

# California Arbovirus Surveillance Bulletin # 44

Week 50 Monday, December 21, 2009

## Weekly Summary

### WEEKLY COMMENTS



This is the last bulletin update in 2009. As of December 18, 42 counties in California have reported West Nile virus (WNV) activity. St. Louis encephalitis and western equine encephalomyelitis viruses were not detected in California in 2009.

#### **Humans**

Since the last bulletin update, two new human cases have been reported in California from Kern and Monterey counties. In 2009, 104 human cases of West Nile virus have been identified in 19 counties: Butte (2), Contra Costa (5), El Dorado (1), Fresno (13), Kern (19), Kings (3), Los Angeles (20), Madera (1), Merced (1), Monterey (1), Orange (3), Riverside (3), San Bernardino (1), San Diego (3), San Joaquin (8), Stanislaus (13), Tulare (4), Yolo (2), and Yuba (1). Of the 104 individuals, 59 (57%) developed neuroinvasive symptoms. The median age of the 104 individuals is 53 years (range: 7-88 years), and 66 (63%) are male. Four fatalities have been reported in Fresno (1), Los Angeles (1), Merced (1), and Stanislaus (1) counties. In addition, 23 WNV-positive blood donation samples have been reported this year; 7 of the individuals developed symptoms and were reclassified as cases.

#### **Horses**

No new cases have been reported. In 2009, 18 equine cases of WNV have been reported from 12 counties. Of the 18 cases, 8 died or were euthanized as a result of their illness.

#### **Dead Birds & Tree Squirrels**

No new positive birds or tree squirrels have been reported. In 2009, 508 birds from 36 counties and 10 tree squirrels from 7 counties have tested positive for WNV. The WNV hotline has received over 15,000 dead bird reports this year.

#### **Mosquito Pools**

No mosquito pools have been tested since the last bulletin update. In 2009, 1,068 mosquito pools have tested positive for WNV from 27 counties.

#### **Sentinel Chickens**

No sentinel chickens have been tested since the last bulletin update. In 2009, 442 chickens from 23 counties have tested positive for WNV antibodies.

**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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## YTD WNV Activity by Element and County, 2009

| County          | Humans     | Horses    | Dead Birds | Mosquito Pools | Sentinel Chickens | Squirrels |
|-----------------|------------|-----------|------------|----------------|-------------------|-----------|
| Alameda         |            |           | 10         | 1              |                   |           |
| Amador          |            |           | 1          |                |                   |           |
| Butte           | 2          |           | 13         | 5              | 36                |           |
| Colusa          |            |           | 2          |                |                   |           |
| Contra Costa    | 5          | 1         | 43         | 17             | 13                | 2         |
| El Dorado       | 1          |           | 9          |                |                   |           |
| Fresno          | 13         | 1         | 62         | 136            | 17                | 1         |
| Glenn           |            |           | 6          |                | 3                 |           |
| Imperial        |            |           |            | 3              | 42                |           |
| Kern            | 19         |           | 28         | 138            | 104               | 1         |
| Kings           | 3          |           | 9          | 105            |                   |           |
| Lake            |            |           | 2          | 2              | 1                 |           |
| Los Angeles     | 20         | 1         | 82         | 99             | 40                |           |
| Madera          | 1          |           | 11         | 3              | 7                 |           |
| Merced          | 1          | 3         | 9          | 11             | 14                |           |
| Modoc           |            |           | 1          |                |                   |           |
| Mono            |            |           |            | 1              |                   |           |
| Monterey        | 1          |           | 4          |                |                   |           |
| Napa            |            |           |            |                | 3                 |           |
| Orange          | 3          |           | 10         | 16             |                   |           |
| Placer          |            |           | 4          | 40             | 11                |           |
| Riverside       | 3          | 1         | 2          | 27             | 37                |           |
| Sacramento      |            | 2         | 28         | 36             | 2                 | 1         |
| San Bernardino  | 1          |           | 17         | 54             | 14                | 2         |
| San Diego       | 3          |           | 38         | 5              | 5                 |           |
| San Francisco   |            |           | 1          |                |                   |           |
| San Joaquin     | 8          | 3         | 23         | 84             | 10                |           |
| San Luis Obispo |            |           | 1          |                |                   |           |
| San Mateo       |            |           | 1          |                |                   |           |
| Santa Barbara   |            |           | 1          |                |                   |           |
| Santa Clara     |            |           | 13         | 14             |                   | 2         |
| Santa Cruz      |            |           | 1          |                |                   |           |
| Shasta          |            | 1         | 8          | 2              |                   |           |
| Solano          |            | 1         | 3          | 2              | 13                |           |
| Stanislaus      | 13         | 2         | 28         | 94             | 25                |           |
| Sutter          |            |           |            | 25             | 11                |           |
| Tehama          |            | 1         |            |                | 2                 | 1         |
| Tulare          | 4          | 1         | 25         | 131            | 28                |           |
| Tuolumne        |            |           | 2          |                |                   |           |
| Ventura         |            |           | 3          |                |                   |           |
| Yolo            | 2          |           | 7          | 16             | 4                 |           |
| Yuba            | 1          |           |            | 1              |                   |           |
| <b>Total</b>    | <b>104</b> | <b>18</b> | <b>508</b> | <b>1068</b>    | <b>442</b>        | <b>10</b> |

