

California Arbovirus Surveillance Bulletin #28

Week 41 Friday, October 11, 2019



Weekly Update

Humans

West Nile virus

A total of 17 human cases of West Nile virus (WNV) illness were reported this week from 7 counties: Colusa (1), Los Angeles (3), Madera (1), Merced (4), Riverside (2), Stanislaus (4), and Tulare (2). **This is the first WNV case reported from Colusa County this year.** In 2019, 145 human WNV cases have been reported from 20 counties. Of the 145 reported cases, 88 (61%) had neuroinvasive disease and 4 (2.8%) fatalities have been reported. The median age of the individuals is 58 years (range: 11–93 years) and 89 (61%) are male. Dates of symptom onset range from May 12 to September 23. In addition to the 145 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, 132 human cases had been reported from 27 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 7 WNV positive dead birds were reported this week from 3 counties: Los Angeles (5), Sacramento (1), and Shasta (1). **This is the first WNV positive dead bird from Shasta County this year.** In 2019, a total of 193 WNV positive dead birds have been reported from 20 counties. At this time last year, 483 WNV positive dead birds had been reported from 20 counties.

Mosquito Pools

West Nile virus

A total of 19 WNV positive mosquito pools were reported this week from 6 counties: Fresno (2), Los Angeles (3), Riverside (3), San Bernardino (5), San Joaquin (3), and Stanislaus (3). In 2019, a total of 3,225 WNV positive mosquito pools have been reported from 24 counties. At this time last year, 1,947 WNV positive mosquito pools had been reported from 29 counties.

St. Louis encephalitis virus

A total of 8 SLEV positive mosquito pools were reported this week from 5 counties: Fresno (1), Riverside (2), San Bernardino (1), Stanislaus (2), and Tulare (2). In 2019, a total of 345 SLEV positive mosquito pools have been reported from 12 counties: Fresno (56), Imperial (5), Kern (56), Kings (4), Los Angeles (2), Madera (4), Merced (2), Orange (1), Riverside (104), San Bernardino (2), Stanislaus (13), and Tulare (96). At this time last year, 383 SLEV positive mosquito pools had been reported from 8 counties.

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Sentinel Chickens

West Nile virus

A total of 11 WNV seroconversions were reported this week from 3 counties: Contra Costa (1), Los Angeles (8), and Ventura (2). In 2019, 130 WNV positive chickens have been reported from 16 counties. At this time last year, 150 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	7,237	4,897
# Positive Counties	39	33
# Human Cases	132	145
# Positive Dead Birds / # Tested	483 / 1,923	193 / 1,556
# Positive Mosquito Pools / # Tested	1,947 / 39,616	3,225 / 40,566
# Seroconversions / # Tested	150 / 8,856	130 / 7,920

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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			44	33
Colusa	1				6
Contral 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	11		41	80	24
Madera	2	2		85	
Merced	7	1	3	48	16
Orange	1		38	167	
Placer			3	52	8
Riverside	10	1	2	520	
Sacramento	1	1	44	74	1
San Benito					1
San Bernardino	5	1	4	52	
San Diego	2		1		
San Joaquin	4	1	5	287	
San Luis Obispo	1				
Santa Clara			5		
Shasta			1	3	
Solano	1			5	4
Stanislaus	14	2	4	203	
Sutter				15	11
Tehama					4
Tulare	15		17	813	10
Tuolumne		1	1		
Ventura	1	1	1	1	3
Yolo			7	59	1
Yuba			3	22	5
Totals	145	15	193	3,225	130

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TESTING SUMMARIES

Humans

		WNV	SLEV	WEEV
Human Cases	Week	17	0	0
	YTD	145	5	0

Dead Birds

		Number Tested	WNV Positive
Dead Birds	Week	36	7
	YTD	1,556	193

Chickens

		Number Tested	WNV Positive	SLEV Positive	WEEV Positive
Chicken Sera	Week	268	11	0	0
	YTD	7,920	130	3	0

Mosquitoes

		Positive / Total Tested						
Mosquito Pools	Week	WNV	SLEV	WEEV	CHIK	DENV	ZIKA	
		Week	19 / 1,073	8 / 1,018	0 / 914	0 / 0	0 / 0	0 / 0
		YTD	3,225 / 40,566	345 / 36,776	0 / 34,075	0 / 743	0 / 743	0 / 743

