

California Arbovirus Surveillance Bulletin #28

Week 41 Friday, October 13, 2017



Weekly Update

Humans

A total of 57 new human cases of West Nile virus (WNV) illness were reported this week from the following 7 counties: Los Angeles (40), Madera (1), Orange (3), Riverside (3), San Bernardino (6), Stanislaus (2), and Yolo (1). **This is the first human case reported from Madera County in 2017.** To date this year, 315 human cases of WNV illness have been reported from 21 counties. Of the 315 case-patients, 245 (78%) had neuroinvasive disease and 18 fatalities have been reported from Kern (1), Los Angeles (11), Orange (1), San Bernardino (2), Stanislaus (1), and Yolo (2) counties. The median age of the individuals is 62 years (range: 4–96 years) and 204 (65%) are male. Dates of symptom onset ranged from March 16 to September 23. In addition to the 315 symptomatic cases, 28 asymptomatic WNV-positive blood donors have been reported from Fresno (1), Humboldt (1), Los Angeles (11), Orange (5), Placer (1), San Bernardino (6), and Stanislaus (3) counties. As of this date in 2016, 327 human WNV cases had been reported from 29 counties.

Dead Birds

A total of 14 WNV positive dead birds were reported this week from the following 5 counties: Los Angeles (3), Orange (1), Sacramento (6), San Bernardino (3), and Yolo (1). To date this year, 463 birds from 38 counties have tested positive for WNV. As of this date in 2016, 1,322 WNV positive birds had been reported from 33 counties.

Mosquito Pools

West Nile Virus

A total of 57 WNV positive mosquito pools were reported this week from the following 9 counties: Los Angeles (22), Orange (24), Placer (1), Sacramento (2), San Bernardino (1), San Diego (1), San Joaquin (1), Tulare (2), and Yolo (3). To date this year, 3,291 WNV positive mosquito pools have been reported from 26 counties. As of this date in 2016, 3,438 WNV positive mosquito pools had been reported from 31 counties.

St. Louis Encephalitis Virus

A total of 3 mosquito pools tested positive for St. Louis encephalitis virus (SLEV) this week from 3 counties: Fresno (1), San Bernardino (1), and Tulare (1). To date this year, 178 SLEV positive mosquito pools have been reported from 14 counties: Butte (1), Fresno (62), Imperial (3), Kern (18), Kings (21), Los Angeles (1), Madera (10), Merced (2), Placer (1), Riverside (23), San Bernardino (2), Stanislaus (27), Tulare (6), and Yuba (1). As of this date in 2016, 176 SLEV positive mosquito pools had been reported from 8 counties.

Sentinel Chickens

West Nile Virus

A total of 5 WNV seroconversions were reported this week from 3 counties: Contra Costa (2), Placer (1), and Solano (2). To date this year, 287 WNV seroconversions have been reported from 17 counties. As of this date in 2016, 323 WNV seroconversions had been detected from 18 counties.

St. Louis Encephalitis Virus

No SLEV seroconversions were reported this week. To date this year, 9 SLEV positive chickens have been reported from Los Angeles (2), Merced (1), and San Bernardino (6) counties. As of this date in 2016, 3 SLEV seroconversions had been detected in 2 counties.

California Arbovirus Surveillance Bulletin #28

Week 41 Friday, October 13, 2017

YTD WNV Activity by Element and County, 2017					
County	Humans	Horses	Dead Birds	Mosquito Pools	Sentinel Chickens
Alameda			1		
Butte	2		5	47	31
Colusa			1		
Contra Costa	2	1	18	8	7
El Dorado			2		
Fresno	3	1	5	167	
Glenn		1	2	12	1
Humboldt			1		
Imperial	2				
Inyo	4			9	
Kern	22	2	3	151	
Kings	1		1	79	
Lake			4	17	2
Lassen		3			
Los Angeles	161	1	91	537	131
Madera	1		1	62	
Marin			1		
Merced			1	40	19
Monterey			1		
Nevada			1		
Orange	29		52	262	
Placer			3	59	5
Plumas		1			
Riverside	16	4	40	193	
Sacramento	1		86	151	2
San Benito					1
San Bernardino	32		45	291	35
San Diego	1	1	33	9	
San Francisco	1		1		
San Joaquin	10	2	6	242	
San Luis Obispo			2		
San Mateo			1		
Santa Barbara					4
Santa Clara			8		
Santa Cruz			1		
Shasta			2		4
Solano			2	7	11
Sonoma			5	1	
Stanislaus	17		6	196	
Sutter	1		3	16	21
Tehama	1	1			4
Tulare	4		8	630	
Ventura			1	2	
Yolo	4		13	85	1
Yuba			6	18	8
Totals	315	18	463	3,291	287

