

California Arbovirus Surveillance Bulletin #40

Week 50 Friday, December 16, 2016



Weekly Update

Humans

West Nile virus

To date in 2016, 417 human cases of WNV illness have been reported from 30 counties. Of the 417 case-patients, 311 (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 253 (61%) are male. Dates of symptom onset range from June 17 to November 29. In addition, 38 asymptomatic WNV-positive blood donors have been reported this year from Fresno (2), Los Angeles (10), 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

To date in 2016, 3 human cases of SLEV disease have been reported from Fresno (1), Kern (1), and Sacramento (1) counties.

Dead Birds

In 2016, a total of 1,350 dead birds have tested positive for WNV from 33 counties. At this time last year, 1,345 WNV positive birds had been reported from 37 counties.

Mosquito Pools

West Nile virus

In 2016, a total of 3,519 WNV positive mosquito pools have been reported from 31 counties. At this time last year, 3,328 WNV positive mosquito pools had been reported from 29 counties.

St. Louis encephalitis virus

In 2016, a total of 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

In 2016, a total of 343 WNV seroconversions have been detected in 82 flocks located in 19 counties. At this time last year, 449 WNV seroconversions had been detected in 96 flocks from 22 counties.

St. Louis encephalitis virus

In 2016, a total of 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	6	4	11	10
Imperial			1	
Kern	17		80	
Kings	7	4	118	
Lake	1	5	39	5
Los Angeles	147	124	435	126
Madera	6	5	101	
Marin		5		
Merced		5	12	35
Monterey	1			
Napa		1	4	
Nevada		2		1
Orange	32	89	436	
Placer	7	30	103	7
Riverside	7	16	32	
Sacramento	24	411	455	3
San Bernardino	8	5	82	23
San Diego	20	264	99	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	417	1,350	3,519	343

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2015 & 2016 YTD West Nile Virus Comparisons		
	2015	2016
Total # Dead Bird Reports	10,757	9,107
# Positive Counties	41	39
# Human Cases	707	417
# Positive Dead Birds / # Tested	1,345 / 3,211	1,350 / 2,853
# Positive Mosquito Pools / # Tested	3,328 / 36,425	3,519 / 44,174
# Seroconversions / # Tested	449 / 12,501	343 / 10,925

TESTING SUMMARIES

Humans

		WNV	SLEV	WEEV
Number of Cases Reported	Week	7	0	0
	YTD	417	3	0

Dead Birds

		Total Tested	WNV Positive
Dead Birds	Week	6	0
	YTD	2,853	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 / 124	0 / 124	0 / 124	0 / 28	0 / 28	0 / 28
		YTD	3,519 / 44,174	180 / 28,993	0 / 28,993	0 / 1,192	0 / 1,192	0 / 1,192

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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
