

California Arbovirus Surveillance Bulletin # 35

Week 42 Monday, October 25, 2010

Weekly Summary

WEEKLY COMMENTS



Humans

Fourteen new human cases of West Nile virus (WNV) were reported last week from Kern (4), Merced (1), Orange (1), Sacramento (3), San Joaquin (1), Stanislaus (1), and Tulare (3) counties. These are the first WNV cases reported from Merced and Orange counties this year. In addition, an asymptomatic WNV infection was reported in a blood donor from Tulare County. To date this year, 82 WNV cases have been reported from 14 counties. Of the 82 individuals, 51 (62%) developed neuroinvasive disease. The median age for all cases for which data are available is 55 years (range: 17-89 years); 46 (56%) are male. Two WNV-associated fatalities have been reported from Fresno and Merced counties. At this time last year, 90 human cases had been reported from 16 counties.

Horses

One new horse case of WNV was reported last week from Fresno County. In 2010, 19 horses from 11 counties have tested positive for WNV infection and 5 fatalities have been reported. At this time last year, 17 horse cases of WNV had been reported from 11 counties.

Dead Birds & Squirrels

As of October 14th, the statewide dead bird testing program has been suspended until March, 2011. The WNV hotline will continue to operate Monday-Friday (8am-5pm) to receive dead bird and squirrel reports and answer questions from the public. Please contact Erin Parker at 510-412-6254 for questions concerning the program.

Eleven recently-infected* WNV positive dead birds were reported last week from the following 5 counties: Los Angeles (4), Placer (2), Sacramento (1), Stanislaus (2), and Yolo (2). Two additional birds from two counties tested positive for chronic infection with WNV. One WNV positive tree squirrel was reported from San Mateo County last week.

In 2010, 401 recently-infected* WNV positive dead birds have been reported from 27 counties, and 21 WNV positive squirrels have been reported from 8 counties. An additional 179 chronic WNV infections have been detected in birds from 29 counties (see www.westnile.ca.gov for more details). At this time last year, 497 birds from 36 counties and 10 tree squirrels from 7 counties had tested positive for WNV. Year-to-date totals from last year and previous years include both recent and chronic infections.

**In 2010, The University of California, Center for Vectorborne Diseases (CVEC) and the California Department of Public Health, Vector-Borne Disease Section began differentiating between chronic and acute infections in West Nile virus positive dead birds. Birds considered to have chronic infection with WNV are unlikely to have been infected recently with WNV and have limited surveillance utility.*

Mosquito Pools

Ten WNV positive mosquito pools were reported last week from the following 4 counties: Kern (1), Lake (1), Los Angeles (3), and San Joaquin (5). In 2010, 1,294 mosquito pools from 24 counties have tested positive for WNV. At this time last year, 1,054 WNV positive mosquito pools had been reported from 27 counties.

Sentinel Chickens

Eight WNV seroconversions were reported last week from 6 flocks within the following 3 counties: Butte (1), Kern (6), and Stanislaus (1). In 2010, 271 WNV positive chickens have been detected among 59 flocks within 20 counties. At this time last year, 422 WNV positive chickens from 22 counties had been reported.

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2009 & 2010 YTD West Nile Virus Comparisons		
	2009	2010
Total # Dead Bird Reports	14,609	9,858
# Positive Counties	42	35
# Human Cases	90	82
# Horse Cases	17	19
# Positive Dead Birds / # Tested	497 / 2,611	401 / 2,053
# Positive Mosquito Pools / # Tested	1,054 / 24,674	1,294 / 29,220
# Seroconversions / # Tested	422 / 22,503	271 / 23,958
# Positive Squirrels / # Tested	10 / 98	21 / 104

