

California Arbovirus Surveillance Bulletin #34

Week 48 Friday, December 1, 2017



Weekly Update

Humans

West Nile Virus

A total of 24 human cases of West Nile virus (WNV) were reported this week from the following 6 counties: Fresno (2), Kern (1), Los Angeles (17), Riverside (2), Sacramento (1), and San Bernardino (1). To date this year, 489 human cases of WNV illness have been reported from 26 counties. Of the 489 case-patients, 363 (74%) had neuroinvasive disease and 26 fatalities have been reported from Kern (1), Los Angeles (17), Orange (3), San Bernardino (2), Stanislaus (1), and Yolo (2) counties. The median age of the individuals is 61 years (range: 4–96 years) and 318 (65%) are male. Dates of symptom onset ranged from March 16 to November 6. In addition to the 489 symptomatic cases, 36 asymptomatic WNV-positive blood donors have been reported from Fresno (1), Kern (1), Humboldt (1), Los Angeles (13), Orange (6), Placer (2), Riverside (1), Sacramento (1), San Bernardino (6), Stanislaus (3), and Tulare (1) counties. As of this date in 2016, 406 human WNV cases had been reported from 29 counties.

St. Louis Encephalitis Virus

One human case of St. Louis encephalitis virus (SLEV) disease has been reported this year from Kern County. At this time last year, 3 human cases of SLEV disease had been reported from 3 counties.

Dead Birds

A total of 3 WNV positive dead birds were reported this week from the following 2 counties: Los Angeles (2), and Orange (1). To date this year, 505 birds from 39 counties have tested positive for WNV. As of this date in 2016, 1,346 WNV positive birds had been reported from 33 counties.

Mosquito Pools

West Nile Virus

A total of 10 WNV positive mosquito pools were reported this week from 2 counties: Los Angeles (6) and Orange (4). To date this year, 3,370 WNV positive mosquito pools have been reported from 26 counties. As of this date in 2016, 3,509 WNV positive mosquito pools had been reported from 31 counties.

St. Louis Encephalitis Virus

No new positives were reported this week. To date this year, 179 SLEV positive mosquito pools have been reported from 14 counties: Butte (1), Fresno (63), Imperial (3), Kern (18), Kings (21), Los Angeles (1), Madera (10), Merced (2), Placer (1), Riverside (23), San Bernardino (2), Stanislaus (27), Tulare (6), and Yuba (1). As of this date in 2016, 180 SLEV positive mosquito pools had been reported from 8 counties.

Sentinel Chickens

West Nile Virus

One new WNV seroconversion was reported this week from Los Angeles County. In 2017, 305 WNV seroconversions have been reported from 18 counties. As of this date in 2016, 343 WNV seroconversions had been detected from 19 counties.

St. Louis Encephalitis Virus

No SLEV seroconversions were reported this week. To date this year, 9 SLEV positive chickens have been reported from Los Angeles (2), Merced (1), and San Bernardino (6) counties. As of this date in 2016, 4 SLEV seroconversions had been detected in 2 counties.

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| YTD WNV Activity by Element and County, 2017 | | | | | |
|--|------------|-----------|------------|----------------|-------------------|
| County | Humans | Horses | Dead Birds | Mosquito Pools | Sentinel Chickens |
| Alameda | 1 | | 2 | | |
| Butte | 3 | | 5 | 47 | 31 |
| Calaveras | | | | | 1 |
| Colusa | | | 1 | | |
| Contra Costa | 4 | 1 | 19 | 9 | 7 |
| El Dorado | | | 2 | | |
| Fresno | 9 | 1 | 5 | 167 | |
| Glenn | | 1 | 2 | 12 | 1 |
| Humboldt | | | 1 | | |
| Imperial | 3 | | | | |
| Inyo | 4 | | | 9 | |
| Kern | 27 | 2 | 3 | 152 | |
| Kings | 1 | | 1 | 79 | |
| Lake | | | 5 | 17 | 2 |
| Lassen | | 3 | | | |
| Los Angeles | 260 | 1 | 101 | 581 | 145 |
| Madera | 2 | | 1 | 62 | |
| Marin | | | 1 | | |
| Merced | 1 | | 1 | 40 | 19 |
| Monterey | | | 1 | | |
| Nevada | | | 1 | | |
| Orange | 34 | | 57 | 280 | |
| Placer | | | 4 | 59 | 5 |
| Plumas | | 1 | | | |
| Riverside | 27 | 4 | 41 | 196 | |
| Sacramento | 3 | 1 | 86 | 153 | 2 |
| San Benito | | | | | 1 |
| San Bernardino | 42 | | 45 | 295 | 36 |
| San Diego | 2 | 1 | 41 | 9 | |
| San Francisco | 1 | | 1 | | |
| San Joaquin | 14 | 2 | 7 | 242 | |
| San Luis Obispo | | | 6 | | |
| San Mateo | | | 1 | | |
| Santa Barbara | | | 1 | 1 | 4 |
| Santa Clara | | | 12 | | |
| Santa Cruz | | | 1 | | |
| Shasta | 1 | | 2 | | 4 |
| Solano | 1 | | 4 | 9 | 11 |
| Sonoma | | | 5 | 1 | |
| Stanislaus | 28 | | 6 | 196 | |
| Sutter | 2 | | 3 | 16 | 22 |
| Tehama | 1 | 1 | | | 4 |
| Tuolumne | | 1 | | | |
| Tulare | 12 | | 8 | 630 | |
| Ventura | 1 | | 2 | 3 | |
| Yolo | 5 | | 14 | 87 | 2 |
| Yuba | | | 6 | 18 | 8 |
| Totals | 489 | 20 | 505 | 3,370 | 305 |

