

California Arbovirus Surveillance Bulletin # 35

Week 40 Monday, October 12, 2009

Weekly Summary

WEEKLY COMMENTS



As of October 9, 2009, 41 counties in California have reported West Nile virus (WNV) activity. At this time last year, 45 counties had reported WNV activity.

Humans

Nine new human cases of West Nile virus have been reported in California from the following 5 counties: Fresno (1), Kern (1), Los Angeles (2), San Diego (1), and Tulare (4). These are the first human cases reported from Tulare County this year. In 2009, 77 human cases of West Nile virus have been identified in 16 counties: Butte (1), Contra Costa (1), El Dorado (1), Fresno (13), Kern (12), Kings (3), Los Angeles (14), Merced (1), Orange (3), Riverside (1), San Bernardino (1), San Diego (3), San Joaquin (5), Stanislaus (12), Tulare (4), and Yolo (2). Of the 77 individuals, 41 (53%) developed neuroinvasive symptoms. The median age of the 77 individuals is 54 years (range: 7-88 years), and 47 (61%) are male. Three fatalities have been reported in Fresno (1), Los Angeles (1) and Merced (1) counties. In addition, 16 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, 295 cases from 24 counties had been reported.

Horses

Two new equine cases of WNV have been reported in California from Fresno and Merced counties. This is the first WNV positive horse reported from Fresno County this year. In 2009, 15 equine cases of WNV have been identified in 11 counties: Contra Costa (1), Fresno (1), Los Angeles (1), Merced (2), Sacramento (1), San Joaquin (3), Shasta (1), Solano (1), Stanislaus (2), Tehama (1), and Tulare (1). Of the 15 cases, 7 have 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), Los Angeles (2), Merced (3), Sacramento (1), San Diego (1), Shasta (2), Solano (1), Stanislaus (1), and Tulare (1). In 2009, 471 birds from 35 counties have tested positive for WNV. At this time last year, 2,232 WNV positive dead birds had been reported from 42 counties.

No new positive tree squirrels have been reported. In 2009, 9 tree squirrels from 7 counties have tested positive for WNV. At this time last year, 25 WNV positive tree squirrels had been reported from 6 counties.

Mosquito Pools

Ten WNV positive mosquito pools were reported in California last week from the following 5 counties: Butte (1), Fresno (1), Kern (2), Los Angeles (5), and Stanislaus (1). In 2009, 1,044 mosquito pools have tested positive for WNV from 27 counties. At this time last year, 1,805 WNV positive mosquito pools had been reported from 26 counties.

Sentinel Chickens

Sixty WNV seroconversions were reported in California last week from the following 11 counties: Butte (9), Glenn (3), Imperial (5), Kern (18), Placer (4), Riverside (7), Solano (2), Stanislaus (4), Sutter (4), Tehama (2), and Tulare (2). These are the first WNV positive chickens detected in Glenn and Tehama counties this year. In 2009, 390 chickens from 22 counties have tested positive for WNV antibodies. At this time last year, 421 WNV seroconversions had been reported from 20 counties.

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	5	34	
Colusa			2			
Contra Costa	1	1	40	17	10	1
El Dorado	1		9			
Fresno	13	1	62	134	13	1
Glenn			6		3	
Imperial				3	39	
Kern	12		27	137	96	1
Kings	3		9	105		
Lake			2	2		
Los Angeles	14	1	71	85	32	
Madera			11	3	7	
Merced	1	2	8	11	12	
Modoc			1			
Mono				1		
Monterey			3			
Napa					3	
Orange	3		7	13		
Placer			4	40	11	
Riverside	1		1	26	27	
Sacramento		1	24	36	2	1
San Bernardino	1		16	51	11	2
San Diego	3		33	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	8	2		
Solano		1	3	2	10	
Stanislaus	12	2	27	94	25	
Sutter				25	10	
Tehama		1			2	1
Tulare	4	1	25	131	27	
Tuolumne			2			
Ventura			3			
Yolo	2		6	16	2	
Yuba				1		
Total	77	15	471	1044	390	9

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2009 & 2008 YTD West Nile Virus Comparisons		
	2008	2009
Total # Dead Bird Reports	29,705	14,235
# Positive Counties	45	41
# Human Cases / # Tested	295 / 919	77 / 813
# Horse Cases / # Tested	21 / 238	15 / 178
# Positive Dead Birds / # Tested	2,232 / 5,222	471 / 2,504
# Positive Mosquito Pools / # Tested	1,805 / 27,517	1,044 / 24,198
# Positive Chicken Sera / # Tested	421 / 25,009	390 / 21,325
# Positive Squirrels / # Tested	25 / 250	9 / 91

