

California Arbovirus Surveillance Bulletin #31

Week 44 Friday, November 1, 2019



Weekly Update

Humans

West Nile virus

A total of 9 human cases of West Nile virus (WNV) illness were reported this week from 6 counties: Fresno (1), Kern (4), Orange (1), Sacramento (1), San Joaquin (1), and Stanislaus (1). In 2019, 178 human WNV cases have been reported from 20 counties. Of the 178 reported cases, 114 (64%) had neuroinvasive disease and 5 (2.8%) fatalities have been reported. The median age of the individuals is 59 years (range: 10–93 years) and 108 (61%) are male. Dates of symptom onset range from May 12 to October 10. In addition to the 178 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, 170 human cases had been reported from 30 counties.

St. Louis encephalitis virus

No new cases were reported this week. In 2019, 5 SLEV human cases have been reported from 3 counties: Fresno (2), Kern (1), and Imperial (2). Of the 5 reported cases, 5 (100%) had neuroinvasive disease. The median age of the individuals is 54 years and dates of symptom onset range from July 14 to August 10. No fatalities have been reported. At this time last year, 1 SLEV human case had been reported from 1 county.

Dead Birds

A total of 5 WNV positive dead birds were reported this week from 2 counties: Los Angeles (1) and Orange (4). In 2019, a total of 210 WNV positive dead birds have been reported from 21 counties. At this time last year, 496 WNV positive dead birds had been reported from 20 counties.

Mosquito Pools

West Nile virus

A total of 5 WNV positive mosquito pools were reported this week from 3 counties: Contra Costa (1), Los Angeles (3) and Riverside (1). **This is the first WNV positive mosquito pool reported from Contra Costa County this year.** In 2019, a total of 3,269 WNV positive mosquito pools have been reported from 25 counties. At this time last year, 1,959 WNV positive mosquito pools had been reported from 29 counties.

St. Louis encephalitis virus

No new positives were reported this week. In 2019, a total of 355 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 (107), 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

A total of 2 WNV seroconversions were reported this week from 2 counties: Butte (1) and Sacramento (1). In 2019, 135 WNV positive chickens have been reported from 17 counties. At this time last year, 156 WNV positive chickens had been reported from 16 counties.

St. Louis encephalitis virus

No new 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	7,642	5,200
# Positive Counties	40	33
# Human Cases	170	178
# Positive Dead Birds / # Tested	496 / 2,065	210 / 1,693
# Positive Mosquito Pools / # Tested	1,959 / 41,403	3,269 / 41,991
# Seroconversions / # Tested	156 / 9,575	135 / 8,642

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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
Contra Costa			1	1	2
Fresno	46	2	10	495	
Glenn				1	1
Imperial	3			2	
Kern	19	2	2	128	
Kings				63	
Lake				6	
Los Angeles	24		45	90	24
Madera	2	2		85	
Merced	8	1	3	48	16
Orange	5		46	194	
Placer			3	53	8
Riverside	10	1	4	523	
Sacramento	2	1	44	74	4
San Benito					1
San Bernardino	5	1	4	52	
San Diego	2		1		
San Joaquin	7	1	5	288	
San Luis Obispo	2				
Santa Clara			7		
Shasta			1	3	1
Solano	1			5	4
Stanislaus	17	2	4	203	
Sutter				15	11
Tehama					4
Tulare	17		17	814	10
Tuolumne		1	1		
Ventura	1	1	1	1	3
Yolo			7	59	1
Yuba			3	22	5
Totals	178	15	210	3,269	135

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TESTING SUMMARIES

Humans

		WNV	SLEV	WEEV
Human Cases	Week	9	0	0
	YTD	178	5	0

Dead Birds

		Number Tested	WNV Positive
Dead Birds	Week	35	5
	YTD	1,693	210

Chickens

		Number Tested	WNV Positive	SLEV Positive	WEEV Positive
Chicken Sera	Week	125	2	0	0
	YTD	8,642	135	3	0

Mosquitoes

		Positive / Total Tested						
Mosquito Pools	Week	WNV	SLEV	WEEV	CHIK	DENV	ZIKA	
		Week	5 / 279	0 / 279	0 / 279	0 / 0	0 / 0	0 / 0
		YTD	3,269 / 41,991	355 / 38,183	0 / 35,392	0 / 858	0 / 858	0 / 858

POSITIVES

Dead Birds

County	Agency	City	Zip Code	Species	Date Reported	Virus
Los Angeles	Los Angeles Co West VCD	Culver City	90230	American Crow	9/29/2019	WNV
Orange	Orange Co VCD	Anaheim	92805	American Crow	10/16/2019	WNV
Orange	Orange Co VCD	Buena Park	90620	American Crow	10/17/2019	WNV
Orange	Orange Co VCD	Garden Grove	92840	American Crow	10/27/2019	WNV
Orange	Orange Co VCD	Irvine	92614	American Crow	10/22/2019	WNV

Mosquito Pools

County	Site Code	Pool #	Species	City	# in Pool	Trap Type	Collected	Virus
Contra Costa	CNTR2302	451	Cx. tarsalis	Martinez	50	CO2	10/28/19	WNV
Los Angeles	GRLA2383	1138	Cx. quinquefasciatus	South Whittier	50	GRVD	10/22/19	WNV
Los Angeles	GRLA2957	1164	Cx. quinquefasciatus	Hawaiian Gardens	33	GRVD	10/25/19	WNV
Los Angeles	GRLA3067	1157	Cx. quinquefasciatus	Gardena	50	GRVD	10/24/19	WNV
Riverside	NWST111	252	Cx. tarsalis	Eastvale	50	CO2	10/16/19	WNV

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Sentinel Chickens

County	Site Code	City	Date Bled	Virus	Band 01
Butte	BUCO0006	Chico	10/22/19	WNV	1973
Sacramento	SAYO203023	Elverta	10/16/2019	WNV	2665

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://www.cdc.gov/arbovet/maps/ADB_Diseases_Map/index.html