

California Arbovirus Surveillance Bulletin #25

Week 43 Friday, October 25, 2019



Weekly Update

Humans

West Nile virus

A total of 11 human cases of West Nile virus (WNV) illness were reported this week from 5 counties: Los Angeles (6), Orange (2), San Joaquin (1), San Luis Obispo (1), and Tulare (1). In 2019, 169 human WNV cases have been reported from 20 counties. Of the 169 reported cases, 107 (63%) had neuroinvasive disease and 4 (2.4%) fatalities have been reported. The median age of the individuals is 58 years (range: 11–93 years) and dates of symptom onset range from May 12 to September 25. In addition to the 169 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, 156 human cases had been reported from 29 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 3 WNV positive dead birds were reported this week from 2 counties: Riverside (2) and Santa Clara (1). In 2019, a total of 205 WNV positive dead birds have been reported from 21 counties. At this time last year, 492 WNV positive dead birds had been reported from 20 counties.

Mosquito Pools

West Nile virus

A total of 2 WNV positive mosquito pools were reported this week from 2 counties: Los Angeles (1) and Placer (1). In 2019, a total of 3,264 WNV positive mosquito pools have been reported from 24 counties. At this time last year, 1,954 WNV positive mosquito pools had been reported from 29 counties.

St. Louis encephalitis virus

A total of 5 SLEV positive mosquito pools were reported this week from 3 counties: Fresno (2), Riverside (1), and San Bernardino (2). 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 3 WNV seroconversions were reported this week from 2 counties: Sacramento (2) and Shasta (1).

This is the first WNV positive chicken reported from Shasta County this year. In 2019, 133 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	7,519	5,147
# Positive Counties	40	33
# Human Cases	156	169
# Positive Dead Birds / # Tested	492 / 2,038	205 / 1,658
# Positive Mosquito Pools / # Tested	1,954 / 40,885	3,264 / 41,712
# Seroconversions / # Tested	156 / 9,400	133 / 8,517

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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	33
Colusa	1				6
Contra Costa			1		2
Fresno	45	2	10	495	
Glenn				1	1
Imperial	3			2	
Kern	15	2	2	128	
Kings				63	
Lake				6	
Los Angeles	24		44	87	24
Madera	2	2		85	
Merced	8	1	3	48	16
Orange	4		42	194	
Placer			3	53	8
Riverside	10	1	4	522	
Sacramento	1	1	44	74	3
San Benito					1
San Bernardino	5	1	4	52	
San Diego	2		1		
San Joaquin	6	1	5	288	
San Luis Obispo	2				
Santa Clara			7		
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	1	1	1	1	3
Yolo			7	59	1
Yuba			3	22	5
Totals	169	15	205	3,264	133

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TESTING SUMMARIES

Humans

		WNV	SLEV	WEEV
Human Cases	Week	11	0	0
	YTD	169	5	0

Dead Birds

		Number Tested	WNV Positive
Dead Birds	Week	19	3
	YTD	1,658	205

Chickens

		Number Tested	WNV Positive	SLEV Positive	WEEV Positive
Chicken Sera	Week	336	3	0	0
	YTD	8,517	133	3	0

Mosquitoes

		Positive / Total Tested						
Mosquito Pools	Week	WNV	SLEV	WEEV	CHIK	DENV	ZIKA	
		Week	2 / 519	5 / 519	0 / 503	0 / 19	0 / 19	0 / 19
		YTD	3,264 / 41,712	355 / 37,904	0 / 35,113	0 / 858	0 / 858	0 / 858

POSITIVES

Dead Birds

County	Agency	City	Zip Code	Species	Date Reported	Virus
Riverside	Northwest Mosquito VCD	Corona	92880	American Crow	9/25/2019	WNV
Riverside	Northwest Mosquito VCD	Corona	92880	American Crow	10/16/2019	WNV
Santa Clara	Santa Clara Co VCD	Campbell	95008	Unknown - songbird	10/18/2019	WNV

Mosquito Pools

County	Site Code	Pool #	Species	City	# in Pool	Trap Type	Collected	Virus
Fresno	CNSL2189	942	Cx. quinquefasciatus	Sanger	14	GRVD	10/17/19	SLEV
Fresno	FRWS3101	389	Cx. tarsalis	Firebaugh	50	CO2	10/16/19	SLEV
Los Angeles	SGVA650	1040	Cx. quinquefasciatus	Pomona	50	GRVD	10/17/19	WNV
Placer	PLCR198707	2735	Cx. tarsalis		6	CO2	10/16/19	WNV
Riverside	COAV37	6108	Cx. tarsalis		50	CO2	10/22/19	SLEV
San Bernardino	WVAL2001	2539	Cx. tarsalis	Chino Hills	7	CO2	10/22/19	SLEV
San Bernardino	WVAL8003	2531	Cx. tarsalis	Chino	50	CO2	10/22/19	SLEV

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Sentinel Chickens

County	Site Code	City	Date Bled	Virus	Band 01	Band 02
Sacramento	SAYO203023	Elverta	10/9/2019	WNV	2661	2662
Shasta	SHAS0301	Redding	10/11/2019	WNV	2232	

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/arbonet/maps/ADB_Diseases_Map/index.html