

California Arbovirus Surveillance Bulletin # 36

Week 43 Friday, October 29, 2010

Weekly Summary

WEEKLY COMMENTS



Humans

Eleven new human cases of West Nile virus (WNV) were reported this week from Alameda (1), Kern (1), Kings (1), Los Angeles (1), Sacramento (2), San Bernardino (2), Stanislaus (1), and Tulare (2) counties. These are the first WNV cases reported from Alameda, Kings, and Los Angeles counties this year. In addition, an asymptomatic WNV infection was reported in a blood donor from Sacramento County. To date this year, 93 WNV cases have been reported from 17 counties. Of the 93 individuals, 59 (63%) developed neuroinvasive disease. The median age for all cases for which data are available is 55 years (range: 10-89 years); 50 (54%) are male. Two WNV-associated fatalities have been reported from Fresno and Merced counties. At this time last year, 95 human cases had been reported from 17 counties.

Horses

No new horse cases were reported this week. 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

No new positive birds or squirrels were reported this 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.

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.

**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

No positive mosquito pools were reported this week. In 2010, 1,294 mosquito pools from 24 counties have tested positive for WNV. At this time last year, 1,059 WNV positive mosquito pools had been reported from 27 counties.

Sentinel Chickens

Six WNV seroconversions were reported this week from 3 flocks within the following 3 counties: Imperial (1), San Bernardino (1), and Yolo (4). These are the first WNV positive chickens detected in Yolo County this year. In 2010, 277 WNV positive chickens have been detected among 61 flocks within 21 counties. At this time last year, 436 WNV positive chickens from 23 counties had been reported.

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2009 & 2010 YTD West Nile Virus Comparisons		
	2009	2010
Total # Dead Bird Reports	14,709	9,974
# Positive Counties	42	35
# Human Cases	95	93
# Horse Cases	17	19
# Positive Dead Birds / # Tested	497 / 2,624	401 / 2,053
# Positive Mosquito Pools / # Tested	1,059 / 24,998	1,294 / 29,711
# Seroconversions / # Tested	436 / 23,325	277 / 24,795
# 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		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	15	
Kern	12	1	11	277	86	
Kings	1			65		
Lake				3		
Lassen		1				
Los Angeles	1		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	10	2	115	205	6	2
San Bernardino	3		10	37	11	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	11	1	34	86	21	
Sutter			1	26	13	
Tehama					1	
Tulare	10	1	21	168	26	
Yolo			13	11	4	
Yuba				2	5	
Totals	93	19	401	1,294	277	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	14	11	0	0	0	0	0
	YTD	637	93	0	0	0	0	0
Horses Tested	Week	2	0	0	0	0	0	0
	YTD	176	19	0	0	0	0	0

Dead Birds & Tree Squirrels

		Number Tested	WNV Positive (recent only)
Dead Birds	Week	0	--
	YTD	2,053	401
Tree Squirrels	Week	0	--
	YTD	104	21

Sentinel Chickens & Mosquito Pools

		Number Tested	WNV Positive	SLE Positive	WEE Positive
Chicken Sera	Week	837	6	0	0
	YTD	24,795	277	0	0
Mosquito Pools: RT-PCR	Week	491	0	0	0
	YTD	28,663	1,275	0	0
Mosquito Pools: RAMP	Week	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?
10-0084	10/21/10	Kings	>18	F	WNND	08/30/10	NO
10-0085	10/21/10	Sacramento	39	F	WNND	07/26/10	NO
10-0086	10/25/10	Stanislaus	10	M	WNND	n/a	NO
10-0087	10/25/10	Sacramento	84	F	WNND	07/18/10	NO
10-0088	10/02/10	Alameda	72	F	WNND	07/26/10	NO
10-0089	10/07/10	Kern	47	F	WNF	n/a	NO
10-0090	10/11/10	Tulare	61	F	WNF	08/13/10	NO
10-0091	10/26/10	Tulare	43	F	WNND	09/12/10	NO
10-0092	10/27/10	Los Angeles	78	M	WNND	09/14/10	NO
10-0093	10/28/10	San Bernardino	57	M	WNND	09/26/10	NO
10-0094	10/28/10	San Bernardino	71	M	WNF	09/14/10	NO
Presumptively Viremic Blood Donors (Asymptomatic Infections)							
BD10-0017	10/18/10	Sacramento	18	M			

¹County of residence

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Sentinel Chickens

County	Site Code	City	Date Bled**	Virus	Band 01	Band 02	Band 03	Band 04
Imperial	COAV5001	Niland	10/18/2010	WNV	1354			
San Bernardino	SANB0024	Needles	10/18/2010	WNV	2879			
Yolo	SAYO145022	Davis	10/18/2010	WNV	2655	2656	2657	2661

**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.

NATIONAL COMMENTS

As of October 26, 2010, 832 human cases of WNV had been reported nationwide in 38 jurisdictions: Alabama (3), Arizona (142), Arkansas (6), California (65), Colorado (77), Connecticut (7), District of Columbia (2), Florida (9), Georgia (11), Idaho (1), Illinois (44), Indiana (8), Iowa (6), Kansas (6), Kentucky (3), Louisiana (20), Maryland (17), Massachusetts (7), Michigan (27), Minnesota (6), Mississippi (7), Missouri (3), Nebraska (37), Nevada (2), New Hampshire (1), New Jersey (29), New Mexico (17), New York (126), North Dakota (8), Ohio (4), Pennsylvania (26), South Dakota (20), Tennessee (4), Texas (69), Utah (2), Virginia (2), Wisconsin (2), and Wyoming (6). Of the 832 cases, 509 (61%) had neuroinvasive disease. A total of 34 WNV-related fatalities have been reported in Arizona (8), California (1), Colorado (4), Florida (2), Illinois (3), Kentucky (1), Maryland (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.

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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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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
