

California Arbovirus Surveillance Bulletin #36

Week 45 Friday, November 10, 2016



Weekly Update

Humans

West Nile virus

A total of 8 new human cases of West Nile virus (WNV) illness were reported this week from the following 6 counties: Kern (1), Kings (1), Los Angeles (3), Madera (1), Riverside (1), and Stanislaus (1). To date this year, 388 cases of WNV illness have been reported from 29 counties. Of the 388 case-patients, 287 (74%) had neuroinvasive illness and 17 fatalities have been reported from 10 counties. The median age of the individuals is 60 years (range: 8-94 years) and 239 (62%) are male. Dates of symptom onset range from June 17 to October 21. In addition, 38 asymptomatic WNV-positive blood donors have been reported from Fresno (2), Los Angeles (11), Madera (1), Orange (4), Riverside (1), Sacramento (4), San Diego (2), San Francisco (1), San Luis Obispo (1), Stanislaus (4), Sutter (2), Tehama (1), Tulare (1), and Yolo (3) counties.

St. Louis encephalitis virus

No new cases of St. Louis encephalitis virus (SLEV) disease were reported this week. To date this year, two human cases of SLEV disease have been reported from Fresno (1) and Sacramento (1) counties.

Dead Birds

One dead bird tested positive for WNV this week from Orange County. In 2016, 1,341 dead birds have tested positive for WNV from 33 counties, whereas at this time last year, 1,254 WNV positive birds had been reported from 37 counties.

Mosquito Pools

West Nile virus

A total of 3 WNV positive mosquito pools were reported this week from Los Angeles County. To date this year, 3,494 WNV positive mosquito pools have been reported from 31 counties, whereas at this time last year, 3,274 WNV positive mosquito pools had been reported from 29 counties.

St. Louis encephalitis virus

No SLEV positive mosquito pools were reported this week. To date this year, 179 SLEV positive mosquito pools have been reported from 8 counties: Fresno (1), Kern (75), Kings (4), Los Angeles (2), Madera (3), Orange (2), Riverside (91), and Tulare (1). At this time last year, 38 SLEV positive mosquito pools had been reported from Riverside County.

Sentinel Chickens

West Nile virus

A total of 6 new WNV seroconversions were reported this week from Los Angeles (4) and Merced (2) counties. To date this year, 341 WNV seroconversions have been detected in 81 flocks located in 19 counties, whereas at this time last year, 430 WNV seroconversions had been detected in 94 flocks from 22 counties.

St. Louis encephalitis virus

No new seroconversions were reported this week. To date this year, 4 SLEV seroconversions have been detected in 3 flocks located in 2 counties: Los Angeles (2) and San Bernardino (2). At this time last year, 8 SLEV seroconversions had been detected in 2 flocks from Riverside County.

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YTD WNV Activity by Element and County, 2016				
County	Humans	Dead Birds	Mosquito Pools	Sentinel Chickens
Alameda		11	2	
Butte	21	22	48	38
Colusa	2			9
Contra Costa	3	33	11	5
El Dorado	1	4		
Fresno	10	6	185	
Glenn	5	4	11	10
Imperial			1	
Kern	16		80	
Kings	7	4	118	
Lake	1	5	39	5
Los Angeles	135	121	434	124
Madera	6	5	101	
Marin		5		
Merced		5	12	35
Monterey	1			
Napa		1	4	
Nevada		2		1
Orange	33	86	423	
Placer	7	30	103	7
Riverside	6	16	32	
Sacramento	23	411	455	3
San Bernardino	8	5	81	23
San Diego	17	262	89	9
San Joaquin	7	37	350	
San Mateo		14	5	
Santa Clara	1	89	13	1
Santa Cruz		2	3	
Shasta	1	3	12	3
Solano	3	13	16	10
Sonoma		8	2	
Stanislaus	24	14	259	
Sutter	11	10	68	33
Tehama	5			8
Tulare	10	3	260	
Ventura	2	34		
Yolo	13	72	259	4
Yuba	9	4	18	13
Totals	388	1,341	3,494	341

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2015 & 2016 YTD West Nile Virus Comparisons		
	2015	2016
Total # Dead Bird Reports	10,374	8,907
# Positive Counties	40	38
# Human Cases	570	388
# Positive Dead Birds / # Tested	1,294 / 3,091	1,341 / 2,798
# Positive Mosquito Pools / # Tested	3,274 / 36,090	3,494 / 43,047
# Seroconversions / # Tested	430 / 12,032	341 / 10,631

TESTING SUMMARIES

Humans

		WNV	SLEV	WEEV
Number of Cases Reported	Week	8	0	0
	YTD	388	2	0

Dead Birds

		Total Tested	WNV Positive
Dead Birds	Week	28	1
	YTD	2,798	1,341

Sentinel Chickens

		Total Tested	WNV +	SLEV +	WEEV +
Chicken Sera	Week	175	6	0	0
	YTD	10,631	341	4	0

Mosquitoes

		Positive / Total Tested					
Mosquito Pools	Week	WNV	SLEV	WEEV	CHIK	DENV	ZIKA
		3 / 116	0 / 115	0 / 115	0 / 140	0 / 140	0 / 140
		YTD	3,494 / 43,047	179 / 28,246	0 / 28,246	0 / 1,002	0 / 1,002

NEW POSITIVES

Dead Birds

County	Agency	City	Zip Code	Species	Date Reported	Virus
Orange	Orange Co VCD	Santa Ana	92706	Red-shouldered Hawk	9/10/2016	WNV

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Mosquitoes

County	Site Code	Pool #	Species	City	# in Pool	Trap Type	Collected	Virus
Los Angeles	GRLA2030	5879	Cx. quinquefasciatus	West Hills	28	GRVD	10/19/2016	WNV
Los Angeles	GRLA2614	5909	Cx. quinquefasciatus	Newhall	37	GRVD	11/4/2016	WNV
Los Angeles	GRLA2995	5875	Cx. quinquefasciatus	Woodland Hills	50	GRVD	10/19/2016	WNV

Sentinel Chickens

County	Site Code	City	Date Bled	Virus	Band 01	Band 02
Los Angeles	LACW1009	Los Angeles	10/19/2016	WNV	2343	2345
Los Angeles	LACW1049	Inglewood	10/26/2016	WNV	2384	
Los Angeles	SGVA0004	Arcadia	10/31/2016	WNV	1858	
Merced	MERC201501	Le Grand	10/20/2016	WNV	1621	1622

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 University of California, Davis Arbovirus Research and Training laboratory (DART) for West Nile virus by the singleplex RT-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 tested by the California Department of Public Health Vector-Borne Disease Laboratory for the presence of antibodies to West Nile, western equine encephalomyelitis, and St. Louis encephalitis viruses by an EIA. Positive samples are confirmed by an IFA, western-blot, or plaque reduction neutralization test.

Mosquito Pools:

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

Prepared by the Vector-Borne Disease Section (Infectious Diseases Branch), California Department of Public Health, 850 Marina Bay Parkway, Richmond, CA 94804. Questions concerning this bulletin should be addressed to Tina Feiszli by phone (510) 412-6253 or email: tina.feiszli@cdph.ca.gov.

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 website, www.cdc.gov, and the USGS website, www.westnilemaps.usgs.gov