

California Arbovirus Surveillance Bulletin # 41

Week 1 Friday, January 5, 2007

Weekly Summary

COMMENTS

**** This Bulletin reports results from the last two weeks in December: 12/18-12/31/2006**

Humans

No new human cases have been reported. In 2006, a total of 272 human West Nile virus (WNV) cases were identified from 36 counties: Alameda (1), Butte (31), Colusa (4), Contra Costa (8), El Dorado (2), Fresno (11), Glenn (12), Imperial (1), Kern (49), Kings (1), Lake (2), Los Angeles (13), Marin (1), Merced (4), Modoc (2), Mono (1), Napa (1), Nevada (1), Orange (6), Placer (8), Riverside (4), Sacramento (15), San Bernardino (3), San Diego (1), San Joaquin (8), San Luis Obispo (1), Santa Clara (5), Shasta (4), Solano (6), Stanislaus (11), Sutter (12), Tehama (3), Tulare (6), Ventura (3), Yolo (26), and Yuba (5). Of the 272 WNV cases, 81 (30%) were classified as West Nile neuroinvasive disease, and 186 (68%) as West Nile fever. The median age of all cases was 49 years (range: 8-86 years). Of the cases, 175 (64%) were male. Six WNV-related fatalities were reported in 2006, from Butte (2), Contra Costa (2), Riverside (1), and Shasta (1). Twenty-eight WNV-positive blood donation samples were identified; 14 of the individuals reported symptoms and were reclassified as cases.

Horses

No new equine cases have been reported by the California Department of Food and Agriculture. In 2006, a total of 57 equine cases of WNV were reported from 23 counties: Contra Costa (1), Fresno (5), Kern (4), Lake (2), Lassen (7), Marin (1), Mendocino (2), Merced (3), Modoc (2), Placer (1), Sacramento (1), San Diego (2), San Joaquin (2), San Luis Obispo (5), Santa Barbara (2), Santa Clara (1), Shasta (4), Sonoma (1), Stanislaus (3), Sutter (1), Tehama (2), Tulare (3), and Yuba (2). Twenty-four died or were euthanized.

Dead Birds

Six out of 51 (11.8%) dead birds tested for WNV were reported positive this week.

- 0/34 dead birds tested positive via RT-PCR
- 2/4 dead birds tested positive via VecTest
- 4/13 dead birds tested positive via IHC

The WNV positive dead birds were collected from the following 4 counties: Marin (1), Los Angeles (1), Orange (4), and San Diego (1).

In 2006, a total of 1,404 dead birds tested positive for WNV from 53 counties: Alameda (41), Amador (2), Butte (40), Calaveras (2), Colusa (9), Contra Costa (88), El Dorado (19), Fresno (72), Glenn (35), Humboldt (2), Inyo (8), Kern (24), Kings (13), Lake (8), Lassen (3), Los Angeles (93), Madera (3), Marin (9), Mariposa (1), Mendocino (7), Merced (41), Modoc (2), Mono (1), Monterey (5), Napa (8), Nevada (4), Orange (48), Placer (12), Riverside (3), Sacramento (87), San Benito (1), San Bernardino (33), San Diego (19), San Francisco (3), San Joaquin (47), San Luis Obispo (14), San Mateo (7), Santa Barbara (19), Santa Clara (223), Santa Cruz (7), Shasta (88), Siskiyou (1), Solano (16), Sonoma (19), Stanislaus (73), Sutter (2), Tehama (12), Trinity (1), Tulare (14), Tuolumne (1), Ventura (60), Yolo (53), and Yuba (1).

Tree Squirrels: No new tree squirrels were reported positive for West Nile virus. In 2006, a total of 32 out of 141 (22.6%) dead tree squirrels tested positive for WNV from 9 counties: Alameda (2), Butte (1), Contra Costa (18), Los Angeles (1), Marin (1), San Bernardino (3), San Mateo (2), Santa Clara (2), and Shasta (2).

