

California Arbovirus Surveillance Bulletin #35

Week 50 Friday, December 15, 2017



Weekly Update

Humans

West Nile Virus

To date in 2017, 502 human cases of WNV illness have been reported from 27 counties. Of the 502 case-patients, 370 (74%) had neuroinvasive disease and 28 fatalities have been reported from Kern (1), Los Angeles (19), Orange (3), San Bernardino (2), Stanislaus (1), and Yolo (2) counties. The median age of the individuals is 61 years (range: 4–96 years) and 323 (64%) are male. Dates of symptom onset ranged from March 16 to November 16. In addition to the 502 symptomatic cases, 37 asymptomatic WNV-positive blood donors have been reported from Fresno (1), Kern (2), Humboldt (1), Los Angeles (13), Orange (6), Placer (2), Riverside (1), Sacramento (1), San Bernardino (6), Stanislaus (3), and Tulare (1) counties. As of this date in 2016, 417 human WNV cases had been reported from 29 counties.

St. Louis Encephalitis Virus

To date in 2017, 2 human cases of St. Louis encephalitis virus (SLEV) disease have been reported from 2 counties: Kern (1) and Stanislaus (1). In 2016, a total of 3 human cases of SLEV disease had been reported from 3 counties.

Dead Birds

No new positives were reported this week. To date this year, 505 birds from 39 counties have tested positive for WNV. As of this date in 2016, 1,350 WNV positive birds had been reported from 33 counties.

Mosquito Pools

West Nile Virus

One WNV positive mosquito pool was reported this week from Los Angeles County. To date in 2017, 3,371 WNV positive mosquito pools have been reported from 27 counties. As of this date in 2016, 3,519 WNV positive mosquito pools had been reported from 31 counties.

St. Louis Encephalitis Virus

No new positives were reported this week. In 2017, 179 SLEV positive mosquito pools have been reported from 14 counties: Butte (1), Fresno (63), Imperial (3), Kern (18), Kings (21), Los Angeles (1), Madera (10), Merced (2), Placer (1), Riverside (23), San Bernardino (2), Stanislaus (27), Tulare (6), and Yuba (1). As of this date in 2016, 180 SLEV positive mosquito pools had been reported from 8 counties.

Sentinel Chickens

West Nile Virus

No new seroconversions were reported this week. In 2017, 305 WNV seroconversions have been reported from 18 counties. As of this date in 2016, 343 WNV seroconversions had been detected from 19 counties.

St. Louis Encephalitis Virus

No new seroconversions were reported this week. In 2017, 9 SLEV positive chickens have been reported from 3 counties: Los Angeles (2), Merced (1), and San Bernardino (6). As of this date in 2016, 4 SLEV seroconversions had been detected in 2 counties.

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YTD WNV Activity by Element and County, 2017					
County	Humans	Horses	Dead Birds	Mosquito Pools	Sentinel Chickens
Alameda	1		2		
Butte	3		5	47	31
Calaveras					1
Colusa			1		
Contra Costa	4	1	19	9	7
El Dorado			2		
Fresno	9	1	5	167	
Glenn		2	2	12	1
Humboldt			1		
Imperial	3				
Inyo	4			9	
Kern	28	2	3	152	
Kings	4		1	79	
Lake			5	17	2
Lassen		3			
Los Angeles	261	1	101	582	145
Madera	2		1	62	
Marin			1		
Merced	1		1	40	19
Monterey			1		
Nevada			1		
Orange	34		57	280	
Placer			4	59	5
Plumas		1			
Riverside	27	4	41	196	
Sacramento	4	1	86	153	2
San Benito					1
San Bernardino	47		45	295	36
San Diego	2	1	41	9	
San Francisco	1		1		
San Joaquin	14	2	7	242	
San Luis Obispo			6		
San Mateo			1		
Santa Barbara			1	1	4
Santa Clara			12		
Santa Cruz			1		
Shasta	1		2		4
Solano	1		4	9	11
Sonoma			5	1	
Stanislaus	28		6	196	
Sutter	2		3	16	22
Tehama	1	1			4
Tuolumne		1			
Tulare	12		8	630	
Ventura	1		2	3	
Yolo	6		14	87	2
Yuba	1		6	18	8
Totals	502	21	505	3,371	305

Website Information: For updated information on WNV in California, please visit the California WNV website, www.westmile.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 website, www.cdc.gov, and the USGS website, www.westmilemaps.usgs.gov

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2016 & 2017 YTD West Nile Virus Comparisons		
	2016	2017
Total # Dead Bird Reports	9,107	7,629
# Positive Counties	39	47
# Human Cases	417	502
# Positive Dead Birds / # Tested	1,350 / 2,853	505 / 2,005
# Positive Mosquito Pools / # Tested	3,519 / 44,174	3,371 / 44,377
# Seroconversions / # Tested	343 / 10,925	305 / 11,029

TESTING SUMMARIES

Humans

		WNV	SLEV	WEEV
Human Cases	Week	13	1	0
	YTD	502	2	0

Dead Birds

		Number Tested	WNV Positive
Dead Birds	Week	5	0
	YTD	2,005	505

Chickens

		Number Tested	WNV Positive	SLEV Positive	WEEV Positive
Chicken Sera	Week	0	0	0	0
	YTD	11,029	305	9	0

Mosquitoes

		Positive / Total Tested					
		WNV	SLEV	WEEV	CHIK	DENV	ZIKA
Mosquito Pools	Week	1 / 61	0 / 61	0 / 61	0 / 3	0 / 3	0 / 3
	YTD	3,371 / 44,377	179 / 35,949	0 / 34,156	0 / 1,942	0 / 1,942	0 / 1,942

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New Positives

Mosquito Pools

County	Site Code	Pool #	Species	City	# in Pool	Trap Type	Collected	Virus
Los Angeles	GRLA3061	1045	Cx. quinquefasciatus	Los Angeles	50	GRVD	11/28/17	WNV

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 or confirmation.

Dead Birds

Oral swab samples from corvids are collected onto RNA preservation cards and tested by the UC Davis Arbovirus Research and Training laboratory (DART) for West Nile virus by the singleplex qRT-PCR Taqman assay and confirmed with a second primer set. Some local agencies test birds using the RAMP© test or conduct RT-PCR on tissue samples.

Sentinel Chickens:

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

Mosquito Pools:

Mosquito pools submitted to DART are tested for West Nile, western equine encephalomyelitis, and St. Louis encephalitis viral RNA using a multiplex qRT-PCR. Invasive *Aedes* mosquitoes (*Ae. aegypti* and *Ae. albopictus*) are also tested for chikungunya, dengue, and Zika viral RNA by a separate qRT-PCR.

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