

California Arbovirus Surveillance Bulletin #27

Week 40 Friday, October 6, 2017



Weekly Update

Humans

A total of 47 new human cases of West Nile virus (WNV) illness were reported this week from the following 10 counties: Imperial (1), Kern (5), Los Angeles (25), Orange (5), Riverside (2), San Bernardino (2), San Diego (1), San Joaquin (1), Stanislaus (4), and Tehama (1). **These are the first human cases reported from San Diego and Tehama counties in 2017.** To date this year, 258 human cases of WNV illness have been reported from 20 counties. Of the 258 case-patients, 201 (78%) had neuroinvasive disease and 12 fatalities have been reported from Kern (1), Los Angeles (7), San Bernardino (1), Stanislaus (1), and Yolo (2) counties. The median age of the individuals is 62 years (range: 4–96 years) and 169 (66%) are male. Dates of symptom onset ranged from March 16 to September 22. In addition to the 258 symptomatic cases, 27 asymptomatic WNV-positive blood donors have been reported from Fresno (1), Humboldt (1), Los Angeles (10), Orange (5), Placer (1), San Bernardino (6), and Stanislaus (3) counties. As of this date in 2016, 310 human WNV cases had been reported from 29 counties.

Dead Birds

A total of 21 WNV positive dead birds were reported this week from the following 11 counties: Contra Costa (2), Los Angeles (4), Marin (1), Orange (4), Riverside (1), Sacramento (3), San Bernardino (1), San Diego (1), San Luis Obispo (1), Santa Clara (1), and Sonoma (2). **This is the first detection of WNV in Marin County in 2017.** To date this year, 449 birds from 38 counties have tested positive for WNV. As of this date in 2016, 1,304 WNV positive birds had been reported from 33 counties.

Mosquito Pools

West Nile Virus

A total of 52 WNV positive mosquito pools were reported this week from the following 18 counties: Butte (1), Contra Costa (1), Fresno (1), Kern (1), Kings (1), Los Angeles (21), Madera (2), Merced (1), Orange (1), Placer (2), Riverside (1), Sacramento (1), San Bernardino (5), San Diego (3), San Joaquin (5), Solano (1), Stanislaus (3), and Yolo (1). To date this year, 3,234 WNV positive mosquito pools have been reported from 26 counties. As of this date in 2016, 3,419 WNV positive mosquito pools had been reported from 31 counties.

St. Louis Encephalitis Virus

A total of 9 mosquito pools tested positive for St. Louis encephalitis virus (SLEV) this week from 4 counties: Fresno (1), Kings (1), Madera (6), and San Bernardino (1). **This is the first SLEV positive mosquito pool reported from San Bernardino County in 2017.** To date this year, 175 SLEV positive mosquito pools have been reported from 14 counties: Butte (1), Fresno (61), Imperial (3), Kern (18), Kings (21), Los Angeles (1), Madera (10), Merced (2), Placer (1), Riverside (23), San Bernardino (1), Stanislaus (27), Tulare (5), and Yuba (1). As of this date in 2016, 176 SLEV positive mosquito pools had been reported from 8 counties.

Sentinel Chickens

West Nile Virus

A total of 18 WNV seroconversions were reported this week from 2 counties: Los Angeles (14) and Santa Barbara (4). **This is the first detection of WNV activity in Santa Barbara County in 2017.** To date this year, 282 WNV seroconversions have been reported from 17 counties. As of this date in 2016, 314 WNV seroconversions had been detected from 17 counties.

St. Louis Encephalitis Virus

One SLEV seroconversion was reported this week from Los Angeles County. 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, 3 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		
Butte	2		5	47	31
Colusa			1		
Contra Costa	2	1	18	8	5
El Dorado			2		
Fresno	3	1	5	167	
Glenn		1	2	12	1
Humboldt			1		
Imperial	2				
Inyo	4			9	
Kern	22	2	3	151	
Kings	1		1	79	
Lake			4	17	2
Lassen		3			
Los Angeles	121		88	515	131
Madera			1	62	
Marin			1		
Merced			1	40	19
Monterey			1		
Nevada			1		
Orange	25		51	238	
Placer			3	58	4
Plumas		1			
Riverside	13	4	40	193	
Sacramento	1		80	149	2
San Benito					1
San Bernardino	26		42	290	35
San Diego	1	1	33	8	
San Francisco	1		1		
San Joaquin	10	2	6	241	
San Luis Obispo			2		
San Mateo			1		
Santa Barbara					4
Santa Clara			8		
Santa Cruz			1		
Shasta			2		4
Solano			2	7	9
Sonoma			5	1	
Stanislaus	15		6	196	
Sutter	1		3	16	21
Tehama	1	1			4
Tulare	4		8	628	
Ventura			1	2	
Yolo	3		12	82	1
Yuba			6	18	8
Totals	258	17	449	3,234	282