POSITIVES

Dead Birds

County	Agency	City	Zip Code	Species	Date Reported	Virus
Los Angeles	Greater Los Angeles Co VCD - SFS	Bellflower	90706	American Crow	10/2/2019	WNV
Los Angeles	Greater Los Angeles Co VCD - SFS	Cerritos	90703	American Crow	9/25/2019	WNV
Los Angeles	Greater Los Angeles Co VCD - SFS	Long Beach	90808	American Crow	9/16/2019	WNV
Los Angeles	Greater Los Angeles Co VCD - SFS	Long Beach	90808	American Crow	10/1/2019	WNV
Los Angeles	Greater Los Angeles Co VCD - SFS	Whittier	90603	American Crow	9/18/2019	WNV
Sacramento	Sacramento-Yolo MVCD	Elk Grove	95624	California Scrub-Jay	10/3/2019	WNV
Shasta	Shasta MVCD	Redding	96003	California Scrub-Jay	9/30/2019	WNV

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Mosquito Pools

County	Site Code	Pool #	Species	City	# in Pool	Trap Type	Collected	Virus
Fresno	FRWS1101	362	Cx. tarsalis		50	CO2	10/8/19	WNV
Fresno	FRWS4102	376	Cx. tarsalis		50	CO2	10/8/19	SLEV
Fresno	FRWS5110	368	Cx. tarsalis		50	CO2	10/8/19	WNV
Los Angeles	ANTV6095	146	Cx. quinquefasciatus	Lancaster	13	GRVD	10/8/19	WNV
Los Angeles	GRLA2383	1075	Cx. quinquefasciatus	South Whittier	50	GRVD	10/3/19	WNV
Los Angeles	SGVA953	965	Cx. quinquefasciatus	Covina	50	GRVD	10/8/19	WNV
Riverside	COAV0	5802	Cx. quinquefasciatus	La Quinta	26	BGSENT	10/10/19	WNV
Riverside	COAV131	5670	Cx. tarsalis	Oasis	50	CO2	10/8/19	WNV
Riverside	COAV542	5712	Cx. tarsalis		50	CO2	10/8/19	SLEV
Riverside	RIVR39	562	Cx. tarsalis	Moreno Valley	50	CO2	10/1/19	WNV
Riverside	RIVR88	595	Cx. tarsalis		50	CO2	10/2/19	SLEV
San Bernardino	SANB6	1035	Cx. tarsalis	Yucaipa	50	CO2	10/9/19	WNV
San Bernardino	WVAL2003	2404	Cx. tarsalis	Chino	28	CO2	10/2/19	SLEV
San Bernardino	WVAL2018	2430	Cx. quinquefasciatus	Chino	7	GRVD	10/8/19	WNV
San Bernardino	WVAL8003	2441	Cx. tarsalis	Chino	50	CO2	10/9/19	WNV
San Bernardino	WVAL9005	2383	Cx. quinquefasciatus	Upland	6	GRVD	10/1/19	WNV
San Bernardino	WVAL9006	2387	Cx. quinquefasciatus	Upland	5	GRVD	10/1/19	WNV
San Joaquin	SJCM8022	2542	Cx. tarsalis		50	CO2	10/8/19	WNV
San Joaquin	SJCM8079	2540	Cx. tarsalis		5	CO2	10/8/19	WNV
San Joaquin	SJCM8228	2546	Cx. tarsalis		15	CO2	10/8/19	WNV
Stanislaus	EAST1008	19253	Cx. tarsalis		33	CO2	10/2/19	WNV
Stanislaus	EAST1013	19198	Cx. tarsalis	Grayson	17	CO2	9/5/19	WNV
Stanislaus	TRLK1219	1392	Cx. pipiens		15	CO2	10/8/19	WNV
Stanislaus	TRLK407	1398	Cx. pipiens	Turlock	50	CO2	10/8/19	SLEV
Stanislaus	TRLK407	1399	Cx. pipiens	Turlock	46	CO2	10/8/19	SLEV
Tulare	DLTA6404	3714	Cx. quinquefasciatus		22	CO2	10/4/19	SLEV
Tulare	DLTA8409	3763	Cx. quinquefasciatus		50	CO2	10/9/19	SLEV

Sentinel Chickens

County	Site Code	City	Date Bled	Virus	Band 01	Band 02	Band 03	Band 04	Band 05
Contra Costa	CNTR8152	Knightsen	9/23/2019	WNV	1409				
Los Angeles	GRLA2371	South El Monte	10/2/2019	WNV	3440				
Los Angeles	GRLA2465	Los Feliz	9/30/2019	WNV	3441	3442	3443	3446	3449
Los Angeles	GRLA2651	Encino	9/30/2019	WNV	3469				
Los Angeles	LACW1007	Baldwin Hills	10/3/2019	WNV	1631				
Ventura	MOOR0029	Moorpark	10/3/2019	WNV	1388				
Ventura	VENT0600	Fillmore	10/1/2019	WNV	1203				

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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/arbonet/maps/ADB_Diseases_Map/index.html