YTD WNV Activity by Element and County, 2010

County	Humans	Horses	Dead Birds [^]	Mosquito Pools	Sentinel Chickens	Squirrels
Alameda			1			
Amador		1				
Butte	1	1	6	7	7	1
Colusa			1		5	
Contra Costa	3		8	4	2	
El Dorado			2			
Fresno	21	4	22	130	7	2
Glenn	2		3			
Imperial				10	14	
Kern	11	1	11	277	86	
Kings				65		
Lake				3		
Lassen		1				
Los Angeles			37	52	2	1
Madera	5	5	13	9	9	
Merced	1		14	9	8	
Mono			1			
Orange	1		12	19		1
Placer	3		9	36	4	
Riverside			1	70	42	
Sacramento	8	2	115	205	6	2
San Bernardino	1		10	37	10	2
San Diego			2	1		
San Joaquin	7	1	26	56	1	
San Mateo						6
Santa Clara			30	10		6
Santa Cruz			4			
Shasta			3			
Solano		1	1	1	2	
Stanislaus	10	1	34	86	21	
Sutter			1	26	13	
Tehama					1	
Tulare	8	1	21	168	26	
Yolo			13	11		
Yuba				2	5	
Totals	82	19	401	1,294	271	21

[^] Chronic infections are not included in county totals.

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TEST SUMMARIES

Human & Horse Cases

		Number Tested	WNV		WEE		SLE	
			Local	Imported	Local	Imported	Local	Imported
Humans Tested*	Week	16	14	0	0	0	0	0
	YTD	623	82	0	0	0	0	0
Horses Tested	Week	5	1	0	0	0	0	0
	YTD	174	19	0	0	0	0	0

Dead Birds & Tree Squirrels

		Number Tested	WNV Positive (recent only)
Dead Birds	Week	36	11
	YTD	2,053	401
Tree Squirrels	Week	6	1
	YTD	104	21

Sentinel Chickens & Mosquito Pools

		Number Tested	WNV Positive	SLE Positive	WEE Positive
Chicken Sera	Week	653	8	0	0
	YTD	23,958	271	0	0
Mosquito Pools: RT-PCR	Week	471	10	0	0
	YTD	28,172	1,275	0	0
Mosquito Pools: RAMP	Week	15	0	N/A	N/A
	YTD	1,048	19	N/A	N/A

NEW POSITIVES

Humans

WNV Cases							
ID	Report Date	County ¹	Age	Sex	Clin Pres	Onset Date	WNV Fatality?
10-0070	10/15/10	Kern	33	M	WNF	n/a	No
10-0071	10/15/10	Kern	23	M	WNND	n/a	No
10-0072	10/15/10	San Joaquin	61	F	WNND	09/15/10	No
10-0073	10/18/10	Merced	>18	M	WNND	09/20/10	Yes
10-0074	10/18/10	Orange	45	M	WNND	09/11/10	No
10-0075	10/19/10	Stanislaus	48	F	WNND	n/a	No
10-0076	10/11/10	Tulare	51	M	WNND	09/19/10	No
10-0077	10/11/10	Tulare	60	F	WNF	09/03/10	No
10-0078	10/20/10	Kern	51	M	WNF	n/a	No
10-0079	10/20/10	Kern	65	M	WNF	n/a	No
10-0080	10/20/10	Sacramento	77	M	WNND	08/12/10	No
10-0081	10/20/10	Sacramento	50	F	WNF	08/09/10	No
10-0082	10/11/10	Tulare	31	M	WNF	08/21/10	No
10-0083	10/18/10	Sacramento	45	F	WNF	07/07/10	No
Presumptively Viremic Blood Donors (Asymptomatic Infections)							
BD10-0016	10/21/10	Tulare	71	F			