TEST SUMMARIES

Human & Horse Cases

		Number Tested	WNV		WEE		SLE		Other	
			Imported	Local	Imported	Local	Imported	Local	Imported	Local
Humans Tested*	Week	30	0	9	0	0	0	0	0	0
	YTD	813	1	76	0	0	0	0	0	0
Horses Tested	Week	11	0	2	0	0	0	0	0	0
	YTD	178	0	15	0	0	0	0	0	0

Dead Birds & Tree Squirrels

		Number Tested	WNV Positive
Dead Birds	Week	47	14
	YTD	2,504	471
Tree Squirrels	Week	5	0
	YTD	91	9

Sentinel Chickens & Mosquito Pools

		Number Tested	WNV Positive	SLE Positive	WEE Positive
Chicken Sera	Week	1,023	60	0	0
	YTD	21,325	390	0	0
Mosquito Pools: RT-PCR	Week	589	10	0	0
	YTD	23,069	971	0	0
Mosquito Pools: RAMP	Week	63	0	N/A	N/A
	YTD	1,129	73	N/A	N/A

POSITIVES

Dead Birds & Tree Squirrels

County	Submitting Agency	City	Zip	Species	Reported	Tested	Virus	Method
Contra Costa	Contra Costa MVCD	Oakley	94561	Western Scrub-Jay	10/1/09	10/1/09	WNV	RAMP
Contra Costa	Contra Costa MVCD	Walnut Creek	94595	Western Scrub-Jay	9/10/09	9/11/09	WNV	RAMP
Los Angeles	Los Angeles Co Veterinarian	Sherman Oaks	91403	American Crow	9/23/09	10/5/09	WNV	RT-PCR
Los Angeles	Los Angeles Co Veterinarian	Van Nuys	91405	American Crow	9/24/09	10/5/09	WNV	RT-PCR
Merced	Merced Co MAD	Atwater	95301	American Crow	9/25/09	10/5/09	WNV	RT-PCR
Merced	Merced Co MAD	Atwater	95301	American Crow	9/25/09	10/5/09	WNV	RT-PCR
Merced	Merced Co MAD	Merced	95341	Yellow-billed Magpie	9/25/09	10/5/09	WNV	RT-PCR
Sacramento	Sacramento-Yolo MVCD	Wilton	95693	Western Scrub-Jay	9/27/09	10/5/09	WNV	RT-PCR
San Diego	San Diego Co Dept Env Health	San Diego	92130	American Crow	9/30/09	9/30/09	WNV	RT-PCR
Shasta	Shasta MVCD	Redding	96003	Western Scrub-Jay	10/1/09	10/2/09	WNV	VecTest
Shasta	Shasta MVCD	Redding	96003	Western Scrub-Jay	10/1/09	10/2/09	WNV	VecTest
Solano	Solano Co MAD	Dixon	95620	American Crow	9/30/09	9/30/09	WNV	RAMP
Stanislaus	Turlock MAD	Newman	95360	Yellow-billed Magpie	9/24/09	10/5/09	WNV	RT-PCR
Tulare	Tulare MAD	Porterville	93257	American Crow	9/28/09	10/5/09	WNV	RT-PCR

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Mosquitoes

County	Site Code	Pool #	Species	# in Pool	Collected	Tested	City	Virus	Method
Butte	BUCO0037	69	Cx tarsalis	50	9/16/2009	10/7/2009	Honcut	WNV	RTPCR
Fresno	CNSL6198	697	Cx quinquefasciatus	50	10/1/2009	10/9/2009	Riverdale	WNV	RTPCR
Kern	KERN0038	624	Cx tarsalis	50	10/2/2009	10/7/2009	Shafter	WNV	RTPCR
Kern	KERN0041	633	Cx tarsalis	50	10/2/2009	10/7/2009	Lost Hills	WNV	RTPCR
Los Angeles	GRLA2247	1796	Cx quinquefasciatus	50	9/30/2009	10/9/2009	Pico Rivera	WNV	RTPCR
Los Angeles	GRLA2334	1774	Cx quinquefasciatus	50	9/30/2009	10/7/2009	Whittier	WNV	RTPCR
Los Angeles	GRLA2335	1768	Cx quinquefasciatus	50	9/30/2009	10/7/2009	Whittier	WNV	RTPCR
Los Angeles	GRLA2849	6044	Cx quinquefasciatus	27	9/30/2009	10/8/2009	Panorama City	WNV	RTPCR
Los Angeles	GRLA2853	6043	Cx quinquefasciatus	21	9/30/2009	10/8/2009	Van Nuys	WNV	RTPCR
Stanislaus	TRLK0305	1536	Cx tarsalis	49	10/6/2009	10/9/2009	Grayson	WNV	RTPCR