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

California Arbovirus Surveillance Bulletin #28

Week 41 Friday, October 13, 2017

2016 & 2017 YTD West Nile Virus Comparisons		
	2016	2017
Total # Dead Bird Reports	8,641	6,961
# Positive Counties	38	45
# Human Cases	327	315
# Positive Dead Birds / # Tested	1,322 / 2,718	463 / 1,825
# Positive Mosquito Pools / # Tested	3,438 / 41,001	3,291 / 41,525
# Seroconversions / # Tested	323 / 9,650	287 / 10,035

TESTING SUMMARIES

Humans

		WNV	SLE	WEE
Human Cases	Week	57	0	0
	YTD	315	0	0

Dead Birds

		Number Tested	WNV Positive
Dead Birds	Week	59	14
	YTD	1,825	463

Chickens

		Number Tested	WNV Positive	SLEV Positive	WEEV Positive
Chicken Sera	Week	328	5	0	0
	YTD	10,035	287	9	0

Mosquitoes

		Positive / Total Tested					
		WNV	SLEV	WEEV	CHIK	DENV	ZIKA
Mosquito Pools	Week	57 / 1,475	3 / 895	0 / 895	0 / 81	0 / 81	0 / 81
	YTD	3,291 / 41,525	178 / 33,715	0 / 31,923	0 / 1,591	0 / 1,591	0 / 1,591

California Arbovirus Surveillance Bulletin #28

Week 41 Friday, October 13, 2017

New Positives

Dead Birds

County	Agency	City	Zip Code	Species	Date Reported	Virus
Los Angeles	Los Angeles Co Veterinarian	Culver City	90230	American Crow	10/6/2017	WNV
Los Angeles	Los Angeles Co Veterinarian	Los Angeles	90035	American Crow	10/12/2017	WNV
Los Angeles	Los Angeles Co Veterinarian	Los Angeles	90066	American Crow	10/8/2017	WNV
Orange	Orange Co VCD	Cypress	90630	American Crow	9/29/2017	WNV
Sacramento	Sacramento-Yolo MVCD	Carmichael	95608	Western Scrub-Jay	10/10/2017	WNV
Sacramento	Sacramento-Yolo MVCD	Sacramento	95818	House Finch	10/6/2017	WNV
Sacramento	Sacramento-Yolo MVCD	Sacramento	95822	American Crow	10/11/2017	WNV
Sacramento	Sacramento-Yolo MVCD	Sacramento	95822	American Crow	10/11/2017	WNV
Sacramento	Sacramento-Yolo MVCD	Sacramento	95822	American Crow	10/11/2017	WNV
Sacramento	Sacramento-Yolo MVCD	Wilton	95693	American Crow	10/4/2017	WNV
San Bernardino	San Bernardino VCP	Yucaipa	92399	American Crow	9/28/2017	WNV
San Bernardino	San Bernardino VCP	Yucaipa	92399	American Crow	10/1/2017	WNV
San Bernardino	San Bernardino VCP	Yucaipa	92399	Common Raven	9/28/2017	WNV
Yolo	Sacramento-Yolo MVCD	West Sacramento	95691	American Crow	10/11/2017	WNV

