

# California Arbovirus Surveillance Bulletin # 40

Week 48 Friday, December 3, 2010

## Weekly Summary

### WEEKLY COMMENTS



#### **Humans**

Five new human cases of West Nile Virus (WNV) have been reported from Fresno, Los Angeles, San Bernardino, Stanislaus, and Tulare counties. As of December 3, 102 WNV cases have been reported this year from 17 counties. In addition, 17 asymptomatic WNV infections have been reported from 11 counties. Of the 102 cases, 65 (64%) developed neuroinvasive disease. The median age for all cases for which data are available is 56 years (range: 10-89 years) and 57 (56%) are male. Two WNV-associated fatalities have been reported from Fresno and Merced counties. At this time last year, 102 human cases had been reported from 18 counties.

#### **Horses**

No new horse cases have been reported. 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**

Four new WNV positive dead birds have been reported from Kern (1) and Los Angeles (3) counties. Additionally, one WNV positive tree squirrel was reported from Sacramento County. 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](http://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**

Three new WNV positive mosquito pools have been reported from Los Angeles (2) and Riverside (1) counties. In 2010, 1,305 mosquito pools from 24 counties have tested positive for WNV. At this time last year, 1,064 WNV positive mosquito pools had been reported from 27 counties.

#### **Sentinel Chickens**

One new WNV seroconversion has been reported from Riverside County. 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	15,233	10,328
# Positive Counties	42	35
# Human Cases	102	102
# Horse Cases	18	19
# Positive Dead Birds / # Tested	508 / 2,728	412 / 2,113
# Positive Mosquito Pools / # Tested	1,064 / 25,669	1,305 / 30,528
# Seroconversions / # Tested	442 / 24,866	280 / 26,219
# Positive Squirrels / # Tested	10 / 99	24 / 108

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## YTD WNV Activity by Element and County, 2010

County	Humans	Horses	Dead Birds <sup>^</sup>	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	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	3		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	
<b>Totals</b>	<b>102</b>	<b>19</b>	<b>412</b>	<b>1,305</b>	<b>280</b>	<b>24</b>

<sup>^</sup> 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	25	5	0	0	0	0	0
	YTD	701	102	0	0	0	0	0
Horses Tested	Week	11	0	0	0	0	0	0
	YTD	199	19	0	0	0	0	0

### Dead Birds & Tree Squirrels

		Number Tested	WNV Positive (recent only)
Dead Birds	Week	37	4
	YTD	2,113	412
Tree Squirrels	Week	2	1
	YTD	108	24

### Sentinel Chickens & Mosquito Pools

		Number Tested	WNV Positive	SLE Positive	WEE Positive
Chicken Sera	Week	504	1	0	0
	YTD	26,219	280	0	0
Mosquito Pools: RT-PCR	Week	163	2	0	0
	YTD	29,479	1,285	0	0
Mosquito Pools: RAMP	Week	1	1	N/A	N/A
	YTD	1,049	20	N/A	N/A

## POSITIVES

### Humans

WNV Cases							
ID	Report Date	County <sup>1</sup>	Age	Sex	Clin Pres	Onset Date	WNV Fatality?
10-0100	11/19/10	Fresno	61	M	WNND	10/08/10	NO
10-0101	11/22/10	Los Angeles	26	F	WNF	10/01/10	NO
10-0102	11/24/10	San Bernardino	65	M	WNND	09/06/10	NO
10-0103	11/29/10	Stanislaus	79	F	WNF	n/a	NO
10-0104	11/29/10	Tulare	61	M	WNND	09/24/10	NO

<sup>1</sup>County of residence

### Dead Birds

County	Submitting Agency	City	Zip Code	Species	Date Reported	Test Type	Virus
Kern	Kern MVCD	Bakersfield	93311	Common Raven	11/16/2010	RT-PCR	WNV
Los Angeles	Greater Los Angeles Co VCD - Sylmar	Northridge	91325	House Finch	11/9/2010	RT-PCR	WNV
Los Angeles	Greater Los Angeles Co VCD - SFS	La Mirada	90638	House Finch	11/15/2010	RT-PCR	WNV
Los Angeles	San Gabriel Valley MVCD	Covina	91723	American Crow	7/1/2010	RAMP	WNV
Sacramento	Sacramento-Yolo	Sacramento	95842	Eastern Squirrel	11/4/2010	RT-PCR	WNV

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## Mosquitoes

County	Site Code	Pool #	Species	# in pool	City	Collected	Virus	Method
Los Angeles	GRLA2554	6578	<i>Cx quinquefasciatus</i>	50	Winnetka	11/17/2010	WNV	RTPCR
Los Angeles	SGVA0062	100	<i>Cx tarsalis</i>	36	Covina	9/28/2010	WNV	RAMP
Riverside	COAV0532	3278	<i>Cx tarsalis</i>	5	Mecca	11/23/2010	WNV	RTPCR

## Sentinel Chickens

County	Site Code	City	Date Bled**	Virus	Band 01
Riverside	COAV0131	Oasis	11/15/2010	WNV	1383

\*\*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 November 30, 2010, 964 human cases of WNV had been reported nationwide in 40 jurisdictions: Alabama (3), Arizona (159), Arkansas (7), California (99), Colorado (81), Connecticut (7), District of Columbia (2), Florida (11), Georgia (12), Idaho (3), Illinois (56), Indiana (11), Iowa (6), Kansas (13), Kentucky (3), Louisiana (20), Maryland (23), Massachusetts (7), Michigan (29), Minnesota (8), Mississippi (8), Missouri (3), Nebraska (37), Nevada (2), New Hampshire (1), New Jersey (30), New Mexico (23), New York (127), North Dakota (9), Ohio (4), Pennsylvania (30), South Carolina (1), South Dakota (20), Tennessee (4), Texas (89), Utah (2), Virginia (4), Washington (2), Wisconsin (2), and Wyoming (6). Of the 964 cases, 589 (61%) had neuroinvasive disease. A total of 41 WNV-related fatalities have been reported in Arizona (10), 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).

## 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.

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## **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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*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](mailto:tina.feiszli@cdph.ca.gov)*

*Website Information: For updated information on WNV in California, please visit the California WNV website, [www.westnile.ca.gov](http://www.westnile.ca.gov), or the California Vectorborne Disease Surveillance System website, [www.calsurv.org](http://www.calsurv.org). For national information on WNV and other arboviruses, please visit the CDC website, [www.cdc.gov](http://www.cdc.gov), and the USGS website, [www.westnilemaps.usgs.gov](http://www.westnilemaps.usgs.gov)*

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