409	455	
San Bernardino	7	5	79	20
San Diego	12	256	65	9
San Joaquin	7	36	348	
San Mateo		13	5	
Santa Clara	1	86	13	
Santa Cruz		2	3	
Shasta	1	3	12	3
Solano	2	13	16	10
Sonoma		8	2	
Stanislaus	19	13	258	
Sutter	10	10	68	33
Tehama	5			8
Tulare	7	3	260	
Ventura	2	33		
Yolo	12	71	259	4
Yuba	9	4	18	13
Totals	310	1,304	3,419	314

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2015 & 2016 YTD West Nile Virus Comparisons		
	2015	2016
Total # Dead Bird Reports	9,538	8,517
# Positive Counties	40	38
# Human Cases	311	310
# Positive Dead Birds / # Tested	1,092 / 2,740	1,304 / 2,676
# Positive Mosquito Pools / # Tested	2,907 / 33,402	3,419 / 40,162
# Seroconversions / # Tested	344 / 10,602	314 / 9,352

TESTING SUMMARIES

Humans

		WNV	SLE	WEE
Number of Cases Reported	Week	34	0	0
	YTD	310	1	0

Dead Birds

		Total Tested	WNV Positive
Dead Birds	Week	47	16
	YTD	2,676	1,304

Sentinel Chickens

		Total Tested	WNV +	SLEV +	WEEV +
Chicken Sera	Week	377	13	0	0
	YTD	9,352	314	3	0

Mosquitoes

		Positive / Total Tested					
Mosquito Pools	Week	WNV	SLEV	WEEV	CHIK	DENV	ZIKA
		59 / 1,515	6 / 1,075	0 / 1,075	0 / 38	0 / 38	0 / 38
		3,419 / 40,162	176 / 25,967	0 / 25,967	0 / 578	0 / 578	0 / 578

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NEW POSITIVES

Dead Birds

County	Agency	City	Zip Code	Species	Date Reported	Virus
Butte	Butte Co MVCD	Chico	95928	Western Scrub-Jay	9/7/2016	WNV
Contra Costa	Contra Costa MVCD	Danville	94526	American Crow	10/3/2016	WNV
Contra Costa	Contra Costa MVCD	Danville	94526	American Crow	10/4/2016	WNV
Los Angeles	San Gabriel Valley MVCD	Sierra Madre	91024	American Crow	8/30/2016	WNV
Orange	Orange Co VCD	Laguna hills	92637	American Crow	9/21/2016	WNV
Orange	Orange Co VCD	Mission Viejo	92692	American Crow	9/26/2016	WNV
Placer	Placer MVCD	Roseville	95678	Western Scrub-Jay	10/3/2016	WNV
Riverside	Northwest Mosquito VCD	Norco	92860	American Crow	9/21/2016	WNV
Riverside	Northwest Mosquito VCD	Riverside	92509	House Finch	9/19/2016	WNV
San Diego	San Diego Co VCP	El Cajon	92021	Red-shouldered Hawk	10/3/2016	WNV
San Joaquin	San Joaquin Co MVCD	Tracy	95377	American Robin	9/29/2016	WNV
San Mateo	San Mateo Co MAD	Menlo Park	94025	American Crow	9/22/2016	WNV
San Mateo	San Mateo Co MAD	San Mateo	94403	American Crow	9/27/2016	WNV
Santa Clara	Santa Clara Co VCD	San Jose	95127	American Crow	9/28/2016	WNV
Stanislaus	Turlock MAD	Keyes	95307	Unknown	9/26/2016	WNV
Ventura	Ventura Co Env Health Dept	Simi Valley	93065	American Crow	9/26/2016	WNV