Sentinel Chickens

County	Site Code	Nearest City	Date Bled	Virus	Band 01	Band 02	Band 03	Band 04	Band 05	Band 06	Band 07
Butte	BUCO0001	Chico	9/28/2009	WNV	3259	3260	3265				
Butte	BUCO0002	Oroville	9/28/2009	WNV	3275						
Butte	BUCO0003	Oroville	9/28/2009	WNV	3279						
Butte	BUCO0004	Gridley	9/28/2009	WNV	3295						
Butte	BUCO0005	Honcut	9/28/2009	WNV	3303	3307	3310				
Glenn	GLEN9701	Willows	9/16/2009	WNV	2858	2865					
Glenn	GLEN9701	Willows	9/30/2009	WNV	2863						
Imperial	COAV5001	Niland	9/21/2009	WNV	3193						
Imperial	COAV5002	Niland	9/21/2009	WNV	3198	3200	3201	3202			
Kern	DLNO0060	Delano	10/1/2009	WNV	3923	3924	3927				
Kern	KERN1008	Bakersfield	9/28/2009	WNV	2632						
Kern	KERN0101	Lost Hills	9/28/2009	WNV	2681	2682	2685	2688	2689	2690	2699
Kern	KERN0104	Old River	9/28/2009	WNV	2707						
Kern	KERN0111	Arvin	9/28/2009	WNV	2703						
Kern	KERN0112	Wasco	9/28/2009	WNV	2665	2666					
Kern	KERN0113	Bakersfield	9/28/2009	WNV	2610						
Kern	KERN0114	Bakersfield	9/28/2009	WNV	2705						
Kern	WEST6203	Hwy 119 and 43	9/29/2009	WNV	1047						
Placer	PLCR0017	Sheridan	9/28/2009	WNV	3452						
Placer	PLCR0025	Lincoln	9/14/2009	WNV	3457	3458	3459				
Riverside	COAV0114	Mecca	9/21/2009	WNV	3186						
Riverside	COAV0122	Mecca	9/21/2009	WNV	3138						
Riverside	COAV0200	Mecca	9/21/2009	WNV	3123						
Riverside	COAV0204	Indio	9/21/2009	WNV	3098						
Riverside	COAV0035	Mecca	9/21/2009	WNV	3127	3128	3135				
Solano	SOLA0015	Winters	10/2/2009	WNV	1342	1345					
Stanislaus	EAST1959	Oakdale	9/30/2009	WNV	2903	2906					
Stanislaus	TRLK9703	Crows Landing	10/1/2009	WNV	1144	1151					
Sutter	SUYA0014	Sutter	10/1/2009	WNV	1283						
Sutter	SUYA0030	Live Oak	9/29/2009	WNV	1304						
Sutter	SUYA0030	Live Oak	10/1/2009	WNV	1305						
Sutter	SUYA0031	Rio Oso	9/29/2009	WNV	1267						
Tehama	TEHA0002	Corning	9/16/2009	WNV	1202	1208					
Tulare	DLNO0021	Earlimart	10/1/2009	WNV	2954						
Tulare	TLRE0012	Alpaugh	9/30/2009	WNV	1184						

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NATIONAL COMMENTS

As of October 6, 2009, 436 human cases had been reported nationwide in the following 33 states: Arizona (16), Arkansas (3), California (68), Colorado (51), Georgia (3), Idaho (8), Illinois (4), Indiana (3), Iowa (5), Kansas (7), Kentucky (3), Louisiana (13), Maryland (1), Minnesota (3), Mississippi (46), Missouri (2), Montana (4), Nebraska (33), Nevada (12), New Jersey (2), New Mexico (7), New York (2), North Dakota (1), Ohio (2), Oklahoma (6), Oregon (7), Pennsylvania (2), South Carolina (3), South Dakota (17), Tennessee (3), Texas (64), Washington (27), and Wyoming (8). Of the 436 individuals, 231 (53%) have neuroinvasive illness. The median age of the 436 individuals is 54 years (range: 10 months-91 years); 57% are male. Sixteen fatalities had been reported as of October 6 in Arizona (1), California (3), Georgia (1), Idaho (1), Indiana (1), Mississippi (3), New Mexico (1), Oklahoma (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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