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| 2009 & 2008 YTD West Nile Virus Comparisons |                |                             |
|---|----------------|-----------------------------|
|   | 2008           | 2009                        |
| Total # Dead Bird Reports                   | 33,002         | 15,373                      |
| # Positive Counties                         | 49             | 42                          |
| # Human Cases / # Tested                    | 411 / 1,223    | 104 / 962                   |
| # Horse Cases / # Tested                    | 32 / 304       | 18 / 186                    |
| # Positive Dead Birds / # Tested            | 2,527 / 5,927  | 508 / 2,744                 |
| # Positive Mosquito Pools / # Tested        | 1,989 / 30,584 | 1,068 <sup>^</sup> / 25,712 |
| # Positive Chicken Sera / # Tested          | 584 / 29,541   | 442 / 24,866                |
| # Positive Squirrels / # Tested             | 32 / 298       | 10 / 99                     |

<sup>^</sup>Four positive mosquito pools not previously reported have been added to the total

## TEST SUMMARIES

### Human & Horse Cases

|                |      | Number Tested | WNV      |       | WEE      |       | SLE      |       | Other    |       |
|----------------|------|---------------|----------|-------|----------|-------|----------|-------|----------|-------|
|                |      |               | Imported | Local | Imported | Local | Imported | Local | Imported | Local |
| Humans Tested* | Week | 37            | 0        | 2     | 0        | 0     | 0        | 0     | 0        | 0     |
|                | YTD  | 962           | 1        | 103   | 0        | 0     | 0        | 0     | 0        | 0     |
| Horses Tested  | Week | 0             | --       | --    | 0        | 0     | 0        | 0     | 0        | 0     |
|                | YTD  | 186           | 0        | 18    | 0        | 0     | 0        | 0     | 0        | 0     |

### Dead Birds & Tree Squirrels

|                |      | Number Tested | WNV Positive |
|----------------|------|---------------|--------------|
| Dead Birds     | Week | 16            | 0            |
|                | YTD  | 2,744         | 508          |
| Tree Squirrels | Week | 0             | --           |
|                | YTD  | 99            | 10           |

### Sentinel Chickens & Mosquito Pools

|                        |      | Number Tested | WNV Positive | SLE Positive | WEE Positive |
|------------------------|------|---------------|--------------|--------------|--------------|
| Chicken Sera           | Week | 0             | --           | 0            | 0            |
|                        | YTD  | 24,866        | 442          | 0            | 0            |
| Mosquito Pools: RT-PCR | Week | 0             | --           | 0            | 0            |
|                        | YTD  | 24,454        | 995          | 0            | 0            |
| Mosquito Pools: RAMP   | Week | 0             | --           | N/A          | N/A          |
|                        | YTD  | 1,258         | 73           | N/A          | N/A          |

## NATIONAL COMMENTS

As of December 8, 2009, 663 human cases had been reported nationwide in the following 34 states: Arizona (18), Arkansas (4), California (103), Colorado (101), Florida (3), Georgia (4), Idaho (37), Illinois (4), Indiana (4), Iowa (5), Kansas (10), Kentucky (3), Louisiana (20), Maryland (2), Minnesota (4), Mississippi (52), Missouri (3), Montana (5), Nebraska (51), Nevada (12), New Jersey (2), New Mexico (8), New York (6), North Dakota (1), Ohio (2), Oklahoma (8), Oregon (7), South Carolina (3), South Dakota (21), Tennessee (7), Texas (104), Washington (36), Wisconsin (1), and Wyoming (12). Of the 663 individuals, 335 (51%) have neuroinvasive illness. A total of 30 fatalities had been reported as of December 8 in Arkansas (1), California (4), Colorado (3), Georgia (1), Idaho (2), Indiana (1), Maryland (1), Mississippi (4), New Mexico (1), Oklahoma (1), Tennessee (1), Texas (8), Washington (1), and Wyoming (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.

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### **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.

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### **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) 412-6298 or email: [tina.feiszli@cdph.ca.gov](mailto:tina.feiszli@cdph.ca.gov)*

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