

California Arbovirus Surveillance Bulletin # 34

Week 39 Monday, October 5, 2009

Weekly Summary

WEEKLY COMMENTS



As of October 3, 2009, 41 counties in California have reported West Nile virus (WNV) activity. At this time last year, 44 counties had reported WNV activity.

Humans

Seven new human cases of West Nile virus have been reported in California from the following 4 counties: Fresno (3), Los Angeles (2), San Bernardino (1), and San Joaquin (1). This is the first human case reported from San Bernardino County this year. In 2009, 68 human cases of WNV have been identified in 15 counties: Butte (1), Contra Costa (1), El Dorado (1), Fresno (12), Kern (11), Kings (3), Los Angeles (12), Merced (1), Orange (3), Riverside (1), San Bernardino (1), San Diego (2), San Joaquin (5), Stanislaus (12), and Yolo (2). Of the 68 individuals, 35 (51%) developed neuroinvasive symptoms. The median age of the 68 individuals is 53 years (range: 7-88 years), and 41 (60%) are male. Three fatalities have been reported in Fresno (1), Los Angeles (1), and Merced (1) counties. In addition, 18 WNV-positive blood donation samples have been reported this year; 5 of the individuals developed symptoms and were reclassified as cases. At this time last year, 272 human cases had been reported from 23 counties.

Horses

Two new equine cases of WNV have been reported in California from Sacramento and Tulare counties; both horses were euthanized. In 2009, 13 equine cases of WNV have been identified in 10 counties: Contra Costa (1), Los Angeles (1), Merced (1), Sacramento (1), San Joaquin (3), Shasta (1), Solano (1), Stanislaus (2), Tehama (1), and Tulare (1). Of the 13 cases, 7 died or were euthanized as a result of their illness. At this time last year, 21 cases had been reported from 12 counties.

Dead Birds & Tree Squirrels

Fourteen WNV positive dead birds were reported in California last week from the following 9 counties: Contra Costa (2), Glenn (1), Los Angeles (4), Merced (1), Sacramento (1), San Bernardino (2), San Diego (1), Santa Clara (1), and Stanislaus (1). In 2009, 457 birds from 35 counties have tested positive for WNV. At this time last year, 2,094 WNV positive dead birds had been reported from 41 counties.

No new positive tree squirrels were reported last week. In 2009, 9 tree squirrels from 7 counties have tested positive for WNV. At this time last year, 24 WNV positive tree squirrels had been reported from 6 counties.

Mosquito Pools

Twenty-six WNV positive mosquito pools were reported in California last week from the following 9 counties: Fresno (2), Kern (7), Los Angeles (4), Orange (2), Riverside (2), San Bernardino (2), San Joaquin (4), Stanislaus (1), and Tulare (2). In 2009, 1,034 mosquito pools have tested positive for WNV from 27 counties. At this time last year, 1,765 WNV positive mosquito pools had been reported from 26 counties.

Sentinel Chickens

Twenty-one new WNV seroconversions were reported in California last week from the following 8 counties: Butte (2), Fresno (2), Kern (2), Los Angeles (1), Madera (7), Merced (3), San Bernardino (3), and San Joaquin (1). These are the first WNV positive chickens detected in Madera County this year. In addition, 2 undetermined flavivirus positive chickens were reported from San Bernardino and Yolo counties; further testing by PRNT will be done to distinguish between SLE and West Nile viruses. In 2009, 330* chickens from 20 counties have tested positive for WNV antibodies. At this time last year, 301 WNV seroconversions had been reported from 20 counties.