Mosquito Pools

County	Site Code	Pool #	Species	City	# in Pool	Trap Type	Collected	Virus
Fresno	FRWS1202	643	Cx. tarsalis	Dos Palos	40	CO2	10/10/17	SLEV
Los Angeles	GRLA2101	870	Cx. quinquefasciatus	Santa Fe Springs	14	GRVD	10/4/17	WNV
Los Angeles	GRLA2166	881	Cx. quinquefasciatus	Montebello	45	GRVD	10/4/17	WNV
Los Angeles	GRLA2221	829	Cx. quinquefasciatus	Rowland Heights	50	GRVD	9/26/17	WNV
Los Angeles	GRLA2383	833	Cx. quinquefasciatus	Whittier	50	GRVD	9/26/17	WNV
Los Angeles	GRLA2414	5846	Cx. quinquefasciatus	Granada Hills	21	GRVD	10/4/17	WNV
Los Angeles	GRLA2416	5841	Cx. quinquefasciatus	Panorama City	38	GRVD	10/4/17	WNV
Los Angeles	GRLA2511	5850	Cx. quinquefasciatus	Los Angeles	25	GRVD	10/5/17	WNV
Los Angeles	GRLA2614	5857	Cx. quinquefasciatus	Newhall	42	GRVD	10/6/17	WNV
Los Angeles	GRLA2937	5855	Cx. quinquefasciatus	Burbank	47	GRVD	10/5/17	WNV
Los Angeles	GRLA2957	900	Cx. quinquefasciatus	Hawaiian Gardens	50	GRVD	10/6/17	WNV
Los Angeles	GRLA3044	824	Cx. quinquefasciatus	South El Monte	50	GRVD	9/26/17	WNV
Los Angeles	GRLA3045	832	Cx. quinquefasciatus	Whittier	28	GRVD	9/26/17	WNV
Los Angeles	GRLA3047	884	Cx. quinquefasciatus	Downey	50	GRVD	10/5/17	WNV
Los Angeles	GRLA3048	880	Cx. quinquefasciatus	Pico Rivera	37	GRVD	10/4/17	WNV
Los Angeles	GRLA3052	831	Cx. quinquefasciatus	La Habra Heights	50	GRVD	9/26/17	WNV
Los Angeles	GRLA3060	875	Cx. quinquefasciatus	Norwalk	32	GRVD	10/4/17	WNV
Los Angeles	GRLA3071	837	Cx. quinquefasciatus	East Los Angeles	50	GRVD	9/27/17	WNV
Los Angeles	GRLA3074	843	Cx. quinquefasciatus	Lincoln Heights	50	GRVD	9/27/17	WNV
Los Angeles	GRLA3084	836	Cx. quinquefasciatus	Commerce	50	GRVD	9/27/17	WNV
Los Angeles	LACW1009	338	Cx. quinquefasciatus	Los Angeles	50	GRVD	10/3/17	WNV
Los Angeles	LACW1049	342	Cx. quinquefasciatus	Inglewood	42	GRVD	10/3/17	WNV
Los Angeles	LACW1054	343	Cx. quinquefasciatus	Inglewood	45	CO2	10/5/17	WNV
Orange	ORCO1009	4634	Cx. quinquefasciatus	Garden Grove	48	GRVD	10/5/17	WNV
Orange	ORCO1011	4262	Cx. quinquefasciatus	La Habra	29	GRVD	9/22/17	WNV

