

California Arbovirus Surveillance Bulletin #28

Week 37 Friday, September 16, 2016



Weekly Update

Humans

A total of 44 new cases of West Nile virus (WNV) illness were reported this week from the following 15 counties: Butte (1), Colusa (1), Contra Costa (1), Fresno (3), Glenn (1), Kern (1), Los Angeles (10), Orange (9), Riverside (1), Sacramento (5), San Joaquin (1), Stanislaus (4), Sutter (1), Yolo (1), and Yuba (4). To date this year, 199 cases of WNV illness have been reported from 24 counties. Of the 199 case-patients, 142 (71%) had neuroinvasive illness, and 4 fatalities have been reported from Los Angeles (2), Sacramento (1) and Yolo (1) counties. The median age of the individuals is 60 years (range: 8-91 years) and 117 (59%) are male. Dates of symptom onset range from June 17 to September 1. In addition, 28 asymptomatic WNV-positive blood donors have been reported from Fresno (2), Los Angeles (7), Madera (1), Orange (3) Sacramento (2), San Diego (2), San Luis Obispo (1), Stanislaus (4), Sutter (2), Tehama (1), and Yolo (3) counties.

Dead Birds

This week, a total of 49 dead birds tested positive for WNV from the following 17 counties: Alameda (1), Butte (3), Contra Costa (1), El Dorado (1), Los Angeles (6), Marin (1), Napa (1), Orange (12), Placer (1), San Bernardino (2), San Diego (8), San Joaquin (1), Santa Clara (4), Shasta (2), Solano (1), Sonoma (3), and Ventura (1). **This is the first positive bird from Napa County this year.** In 2016, 1,235 dead birds have tested positive for WNV from 33 counties, whereas at this time last year, 855 WNV positive birds had been reported from 36 counties.

Mosquito Pools

West Nile virus

A total of 75 WNV positive mosquito pools were reported this week from the following 12 counties: Butte (2), Kings (4), Lake (3), Los Angeles (28), Madera (3), Placer (3), Riverside (1) Sacramento (3), San Joaquin (10), Stanislaus (5), Tulare (9), and Yolo (4). In 2016, 3,180 WNV positive mosquito pools have been reported from 30 counties, whereas at this time last year, 2,668 WNV positive mosquito pools had been reported from 29 counties.

St. Louis encephalitis virus

A total of 3 SLEV positive mosquito pools were reported this week from Kings (2) and Riverside (1) counties. **This is the first detection of SLEV activity in Kings County in 2016.** To date this year, 151 SLEV positive mosquito pools have been reported from: Kern (65), Kings (2), Los Angeles (2), Orange (2), Riverside (79), and Tulare (1) counties. At this time last year, 29 SLEV positive mosquito pools had been reported from Riverside County.

Sentinel Chickens

West Nile virus

A total of 15 WNV seroconversions were reported this week from 7 flocks in 3 counties: Los Angeles (9), Placer (3), and San Bernardino (3). To date this year, 279 WNV seroconversions have been detected in 69 flocks located in 17 counties, whereas at this time last year, 269 WNV seroconversions had been detected in 71 flocks located in 21 counties.

St. Louis encephalitis virus

No new SLEV seroconversions were reported this week. In 2016, 2 SLEV seroconversions have been detected in one flock located in San Bernardino County. At this time last year, 2 SLEV positive chickens from 2 flocks in Riverside County had been reported.

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YTD WNV Activity by Element and County, 2016				
County	Humans	Dead Birds	Mosquito Pools	Sentinel Chickens
Alameda		11	2	
Butte	18	21	46	37
Colusa	2			9
Contra Costa	1	23	8	5
El Dorado	1	4		
Fresno	8	6	175	
Glenn	3	4	11	10
Kern	8		78	
Kings	1	4	114	
Lake		4	38	4
Los Angeles	63	106	339	84
Madera	1	5	93	
Marin		5		
Merced		5	11	33
Napa		1	4	
Nevada		2		1
Orange	12	72	327	
Placer		27	102	6
Riverside	2	12	30	
Sacramento	18	405	444	
San Bernardino	3	5	77	18
San Diego	3	247	65	9
San Joaquin	5	35	332	
San Mateo		10	5	
Santa Clara	1	78	12	
Santa Cruz		2	3	
Shasta	1	3	11	3
Solano		7	16	5
Sonoma		7	1	
Stanislaus	15	10	246	
Sutter	7	10	68	32
Tehama	4			8
Tulare		3	254	
Ventura	2	28		
Yolo	11	69	250	2
Yuba	9	4	18	13
Totals	199	1,235	3,180	279