**Three WNV positive chickens from Solano County were retroactively added to the total.*

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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YTD WNV Activity by Element and County, 2009

County	Humans	Horses	Dead Birds	Mosquito Pools	Sentinel Chickens	Squirrels
Alameda			10	1		
Amador			1			
Butte	1		12	4	25	
Colusa			2			
Contra Costa	1	1	38	17	10	1
El Dorado	1		9			
Fresno	12		62	133	13	1
Glenn			6			
Imperial				3	34	
Kern	11		27	135	78	1
Kings	3		9	105		
Lake			2	2		
Los Angeles	12	1	69	80	32	
Madera			11	3	7	
Merced	1	1	5	11	12	
Modoc			1			
Mono				1		
Monterey			3			
Napa					3	
Orange	3		7	13		
Placer			4	40	7	
Riverside	1		1	26	20	
Sacramento		1	23	36	2	1
San Bernardino	1		16	51	11	2
San Diego	2		32	5	4	
San Francisco			1			
San Joaquin	5	3	22	84	10	
San Mateo			1			
Santa Barbara			1			
Santa Clara			12	14		2
Santa Cruz			1			
Shasta		1	6	2		
Solano		1	2	2	8	
Stanislaus	12	2	26	93	21	
Sutter				25	6	
Tehama		1				1
Tulare		1	24	131	25	
Tuolumne			2			
Ventura			3			
Yolo	2		6	16	2	
Yuba				1		
Total	68	13	457	1034	330	9

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2009 & 2008 YTD West Nile Virus Comparisons		
	2008	2009
Total # Dead Bird Reports	29,015	13,970
# Positive Counties	44	41
# Human Cases / # Tested	272 / 879	68 / 783
# Horse Cases / # Tested	21 / 238	13 / 167
# Positive Dead Birds / # Tested	2,094 / 5,060	457 / 2,457
# Positive Mosquito Pools / # Tested	1,765 / 26,647	1,034 / 23,546
# Positive Chicken Sera / # Tested	301 / 23,895	330 / 20,302
# Positive Squirrels / # Tested	24 / 240	9 / 86

TEST SUMMARIES

Human & Horse Cases

		Number Tested	WNV		WEE		SLE		Other	
			Imported	Local	Imported	Local	Imported	Local	Imported	Local
Humans Tested*	Week	38	0	7	0	0	0	0	0	0
	YTD	783	1	67	0	0	0	0	0	0
Horses Tested	Week	5	0	2	0	0	0	0	0	0
	YTD	167	0	13	0	0	0	0	0	0

Dead Birds & Tree Squirrels

		Number Tested	WNV Positive
Dead Birds	Week	46	14
	YTD	2,457	457
Tree Squirrels	Week	1	0
	YTD	86	9

Sentinel Chickens & Mosquito Pools

		Number Tested	WNV Positive	SLE Positive	WEE Positive
Chicken Sera	Week	649	21	0	0
	YTD	20,302	330	0	0
Mosquito Pools: RT-PCR	Week	894	20	0	0
	YTD	22,480	961	0	0
Mosquito Pools: RAMP	Week	69	6	N/A	N/A
	YTD	1,066	73	N/A	N/A

POSITIVES

Dead Birds & Tree Squirrels

County	Submitting Agency	City	Zip Code	Species	Reported	Tested	Virus	Method
Contra Costa	Contra Costa MVCD	Brentwood	94513	American Crow	9/24/09	9/25/09	WNV	RAMP
Contra Costa	Contra Costa MVCD	Walnut Creek	94598	American Crow	9/22/09	9/23/09	WNV	RAMP
Glenn	Glenn Co MVCD	Orland	95963	Western Scrub-Jay	9/17/09	9/28/09	WNV	RT-PCR
Los Angeles	Greater Los Angeles Co VCD	Northridge	91324	American Crow	9/21/09	9/28/09	WNV	RT-PCR
Los Angeles	Los Angeles Co Veterinarian	Los Angeles	90048	American Crow	9/16/09	9/28/09	WNV	RT-PCR
Los Angeles	Los Angeles Co Veterinarian	Northridge	91326	American Crow	9/16/09	9/28/09	WNV	RT-PCR
Los Angeles	Los Angeles Co Veterinarian	Van Nuys	91401	American Crow	9/18/09	9/28/09	WNV	RT-PCR
Merced	Merced Co MAD	Atwater	95301	Yellow-billed Magpie	9/22/09	9/28/09	WNV	RT-PCR