Mosquitoes

County	Site Code	Pool #	Species	City	# in Pool	Trap Type	Collected	Virus
Contra Costa	CNTR661	453	Cx. tarsalis	Byron	16	CO2	10/3/2016	WNV
Fresno	FRWS200012	383	Cx. quinquefasciatus	Firebaugh	50	CO2	9/29/2016	WNV
Fresno	FRWS200012	386	Cx. tarsalis	Firebaugh	50	CO2	9/29/2016	WNV
Fresno	FRWS300028	382	Cx. quinquefasciatus	Firebaugh	50	CO2	9/29/2016	WNV
Fresno	FRWS300031	379	Cx. quinquefasciatus		21	CO2	9/28/2016	WNV
Imperial	IMPR30	161	Ae. aegypti	El Centro	4	BGSENT	10/4/2016	WNV
Los Angeles	GRLA2065	877	Cx. quinquefasciatus	Gardena	50	GRVD	9/30/2016	WNV
Los Angeles	GRLA2093	867	Cx. quinquefasciatus	South Gate	31	GRVD	9/29/2016	WNV
Los Angeles	GRLA2115	860	Cx. quinquefasciatus	Bell	50	GRVD	9/29/2016	WNV
Los Angeles	GRLA2221	846	Cx. quinquefasciatus	Rowland Heights	14	GRVD	9/27/2016	WNV
Los Angeles	GRLA2301	856	Cx. quinquefasciatus	Willowbrook	50	GRVD	9/28/2016	WNV
Los Angeles	GRLA2383	850	Cx. quinquefasciatus	Whittier	37	GRVD	9/27/2016	WNV
Los Angeles	GRLA2438	5820	Cx. quinquefasciatus	Chatsworth	40	GRVD	9/29/2016	WNV
Los Angeles	GRLA2552	5790	Cx. quinquefasciatus	Glendale	50	GRVD	9/27/2016	WNV
Los Angeles	GRLA2554	5813	Cx. quinquefasciatus	Winnetka	50	GRVD	9/29/2016	WNV
Los Angeles	GRLA2937	5791	Cx. quinquefasciatus	Burbank	50	GRVD	9/27/2016	WNV
Los Angeles	GRLA3027	5822	Cx. quinquefasciatus	Studio City	34	GRVD	9/30/2016	WNV
Los Angeles	GRLA3028	5818	Cx. quinquefasciatus	West Hills	22	GRVD	9/29/2016	WNV
Los Angeles	GRLA3044	840	Cx. quinquefasciatus	South El Monte	50	GRVD	9/27/2016	WNV