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

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2016 & 2017 YTD West Nile Virus Comparisons		
	2016	2017
Total # Dead Bird Reports	8,517	6,778
# Positive Counties	38	45
# Human Cases	310	258
# Positive Dead Birds / # Tested	1,304 / 2,676	449 / 1766
# Positive Mosquito Pools / # Tested	3,419 / 40,162	3,234 / 40,050
# Seroconversions / # Tested	314 / 9,352	282 / 9,707

TESTING SUMMARIES

Humans

		WNV	SLE	WEE
	Week	47	0	0
	YTD	258	0	0

Dead Birds

		Number Tested	WNV Positive
	Week	56	21
	YTD	1,766	449

Chickens

		Number Tested	WNV Positive	SLEV Positive	WEEV Positive
	Week	237	18	1	0
	YTD	9,707	282	9	0

Mosquitoes

		Positive / Total Tested					
Mosquito Pools		WNV	SLEV	WEEV	CHIK	DENV	ZIKA
	Week	52 / 1,598	9 / 1,436	0 / 1,436	0 / 290	0 / 290	0 / 290
	YTD	3,234 / 40,050	175 / 32,820	0 / 31,028	0 / 1,510	0 / 1,510	0 / 1,510

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New Positives

Dead Birds

County	Agency	City	ZIP Code	Species	Date Reported	Virus
Contra Costa	Contra Costa MVCD	Martinez	94553	American Crow	10/2/2017	WNV
Contra Costa	Contra Costa MVCD	Walnut Creek	94596	American Crow	10/1/2017	WNV
Los Angeles	Los Angeles Co Veterinarian	Monrovia	91016	American Crow	10/3/2017	WNV
Los Angeles	Los Angeles Co Veterinarian	San Fernando	91340	Falcon	9/29/2017	WNV
Los Angeles	Los Angeles Co Veterinarian	Torrance	90501	American Crow	9/30/2017	WNV
Los Angeles	Los Angeles Co Veterinarian	Venice	90291	American Crow	9/30/2017	WNV
Marin	Marin-Sonoma MVCD	Novato	94949	American Crow	10/4/2017	WNV
Orange	Orange Co VCD	Anaheim	92804	American Crow	9/26/2017	WNV
Orange	Orange Co VCD	Fullerton	92835	American Crow	9/26/2017	WNV
Orange	Orange Co VCD	Stanton	92683	American Crow	9/26/2017	WNV
Orange	Orange Co VCD	Tustin	92780	American Crow	9/22/2017	WNV
Riverside	Northwest Mosquito VCD	Riverside	92507	Unknown	9/22/2017	WNV
Sacramento	Sacramento-Yolo MVCD	Rancho Murieta	95683	Western Scrub-Jay	9/25/2017	WNV
Sacramento	Sacramento-Yolo MVCD	Sacramento	95823	Western Scrub-Jay	9/26/2017	WNV
Sacramento	Sacramento-Yolo MVCD	Sacramento	95831	Western Scrub-Jay	9/30/2017	WNV
San Bernardino	San Bernardino Vector Control Program	Yucaipa	92399	American Crow	9/24/2017	WNV
San Diego	San Diego Co VCP	Descanso	91916	American Crow	10/5/2017	WNV
San Luis Obispo	San Luis Obispo Public Health Lab	Paso Robles	93446	American Crow	9/21/2017	WNV
Santa Clara	Santa Clara Co VCD	Campbell	95008	American Crow	10/5/2017	WNV
Sonoma	Marin-Sonoma MVCD	Sonoma	95476	American Crow	9/29/2017	WNV
Sonoma	Marin-Sonoma MVCD	Sonoma	95476	American Crow	9/29/2017	WNV

