

California Arbovirus Surveillance Bulletin #38

Week 48 Friday, December 2, 2016



Weekly Update

Humans

West Nile virus

A total of 10 new human cases of West Nile virus (WNV) illness were reported this week from the following 6 counties: Contra Costa (1), Fresno (1), Los Angeles (5), Sacramento (1), Stanislaus (1), and Yuba (1). To date this year, 406 human cases of WNV illness have been reported from 29 counties. Of the 406 case-patients, 304 (75%) had neuroinvasive illness and 18 fatalities have been reported from 11 counties. The median age of the individuals is 60 years (range: 8-94 years) and 249 (61%) are male. Dates of symptom onset range from June 17 to November 21. In addition, 39 asymptomatic WNV-positive blood donors have been reported this year from Fresno (2), Los Angeles (11), Madera (1), Orange (4), Riverside (1), Sacramento (4), San Diego (2), San Francisco (1), San Joaquin (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. To date this year, three human cases of SLEV disease have been reported from Fresno (1), Kern (1), and Sacramento (1) counties.

Dead Birds

One WNV positive bird was reported this week from San Mateo County. To date this year, 1,346 dead birds have tested positive for WNV from 33 counties, whereas at this time last year, 1,333 WNV positive birds had been reported from 37 counties.

Mosquito Pools

West Nile virus

A total of 13 WNV positive mosquito pools were reported this week from Los Angeles (1) and Orange (12) counties. To date this year, 3,509 WNV positive mosquito pools have been reported from 31 counties, whereas at this time last year, 3,287 WNV positive mosquito pools had been reported from 29 counties.

St. Louis encephalitis virus

No new positives were reported this week. To date this year, 180 SLEV positive mosquito pools have been reported from 8 counties: Fresno (1), Kern (75), Kings (4), Los Angeles (2), Madera (3), Orange (2), Riverside (92), and Tulare (1). At this time last year, 38 SLEV positive mosquito pools had been reported from Riverside County.

Sentinel Chickens

West Nile virus

No new seroconversions were reported this week. To date this year, 343 WNV seroconversions have been detected in 82 flocks located in 19 counties, whereas at this time last year, 449 WNV seroconversions had been detected in 96 flocks from 22 counties.

St. Louis encephalitis virus

No new seroconversions were reported this week. To date this year, 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, 9 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	4	33	11	5
El Dorado	1	4		
Fresno	11	6	185	
Glenn	5	4	11	10
Imperial			1	
Kern	17		80	
Kings	7	4	118	
Lake	1	5	39	5
Los Angeles	142	124	435	126
Madera	6	5	101	
Marin		5		
Merced		5	12	35
Monterey	1			
Napa		1	4	
Nevada		2		1
Orange	33	87	436	
Placer	7	30	103	7
Riverside	6	16	32	
Sacramento	24	411	455	3
San Bernardino	8	5	82	23
San Diego	17	262	89	9
San Joaquin	12	37	350	
San Mateo		15	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	25	14	259	
Sutter	11	10	68	33
Tehama	5			8
Tulare	10	3	260	
Ventura	2	34		
Yolo	13	72	259	4
Yuba	10	4	18	13
Totals	406	1,346	3,509	343

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2015 & 2016 YTD West Nile Virus Comparisons		
	2015	2016
Total # Dead Bird Reports	10,623	9,040
# Positive Counties	40	38
# Human Cases	641	406
# Positive Dead Birds / # Tested	1,333 / 3,174	1,346 / 2,830
# Positive Mosquito Pools / # Tested	3,287 / 36,382	3,509 / 43,955
# Seroconversions / # Tested	449 / 12,436	343 / 10,925

TESTING SUMMARIES

Humans

		WNV	SLEV	WEEV
Number of Cases Reported	Week	10	0	0
	YTD	406	3	0

Dead Birds

		Total Tested	WNV Positive
Dead Birds	Week	26	1
	YTD	2,830	1,346

Sentinel Chickens

		Total Tested	WNV +	SLEV +	WEEV +
Chicken Sera	Week	112	0	0	0
	YTD	10,925	343	4	0

Mosquitoes

		Positive / Total Tested						
Mosquito Pools	Week	WNV	SLEV	WEEV	CHIK	DENV	ZIKA	
		Week	13 / 549	0 / 190	0 / 190	0 / 54	0 / 54	0 / 54
		YTD	3,509 / 43,955	180 / 28,795	0 / 28,795	0 / 1,130	0 / 1,130	0 / 1,130

NEW POSITIVES

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Dead Birds

County	Agency	City	ZIP Code	Species	Date Reported	Virus
San Mateo	San Mateo Co MVCD	Menlo Park	94025	American Crow	11/17/2016	WNV

Mosquitoes

County	Site Code	Pool #	Species	City	# in Pool	Trap Type	Collected	Virus
Los Angeles	LACW1039	532	Cx. quinquefasciatus	El Segundo	28	CO2	11/15/2016	WNV
Orange	ORCO1031	4515	Cx. quinquefasciatus	Los Alamitos	19	GRVD	10/20/2016	WNV
Orange	ORCO1040	4594	Cx. quinquefasciatus	Orange	6	GRVD	10/27/2016	WNV
Orange	ORCO1041	4590	Cx. quinquefasciatus	Tustin	36	GRVD	10/27/2016	WNV
Orange	ORCO213	4845	Cx. quinquefasciatus	Garden Grove	3	CO2	11/15/2016	WNV
Orange	ORCO217	4624	Cx. quinquefasciatus	Santa Ana	6	GRVD	10/28/2016	WNV
Orange	ORCO217	4772	Cx. quinquefasciatus	Santa Ana	50	GRVD	11/8/2016	WNV
Orange	ORCO238	4749	Cx. quinquefasciatus	Anaheim	50	GRVD	11/8/2016	WNV
Orange	ORCO238	4750	Cx. quinquefasciatus	Anaheim	27	GRVD	11/8/2016	WNV
Orange	ORCO241	4729	Cx. quinquefasciatus	Stanton	23	GRVD	11/8/2016	WNV
Orange	ORCO244	4745	Cx. quinquefasciatus	Garden Grove	20	GRVD	11/8/2016	WNV
Orange	ORCO84	4589	Cx. quinquefasciatus	Orange	27	GRVD	10/27/2016	WNV
Orange	ORCO85	4770	Cx. quinquefasciatus	Garden Grove	40	GRVD	11/8/2016	WNV

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.
