

California Arbovirus Surveillance Bulletin #34

Week 43 Friday, October 28, 2016



Weekly Update

Humans

West Nile virus

A total of 23 new cases of West Nile virus (WNV) illness were reported this week from the following 9 counties: Contra Costa (2), Kern (2), Kings (3), Los Angeles (6), Orange (4), Placer (1), Riverside (1), San Bernardino (1), and San Diego (3). To date this year, 370 cases of WNV illness have been reported from 29 counties. Of the 370 case-patients, 271(73%) had neuroinvasive illness and 16 fatalities have been reported from 10 counties. The median age of the individuals is 60 years (range: 8-94 years) and 230 (62%) are male. Dates of symptom onset range from June 17 to October 12. In addition, 37 asymptomatic WNV-positive blood donors have been reported from Fresno (2), Los Angeles (10), Madera (1), Orange (4), Riverside (1), Sacramento (4), 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 8 dead birds tested positive for WNV from the following 4 counties: Los Angeles (4), San Diego (2), San Mateo (1), and Santa Clara (1). In 2016, 1,340 dead birds have tested positive for WNV from 33 counties, whereas at this time last year, 1,219 WNV positive birds had been reported from 37 counties.

Mosquito Pools

West Nile virus

A total of 35 WNV positive mosquito pools were reported this week from 6 counties: Contra Costa (1), Fresno (1), Los Angeles (1), Madera (1), Orange (7), and San Diego (24). In 2016, 3,481 WNV positive mosquito pools have been reported from 31 counties, whereas at this time last year, 3,006 WNV positive mosquito pools had been reported from 29 counties.

St. Louis encephalitis virus

No SLEV positive mosquito pools were reported this week. To date this year, 179 SLEV positive mosquito pools have been reported from 8 counties: Fresno (1), Kern (75), Kings (4), Los Angeles (2), Madera (3), Orange (2), Riverside (91), 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 7 WNV positive chickens were reported this week from 2 counties: Los Angeles (4) and San Bernardino (3). To date this year, 335 WNV seroconversions have been detected in 81 flocks located in 19 counties, whereas at this time last year, 385 WNV seroconversions had been detected in 89 flocks from 22 counties.

St. Louis encephalitis virus

No SLEV positive chickens were reported this week. In 2016, 4 SLEV seroconversions have been detected in 3 flocks located in 2 counties: Los Angeles (2) and San Bernardino (2). At this time last year, 8 SLEV seroconversions had been 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	3	33	11	5
El Dorado	1	4		
Fresno	9	6	185	
Glenn	5	4	11	10
Imperial			1	
Kern	14		80	
Kings	6	4	118	
Lake	1	5	39	5
Los Angeles	128	121	423	120
Madera	5	5	101	
Marin		5		
Merced		5	12	33
Monterey	1			
Napa		1	4	
Nevada		2		1
Orange	33	85	423	
Placer	7	30	103	7
Riverside	5	16	32	
Sacramento	22	411	455	3
San Bernardino	8	5	79	23
San Diego	17	262	89	9
San Joaquin	7	37	350	
San Mateo		14	5	
Santa Clara	1	89	13	1
Santa Cruz		2	3	
Shasta	1	3	12	3
Solano	3	13	16	10
Sonoma		8	2	
Stanislaus	22	14	259	
Sutter	10	10	68	33
Tehama	5			8
Tulare	9	3	260	
Ventura	2	34		
Yolo	13	72	259	4
Yuba	9	4	18	13
Totals	370	1,340	3,481	335

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2015 & 2016 YTD West Nile Virus Comparisons		
	2015	2016
Total # Dead Bird Reports	10,125	8,790
# Positive Counties	40	38
# Human Cases	469	370
# Positive Dead Birds / # Tested	1,219 / 2,980	1,340 / 2,759
# Positive Mosquito Pools / # Tested	3,006 / 36,006	3,481 / 42,165
# Seroconversions / # Tested	385 / 11,644	335 / 10,170

TESTING SUMMARIES

Humans

		WNV	SLE	WEE
Number of Cases Reported	Week	23	0	0
	YTD	370	1	0

Dead Birds

		Total Tested	WNV Positive
Dead Birds	Week	11	8
	YTD	2,759	1,340

Sentinel Chickens

		Total Tested	WNV +	SLEV +	WEEV +
Chicken Sera	Week	220	7	0	0
	YTD	10,170	335	4	0

Mosquitoes

		Positive / Total Tested					
		WNV	SLEV	WEEV	CHIK	DENV	ZIKA
Mosquito Pools	Week	35 / 496	0 / 315	0 / 315	0 / 89	0 / 89	0 / 89
	YTD	3,481 / 42,165	179 / 27,402	0 / 27,402	0 / 803	0 / 803	0 / 803

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NEW POSITIVES

Dead Birds

County	Agency	City	Zip Code	Species	Date Reported	Virus
Los Angeles	Los Angeles Co Veterinarian	Malibu	90265	American Crow	10/24/2016	WNV
Los Angeles	Los Angeles Co Veterinarian	Marina Del Rey	90292	American Crow	10/12/2016	WNV
Los Angeles	Los Angeles Co Veterinarian	Sun Valley	91502	Merlin	10/24/2016	WNV
Los Angeles	Los Angeles Co Veterinarian	Venice	90291	American Crow	10/24/2016	WNV
San Diego	San Diego Co VCP	La Jolla	92037	American Crow	10/24/2016	WNV
San Diego	San Diego Co VCP	Valley Center	92114	Cooper's Hawk	10/20/2016	WNV
San Mateo	San Mateo Co MVCD	Atherton	94027	American Crow	10/21/2016	WNV
Santa Clara	Santa Clara Co VCD	Cupertino	95014	American Crow	10/19/2016	WNV