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Los Angeles	GRLA3045	849	Cx. quinquefasciatus	Whittier	32	GRVD	9/27/2016	WNV
Los Angeles	GRLA3046	870	Cx. quinquefasciatus	Bellflower	37	GRVD	9/29/2016	WNV
Los Angeles	GRLA3047	871	Cx. quinquefasciatus	Downey	50	GRVD	9/29/2016	WNV
Los Angeles	GRLA3053	847	Cx. quinquefasciatus	Hacienda Heights	51	GRVD	9/27/2016	WNV
Los Angeles	GRLA3064	855	Cx. quinquefasciatus	West Athens Village	50	GRVD	9/28/2016	WNV
Los Angeles	GRLA3076	5831	Cx. quinquefasciatus	Valley Glen	50	GRVD	9/30/2016	WNV
Los Angeles	LACW1003	460	Cx. quinquefasciatus	Redondo Beach	42	GRVD	9/27/2016	WNV
Los Angeles	LACW1004	461	Cx. quinquefasciatus	Lawndale	49	GRVD	9/28/2016	WNV
Madera	MADR239	416	Cx. quinquefasciatus	Madera	50	CO2	9/27/2016	SLEV
Madera	MADR3334	413	Cx. tarsalis	Madera	50	CO2	9/27/2016	WNV
Merced	MERC410	303	Cx. tarsalis	Los Banos	18	CO2	10/4/2016	WNV
Orange	ORCO1005	4044	Cx. quinquefasciatus	Buena Park	43	GRVD	9/27/2016	WNV
Orange	ORCO1010	4043	Cx. quinquefasciatus	Huntington Beach	36	GRVD	9/27/2016	WNV
Orange	ORCO1010	4077	Cx. quinquefasciatus	Huntington Beach	6	GRVD	9/28/2016	WNV
Orange	ORCO1010	4150	Cx. quinquefasciatus	Huntington Beach	15	GRVD	10/4/2016	WNV
Orange	ORCO1011	4090	Cx. quinquefasciatus	La Habra	28	GRVD	9/28/2016	WNV
Orange	ORCO1014	4120	Cx. quinquefasciatus	Mission Viejo	5	GRVD	9/29/2016	WNV
Orange	ORCO1031	4023	Cx. quinquefasciatus	Los Alamitos	50	GRVD	9/27/2016	WNV
Orange	ORCO1033	3991	Cx. quinquefasciatus	Tustin	50	GRVD	9/27/2016	WNV
Orange	ORCO1036	3965	Cx. quinquefasciatus	Buena Park	24	GRVD	9/27/2016	WNV
Orange	ORCO1040	4178	Cx. quinquefasciatus	Orange	46	GRVD	10/4/2016	WNV
Orange	ORCO169	4003	Cx. quinquefasciatus	Orange	28	GRVD	9/27/2016	WNV
Orange	ORCO17	3989	Cx. quinquefasciatus	Orange	27	GRVD	9/27/2016	WNV
Orange	ORCO170	4114	Cx. quinquefasciatus	Anaheim	50	GRVD	9/29/2016	WNV
Orange	ORCO199	4070	Cx. quinquefasciatus	Costa Mesa	11	GRVD	9/28/2016	WNV
Orange	ORCO2	3959	Cx. quinquefasciatus	Fullerton	50	GRVD	9/27/2016	WNV
Orange	ORCO2	4184	Cx. quinquefasciatus	Fullerton	43	GRVD	10/4/2016	WNV
Orange	ORCO218	4039	Cx. quinquefasciatus	Anaheim	50	GRVD	9/27/2016	WNV
Orange	ORCO218	4049	Cx. quinquefasciatus	Anaheim	50	GRVD	9/27/2016	WNV
Orange	ORCO218	4136	Cx. quinquefasciatus	Anaheim	22	GRVD	9/29/2016	WNV
Orange	ORCO225	4082	Cx. quinquefasciatus	Newport Beach	38	GRVD	9/28/2016	WNV
Orange	ORCO236	4118	Cx. quinquefasciatus	Garden Grove	50	GRVD	9/29/2016	WNV
Orange	ORCO33	4106	Cx. quinquefasciatus	Westminster	50	GRVD	9/29/2016	WNV
Orange	ORCO34	4204	Cx. quinquefasciatus	Brea	50	CO2	10/4/2016	WNV
Orange	ORCO55	4061	Cx. quinquefasciatus	Mission Viejo	6	GRVD	9/28/2016	WNV
Riverside	COAV10	3547	Cx. tarsalis	Thermal	36	CO2	10/4/2016	SLEV
Riverside	COAV13	3545	Cx. tarsalis	Mecca	50	CO2	10/4/2016	SLEV
Riverside	COAV132	3548	Cx. tarsalis	Mecca	50	CO2	10/4/2016	SLEV
Riverside	COAV58	3639	Cx. tarsalis	Mecca	50	CO2	10/4/2016	SLEV
Riverside	COAV611	3646	Cx. tarsalis	Mecca	50	CO2	10/4/2016	SLEV
Sacramento	SAYO244004	7865	Cx. tarsalis	Galt	48	CO2	10/4/2016	WNV
Stanislaus	TRLK1615	1248	Cx. tarsalis		50	CO2	9/27/2016	WNV
Tulare	DLTA6408	2487	Cx. quinquefasciatus	Dinuba	14	GRVD	9/27/2016	WNV
Tulare	DLTA8426	2504	Cx. quinquefasciatus	Visalia	22	GRVD	9/30/2016	WNV
Tulare	DLTA9403	2491	Cx. quinquefasciatus	Visalia	10	GRVD	9/28/2016	WNV
Yolo	SAYO146017	7904	Cx. tarsalis	Davis	37	CO2	10/6/2016	WNV

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Sentinel Chickens

County	Site Code	City	Date Bled	Virus	Band 01	Band 02	Band 03	Band 04
Lake	LAKE0226	Lower Lake	9/26/2016	WNV	1603			
Los Angeles	LACW1006	Playa Del Rey	9/29/2016	WNV	2333	2336		
Los Angeles	LACW1026	Los Angeles	9/28/2016	WNV	2373	2374	2376	2377
Los Angeles	LACW1049	Inglewood	9/28/2016	WNV	2381			
Solano	SOLA0125	Cordelia	9/28/2016	WNV	1876	1883		
Solano	SOLA0015	Winters	9/28/2016	WNV	1866			
Sutter	SUYA0015	Robbins	9/29/2016	WNV	2033			
Yolo	SAYO123001	Esparto	10/3/2016	WNV	1343			

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.

Dead Birds

Oral swab samples from corvids are collected onto RNA preservation cards and tested by the University of California, Davis Arbovirus Research and Training laboratory (DART) for West Nile virus by the singleplex RT-PCR Taqman assay and confirmed with a second primer set. Some local agencies test birds using the RAMP© test or conduct RT-PCR on tissue samples.

Sentinel Chickens:

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

Mosquito Pools:

Mosquito pools submitted to DART are tested for West Nile, western equine encephalomyelitis, and St. Louis encephalitis viral RNA using a Taqman multiplex RT-PCR. Invasive *Aedes* mosquitoes (*Ae. aegypti* and *Ae. albopictus*) are also tested for chikungunya, dengue, and Zika viral RNA.

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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.westmilemaps.usgs.gov.