Mosquito Pools

County	Site Code	Pool #	Species	City	# in Pool	Trap Type	Collected	Virus
Butte	BUCO114	440	Cx. tarsalis	Oroville	50	CO2	9/27/2017	WNV
Contra Costa	CNTR7253	485	Cx. tarsalis		50	CO2	10/2/2017	WNV
Fresno	FRWS400002	612	Cx. quinquefasciatus	Mendota	48	OTHER	9/28/2017	SLEV
Fresno	FRWS400017	623	Cx. quinquefasciatus	Mendota	50	CO2	10/3/2017	WNV
Kern	KERN2005	523	Cx. quinquefasciatus	Bakersfield	28	GRVD	9/26/2017	WNV
Kings	KNGS3043	417	Cx. tarsalis	Lemoore	24	CO2	9/19/2017	SLEV
Kings	KNGS8005	445	Cx. pipiens	Stratford	27	CO2	9/28/2017	WNV
Los Angeles	ANTV441245	90	Cx. tarsalis	Lancaster	23	CO2	10/3/2017	WNV
Los Angeles	ANTV441245	91	Cx. quinquefasciatus	Lancaster	12	CO2	10/3/2017	WNV
Los Angeles	GRLA2007	5820	Cx. quinquefasciatus	Toluca Lake	34	GRVD	9/28/2017	WNV
Los Angeles	GRLA2035	5804	Cx. quinquefasciatus	Tarzana	50	GRVD	9/27/2017	WNV
Los Angeles	GRLA2300	860	Cx. quinquefasciatus	Los Angeles	50	GRVD	9/29/2017	WNV
Los Angeles	GRLA2301	867	Cx. quinquefasciatus	Willowbrook	50	GRVD	9/29/2017	WNV
Los Angeles	GRLA2312	847	Cx. quinquefasciatus	San Pedro	50	GRVD	9/28/2017	WNV
Los Angeles	GRLA2321	852	Cx. quinquefasciatus	Carson	50	GRVD	9/28/2017	WNV

