

California Arbovirus Surveillance Bulletin #35

Week 50 Friday, December 14, 2018



Weekly Update

Humans

West Nile virus

To date in 2018, a total of 203 human West Nile virus (WNV) cases have been reported from 31 counties. Of the 203 case-patients, 142 (70%) had neuroinvasive illness and eight (3.9%) fatalities have been reported. The median age of the individuals is 60 years (range: 1–91 years) and 129 (64%) are male. Dates of symptom onset ranged from May 6 – November 8. In addition to the 203 cases, 22 asymptomatic infections have been reported from Butte (5), Contra Costa (2), Fresno (1), Los Angeles (4), Orange (2), Riverside (1), Sacramento (2), San Joaquin (1), Stanislaus (3), and Yolo (1) counties. At this time last year, 502 human WNV cases had been reported from 27 counties.

St. Louis encephalitis virus

To date in 2018, a total of five human cases of St. Louis encephalitis virus (SLEV) disease have been reported from the following counties: Fresno (1), Kern (1), Los Angeles (2), and Stanislaus (1). Four (80%) of the case-patients had neuroinvasive disease and no fatalities have been reported. The median age of the individuals is 63 years (range: 31–77) and two (40%) are male. At this time last year, two human SLEV cases had been reported from two counties.

Dead Birds

No new positives were reported this week. In 2018, a total of 499 WNV positive dead birds have been reported from 21 counties. At this time last year, 505 WNV positive dead birds had been reported from 39 counties.

Mosquito Pools

West Nile virus

No new positives were reported this week. In 2018, 1,963 mosquito pools have tested positive for WNV from 29 counties. At this time last year, 3,371 WNV positive mosquito pools had been reported from 27 counties.

St. Louis encephalitis virus

No new positives were reported this week. In 2018, 387 SLEV positive mosquito pools have been reported from 8 counties: Fresno (56), Imperial (3), Kern (65), Kings (30), Los Angeles (1), Madera (14), Riverside (56), and Tulare (162). At this time last year, 179 SLEV positive mosquito pools had been reported from 14 counties.

Sentinel Chickens

West Nile virus

No new positives were reported this week. In 2018, 163 WNV positive chickens have been reported from 16 counties. At this time last year, 305 WNV positive chickens had been reported from 18 counties.

St. Louis encephalitis virus

No new positives were reported this week. In 2018, one sentinel chicken has tested positive for SLEV from Merced County. At this time last year, 9 SLEV positive chickens had been reported from 3 counties.

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2017 & 2018 YTD West Nile Virus Comparisons		
	2017	2018
Total # Dead Bird Reports	7,629	8,090
# Positive Counties	47	41
# Human Cases	502	203
# Positive Dead Birds / # Tested	505 / 2,005	499 / 2,189
# Positive Mosquito Pools / # Tested	3,371 / 44,377	1,963 / 42,110
# Seroconversions / # Tested	305 / 11,029	163 / 10,162

YTD WNV Activity by Element and County, 2018					
County	Humans	Horses	Dead Birds	Mosquito Pools	Sentinel Chickens
Alameda			20	15	
Amador	1	1			
Butte	11		4	48	37
Colusa					6
Contra Costa	4		13	17	16
El Dorado			2		
Fresno	11			119	
Glenn	2			4	
Humboldt	1		1		
Imperial				1	
Kern	12	1	1	48	
Kings				22	
Lake	1			4	1
Los Angeles	43		19	75	30
Madera	3			55	
Merced	2	2		12	16
Monterey	1				
Napa	1				
Nevada	1				
Orange	9		16	96	
Placer	9	1	44	230	4
Riverside	14		6	36	
Sacramento	13	3	241	300	5
San Benito					1
San Bernardino	7			12	
San Diego	1		1	3	
San Joaquin	13	1	16	533	
San Mateo			5	2	
Santa Clara	1		56	5	8
Santa Cruz			2		
Shasta	1	1	5	8	4
Solano				3	7
Sonoma				1	
Stanislaus	15	1	1	111	
Sutter	1		4	28	20
Tehama	2				1
Tulare	8			77	
Tuolumne	1		1		
Ventura	2				
Yolo	10		41	90	5
Yuba	2			8	2
Totals	203	11	499	1,963	163

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TESTING SUMMARIES

Humans

		WNV	SLE	WEE
Human Cases	Week	14	4	0
	YTD	203	5	0

Dead Birds

		Number Tested	WNV Positive
Dead Birds	Week	12	0
	YTD	2,189	499

Chickens

		Number Tested	WNV Positive	SLEV Positive	WEEV Positive
Chicken Sera	Week	0	0	0	0
	YTD	10,162	163	1	0

Mosquitoes

		Positive / Total Tested						
Mosquito Pools		WNV	SLEV	WEEV	CHIK	DENV	ZIKA	
		Week	0 / 89	0 / 89	0 / 89	0 / 148	0 / 148	0 / 148
		YTD	1,963 / 42,110	387 / 34,260	0 / 29,371	0 / 2,272	0 / 2,272	0 / 2,272

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 with a plaque reduction neutralization test (PRNT).

Dead Birds

Oral swab samples collected from bird carcasses are tested at the UC Davis Arbovirus Research and Training laboratory (DART) or at a local agency for West Nile virus by RT-qPCR.

Sentinel Chickens:

Dried blood spot samples from sentinel chickens are tested at the California Department of Public Health Vector-Borne Disease Laboratory for IgG antibodies to West Nile, St. Louis encephalitis, and western equine encephalomyelitis viruses by an EIA. Positive samples are confirmed by IFA, western-blot, or PRNT.

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Mosquito Pools:

Mosquito pools are tested at DART or at a local agency for West Nile, western equine encephalomyelitis, and St. Louis encephalitis viral RNA using a multiplex RT-qPCR. Invasive *Aedes* mosquitoes (*Ae. aegypti* and *Ae. albopictus*) are also tested at DART for chikungunya, dengue, and Zika viral RNA by a separate RT-qPCR.

Website Information: For updated information on WNV and SLEV 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 websites: www.cdc.gov and https://wwwn.cdc.gov/arbovet/maps/ADB_Diseases_Map/index.html

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