

California Arbovirus Surveillance Bulletin #39

Week 49 Friday, December 9, 2016



Weekly Update

Humans

West Nile virus

A total of 5 new human cases of West Nile virus (WNV) illness were reported this week from the following 3 counties: Amador (1), Los Angeles (3), and Stanislaus (1). To date this year, 411 human cases of WNV illness have been reported from 30 counties. Of the 411 case-patients, 308 (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 252 (61%) are male. Dates of symptom onset range from June 17 to November 7. 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, 3 human cases of SLEV disease have been reported from Fresno (1), Kern (1), and Sacramento (1) counties.

Dead Birds

A total of 4 WNV positive birds were reported this week from 2 counties: Orange (2), and San Diego (2). To date this year, 1,350 dead birds have tested positive for WNV from 33 counties, whereas at this time last year, 1,339 WNV positive birds had been reported from 37 counties.

Mosquito Pools

West Nile virus

No new positives were reported this week. To date this year, 3,514 WNV positive mosquito pools have been reported from 31 counties, whereas at this time last year, 3,288 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	
Amador	1			
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	145	124	435	126
Madera	6	5	101	
Marin		5		
Merced		5	12	35
Monterey	1			
Napa		1	4	
Nevada		2		1
Orange	33	89	436	
Placer	7	30	103	7
Riverside	6	16	32	
Sacramento	24	411	455	3
San Bernardino	8	5	82	23
San Diego	17	264	94	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	26	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	411	1,350	3,514	343

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2015 & 2016 YTD West Nile Virus Comparisons		
	2015	2016
Total # Dead Bird Reports	10,695	9,083
# Positive Counties	41	39
# Human Cases	681	411
# Positive Dead Birds / # Tested	1,339 / 3,189	1,350 / 2,847
# Positive Mosquito Pools / # Tested	3,288 / 36,389	3,514 / 44,050
# Seroconversions / # Tested	449 / 12,451	343 / 10,925

TESTING SUMMARIES

Humans

		WNV	SLEV	WEEV
Number of Cases Reported	Week	5	0	0
	YTD	411	3	0

Dead Birds

		Total Tested	WNV Positive
Dead Birds	Week	17	4
	YTD	2,847	1,350

Sentinel Chickens

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

Mosquitoes

		Positive / Total Tested						
Mosquito Pools	Week	WNV	SLEV	WEEV	CHIK	DENV	ZIKA	
		Week	0 / 95	0 / 74	0 / 74	0 / 34	0 / 34	0 / 34
		YTD	3,514 / 44,050	180 / 28,869	0 / 28,869	0 / 1,164	0 / 1,164	0 / 1,164

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NEW POSITIVES

Dead Birds

County	Agency	City	Zip Code	Species	Date Reported	Virus
Orange	Orange Co VCD	Garden Grove	92845	Red-tailed Hawk	11/12/2016	WNV
Orange	Orange Co VCD	Irvine	92602	Turkey Vulture	11/14/2016	WNV
San Diego	San Diego Co VCP	San Diego	92121	Red-shouldered Hawk	12/6/2016	WNV
San Diego	San Diego Co VCP	Santa Ysabel	92070	Western Scrub-Jay	12/5/2016	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.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
