

California Arbovirus Surveillance Bulletin # 41

Week 50 Friday, December 17, 2010

Weekly Summary

WEEKLY COMMENTS



This is the last bulletin update in 2010. As of December 17, 35 counties in California have reported West Nile virus (WNV) activity. St. Louis encephalitis virus (SLEV) and western equine encephalomyelitis virus (WEEV) were not detected in California in 2010. SLEV and WEEV have not been detected in California since 2003 and 2007, respectively.

Humans

Since the last bulletin, two new human cases of WNV have been reported from Contra Costa and Los Angeles counties. In 2010, a total of 104 cases have been reported from 17 counties, and an additional 17 asymptomatic WNV infections have been reported from 11 counties. Of the 104 cases, 67 (64%) developed neuroinvasive disease. The median age for all cases for which data are available is 56 years (range: 10-89 years) and 58 (56%) are male. Two WNV-associated fatalities have been reported from Fresno and Merced counties. At this time last year, 104 human cases had been reported from 18 counties.

Horses

In 2010, 19 horse cases of WNV have been reported from 11 counties. Five of the horses (26%) were euthanized as a result of their infection. All cases were reported as unvaccinated or incompletely vaccinated per manufacturer protocol. In 2009, there were 18 confirmed horse cases of WNV, with 8 fatalities.

Dead Birds & Squirrels

In 2010, 412 recently-infected* WNV positive dead birds have been reported from 27 counties, and 24 WNV positive squirrels have been reported from 8 counties. An additional 181 chronic WNV infections have been detected in birds from 29 counties (see www.westnile.ca.gov for more details). At this time last year, 508 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

In 2010, 1,305 mosquito pools from 24 counties have tested positive for WNV. At this time last year, 1,068 WNV positive mosquito pools had been reported from 27 counties.

Sentinel Chickens

In 2010, 280 WNV positive chickens have been detected among 62 flocks within 21 counties. At this time last year, 442 WNV positive chickens from 23 counties had been reported.

2009 & 2010 YTD West Nile Virus Comparisons		
	2009	2010
Total # Dead Bird Reports	15,373	10,406
# Positive Counties	42	35
# Human Cases	104	104
# Horse Cases	18	19
# Positive Dead Birds / # Tested	508 / 2,744	412 / 2,113
# Positive Mosquito Pools / # Tested	1,068 / 25,712	1,305 / 30,629
# Seroconversions / # Tested	442 / 24,866	280 / 26,219
# Positive Squirrels / # Tested	10 / 99	24 / 108

California Arbovirus Surveillance Bulletin # 41

Week 50 Friday, December 17, 2010

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	4		8	4	3	
El Dorado			2			
Fresno	22	4	22	130	7	2
Glenn	2		3			
Imperial				10	15	
Kern	13	1	13	277	86	
Kings	1			65		
Lake				3		
Lassen		1				
Los Angeles	4		40	57	2	1
Madera	5	5	13	9	9	
Merced	1		14	9	8	
Mono			1			
Orange	1		15	19		2
Placer	3		9	36	4	
Riverside			1	71	43	
Sacramento	12	2	115	205	6	4
San Bernardino	4		10	41	11	2
San Diego			2	1		
San Joaquin	7	1	26	57	1	
San Mateo						6
Santa Clara			31	10		6
Santa Cruz			4			
Shasta			4			
Solano		1	1	1	2	
Stanislaus	12	1	34	86	21	
Sutter			1	26	13	
Tehama					1	
Tulare	11	1	21	168	26	
Yolo			14	11	5	
Yuba				2	5	
Totals	104	19	412	1,305	280	24

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

California Arbovirus Surveillance Bulletin # 41

Week 50 Friday, December 17, 2010

TEST SUMMARIES

Human & Horse Cases

		Number Tested	WNV		WEE		SLE	
			Local	Imported	Local	Imported	Local	Imported
Humans Tested*	Week	21	2	0	0	0	0	0
	YTD	722	104	0	0	0	0	0
Horses Tested	Week	0	--	0	0	0	0	0
	YTD	231	19	0	0	0	0	0

Dead Birds & Tree Squirrels

		Number Tested	WNV Positive (recent only)
Dead Birds	Week	0	--
	YTD	2,113	412
Tree Squirrels	Week	0	--
	YTD	108	24

Sentinel Chickens & Mosquito Pools

		Number Tested	WNV Positive	SLE Positive	WEE Positive
Chicken Sera	Week	0	--	0	0
	YTD	26,219	280	0	0
Mosquito Pools: RT-PCR	Week	101	0	0	0
	YTD	29,580	1,285	0	0
Mosquito Pools: RAMP	Week	0	--	N/A	N/A
	YTD	1,049	20	N/A	N/A

POSITIVES

Humans

WNV Cases							
ID	Report Date	County ¹	Age	Sex	Clin Pres	Onset Date	WNV Fatality?
10-0105	12/03/10	Los Angeles	69	F	WNND	10/11/10	NO
10-0106	12/08/10	Contra Costa	>18	M	WNNND	10/27/10	NO

¹County of residence

NATIONAL COMMENTS

As of December 14, 2010, 979 human cases of WNV had been reported nationwide in 40 jurisdictions: Alabama (3), Arizona (162), Arkansas (7), California (104), Colorado (81), Connecticut (7), District of Columbia (2), Florida (11), Georgia (13), Idaho (1), Illinois (56), Indiana (12), Iowa (6), Kansas (17), Kentucky (3), Louisiana (20), Maryland (23), Massachusetts (7), Michigan (29), Minnesota (8), Mississippi (9), Missouri (3), Nebraska (37), Nevada (2), New Hampshire (1), New Jersey (30), New Mexico (23), New York (127), North Dakota (9), Ohio (5), Pennsylvania (30), South Carolina (1), South Dakota (20), Tennessee (4), Texas (89), Utah (2), Virginia (5), Washington (2), Wisconsin (2), and Wyoming (6). Of the 979 cases, 598 (61%) had neuroinvasive disease. A total of 43 WNV-related fatalities have been reported in Arizona (12), California (2), Colorado (4), Florida (2), Illinois (3), Indiana (1), Kentucky (1), Maryland (2), Michigan (3), Nebraska (1), New Jersey (2), New York (3), Texas (6), and Virginia (1).

California Arbovirus Surveillance Bulletin # 41

Week 50 Friday, December 17, 2010

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
