

California Arbovirus Surveillance Bulletin # 39

Week 46 Friday, November 19, 2010

Weekly Summary

WEEKLY COMMENTS



Humans

No new human cases were reported this week. In 2010, 97 WNV cases have been reported from 17 counties (*one case from Orange County reported last week has been removed*). In addition, 17 asymptomatic WNV infections have been reported from 11 counties. Of the 97 cases, 62 (64%) developed neuroinvasive disease. The median age for all cases for which data are available is 56 years (range: 10-89 years) and 54 (56%) are male. Two WNV-associated fatalities have been reported from Fresno and Merced counties. At this time last year, 101 human cases had been reported from 18 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, 18 horse cases of WNV had been reported from 12 counties.

Dead Birds & Squirrels

No new positive dead birds or squirrels were reported this week. In 2010, 408 recently-infected* WNV positive dead birds have been reported from 27 counties, and 23 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, 507 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

No new positive mosquito pools were reported this week. In 2010, 1,302 mosquito pools from 24 counties have tested positive for WNV. At this time last year, 1,063 WNV positive mosquito pools had been reported from 27 counties.

Sentinel Chickens

No new seroconversions were reported this week. In 2010, 279 WNV positive chickens have been detected among 62 flocks within 21 counties. At this time last year, 441 WNV positive chickens from 23 counties had been reported.

2009 & 2010 YTD West Nile Virus Comparisons		
	2009	2010
Total # Dead Bird Reports	15,079	10,225
# Positive Counties	42	35
# Human Cases	101	97
# Horse Cases	18	19
# Positive Dead Birds / # Tested	507 / 2,717	408 / 2,076
# Positive Mosquito Pools / # Tested	1,063 / 25,452	1,302 / 30,315
# Seroconversions / # Tested	441 / 24,340	279 / 25,715
# Positive Squirrels / # Tested	10 / 99	23 / 106

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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	3	
El Dorado			2			
Fresno	21	4	22	130	7	2
Glenn	2		3			
Imperial				10	15	
Kern	13	1	12	277	86	
Kings	1			65		
Lake				3		
Lassen		1				
Los Angeles	2		37	55	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	70	42	
Sacramento	12	2	115	205	6	3
San Bernardino	3		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	11	1	34	86	21	
Sutter			1	26	13	
Tehama					1	
Tulare	10	1	21	168	26	
Yolo			14	11	5	
Yuba				2	5	
Totals	97	19	408	1,302	279	23

[^] 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	9	0	0	0	0	0	0
	YTD	676	97	0	0	0	0	0
Horses Tested	Week	3	0	0	0	0	0	0
	YTD	188	19	0	0	0	0	0

Dead Birds & Tree Squirrels

		Number Tested	WNV Positive (recent only)
Dead Birds	Week	0	--
	YTD	2,076	408
Tree Squirrels	Week	0	--
	YTD	106	23

Sentinel Chickens & Mosquito Pools

		Number Tested	WNV Positive	SLE Positive	WEE Positive
Chicken Sera	Week	60	0	0	0
	YTD	25,715	279	0	0
Mosquito Pools: RT-PCR	Week	125	0	0	0
	YTD	29,267	1,283	0	0
Mosquito Pools: RAMP	Week	0	--	N/A	N/A
	YTD	1,048	19	N/A	N/A

NATIONAL COMMENTS

As of November 16, 2010, 944 human cases of WNV had been reported nationwide in 39 jurisdictions: Alabama (3), Arizona (158), Arkansas (7), California (98), Colorado (81), Connecticut (7), District of Columbia (2), Florida (11), Georgia (12), Idaho (3), Illinois (56), Indiana (10), Iowa (6), Kansas (13), Kentucky (3), Louisiana (20), Maryland (23), Massachusetts (7), Michigan (29), Minnesota (8), Mississippi (7), Missouri (3), Nebraska (37), Nevada (2), New Hampshire (1), New Jersey (30), New Mexico (22), New York (127), North Dakota (9), Ohio (4), Pennsylvania (29), South Carolina (1), South Dakota (20), Tennessee (4), Texas (78), Utah (2), Virginia (3), Wisconsin (2), and Wyoming (6). Of the 944 cases, 575 (61%) had neuroinvasive disease. A total of 39 WNV-related fatalities have been reported in Arizona (9), 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 (5), and Virginia (1).

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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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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
