

California Arbovirus Surveillance Bulletin #29

Week 42 Friday, October 20, 2017



Weekly Update

Humans

A total of 46 new human cases of West Nile virus (WNV) illness were reported this week from the following 11 counties: Butte (1), Imperial (1), Los Angeles (26), Orange (2), Riverside (4), San Bernardino (4), San Diego (1), San Joaquin (2), Shasta (1), Stanislaus (3), and Ventura (1). **These are the first human cases reported from Shasta and Ventura counties in 2017.** To date this year, 361 human cases of WNV illness have been reported from 23 counties. Of the 361 case-patients, 274 (76%) had neuroinvasive disease and 20 fatalities have been reported from Kern (1), Los Angeles (13), Orange (1), San Bernardino (2), Stanislaus (1), and Yolo (2) counties. The median age of the individuals is 62 years (range: 4–96 years) and 233 (65%) are male. Dates of symptom onset ranged from March 16 to September 28. In addition to the 361 symptomatic cases, 30 asymptomatic WNV-positive blood donors have been reported from Fresno (1), Humboldt (1), Los Angeles (11), Orange (5), Placer (1), San Bernardino (8), and Stanislaus (3) counties. As of this date in 2016, 347 human WNV cases had been reported from 29 counties.

Dead Birds

A total of 10 WNV positive dead birds were reported this week from the following 7 counties: Alameda (1), Contra Costa (1), Los Angeles (2), San Diego (2), Santa Barbara (1), Solano (2), and Yolo (1). **This is the first WNV positive bird from Santa Barbara County this year.** To date this year, 473 birds from 39 counties have tested positive for WNV. As of this date in 2016, 1,329 WNV positive birds had been reported from 33 counties.

Mosquito Pools

West Nile Virus

A total of 13 WNV positive mosquito pools were reported this week from the following 6 counties: Kern (1), Los Angeles (6), Riverside (1), Sacramento (2), Ventura (1), and Yolo (2). To date this year, 3,304 WNV positive mosquito pools have been reported from 26 counties. As of this date in 2016, 3,446 WNV positive mosquito pools had been reported from 31 counties.

St. Louis Encephalitis Virus

One mosquito pool tested positive for St. Louis encephalitis virus (SLEV) this week from Fresno County. To date this year, 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, 179 SLEV positive mosquito pools had been reported from 8 counties.

Sentinel Chickens

West Nile Virus

A total of 8 WNV seroconversions were reported this week from 3 counties: Calaveras (1), Los Angeles (6), and Sutter (1). **This is the first detection of WNV activity in Calaveras County in 2017.** To date this year, 295 WNV seroconversions have been reported from 18 counties. As of this date in 2016, 328 WNV seroconversions had been detected from 19 counties.

St. Louis Encephalitis Virus

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

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Week 42 Friday, October 20, 2017

YTD WNV Activity by Element and County, 2017					
County	Humans	Horses	Dead Birds	Mosquito Pools	Sentinel Chickens
Alameda			2		
Butte	3		5	47	31
Calaveras					1
Colusa			1		
Contra Costa	2	1	19	8	7
El Dorado			2		
Fresno	3	1	5	167	
Glenn		1	2	12	1
Humboldt			1		
Imperial	3				
Inyo	4			9	
Kern	22	2	3	152	
Kings	1		1	79	
Lake			4	17	2
Lassen		3			
Los Angeles	187	1	93	543	137
Madera	1		1	62	
Marin			1		
Merced			1	40	19
Monterey			1		
Nevada			1		
Orange	31		52	262	
Placer			3	59	5
Plumas		1			
Riverside	20	4	40	194	
Sacramento	1		86	153	2
San Benito					1
San Bernardino	36		45	291	35
San Diego	2	1	35	9	
San Francisco	1		1		
San Joaquin	12	2	6	242	
San Luis Obispo			2		
San Mateo			1		
Santa Barbara			1		4
Santa Clara			8		
Santa Cruz			1		
Shasta	1		2		4
Solano			4	7	11
Sonoma			5	1	
Stanislaus	20		6	196	
Sutter	1		3	16	22
Tehama	1	1			4
Tuolumne		1			
Tulare	4		8	630	
Ventura	1		1	3	
Yolo	4		14	87	1
Yuba			6	18	8
Totals	361	19	473	3,304	295

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

California Arbovirus Surveillance Bulletin #29

Week 42 Friday, October 20, 2017

2016 & 2017 YTD West Nile Virus Comparisons		
	2016	2017
Total # Dead Bird Reports	8,728	7,088
# Positive Counties	38	47
# Human Cases	347	361
# Positive Dead Birds / # Tested	1,329 / 2,745	473 / 1,855
# Positive Mosquito Pools / # Tested	3,446 / 41,669	3,304 / 42,000
# Seroconversions / # Tested	328 / 9,950	295 / 10,281

