

California Arbovirus Surveillance Bulletin # 39

Week 48 Friday, December 1, 2006

Biweekly Summary: November 20 – December 1, 2006

COMMENTS

Humans

Two new human cases of West Nile virus (WNV) were reported this week from Colusa and El Dorado counties; symptom onset dates were in June and August, respectively.

As of December 1, 2006, a total of 272 human WNV cases have been 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%) have been classified as West Nile neuroinvasive disease, and 186 (68%) as West Nile fever. The median age of all cases is 49 years (range: 8-86 years). Of the cases, 175 (64%) are male. Six WNV-related fatalities have been reported in 2006, from Butte (2), Contra Costa (2), Riverside (1), and Shasta (1). Twenty-eight WNV-positive blood donation samples have been identified to date; 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.

To date in 2006, 56 equine cases of WNV have been 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 (1); 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 have died or were euthanized.

Dead Birds

In the last two weeks, 6 out of 107 (5.6%) dead birds have tested positive for WNV.

- 2/88 dead birds tested positive via RT-PCR.
- 2/11 dead birds tested positive via VecTest.
- 1/1 dead birds tested positive via RAMP.
- 1/7 dead birds tested positive via IHC.

The WNV positive dead birds were collected from the following 5 counties: Contra Costa (1); Los Angeles (2); Orange (1); Riverside (1); and Santa Clara (1).

In 2006, 1,391 out of 5,750 (24.2%) dead birds have 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 (92); Madera (3); Marin (8); Mariposa (1); Mendocino (7); Merced (41); Modoc (2); Mono (1); Monterey (5); Napa (8); Nevada (4); Orange (45); Placer (12); Riverside (3); Sacramento (87); San Benito (1); San Bernardino (33); San Diego (18); San Francisco (3); San Joaquin (47); San Luis Obispo (13); San Mateo (7); Santa Barbara (18); Santa Clara (223); Santa Cruz (7); Shasta (86); Siskiyou (1); Solano (16); Sonoma (19); Stanislaus (72); Sutter (2); Tehama (12); Trinity (1); Tulare (14); Tuolumne (1); Ventura (58); Yolo (53) and Yuba (1).

Tree Squirrels: No new tree squirrels have tested positive for West Nile virus. In 2006, 32 of 138 (23.2%) dead tree squirrels have tested positive 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).

The California Department of Health Services has received a total of 45,224 dead bird reports (hotline and website) this year.

Mosquito Pools

CVEC reported 2 new WNV positive *Cx. quinquefasciatus* pools collected from Los Angeles and Orange counties.

In 2006, 835 mosquito pools have 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 (77); Madera (4); Marin (3); Merced (6); Orange (13); Placer (23); Riverside (31); Sacramento (35); San Bernardino (25); San Joaquin (41); Santa Barbara (1); Santa Clara (9); Shasta (7); Solano (1); Sonoma (2); Stanislaus (54); Sutter (55); Tulare (8); Ventura (2); Yolo (63); and Yuba (6). 18 mosquito pools from Kern County have tested positive for western equine encephalomyelitis virus (WEE) this year.

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Sentinel Chickens

This week, VRDL reported 3 WNV seroconversions in chickens from 3 counties: Imperial (1), Riverside (1), and San Bernardino (1). In addition, a chicken from Los Angeles County tested flavivirus positive.

In 2006, 638 WNV seroconversions have been confirmed in chickens from Butte (49), Colusa (1), Contra Costa (25), Fresno (37), Glenn (11), Imperial (57), Kern (95), Kings (25), Lake (6), Los Angeles (35), 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 (27), Ventura (1), Yolo (26), and Yuba (9) counties. 121 flocks have had at least one chicken test positive for WNV. WEE antibodies have been detected in 14 chickens from Kern (12) and Riverside (2) counties this year.