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Los Angeles	GRLA2438	5798	Cx. quinquefasciatus	Chatsworth	28	GRVD	9/26/2017	WNV
Los Angeles	GRLA2635	5801	Cx. quinquefasciatus	Van Nuys	40	GRVD	9/27/2017	WNV
Los Angeles	GRLA2636	5800	Cx. quinquefasciatus	Van Nuys	50	GRVD	9/27/2017	WNV
Los Angeles	GRLA2962	5799	Cx. quinquefasciatus	Chatsworth	43	GRVD	9/26/2017	WNV
Los Angeles	GRLA2995	5791	Cx. quinquefasciatus	Woodland Hills	50	GRVD	9/26/2017	WNV
Los Angeles	GRLA3062	864	Cx. quinquefasciatus	Los Angeles-Florence-Firestone	50	GRVD	9/29/2017	WNV
Los Angeles	GRLA3069	5824	Cx. quinquefasciatus	Valley Village	41	GRVD	9/28/2017	WNV
Los Angeles	GRLA3080	5825	Cx. quinquefasciatus	North Hollywood	50	GRVD	9/28/2017	WNV
Los Angeles	GRLA3086	5812	Cx. quinquefasciatus	Highland Park	15	GRVD	9/27/2017	WNV
Los Angeles	GRLA3132	5816	Cx. quinquefasciatus	Eagle Rock	33	GRVD	9/27/2017	WNV
Los Angeles	GRLA3133	5829	Cx. quinquefasciatus	San Fernando	50	GRVD	9/29/2017	WNV
Los Angeles	LACW1054	337	Cx. quinquefasciatus	Inglewood	50	CO2	9/28/2017	WNV
Los Angeles	SGVA949	2277	Cx. quinquefasciatus	La Puente	13	USDS	9/22/2017	WNV
Madera	MADR3334	372	Cx. quinquefasciatus	Madera	50	CO2	9/27/2017	SLEV
Madera	MADR3334	376	Cx. tarsalis	Madera	26	CO2	9/27/2017	WNV
Madera	MADR3334	378	Cx. quinquefasciatus	Madera	50	CO2	9/27/2017	SLEV
Madera	MADR3334	390	Cx. tarsalis	Madera	29	CO2	9/29/2017	WNV
Madera	MADR3334	393	Cx. quinquefasciatus	Madera	50	CO2	9/29/2017	SLEV
Madera	MADR346	361	Cx. quinquefasciatus	Chowchilla	50	CO2	9/26/2017	SLEV
Madera	MADR507	368	Cx. tarsalis	Madera	20	CO2	9/27/2017	SLEV
Madera	MADR507	388	Cx. quinquefasciatus	Madera	40	CO2	9/29/2017	SLEV
Merced	MERC201733	357	Cx. tarsalis	Merced	6	BGSENT	10/5/2017	WNV
Orange	ORCO0	9096	Unknown		50	NA	10/3/2017	WNV
Placer	PLCR191373	2286	Cx. tarsalis		7	CO2	10/3/2017	WNV
Placer	PLCR519	2295	Cx. pipiens	Roseville	1	CO2	10/3/2017	WNV
Riverside	NWST125	390	Cx. quinquefasciatus	Riverside	41	CO2	9/27/2017	WNV
Sacramento	SAYO253014	6463	Cx. tarsalis	Galt	34	CO2	9/29/2017	WNV
San Bernardino	SANB191	1060	Cx. tarsalis	San Bernardino	10	CO2	9/26/2017	SLEV
San Bernardino	WVAL2020	2356	Cx. quinquefasciatus	Fwy CA 71	25	GRVD	10/3/2017	WNV
San Bernardino	WVAL2020	2357	Cx. quinquefasciatus	Fwy CA 71	11	GRVD	10/3/2017	WNV
San Bernardino	WVAL5005	2383	Cx. quinquefasciatus	Rancho Cucamonga	14	GRVD	10/4/2017	WNV
San Bernardino	WVAL5009	2297	Cx. quinquefasciatus	Rancho Cucamonga	6	GRVD	9/27/2017	WNV
San Bernardino	WVAL7002	2385	Cx. quinquefasciatus	Montclair	22	GRVD	10/4/2017	WNV
San Diego	SAND12866	1652	Cx. quinquefasciatus	Bonsall	20	GRVD	9/19/2017	WNV
San Diego	SAND12875	1648	Cx. quinquefasciatus	San Diego	10	GRVD	9/19/2017	WNV
San Diego	SAND12876	1647	Cx. quinquefasciatus	San Diego	10	GRVD	9/19/2017	WNV
San Joaquin	SJCM8199	2780	Cx. pipiens	Manteca	50	CO2	10/2/2017	WNV
San Joaquin	SJCM8206	2831	Cx. tarsalis	Lodi	50	CO2	10/2/2017	WNV
San Joaquin	SJCM8206	2837	Cx. tarsalis	Lodi	50	CO2	10/2/2017	WNV
San Joaquin	SJCM8206	2838	Cx. tarsalis	Lodi	50	CO2	10/2/2017	WNV
San Joaquin	SJCM8206	2843	Cx. pipiens	Lodi	50	CO2	10/2/2017	WNV
Solano	SOLA1	223	Cx. tarsalis	Davis	50	CO2	9/29/2017	WNV
Stanislaus	TRLK16114	1263	Cx. pipiens	Turlock	50	CO2	9/28/2017	WNV
Stanislaus	TRLK432	1290	Cx. pipiens	Turlock	50	CO2	10/3/2017	WNV
Stanislaus	TRLK536	1281	Cx. pipiens	Turlock	50	CO2	10/3/2017	WNV
Yolo	SAYO115008	6525	Cx. tarsalis	Woodland	50	CO2	9/29/2017	WNV

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Sentinel Chickens

County	Site Code	City	Date Bled	Virus	Band 01	Band 02	Band 03	Band 04
Los Angeles	ANTV3247	Lancaster	9/27/2017	WNV	1023			
Los Angeles	ANTV5465	Quartz Hill	9/27/2017	WNV	1038			
Los Angeles	ANTV7938	Palmdale	9/27/2017	SLEV	1059			
Los Angeles	GRLA2056	Long Beach	9/26/2017	WNV	4702	4707		
Los Angeles	GRLA2615	Newhall	9/25/2017	WNV	4758			
Los Angeles	LACW1001	Rolling Hills Estates	9/20/2017	WNV	2501			
Los Angeles	LACW1009	Los Angeles	9/12/2017	WNV	2543	2544	2545	2547
Los Angeles	LACW1026	Los Angeles	9/20/2017	WNV	2578			
Los Angeles	LACW1049	Inglewood	9/21/2017	WNV	2581			
Los Angeles	SGVA0014	La Verne	9/25/2017	WNV	4551			
Los Angeles	SGVA0006	Glendora	9/25/2017	WNV	4549			
Santa Barbara	SBCO0009	Solvang	9/25/2017	WNV	1642	1643	1644	1647

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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