In 2006, the California Department of Health Services received a total of 46,124 dead bird reports (hotline and website).

Mosquito Pools

No new positive mosquito pools were reported. In 2006, a total of 833* mosquito pools tested positive for WNV from 34 counties: Alameda (9), Butte (1), Calaveras (2), Contra Costa (18), El Dorado (2), Fresno (40), Glenn (1), Imperial (14), Inyo (3), Kern (230), Kings (34), Lake (12), Lassen (3), Los Angeles (78), Madera (4), Marin (2), Merced (8), Orange (14), Placer (23), Riverside (31), Sacramento (34), San Bernardino (25), San Joaquin (40), Santa Barbara (1), Santa Clara (9), Shasta (7), Solano (1), Sonoma (1), Stanislaus (51), Sutter (55), Tulare (8), Ventura (2), Yolo (64), and Yuba (6).

In 2006, 18 mosquito pools from Kern County tested positive for western equine encephalomyelitis virus (WEE).

**Pools that were erroneously reported twice were subtracted from total.*

Sentinel Chickens

This week, VRDL reported 2 WNV seroconversions from a new flock located in Los Angeles County. In 2006, a total of 640 WNV seroconversions were detected in chickens from Butte (49), Colusa (1), Contra Costa (25), Fresno (37), Glenn (10), Imperial (57), Kern (92), Kings (25), Lake (6), Los Angeles (38), Madera (9), Marin (2), Merced (15), Placer (11), Riverside (27), Sacramento (13), San Bernardino (26), San Joaquin (19), Santa Clara (1), Shasta (4), Solano (22), Sonoma (1), Stanislaus (45), Sutter (36), Tehama (3), Tulare (30), Ventura (1), Yolo (26), and Yuba (9) counties. 131 out of 246 flocks had at least one

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chicken test positive for WNV antibodies. In addition, there were 13 unconfirmed flavivirus seroconversions detected in chickens from Kings (2), Madera (3), Placer (5), San Bernardino (1), and Stanislaus (2) counties.

In 2006, 14 WEE seroconversions were detected in chickens located in Kern (12) and Riverside (2) counties.

Website Information

For updated information on WNV, please visit the California WNV website, www.westnile.ca.gov, the CDC website, www.cdc.gov, and the USGS website, www.westnilemaps.usgs.gov. Please go to the Vector website at <http://vector.ucdavis.edu/arbo.html> for flock location and more information on WNV and other vector-borne diseases.

TEST SUMMARIES

Humans and Horses

		Number Tested	WNV Positive		WEE Positive		SLE Positive		Other Positive	
			Imported	Local	Imported	Local	Imported	Local	Imported	Local
Humans Tested	Week	45	0	0	0	0	0	0	0	0
	YTD	1583	0	272	0	0	0	0	0	0
Horses Tested	Week	0	0	0	0	0	0	0	0	0
	YTD	516	0	57	0	0	0	0	0	0

Dead Birds

	Number Tested	WNV Positive
Week	51	6
YTD	5939	1404

Sentinel Chickens and Mosquito Pools

		Number Tested	WNV Positive	WEE Positive	SLE Positive	Flavivirus* Positive
	YTD	32,015	640	14	0	13
Mosquito pools	Week	81	0	0	0	0
	YTD	16,252	672	18	0	0

*Does not include those later confirmed as WNV or SLE

Mosquito pools tested by local agencies

		Number Tested	WNV Positive	WEE Positive	SLE Positive	Other Positive
	YTD	5813	99	0	0	0
RAMP	Week	0	0	N/A	N/A	N/A
	YTD	2442	62	--	--	--
VecTest	Week	0	0	N/A	N/A	N/A
	YTD	9	0	--	--	--

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POSITIVES

Sentinel Chicken Seroconversions

Site Number	County	Nearest City	Date Bled	Virus	BAND 01
GRLA2615	LOS ANGELES	Newhall	10/31/06	WNV	1703
GRLA2615	LOS ANGELES	Newhall	11/14/06	WNV	1701