Mosquitoes

County	Site Code	Pool #	Species	City	# in Pool	Trap Type	Collected	Virus
Contra Costa	CNTR7202	492	Cx. tarsalis	Bethel Island	14	CO2	10/24/2016	WNV
Fresno	FRWS400002	485	Cx. quinquefasciatus	Mendota	50	GRVD	10/20/2016	WNV
Los Angeles	SGVA32	640	Cx. quinquefasciatus	Arcadia	4	CO2	10/25/2016	WNV
Madera	MADR3334	469	Cx. quinquefasciatus	Madera	24	CO2	10/25/2016	WNV
Orange	ORCO1026	4439	Cx. quinquefasciatus	Seal Beach	30	CO2	10/18/2016	WNV
Orange	ORCO205	4500	Cx. quinquefasciatus	Tustin	46	GRVD	10/20/2016	WNV
Orange	ORCO217	4432	Cx. quinquefasciatus	Santa Ana	29	GRVD	10/18/2016	WNV
Orange	ORCO218	4456	Cx. quinquefasciatus	Anaheim	27	GRVD	10/19/2016	WNV
Orange	ORCO244	4419	Cx. quinquefasciatus	Garden Grove	23	GRVD	10/18/2016	WNV
Orange	ORCO245	4429	Cx. quinquefasciatus	Santa Ana	32	GRVD	10/18/2016	WNV
Orange	ORCO55	4430	Cx. quinquefasciatus	Mission Viejo	4	GRVD	10/18/2016	WNV
San Diego	SAND10569	776	Cx. quinquefasciatus	San Diego	39	GRVD	7/29/2016	WNV
San Diego	SAND10569	803	Cx. quinquefasciatus	San Diego	14	GRVD	8/9/2016	WNV
San Diego	SAND10725	740	Cx. quinquefasciatus	San Diego	50	GRVD	7/15/2016	WNV
San Diego	SAND10739	754	Cx. quinquefasciatus		12	GRVD	7/21/2016	WNV
San Diego	SAND10740	757	Cx. quinquefasciatus	Rancho Santa Fe	11	GRVD	7/21/2016	WNV
San Diego	SAND10742	752	Cx. quinquefasciatus		14	GRVD	7/21/2016	WNV
San Diego	SAND10750	755	Cx. quinquefasciatus	Rancho Santa Fe	18	GRVD	7/22/2016	WNV
San Diego	SAND10759	758	Cx. quinquefasciatus	San Diego	18	GRVD	7/22/2016	WNV
San Diego	SAND10779	774	Cx. quinquefasciatus	La Mesa	22	GRVD	7/28/2016	WNV
San Diego	SAND10804	775	Cx. quinquefasciatus		48	GRVD	7/29/2016	WNV
San Diego	SAND10804	798	Cx. quinquefasciatus		16	GRVD	8/9/2016	WNV
San Diego	SAND10807	782	Cx. quinquefasciatus	Coronado	8	GRVD	7/29/2016	WNV
San Diego	SAND10808	783	Cx. quinquefasciatus		27	GRVD	7/29/2016	WNV
San Diego	SAND10808	804	Cx. quinquefasciatus		5	GRVD	8/5/2016	WNV
San Diego	SAND10823	785	Cx. quinquefasciatus	El Cajon	18	GRVD	8/2/2016	WNV
San Diego	SAND10823	795	Cx. quinquefasciatus	El Cajon	10	GRVD	8/9/2016	WNV
San Diego	SAND10831	786	Cx. quinquefasciatus	San Diego	12	GRVD	8/4/2016	WNV
San Diego	SAND10849	796	Cx. quinquefasciatus	San Diego	31	GRVD	8/9/2016	WNV
San Diego	SAND10852	799	Cx. quinquefasciatus		29	GRVD	8/9/2016	WNV
San Diego	SAND10855	801	Cx. quinquefasciatus	La Mesa	11	GRVD	8/9/2016	WNV
San Diego	SAND10856	797	Cx. quinquefasciatus		33	GRVD	8/9/2016	WNV
San Diego	SAND10857	802	Cx. quinquefasciatus	San Diego	6	GRVD	8/9/2016	WNV
San Diego	SAND10858	800	Cx. quinquefasciatus	San Diego	15	GRVD	8/9/2016	WNV
San Diego	SAND20	751	Cx. tarsalis	San Diego	34	CO2	7/21/2016	WNV

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Sentinel Chickens

County	Site Code	City	Date Bled	Virus	Band 01	Band 02	Band 03
Los Angeles	GRLA2132	Wilmington	10/19/2016	WNV	1219		
Los Angeles	GRLA2465	Los Feliz	10/19/2016	WNV	1243	1245	1249
San Bernardino	SANB0003	Colton	10/19/2016	WNV	1729		
San Bernardino	SANB0006	Yucaipa	10/19/2016	WNV	1733	1738	

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.westnilemaps.usgs.gov