TESTING SUMMARIES

Humans

		WNV	SLE	WEE
Human Cases	Week	46	0	0
	YTD	361	0	0

Dead Birds

		Number Tested	WNV Positive
Dead Birds	Week	30	10
	YTD	1,855	473

Chickens

		Number Tested	WNV Positive	SLEV Positive	WEEV Positive
Chicken Sera	Week	246	8	0	0
	YTD	10,281	295	9	0

Mosquitoes

		Positive / Total Tested					
		WNV	SLEV	WEEV	CHIK	DENV	ZIKA
Mosquito Pools	Week	13 / 475	1 / 428	0 / 428	0 / 50	0 / 50	0 / 50
	YTD	3,304 / 42,000	179 / 34,143	0 / 32,351	0 / 1,641	0 / 1,641	0 / 1,641

California Arbovirus Surveillance Bulletin #29

Week 42 Friday, October 20, 2017

New Positives

Dead Birds

County	Submitting Agency	City	Zip Code	Species	Date Reported	Date Tested	Virus
Alameda	Alameda Co MAD	Castro Valley	94552	American Crow	10/18/2017	10/19/2017	WNV
Contra Costa	Contra Costa MVCD	Walnut Creek	94598	American Crow	10/1/2017	10/6/2017	WNV
Los Angeles	Los Angeles Co Veterinarian	Los Angeles	90064	American Crow	10/16/2017	10/20/2017	WNV
Los Angeles	San Gabriel Valley MVCD	Alhambra	91803	American Crow	9/29/2017	10/20/2017	WNV
San Diego	San Diego Co VCP	Imperial Beach	91932	American Crow	10/19/2017	10/19/2017	WNV
San Diego	San Diego Co VCP	Santa Ysabel	92070	Western Scrub-Jay	10/16/2017	10/16/2017	WNV
Santa Barbara	MVCD of Santa Barbara Co.	Santa Ynez	93460	Yellow-billed Magpie	10/9/2017	10/20/2017	WNV
Solano	Solano Co MAD	Fairfield	94533	Sparrow	10/10/2017	10/20/2017	WNV
Solano	Solano Co MAD	Vallejo	94591	Red-tailed Hawk	10/13/2017	10/20/2017	WNV
Yolo	Sacramento-Yolo MVCD	Woodland	95695	Unknown	10/13/2017	10/16/2017	WNV

Mosquito Pools

County	Site Code	Pool #	Species	City	# in Pool	Trap Type	Collected	Virus
Fresno	FRWS200012	650	Cx. tarsalis	Firebaugh	22	CO2	10/12/2017	SLEV
Kern	WEST6232	38	Cx. tarsalis	Tupman	50	CO2	10/18/2017	WNV
Los Angeles	ANTV1627	109	Cx. quinquefasciatus	Palmdale	27	GRVD	10/17/2017	WNV
Los Angeles	GRLA2323	906	Cx. quinquefasciatus	Los Angeles	47	GRVD	10/13/2017	WNV
Los Angeles	GRLA2478	5867	Cx. quinquefasciatus	Sunland	36	GRVD	10/13/2017	WNV
Los Angeles	GRLA3074	915	Cx. quinquefasciatus	Lincoln Heights	42	GRVD	10/13/2017	WNV
Los Angeles	GRLA3075	916	Cx. quinquefasciatus	El Sereno	44	GRVD	10/13/2017	WNV
Los Angeles	LACW1054	324	Cx. quinquefasciatus	Inglewood	42	CO2	10/12/2017	WNV
Riverside	COAV208	4226	Cx. quinquefasciatus	Palm Springs	16	GRVD	10/12/2017	WNV
Sacramento	SAYO222001	6908	Cx. pipiens	Sacramento	5	GRVD	10/17/2017	WNV
Sacramento	SAYO232006	6844	Cx. pipiens	Elk Grove	6	CO2	10/13/2017	WNV
Ventura	VENT1011	40	Cx. erythrothorax	Simi valley	50	CO2	10/18/2017	WNV
Yolo	SAYO135022	6829	Cx. pipiens	Woodland	1	GRVD	10/13/2017	WNV
Yolo	SAYO146002	6881	Cx. tarsalis	Davis	27	CO2	10/17/2017	WNV

Sentinel Chickens

County	Site Code	City	Date Bled	Virus	Band 01	Band 02
Calaveras	SCSD9901	Copperopolis	10/4/2017	WNV	1455	
Los Angeles	ANTV7242	Palmdale	10/11/2017	WNV	1054	
Los Angeles	GRLA2056	Long Beach	10/10/2017	WNV	4708	
Los Angeles	LACW1001	Rolling Hills Estates	10/4/2017	WNV	2506	
Los Angeles	LACW1026	Los Angeles	10/4/2017	WNV	2575	2576
Los Angeles	LACW1049	Inglewood	10/3/2017	WNV	2579	
Los Angeles	SGVA0001	City of Industry	10/9/2017	WNV	4567	
Sutter	SUYA0084	Yuba City	10/5/2017	WNV	1704	

California Arbovirus Surveillance Bulletin #29

Week 42 Friday, October 20, 2017

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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