WNV Positive Dead Birds

County	City	ZIP	Species	Collected	Tested	Tested By
Los Angeles	La Mirada	90638	American Crow	12/28/06	12/28/06	VecTest
Marin	Petaluma	94952	Red-tailed Hawk	08/20/06	08/20/06	IHC
Orange	Anaheim	92806	American Crow	11/20/06	11/20/06	IHC
Orange	Anaheim Hills	92808	Red-shouldered Hawk	11/27/06	11/27/06	IHC
Orange	Laguna Hills	92653	American Crow	11/27/06	11/27/06	IHC
San Diego	Fallbrook	92028	American Crow	12/26/06	12/26/06	VecTest

National Comments: As of January 3, 2007, WNV activity had been reported from 48 states, the District of Columbia (DC), and New York City (NYC). A total of 4,180 human cases were reported to the Centers for Disease Control and Prevention (CDC) from 43 states and DC: Alabama (7), Arizona (150), Arkansas (28), California (272), Colorado (332), Connecticut (9), DC (2), Florida (3), Georgia (8), Idaho (984), Illinois (210), Indiana (81), Iowa (36), Kansas (30), Kentucky (6), Louisiana (172), Maryland (10), Massachusetts (3), Michigan (52), Minnesota (65), Mississippi (182), Missouri (61), Montana (34), Nebraska (264), Nevada (123), New Jersey (5), New Mexico (8), New York (23), North Carolina (1), North Dakota (137), Ohio (47), Oklahoma (47), Oregon (69), Pennsylvania (9), South Carolina (1), South Dakota (113), Tennessee (18), Texas (327), Utah (158), Virginia (4), Washington (3), West Virginia (1), Wisconsin (20), and Wyoming (65).

At the same time last year, 2,819 cases had been reported from 42 states and NYC. Of the 4,180 cases reported in 2006, 1,410 (34%) had West Nile neuroinvasive disease (i.e. encephalitis or meningitis). The median age of the 4,165 cases where data was available was 51 years (range: 3 months-99 years) and 55% were male. A total of 149 WNV-associated fatalities have been reported in 2006, from Arizona (6), Arkansas (3), California (6), Colorado (7), Connecticut (1), Georgia (1), Idaho (14), Illinois (9), Indiana (4), Kansas (4), Kentucky (1), Louisiana (8), Michigan (6), Minnesota (3), Missouri (3), Mississippi (13), Nebraska (1), Nevada (1), New Mexico (1), New York (4), North Dakota (1), Ohio (4), Oklahoma (5), Pennsylvania (2), South Dakota (3), Tennessee (1), Texas (29), Utah (5), Wisconsin (1), and Wyoming (2).

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TEST PROTOCOLS

Dead Birds:

All bird species from all zip codes are currently being accepted for testing unless otherwise requested by a local agency. Additionally, once WNV has been detected within a county, doves, pigeons, and chickens will no longer be accepted for testing from that county. Corvids that test positive via RAMP or VecTest are no longer confirmed. Dead birds are necropsied at the California Animal Health and Food Safety (CAHFS) laboratory at UC Davis. Oral swabs from American Crows and kidney tissue from all other dead birds are forwarded to the UC Davis Center for Vector borne Diseases (CVEC) for WNV testing using the singleplex RT-PCR Taqman assay and confirmed with a second primer set. The WNV Dead Bird Surveillance Coordinator, Ryan Carney, can be reached directly at (510) 412-6254.

Sentinel Chickens:

Dried blood spot specimens from sentinel chickens submitted each week to the DHS Viral and Rickettsial Disease Laboratory (VRDL) are tested for the presence of antibodies to West Nile virus (WNV), western equine encephalomyelitis (WEE), and St. Louis encephalitis (SLE) viruses by EIA and IFA. The VRDL performs additional testing, including plaque reduction neutralization (PRNT), on specimens from sentinel chickens from geographic areas where WNV is detected for the first time.

Mosquito Pools:

All mosquito pools are 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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