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2015 & 2016 YTD West Nile Virus Comparisons		
	2015	2016
Total # Dead Bird Reports	8,633	8,060
# Positive Counties	40	36
# Human Cases	157	199
# Positive Dead Birds / # Tested	855 / 2,398	1,235 / 2,504
# Positive Mosquito Pools / # Tested	2,668 / 28,125	3,180 / 35,394
# Seroconversions / # Tested	269 / 9,571	279 / 8,307

TESTING SUMMARIES

Humans

		WNV	SLE	WEE
Number of Cases Reported	Week	44	0	0
	YTD	199	0	0

Dead Birds

		Total Tested	WNV Positive
Dead Birds	Week	102	49
	YTD	2,504	1,235

Sentinel Chickens

		Total Tested	WNV +	SLEV +	WEEV +
Chicken Sera	Week	269	15	0	0
	YTD	8,307	279	2	0

Mosquitoes

		Positive / Total Tested					
		WNV	SLEV	WEEV	CHIK	DENV	ZIKA
Mosquito Pools	Week	75 / 1,089	3 / 868	0 / 868	0 / 53	0 / 53	0 / 53
	YTD	3,180 / 35,394	151 / 22,495	0 / 22,495	0 / 390	0 / 390	0 / 390

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NEW POSITIVES

Dead Birds

County	Agency	City	Zip Code	Species	Date Reported	Virus
Alameda	Alameda Co MAD	Dublin	94568	American Crow	9/16/2016	WNV
Butte	Butte Co MVCD	Paradise	95969	American Crow	8/30/2016	WNV
Butte	Butte Co MVCD	Richvale	95974	Unknown	9/8/2016	WNV
Butte	Oroville MAD	Oroville	95965	American Crow	9/5/2016	WNV
Contra Costa	Contra Costa MVCD	Concord	94521	Western Scrub-Jay	9/14/2016	WNV
El Dorado	El Dorado Co Env Management	Cameron Park	95682	Steller's Jay	9/8/2016	WNV
Los Angeles	Greater Los Angeles Co VCD - Sylmar	North Hollywood	91601	American Crow	9/9/2016	WNV
Los Angeles	Los Angeles Co Veterinarian	Calabasas	91302	American Crow	9/3/2016	WNV
Los Angeles	Los Angeles Co Veterinarian	Playa del Rey	90045	American Crow	9/8/2016	WNV
Los Angeles	Los Angeles Co Veterinarian	Santa Clarita	91354	American Crow	9/7/2016	WNV
Los Angeles	Los Angeles Co Veterinarian	Thousand Oaks	91320	American Crow	9/12/2016	WNV
Los Angeles	Los Angeles Co Veterinarian	Thousand Oaks	91362	American Crow	9/12/2016	WNV
Marin	Marin-Sonoma MVCD	Novato	94945	American Crow	9/14/2016	WNV
Napa	Napa Co MAD	Napa	94558	American Crow	9/9/2016	WNV
Orange	Orange Co VCD	Aliso Viejo	92656	American Crow	8/8/2016	WNV