¹County of residence

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Dead Birds & Squirrels

County	Agency	City	Zip	Species	Reported	Virus	Type of Infection	Method
Alameda	Alameda Co MAD	Pleasanton	94588	Fox Sparrow	10/7/2010	WNV	Chronic	RT-PCR
Butte	Butte Co MVCD	Chico	95926	Turkey	10/6/2010	WNV	Chronic	RT-PCR
Los Angeles	Greater LA Co VCD-Sylmar	Northridge	91324	American Crow	10/12/2010	WNV	Recent	RT-PCR
Los Angeles	Los Angeles Co Vet	North Hills	91343	American Crow	9/30/2010	WNV	Recent	RT-PCR
Los Angeles	Los Angeles Co Vet	Woodland Hills	91364	American Crow	10/3/2010	WNV	Recent	RT-PCR
Los Angeles	Los Angeles Co Vet	Long Beach	90805	American Crow	10/8/2010	WNV	Recent	RT-PCR
Placer	Placer MVCD	Roseville	95678	White-crowned Sparrow	10/1/2010	WNV	Recent	RT-PCR
Placer	Placer MVCD	Lincoln	95648	House Sparrow	10/12/2010	WNV	Recent	RT-PCR
Sacramento	Sacramento-Yolo MVCD	Elk Grove	95624	Red-tailed Hawk	10/13/2010	WNV	Recent	RT-PCR
San Mateo	San Mateo Co. MAD	San Carlos	94070	Eastern Gray Squirrel	10/8/2010	WNV	Recent	RT-PCR
Stanislaus	Turlock MAD	Turlock	95380	Yellow-billed Magpie	10/8/2010	WNV	Recent	RT-PCR
Stanislaus	Turlock MAD	Patterson	95363	American Crow	10/12/2010	WNV	Recent	RT-PCR
Yolo	Sacramento-Yolo MVCD	Knights Landing	95645	Yellow-billed Magpie	10/8/2010	WNV	Recent	RT-PCR
Yolo	Sacramento-Yolo MVCD	Winters	95694	Yellow-billed Magpie	10/12/2010	WNV	Recent	RT-PCR

Mosquitoes

County	Site Code	Pool #	Species	# in pool	City	Collected	Virus	Method
Kern	KERN3032	1378	Culex quinquefasciatus	43		10/5/2010	WNV	RTPCR
Lake	LAKE151	332	Culex tarsalis	21		10/6/2010	WNV	RTPCR
Los Angeles	GRLA2419	6427	Culex quinquefasciatus	19	Panorama City	10/14/2010	WNV	RTPCR
Los Angeles	GRLA2557	6432	Culex quinquefasciatus	50	Reseda	10/14/2010	WNV	RTPCR
Los Angeles	GRLA2574	6429	Culex quinquefasciatus	50	Sherman Oaks	10/14/2010	WNV	RTPCR
San Joaquin	SJCM8020	1003	Culex tarsalis	9	Acampo	10/14/2010	WNV	RTPCR
San Joaquin	SJCM8106	1000	Culex pipiens	11	Escalon	10/14/2010	WNV	RTPCR
San Joaquin	SJCM8111	1031	Culex erythrothorax	50	Stockton	10/19/2010	WNV	RTPCR
San Joaquin	SJCM8143	1023	Culex pipiens	44	Stockton	10/19/2010	WNV	RTPCR
San Joaquin	SJCM9906	962	Culex pipiens	15	French Camp	10/13/2010	WNV	RTPCR

Sentinel Chickens

County	Site Code	City	Date Bled**	Virus	Band 01	Band 02
Butte	BUCO0004	Gridley	10/12/2010	WNV	1145	
Kern	KERN0101	Lost Hills	10/4/2010	WNV	1752	1753
Kern	KERN0107	Arvin	10/4/2010	WNV	1865	1867
Kern	KERN0112	Wasco	10/4/2010	WNV	1788	
Kern	KERN0117	Bakersfield	10/4/2010	WNV	1837	
Stanislaus	TRLK0402	Denair	10/14/2010	WNV	3392	

**Date bled is equivalent to the probable date of seroconversion. The filter paper bleed date is reported as the date bled when whole blood is requested & tested for confirmation.

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NATIONAL COMMENTS

As of October 19, 2010, 789 human cases of WNV had been reported nationwide in 36 states: Alabama (3), Arizona (132), Arkansas (6), California (65), Colorado (73), Connecticut (7), Florida (7), Georgia (11), Idaho (1), Illinois (44), Indiana (8), Iowa (6), Kansas (6), Kentucky (3), Louisiana (20), Maryland (14), Massachusetts (6), Michigan (27), Minnesota (5), Mississippi (6), Missouri (3), Nebraska (37), Nevada (2), New Hampshire (1), New Jersey (24), New Mexico (16), New York (124), North Dakota (8), Ohio (3), Pennsylvania (27), South Dakota (20), Tennessee (4), Texas (60), Virginia (2), Wisconsin (2), and Wyoming (6). Of the 789 cases, 479 (61%) had neuroinvasive disease. A total of 33 WNV-related fatalities have been reported in Arizona (8), California (1), Colorado (4), Florida (2), Illinois (3), Kentucky (1), Michigan (3), Nebraska (1), New Jersey (2), New York (3), Texas (4), and Virginia (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.

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.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