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Sacramento	Sacramento-Yolo MVCD	Rancho Cordova	95670	American Crow	9/21/09	9/28/09	WNV	RT-PCR
San Bernardino	West Valley MVCD	Alta Loma	91737	American Crow	9/25/09	9/25/09	WNV	VecTest
San Bernardino	West Valley MVCD	Chino	91710	American Crow	9/22/09	9/28/09	WNV	RT-PCR
San Diego	San Diego Co VCP	San Marcos	92069	American Crow	9/21/09	9/24/09	WNV	RT-PCR
Santa Clara	Santa Clara Co VCD	San Jose	95129	American Crow	9/16/09	9/16/09	WNV	VecTest
Stanislaus	Turlock MAD	Denair	95316	American Crow	9/17/09	9/28/09	WNV	RT-PCR

Mosquitoes

County	Site Code	Pool #	Species	# in Pool	Collected	Tested	City	Virus	Method
Fresno	FRNO0053	68	Cx tarsalis	50	9/24/2009	9/28/2009	Fresno	WNV	RAMP
Fresno	FRNO0053	69	Cx quinquefasciatus	50	9/24/2009	9/28/2009	Fresno	WNV	RAMP
Kern	AFSB0123	5211	Cx quinquefasciatus	50	9/24/2009	9/30/2009	Oildale	WNV	RTPCR
Kern	KERN0015	580	Cx quinquefasciatus	50	9/22/2009	9/30/2009	Pumpkin Center	WNV	RTPCR
Kern	KERN0038	608	Cx tarsalis	42	9/25/2009	9/30/2009	Shafter	WNV	RTPCR
Kern	KERN0044	605	Cx quinquefasciatus	33	9/25/2009	9/30/2009	Shafter	WNV	RTPCR
Kern	KERN0060	607	Cx quinquefasciatus	44	9/25/2009	9/30/2009	Bakersfield	WNV	RTPCR
Kern	KERN0114	583	Cx quinquefasciatus	50	9/22/2009	9/30/2009	Bakersfield	WNV	RTPCR
Kern	KERN3019	587	Cx quinquefasciatus	50	9/23/2009	9/30/2009	Bakersfield	WNV	RTPCR
Los Angeles	GRLA2520	6011	Cx quinquefasciatus	27	9/24/2009	9/30/2009	Los Angeles	WNV	RTPCR
Los Angeles	GRLA2521	6012	Cx quinquefasciatus	47	9/24/2009	9/30/2009	Los Angeles	WNV	RTPCR
Los Angeles	GRLA2918	6005	Cx quinquefasciatus	16	9/24/2009	9/30/2009	Sunland	WNV	RTPCR
Los Angeles	GRLA2950	6006	Cx quinquefasciatus	43	9/24/2009	9/30/2009	Sunland	WNV	RTPCR
Orange	ORCO0002	1231	Cx quinquefasciatus	13	9/23/2009	9/25/2009	Fullerton	WNV	RTPCR
Orange	ORCO0003	1238	Cx erythrothorax	6	9/23/2009	9/25/2009	Garden Grove	WNV	RTPCR
Riverside	COAV0045	1683	Cx tarsalis	50	9/29/2009	9/30/2009	Mecca	WNV	RTPCR
Riverside	COAV0132	1662	Cx tarsalis	50	9/29/2009	9/30/2009	Mecca	WNV	RTPCR
San Bernardino	WVAL6002	984	Cx stigmatosoma	28	9/23/2009	9/29/2009	Ontario	WNV	RTPCR
San Bernardino	WVAL6002	988	Cx quinquefasciatus	50	9/23/2009	9/29/2009	Ontario	WNV	RTPCR
San Joaquin	SJCM8008	1102	Cx tarsalis	50	10/1/2009	10/1/2009	Manteca	WNV	RAMP
San Joaquin	SJCM8143	1091	Cx tarsalis	22	9/29/2009	9/28/2009	Stockton	WNV	RAMP
San Joaquin	SJCM8161	1083	Cx pipiens	50	9/29/2009	9/28/2009	Ripon	WNV	RAMP
San Joaquin	SJCM8161	1086	Cx pipiens	27	9/29/2009	9/28/2009	Ripon	WNV	RAMP
Stanislaus	TRLK0516	1434	Cx pipiens	50	9/29/2009	9/30/2009	Denair	WNV	RTPCR
Tulare	DLTA7529	955	Cx quinquefasciatus	50	9/25/2009	9/29/2009	Visalia	WNV	RTPCR
Tulare	DLTA9402	934	Cx quinquefasciatus	37	9/25/2009	9/29/2009	Visalia	WNV	RTPCR