Orange	Orange Co VCD	Anaheim	92802	American Crow	8/5/2016	WNV
Orange	Orange Co VCD	Anaheim	92867	American Crow	7/30/2016	WNV
Orange	Orange Co VCD	Cypress	90630	American Crow	9/7/2016	WNV
Orange	Orange Co VCD	Huntington Beach	92646	House Sparrow	9/7/2016	WNV
Orange	Orange Co VCD	Huntington Beach	92649	American Crow	9/8/2016	WNV
Orange	Orange Co VCD	Irvine	92603	Red-shouldered Hawk	8/4/2016	WNV
Orange	Orange Co VCD	Irvine	92604	American Crow	7/3/2016	WNV
Orange	Orange Co VCD	Mission Viejo	92691	Red-shouldered Hawk	8/4/2016	WNV
Orange	Orange Co VCD	Mission Viejo	92692	House Finch	9/7/2016	WNV
Orange	Orange Co VCD	Orange	92866	American Crow	8/4/2016	WNV
Orange	Orange Co VCD	Orange	92867	American Crow	8/4/2016	WNV
Placer	Placer MVCD	Roseville	95661	Western Scrub-Jay	9/13/2016	WNV
San Bernardino	San Bernardino VCP	San Bernardino	92404	American Crow	6/9/2016	WNV
San Bernardino	West Valley MVCD	Rancho Cucamonga	91737	American Crow	9/2/2016	WNV
San Diego	San Diego Co VCP	Carlsbad	92009	American Crow	9/11/2016	WNV
San Diego	San Diego Co VCP	Encinitas	92024	Cooper's Hawk	9/11/2016	WNV
San Diego	San Diego Co VCP	Escondido	92029	American Crow	9/11/2016	WNV
San Diego	San Diego Co VCP	Lakeside	92040	American Crow	9/16/2016	WNV
San Diego	San Diego Co VCP	Palomar Mountain	92060	Western Scrub-Jay	9/14/2016	WNV
San Diego	San Diego Co VCP	San Diego	92116	American Crow	9/11/2016	WNV
San Diego	San Diego Co VCP	San Diego	92128	American Crow	9/14/2016	WNV
San Diego	San Diego Co VCP	Santee	92071	American Crow	9/11/2016	WNV
San Joaquin	San Joaquin Co MVCD	Lodi	95242	American Robin	9/15/2016	WNV
Santa Clara	Santa Clara Co VCD	Milpitas	95035	American Crow	9/9/2016	WNV
Santa Clara	Santa Clara Co VCD	Palo Alto	94306	American Crow	9/7/2016	WNV
Santa Clara	Santa Clara Co VCD	Palo Alto	95303	American Crow	9/12/2016	WNV
Santa Clara	Santa Clara Co VCD	San jose	95112	American Crow	9/7/2016	WNV
Shasta	Shasta MVCD	Redding	96001	Western Scrub-Jay	9/9/2016	WNV
Shasta	Shasta MVCD	Redding	96002	Steller's Jay	9/9/2016	WNV
Solano	Solano Co MAD	Vallejo	94591	American Crow	9/12/2016	WNV