Website Information: For updated information on WNV in California, please visit the California WNV website, www.westmile.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.westmilemaps.usgs.gov

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| 2016 & 2017 YTD West Nile Virus Comparisons | | |
|---|----------------|----------------|
| | 2016 | 2017 |
| Total # Dead Bird Reports | 9,040 | 7,545 |
| # Positive Counties | 38 | 47 |
| # Human Cases | 406 | 489 |
| # Positive Dead Birds / # Tested | 1,346 / 2,830 | 505 / 2,000 |
| # Positive Mosquito Pools / # Tested | 3,509 / 43,955 | 3,370 / 44,316 |
| # Seroconversions / # Tested | 343 / 10,925 | 305 / 11,029 |

TESTING SUMMARIES

Humans

| | | WNV | SLEV | WEEV |
|-------------|------|-----|------|------|
| Human Cases | Week | 24 | 0 | 0 |
| | YTD | 489 | 1 | 0 |

Dead Birds

| | | Number Tested | WNV Positive |
|------------|------|---------------|--------------|
| Dead Birds | Week | 51 | 3 |
| | YTD | 2,000 | 505 |

Chickens

| | | Number Tested | WNV Positive | SLEV Positive | WEEV Positive |
|--------------|------|---------------|--------------|---------------|---------------|
| Chicken Sera | Week | 31 | 1 | 0 | 0 |
| | YTD | 11,029 | 305 | 9 | 0 |

Mosquitoes

| | | Positive / Total Tested | | | | | |
|----------------|------|-------------------------|--------------|------------|-----------|-----------|-----------|
| | | WNV | SLEV | WEEV | CHIK | DENV | ZIKA |
| Mosquito Pools | Week | 10 / 676 | 0 / 187 | 0 / 187 | 0 / 63 | 0 / 63 | 0 / 63 |
| | YTD | 3,370 / 44,316 | 179 / 35,888 | 0 / 34,095 | 0 / 1,939 | 0 / 1,939 | 0 / 1,939 |

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New Positives

Dead Birds

| County | Agency | City | Zip Code | Species | Date Reported | Virus |
|-------------|-----------------------------|-------------------|----------|---------------|---------------|-------|
| Los Angeles | Los Angeles Co Veterinarian | Pacific Palisades | 90272 | American Crow | 11/22/2017 | WNV |
| Orange | Orange Co VCD | Anaheim | 92801 | American Crow | 11/14/2017 | WNV |
| Orange | Orange Co VCD | Irvine | 92618 | Rock Dove | 8/11/2017 | WNV |

Mosquito Pools

| County | Site Code | Pool # | Species | City | # in Pool | Trap Type | Collected | Virus |
|-------------|-----------|--------|----------------------|------------------|-----------|-----------|-----------|-------|
| Los Angeles | GRLA2312 | 1028 | Cx. quinquefasciatus | San Pedro | 35 | GRVD | 11/17/17 | WNV |
| Los Angeles | GRLA2476 | 5939 | Cx. quinquefasciatus | Sunland | 50 | GRVD | 11/17/17 | WNV |
| Los Angeles | GRLA2957 | 1038 | Cx. quinquefasciatus | Hawaiian Gardens | 50 | GRVD | 11/21/17 | WNV |
| Los Angeles | SGVA898 | 2564 | Cx. quinquefasciatus | San Gabriel | 25 | GRVD | 11/8/17 | WNV |
| Los Angeles | SGVA898 | 2568 | Cx. quinquefasciatus | San Gabriel | 25 | GRVD | 11/8/17 | WNV |
| Los Angeles | SGVA898 | 2569 | Cx. quinquefasciatus | San Gabriel | 25 | GRVD | 11/8/17 | WNV |
| Orange | ORCO1005 | 5243 | Cx. quinquefasciatus | Buena Park | 14 | BGSENT | 10/31/17 | WNV |
| Orange | ORCO1005 | 5432 | Cx. quinquefasciatus | Buena Park | 50 | GRVD | 11/9/17 | WNV |
| Orange | ORCO34 | 5311 | Cx. quinquefasciatus | Brea | 20 | GRVD | 11/2/17 | WNV |
| Orange | ORCO58 | 5227 | Cx. quinquefasciatus | Laguna Niguel | 9 | GRVD | 10/31/17 | WNV |

Sentinel Chickens

| County | Site Code | City | Date Bled | Virus | Band 01 |
|-------------|-----------|--------|------------|-------|---------|
| Los Angeles | LACW1012 | Venice | 11/14/2017 | WNV | 2559 |

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.

Dead Birds

Oral swab samples from corvids are collected onto RNA preservation cards and tested by the UC Davis Arbovirus Research and Training laboratory (DART) for West Nile virus by the singleplex qRT-PCR Taqman assay and confirmed with a second primer set. Some local agencies test birds using the RAMP© test or conduct RT-PCR on tissue samples.

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 antibodies to West Nile, western equine encephalomyelitis, and St. Louis encephalitis viruses by EIA. Positive samples are confirmed by IFA, western-blot, or PRNT.

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Mosquito Pools:

Mosquito pools submitted to DART are tested for West Nile, western equine encephalomyelitis, and St. Louis encephalitis viral RNA using a multiplex qRT-PCR. Invasive *Aedes* mosquitoes (*Ae. aegypti* and *Ae. albopictus*) are also tested for chikungunya, dengue, and Zika viral RNA by a separate qRT-PCR.

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