California Arbovirus Surveillance Bulletin #28

Week 41 Friday, October 13, 2017

Orange	ORCO1011	4392	Cx. quinquefasciatus	La Habra	42	GRVD	9/27/17	WNV
Orange	ORCO1011	4398	Cx. quinquefasciatus	La Habra	20	GRVD	9/27/17	WNV
Orange	ORCO1011	4516	Cx. quinquefasciatus	La Habra	33	GRVD	10/3/17	WNV
Orange	ORCO1029	4466	Cx. quinquefasciatus	Lake Forest	3	BGSENT	10/2/17	WNV
Orange	ORCO1038	4588	Cx. quinquefasciatus	La Palma	50	GRVD	10/5/17	WNV
Orange	ORCO119	4354	Cx. quinquefasciatus	Santa Ana	33	CO2	9/27/17	WNV
Orange	ORCO18	4481	Cx. quinquefasciatus	Lake Forest	31	GRVD	10/3/17	WNV
Orange	ORCO2	4438	Cx. quinquefasciatus	Fullerton	50	GRVD	9/28/17	WNV
Orange	ORCO202	4583	Cx. quinquefasciatus	Fullerton	50	GRVD	10/5/17	WNV
Orange	ORCO209	4544	Cx. quinquefasciatus	Santa Ana	7	CO2	10/4/17	WNV
Orange	ORCO217	4539	Cx. quinquefasciatus	Santa Ana	45	CO2	10/4/17	WNV
Orange	ORCO218	4394	Cx. quinquefasciatus	Anaheim	44	GRVD	9/27/17	WNV
Orange	ORCO227	4449	Cx. quinquefasciatus	Brea	48	GRVD	9/28/17	WNV
Orange	ORCO227	4467	Cx. quinquefasciatus	Brea	36	GRVD	10/2/17	WNV
Orange	ORCO260	4525	Cx. quinquefasciatus	Cypress	10	CO2	10/4/17	WNV
Orange	ORCO33	4593	Cx. quinquefasciatus	Westminster	50	GRVD	10/5/17	WNV
Orange	ORCO34	4427	Cx. quinquefasciatus	Brea	28	GRVD	9/28/17	WNV
Orange	ORCO36	4589	Cx. quinquefasciatus	Cypress	50	GRVD	10/5/17	WNV
Orange	ORCO4	4472	Cx. quinquefasciatus	Huntington Beach	25	GRVD	10/3/17	WNV
Orange	ORCO52	4405	Cx. quinquefasciatus	Anaheim	40	GRVD	9/28/17	WNV
Orange	ORCO81	4303	Cx. quinquefasciatus	Seal Beach	37	GRVD	9/26/17	WNV
Orange	ORCO83	4704	Cx. quinquefasciatus	Costa Mesa	25	GRVD	10/11/17	WNV
Placer	PLCR191218	2333	Cx. tarsalis		7	CO2	10/10/17	WNV
Sacramento	SAYO213048	6767	Cx. pipiens	Sacramento	6	CO2	10/11/17	WNV
Sacramento	SAYO232029	6685	Cx. tarsalis	Elk Grove	50	CO2	10/6/17	WNV
San Bernardino	SANB180	1127	Cx. quinquefasciatus	Rialto	5	CO2	10/11/17	SLEV
San Bernardino	SANB192	1111	Cx. stigmatosoma	San Bernardino	4	CO2	10/5/17	WNV
San Diego	SAND12999	1690	Cx. quinquefasciatus	SAN DIEGO	10	GRVD	10/4/17	WNV
San Joaquin	SJCM8213	2877	Cx. pipiens	Lodi	19	CO2	10/9/17	WNV
Tulare	TLRE202410	222	Cx. quinquefasciatus	Tulare	34	GRVD	10/5/17	SLEV
Tulare	TLRE202410	222	Cx. quinquefasciatus	Tulare	34	GRVD	10/5/17	WNV
Tulare	TLRE202410	235	Cx. quinquefasciatus	Tulare	50	GRVD	10/12/17	WNV
Yolo	SAYO115008	6636	Cx. tarsalis	Woodland	50	CO2	10/6/17	WNV
Yolo	SAYO115008	6637	Cx. tarsalis	Woodland	50	CO2	10/6/17	WNV
Yolo	SAYO135016	6658	Cx. tarsalis	Woodland	50	CO2	10/6/17	WNV

Sentinel Chickens

County	Site Code	City	Date Bled	Virus	Band 01	Band 02
Contra Costa	CNTR8152	Knightsen	10/2/2017	WNV	1201	
Contra Costa	CNTR2302	Martinez	10/2/2017	WNV	1246	
Placer	PLCR0757	Auburn	10/4/2017	WNV	1442	
Solano	SOLA0125	Cordelia	10/2/2017	WNV	1675	1680

California Arbovirus Surveillance Bulletin #28

Week 41 Friday, October 13, 2017

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 UC Davis Arbovirus Research and Training laboratory (DART) for West Nile virus by the singleplex qRT-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 submitted to the California Department of Public Health Vector-Borne Disease Laboratory and tested for antibodies to West Nile, western equine encephalomyelitis, and St. Louis encephalitis viruses by EIA. Positive samples are confirmed by IFA, western-blot, or PRNT.

Mosquito Pools:

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

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