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Sonoma	Marin-Sonoma MVCD	Sebastopol	95472	American Crow	9/12/2016	WNV
Sonoma	Marin-Sonoma MVCD	Sonoma	95476	American Crow	9/8/2016	WNV
Sonoma	Marin-Sonoma MVCD	Sonoma	95476	Western Scrub-Jay	9/8/2016	WNV
Ventura	Ventura Co Env Health Dept	Thousand Oaks	91360	Western Scrub-Jay	9/7/2016	WNV

Mosquitoes

County	Site Code	Pool #	Species	City	# in Pool	Trap Type	Collected	Virus
Butte	BUCO123	304	Cx. tarsalis	Oroville	50	CO2	8/30/16	WNV
Butte	BUCO75	325	Cx. tarsalis	Chico	50	CO2	9/7/16	WNV
Kings	KNGS3030	459	Cx. tarsalis	Lemoore	50	CO2	9/7/16	SLEV
Kings	KNGS3030	459	Cx. tarsalis	Lemoore	50	CO2	9/7/16	WNV
Kings	KNGS3030	460	Cx. tarsalis	Lemoore	30	CO2	9/7/16	WNV
Kings	KNGS3062	463	Cx. tarsalis	Lemoore	46	CO2	9/7/16	SLEV
Kings	KNGS3062	463	Cx. tarsalis	Lemoore	46	CO2	9/7/16	WNV
Kings	KNGS5511	477	Cx. pipiens	Hanford	14	BGSENT	9/9/16	WNV
Lake	LAKE196	627	Cx. tarsalis	Lakeport	10	CO2	9/9/16	WNV
Lake	LAKE226	623	Cx. tarsalis	Lower Lake	15	REST	9/8/16	WNV
Lake	LAKE315	617	Cx. thriambus	Kelseyville	15	REST	9/8/16	WNV
Los Angeles	GRLA2031	5703	Cx. quinquefasciatus	Northridge	28	GRVD	9/8/16	WNV
Los Angeles	GRLA2032	5704	Cx. tarsalis	Northridge	7	CO2	9/8/16	WNV
Los Angeles	GRLA2035	5699	Cx. quinquefasciatus	Tarzana	22	GRVD	9/8/16	WNV
Los Angeles	GRLA2097	750	Cx. quinquefasciatus	La Mirada	24	GRVD	9/7/16	WNV
Los Angeles	GRLA2100	756	Cx. quinquefasciatus	Norwalk	27	GRVD	9/7/16	WNV
Los Angeles	GRLA2101	748	Cx. quinquefasciatus	Santa Fe Springs	13	GRVD	9/7/16	WNV
Los Angeles	GRLA2247	747	Cx. quinquefasciatus	Pico Rivera	50	GRVD	9/7/16	WNV
Los Angeles	GRLA2268	754	Cx. quinquefasciatus	Cerritos	50	GRVD	9/7/16	WNV
Los Angeles	GRLA2300	732	Cx. quinquefasciatus	Los Angeles-South Central	50	GRVD	8/31/16	WNV
Los Angeles	GRLA2323	758	Cx. quinquefasciatus	Los Angeles	30	GRVD	9/8/16	WNV
Los Angeles	GRLA2478	5713	Cx. quinquefasciatus	Sunland	50	GRVD	9/9/16	WNV
Los Angeles	GRLA2539	5706	Cx. quinquefasciatus	Northridge	32	GRVD	9/8/16	WNV
Los Angeles	GRLA2547	5708	Cx. quinquefasciatus	Sylmar	23	CO2	9/9/16	WNV
Los Angeles	GRLA2555	5697	Cx. quinquefasciatus	Encino	50	GRVD	9/8/16	WNV
Los Angeles	GRLA2636	5695	Cx. quinquefasciatus	Van Nuys	50	GRVD	9/8/16	WNV
Los Angeles	GRLA2957	739	Cx. quinquefasciatus	Hawaiian Gardens	50	GRVD	9/2/16	WNV
Los Angeles	GRLA3040	751	Cx. quinquefasciatus	La Mirada	23	GRVD	9/7/16	WNV
Los Angeles	GRLA3041	753	Cx. quinquefasciatus	Artesia	50	GRVD	9/7/16	WNV
Los Angeles	GRLA3051	741	Cx. quinquefasciatus	Signal Hill	45	GRVD	9/2/16	WNV
Los Angeles	GRLA3060	755	Cx. quinquefasciatus	Norwalk	50	GRVD	9/7/16	WNV
Los Angeles	GRLA3064	736	Cx. quinquefasciatus	West Athens Village	50	GRVD	8/31/16	WNV
Los Angeles	GRLA3071	759	Cx. quinquefasciatus	East Los Angeles	45	GRVD	9/8/16	WNV
Los Angeles	GRLA3133	5707	Cx. quinquefasciatus	San Fernando	30	GRVD	9/9/16	WNV
Los Angeles	SGVA5	482	Cx. quinquefasciatus	Irwindale	35	GRVD	9/14/16	WNV
Los Angeles	SGVA884	466	Cx. quinquefasciatus	glendora	45	GRVD	9/8/16	WNV
Los Angeles	SGVA896	461	Cx. quinquefasciatus	La Verne	50	GRVD	9/8/16	WNV
Los Angeles	SGVA898	489	Cx. quinquefasciatus	San Gabriel	50	GRVD	9/14/16	WNV
Los Angeles	SGVA898	492	Cx. quinquefasciatus	San Gabriel	45	GRVD	9/14/16	WNV
Madera	MADR178	361	Cx. quinquefasciatus	Madera	50	CO2	9/9/16	WNV
Madera	MADR204	358	Cx. quinquefasciatus	Madera	19	CO2	9/9/16	WNV
Madera	MADR299	354	Cx. quinquefasciatus	Chowchilla	25	CO2	9/8/16	WNV
Placer	PLCR1113	2305	Cx. tarsalis	Pleasant Grove	50	CO2	9/13/16	WNV