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	2	0	0	0	0	0	0
	YTD	1496	0	272	0	0	0	0	0	0
Horses Tested	Week	**	0	0	0	0	0	0	0	0
	YTD	473	0	56	0	0	0	0	0	0

**no data available

Dead Birds

	Number Tested	WNV Positive
Week	107	6
YTD	5750	1391

Sentinel Chickens and Mosquito Pools

		Number Tested	WNV Positive	WEE Positive	SLE Positive	Flavivirus* Positive
	YTD	31,486	638	14	0	15
Mosquito pools	Week	140	2	0	0	0
	YTD	16,031	663	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	101	0	0	0
RAMP	Week	13	0	N/A	N/A	N/A
	YTD	2436	71	--	--	--
VecTest	Week	0	0	N/A	N/A	N/A
	YTD	9	0	--	--	--

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POSITIVES

Human Cases

West Nile Virus Cases* Reported November 19 – December 1, 2006							
ID	Report Date	County ¹	Age	Sex	Clin Pres ²	Onset Date	WNV Fatality?
06-0274	11/28/06	COLUSA	>18	n/a	WNF	06/15/06	NO
06-0275	11/29/06	EL DORADO	37	M	WNF	08/30/06	NO

* Cases of WNV illness in California residents with infection likely acquired in California

¹ County of residence

² Clinical presentation of WNV: WNF=fever; WNND=neuroinvasive

^ Initially identified as blood donor, later developed symptoms

Mosquito Pools

Site Code	County	City	Pool #	Species	Collected	Tested	Virus
GRLA2552	Los Angeles	Glendale	5680	Cx quinquefasciatus	11/17/06	12/1/06	WNV
ORCO0002	Orange	Fullerton	958	Cx quinquefasciatus	11/16/06	11/21/06	WNV

Sentinel Chicken Seroconversions

Site Number	County	Nearest City	Date Bled	Virus	BAND 01
COAV5502	Imperial	Niland	11/13/06	WNV	4243
COAV0131	Riverside	Oasis	11/13/06	WNV	4314
GRLA2615	Los Angeles	Newhall	11/14/06	Flav	1701
SANB0007	San Bernardino	Fontana	11/15/06	WNV	2925

WNV Positive Dead Birds

County	City	ZIP	Species	Date Collected	Date Tested	Tested By
Contra Costa	Concord	94521	American Crow	11/13/06	11/13/06	RAMP
Los Angeles	Encino	91436	Sharp-shinned Hawk	11/20/06	11/27/06	RT-PCR
Los Angeles	Lancaster	93534	Common Raven	11/16/06	11/16/06	VecTest
Orange	Santa Ana	92706	Common Raven	11/02/06	11/02/06	IHC
Riverside	Palm Desert	92211	Mallard	11/01/06	11/20/06	RT-PCR
Santa Clara	Mountain View	94040	American Crow	11/16/06	11/16/06	VecTest

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National Comments: As of November 28, 2006, WNV activity had been reported from 48 states, the District of Columbia (DC), and New York City (NYC). A total of 4,028 human cases were reported to the Centers for Disease Control and Prevention (CDC) from 42 states and DC: Alabama (7), Arizona (147), Arkansas (28), California (270), Colorado (332), Connecticut (9), DC (1), Florida (3), Georgia (8), Idaho (889), Illinois (210), Indiana (75), Iowa (36), Kansas (30), Kentucky (6), Louisiana (169), Maryland (10), Massachusetts (3), Michigan (50), Minnesota (65), Mississippi (173), Missouri (60), Montana (34), Nebraska (251), Nevada (123), New Jersey (5), New Mexico (8), New York (23), North Dakota (137), Ohio (47), Oklahoma (47), Oregon (69), Pennsylvania (9), South Carolina (1), South Dakota (113), Tennessee (17), Texas (313), Utah (157), Virginia (4), Washington (3), West Virginia (1), Wisconsin (20), and Wyoming (65).

At the same time last year, 2,744 cases had been reported from 42 states and NYC. Of the 4,028 cases reported in 2006, 1,386 (34%) had West Nile neuroinvasive disease (i.e. encephalitis or meningitis). The median age of the 4,016 cases where data was available was 51 years (range: 3 months-99 years) and 55% were male. A total of 135 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 (3), Kansas (4), Kentucky (1), Michigan (6), Minnesota (3), Missouri (3), Mississippi (10), Nebraska (1), Nevada (1), New York (4), North Dakota (1), Ohio (4), Oklahoma (5), Pennsylvania (2), South Dakota (3), Tennessee (1), Texas (28), Utah (5), Wisconsin (1), and Wyoming (2).

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.

Prepared by the Vector-Borne Disease Section (Infectious Diseases Branch) and the Viral and Rickettsial Disease Laboratory Branch, Division of Communicable Disease Control, California Department of Health Services, 850 Marina Bay Parkway, Richmond, CA 94804. Questions concerning this bulletin should be addressed to Tina Feiszli by phone (510) 412-6298, FAX (510) 412-6263, or email [tfeiszli@dhs.ca.gov].