

California Arbovirus Surveillance Bulletin #35

Week 49 Friday, December 6, 2019



Weekly Update

Humans

West Nile virus

A total of 9 human cases of West Nile virus (WNV) illness were reported this week from 5 counties: Fresno (1), Kern (4), Los Angeles (1), Madera (1), and San Bernardino (2). In 2019, 205 WNV cases have been reported from 23 counties. Of the 205 reported cases, 136 (66%) had neuroinvasive disease and 6 (2.9%) fatalities have been reported. The median age of the individuals is 59 years (range: 10–93 years) and 123 (60%) are male. Dates of symptom onset range from May 12 to November 6. In addition to the 205 cases, 17 asymptomatic infections have also been reported from Butte (1), El Dorado (1), Kern (3), Madera (1), Merced (1), Orange (2), San Bernardino (4), San Joaquin (1), Stanislaus (1), Sutter (1), and Tulare (1) counties. At this time last year, 203 human cases had been reported from 31 counties.

St. Louis encephalitis virus

No new cases were reported this week. In 2019, 6 human cases of St. Louis encephalitis virus (SLEV) disease have been reported from 4 counties: Fresno (2), Kern (1), Imperial (2), and Stanislaus (1). Of the 6 reported cases, 6 (100%) had neuroinvasive disease. The median age of the individuals is 64 years and dates of symptom onset range from July 14 to September 13. No fatalities have been reported. At this time last year, 5 SLEV human cases had been reported from 4 counties.

Dead Birds

A total of 2 WNV positive dead birds were reported this week from Orange County. In 2019, a total of 225 WNV positive dead birds have been reported from 21 counties. At this time last year, 499 WNV positive dead birds had been reported from 21 counties.

Mosquito Pools

West Nile virus

A total of 4 WNV positive mosquito pool were reported this week from Orange County. In 2019, a total of 3,288 WNV positive mosquito pools have been reported from 25 counties. At this time last year, 1,963 WNV positive mosquito pools had been reported from 29 counties.

St. Louis encephalitis virus

No SLEV positive mosquito pools were reported this week. In 2019, a total of 356 SLEV positive mosquito pools have been reported from 12 counties: Fresno (58), Imperial (5), Kern (56), Kings (4), Los Angeles (2), Madera (5), Merced (2), Orange (3), Riverside (108), San Bernardino (4), Stanislaus (13), and Tulare (96). At this time last year, 387 SLEV positive mosquito pools had been reported from 8 counties.

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Sentinel Chickens

West Nile virus

No new WNV seroconversions were reported this week. In 2019, 139 WNV positive chickens have been reported from 17 counties. At this time last year, 163 WNV positive chickens had been reported from 16 counties.

St. Louis encephalitis virus

No new SLEV seroconversions were reported this week. In 2019, 3 SLEV positive chickens have been reported from 1 county (Merced). At this time last year, 1 SLEV positive chicken had been reported from 1 county.

2018 & 2019 YTD West Nile Virus Comparisons		
	2018	2019
Total # Dead Bird Reports	8,090	5,564
# Positive Counties	41	33
# Human Cases	203	205
# Positive Dead Birds / # Tested	499 / 2,189	225 / 1,799
# Positive Mosquito Pools / # Tested	1,963 / 42,110	3,288 / 42,610
# Seroconversions / # Tested	163 / 10,162	139 / 9,135

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YTD WNV Activity by Element and County, 2019					
County	Humans	Horses	Dead Birds	Mosquito Pools	Sentinel Chickens
Amador	1				
Butte	5		1	44	34
Colusa	1				6
Contral Costa			1	1	2
Fresno	50	2	10	495	
Glenn				1	1
Imperial	3			2	
Kern	27	2	2	128	
Kings	2			63	
Lake				6	
Los Angeles	30		52	94	28
Madera	3	2		85	
Merced	10	1	3	48	16
Orange	5		50	208	
Placer	1		3	53	8
Riverside	10	1	5	524	
Sacramento	2	1	44	74	4
San Benito					1
San Bernardino	7	1	4	52	
San Diego	2		2		
San Joaquin	7	1	5	288	
San Luis Obispo	2				
Santa Clara	1		8		
Shasta			1	3	1
Solano	1			5	4
Stanislaus	16	2	4	203	
Sutter				15	11
Tehama					4
Tulare	17		17	814	10
Tuolumne		1	1		
Ventura	2	1	2	1	3
Yolo			7	59	1
Yuba			3	22	5
Totals	205	15	225	3,288	139

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TESTING SUMMARIES

Humans

		WNV	SLEV	WEEV
Human Cases	Week	9	0	0
	YTD	205	6	0

Dead Birds

		Number Tested	WNV Positive
Dead Birds	Week	32	2
	YTD	1,799	225

Chickens

		Number Tested	WNV Positive	SLEV Positive	WEEV Positive
Chicken Sera	Week	8	0	0	0
	YTD	9,135	139	3	0

Mosquitoes

		Positive / Total Tested						
Mosquito Pools	Week	WNV	SLEV	WEEV	CHIK	DENV	ZIKA	
		Week	4 / 148	0 / 96	0 / 96	0 / 0	0 / 0	0 / 0
		YTD	3,288 / 42,610	356 / 38,699	0 / 35,908	0 / 884	0 / 884	0 / 884

POSITIVES

Dead Birds

County	Agency	City	Zip Code	Species	Date Reported	Virus
Orange	Orange Co VCD	Fullerton	92832	American Crow	11/15/2019	WNV
Orange	Orange Co VCD	Tustin	92780	American Crow	11/20/2019	WNV

Mosquito Pools

County	Site Code	Pool #	Species	City	# in Pool	Trap Type	Collected	Virus
Orange	ORCO236	5258	Cx. quinquefasciatus	Garden Grove	26	GRVD	11/5/19	WNV
Orange	ORCO238	5453	Cx. quinquefasciatus	Anaheim	33	GRVD	11/15/19	WNV
Orange	ORCO29	5344	Cx. quinquefasciatus	Santa Ana	31	CO2	11/7/19	WNV
Orange	ORCO323	5354	Cx. quinquefasciatus	Buena Park	13	BGSENT	11/13/19	WNV

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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 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.

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.

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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 websites: www.cdc.gov and https://wwwn.cdc.gov/arbovet/maps/ADB_Diseases_Map/index.html