Sentinel Chickens

County	Site Code	City	Date Bled	Virus	Band 01	Band 02	Band 03
Butte	BUCO0005	Honcut	9/15/2009	WNV	3301	3305	
Fresno	FRNO0012	Fresno	9/21/2009	WNV	2004		
Fresno	FRWS5101	The Mendota Airport	9/22/2009	WNV	2888		
Kern	DLNO0060	Delano	9/17/2009	WNV	3922	3925	
Los Angeles	ANTV7945	Quartz Hill	9/23/2009	WNV	3373		
Madera	MADR4123	Chowchilla	9/9/2009	WNV	2367	2368	2370
Madera	MADR4123	Chowchilla	9/23/2009	WNV	2362	2363	2366
Madera	MADR5234	Madera	9/23/2009	WNV	2377		
Merced	MERC0501	El Nido	9/18/2009	WNV	2263	2265	2267
San Bernardino	SANB0004	San Bernardino	9/21/2009	WNV	1715		
San Bernardino	SANB0007	Fontana	9/21/2009	Flavivirus	1741		
San Bernardino	WVAL0011	Ontario Airport	9/24/2009	WNV	3725	3726	
San Joaquin	SJCM9901	Lodi	9/21/2009	WNV	1557		
Yolo	SAYO6002	Woodland	9/14/2009	Flavivirus	1903		

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NATIONAL COMMENTS

As of September 29, 2009, 395 human cases had been reported nationwide in the following 32 states: Arizona (15), Arkansas (1), California (60), Colorado (51), Georgia (3), Idaho (8), Illinois (1), Indiana (3), Iowa (3), Kansas (7), Kentucky (2), Louisiana (13), Minnesota (1), Mississippi (37), Missouri (1), Montana (3), Nebraska (33), Nevada (12), New Jersey (2), New Mexico (6), New York (1), North Dakota (1), Ohio (2), Oklahoma (4), Oregon (7), Pennsylvania (2), South Carolina (3), South Dakota (14), Tennessee (2), Texas (64), Washington (25), and Wyoming (8). Of the 395 individuals, 202 (51%) have neuroinvasive illness. The median age of the 395 individuals is 53 years (range: 2-91 years); 58% are male. Twelve fatalities had been reported as of September 29 in California (2), Idaho (1), Indiana (1), Mississippi (3), New Mexico (1), Texas (3), and Wyoming (1).

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 by plaque reduction neutralization test (PRNT).

*Human denominator data only includes specimens tested at VRDL and does not include additional negative specimens that are tested by local agencies only.

Horses:

Serum or brain tissue specimens from horses displaying neurological symptoms are submitted to the California Animal Health and Safety Laboratory (CAHFS) and tested by EIA and PRNT.

Dead Birds and Tree Squirrels:

Dead birds and tree squirrels are necropsied at CAHFS laboratory at University of California, Davis. Oral swabs from American Crows and kidney tissue from all other dead birds and squirrels are forwarded to the UC Davis Center for Vectorborne Diseases (CVEC) for West Nile virus testing using the singleplex RT-PCR Taqman assay and confirmed with a second primer set. The WNV Dead Bird Surveillance Coordinator, Erin Parker, can be reached directly at (510) 412-6254.

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 the presence of antibodies to West Nile, western equine encephalomyelitis (WEE), and St. Louis encephalitis (SLE) viruses by EIA and IFA. Positive samples are confirmed by western-blot or PRNT.

Mosquito Pools:

Mosquito pools are submitted to CVEC and screened for WEE, SLE, and WNV viral RNA using a Taqman multiplex RT-PCR. CVEC will cease confirmation testing on PCR-positive pools of *Cx. tarsalis* and *Cx. quinquefasciatus* but will continue to confirm multiplex PCR-positive results for other mosquito species using singleplex RT-PCR.

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