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Placer	PLCR152964	2260	Cx. stigmatosoma	Roseville	18	CO2	9/9/16	WNV
Placer	PLCR196376	2209	Cx. pipiens		13	CO2	9/8/16	WNV
Riverside	COAV121	3256	Cx. tarsalis	Mecca	50	CO2	9/13/16	WNV
Riverside	COAV45	3262	Cx. tarsalis	Mecca	50	CO2	9/13/16	SLEV
Sacramento	SAYO205029	6891	Cx. pipiens	Orangevale	27	GRVD	9/9/16	WNV
Sacramento	SAYO233070	6968	Cx. tarsalis	Sacramento	50	CO2	9/13/16	WNV
Sacramento	SAYO234025	6942	Cx. pipiens	Elk Grove	12	CO2	9/13/16	WNV
San Joaquin	SJCM8008	2369	Cx. tarsalis	Manteca	39	CO2	9/13/16	WNV
San Joaquin	SJCM8018	2373	Cx. tarsalis	Stockton	48	CO2	9/13/16	WNV
San Joaquin	SJCM8020	2376	Cx. tarsalis	Acampo	14	CO2	9/13/16	WNV
San Joaquin	SJCM8029	2418	Cx. pipiens	Farmington	46	CO2	9/15/16	WNV
San Joaquin	SJCM8033	2400	Cx. tarsalis	Lockeford	29	CO2	9/15/16	WNV
San Joaquin	SJCM8047	2420	Cx. pipiens	Stockton	50	CO2	9/15/16	WNV
San Joaquin	SJCM8047	2421	Cx. pipiens	Stockton	14	CO2	9/15/16	WNV
San Joaquin	SJCM8077	2381	Cx. pipiens	Stockton	33	CO2	9/13/16	WNV
San Joaquin	SJCM8083	2364	Cx. pipiens	Escalon	26	CO2	9/13/16	WNV
San Joaquin	SJCM8159	2370	Cx. pipiens	Stockton	12	CO2	9/13/16	WNV
Stanislaus	TRLK1107	1055	Cx. tarsalis	Denair	15	CO2	9/13/16	WNV
Stanislaus	TRLK1309	1063	Cx. pipiens	Hughson	17	CO2	9/13/16	WNV
Stanislaus	TRLK1612	1051	Cx. pipiens	Turlock	50	CO2	9/13/16	WNV
Stanislaus	TRLK516	1057	Cx. pipiens	Denair	50	CO2	9/13/16	WNV
Stanislaus	TRLK613	1059	Cx. pipiens	Hickman	14	CO2	9/13/16	WNV
Tulare	DLTA8413	2425	Cx. quinquefasciatus	Visalia	10	GRVD	9/9/16	WNV
Tulare	DLTA8413	2426	Cx. quinquefasciatus	Visalia	19	GRVD	9/9/16	WNV
Tulare	DLTA8532	2422	Cx. quinquefasciatus	Visalia	21	GRVD	9/8/16	WNV
Tulare	DLTA9504	2391	Cx. quinquefasciatus	Visalia	16	GRVD	9/7/16	WNV
Tulare	DLTA9506	2419	Cx. quinquefasciatus	Visalia	21	GRVD	9/8/16	WNV
Tulare	DLTA9610	2399	Cx. quinquefasciatus	Exeter	50	GRVD	9/7/16	WNV
Tulare	TLRE70	95	Cx. tarsalis	Tulare	50	CO2	8/30/16	WNV
Tulare	TLRE70	96	Cx. quinquefasciatus	Tulare	50	CO2	8/30/16	WNV
Tulare	TLRE70	97	Cx. quinquefasciatus	Tulare	31	CO2	8/30/16	WNV
Yolo	SAYO116002	7001	Cx. tarsalis	Knights Landing	50	CO2	9/13/16	WNV
Yolo	SAYO136010	6844	Cx. tarsalis	Woodland	50	CO2	9/9/16	WNV
Yolo	SAYO143008	6987	Cx. tarsalis	Winters	1	CO2	9/13/16	WNV
Yolo	SAYO146006	6805	Cx. pipiens	Davis	1	GRVD	9/9/16	WNV

Sentinel Chickens

County	Site Code	City	Date Bled	Virus	Band 01	Band 02	Band 03
Los Angeles	GRLA2465	Los Feliz	9/7/2016	WNV	1242	1246	
Los Angeles	SGVA0005	Irwindale	9/6/2016	WNV	1819	1820	
Los Angeles	SGVA0006	Glendora	9/6/2016	WNV	1821	1822	
Los Angeles	SGVA0024	Altadena	9/6/2016	WNV	1809	1811	1843
Placer	PLCR0757	Auburn	9/12/2016	WNV	2148	2151	2152
San Bernardino	SANB0003	Colton	9/7/2016	WNV	1727		
San Bernardino	SANB0007	Fontana	9/7/2016	WNV	1745	1747	

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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 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.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
