

California Arbovirus Surveillance Bulletin #29

Week 42 Friday, October 19, 2018



Weekly Update

Humans

West Nile virus

A total of 11 human cases of West Nile virus (WNV) illness were reported this week from 6 counties: Los Angeles (3), Riverside (1), San Bernardino (1), Stanislaus (3), Sutter (1), and Yolo (2). **This is the first human WNV case reported from Sutter County this year.** In 2018, a total of 143 human WNV cases have been reported from 28 counties. Of the 143 case patients, 99 (69%) had neuroinvasive illness and 6 (4.2%) fatalities have been reported. The median age of the individuals is 59 years (range: 1–90 years) and 92 (64%) are male. Dates of symptom onset ranged from May 6 – September 22. In addition to the 143 cases, 21 asymptomatic infections have been reported from Butte (5), Contra Costa (2), Fresno (1), Los Angeles (4), Orange (2), Riverside (1), Sacramento (1), San Joaquin (1), Stanislaus (3), and Yolo (1) counties. At this time last year, 361 human WNV cases had been reported from 23 counties.

St. Louis encephalitis virus

No new cases were reported this week. In 2018, one human case of St. Louis encephalitis virus (SLEV) disease has been reported from Los Angeles County. At this time last year, no human SLEV cases had been reported.

Dead Birds

A total of 7 WNV positive dead birds were reported this week from 6 counties: Los Angeles (1), Orange (1), Placer (1), Riverside (1), San Joaquin (1), and Santa Clara (2). In 2018, a total of 490 WNV positive dead birds have been reported from 20 counties. At this time last year, 473 WNV positive dead birds had been reported from 39 counties.

Mosquito Pools

West Nile virus

A total of 5 WNV positive mosquito pools were reported this week from 2 counties: Los Angeles (1) and San Joaquin (4). In 2018, 1,952 mosquito pools have tested positive for WNV from 29 counties. At this time last year, 3,304 WNV positive mosquito pools had been reported from 26 counties.

St. Louis encephalitis virus

A total of 4 SLEV positive mosquito pools were reported this week from 2 counties: Fresno (1) and Kings (3). In 2018, 387 SLEV positive mosquito pools have been reported from 8 counties: Fresno (56), Imperial (3), Kern (65), Kings (30), Los Angeles (1), Madera (14), Riverside (56), and Tulare (162). At this time last year, 179 SLEV positive mosquito pools had been reported from 14 counties.

Sentinel Chickens

West Nile virus

A total of 2 WNV seroconversions were reported this week from 2 flocks located in 2 counties: Butte (1) and Colusa (1). In 2018, 152 WNV positive chickens have been reported from 16 counties. At this time last year, 295 WNV positive chickens had been reported from 18 counties.

St. Louis encephalitis virus

No SLEV seroconversions were reported this week. In 2018, one sentinel chicken has tested positive for SLEV from Merced County. At this time last year, 9 SLEV positive chickens had been reported from 3 counties.

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| 2017 & 2018 YTD West Nile Virus Comparisons | | |
|---|----------------|----------------|
| | 2017 | 2018 |
| Total # Dead Bird Reports | 7,088 | 7,386 |
| # Positive Counties | 47 | 39 |
| # Human Cases | 361 | 143 |
| # Positive Dead Birds / # Tested | 473 / 1,855 | 490 / 1,999 |
| # Positive Mosquito Pools / # Tested | 3,304 / 42,000 | 1,952 / 40,453 |
| # Seroconversions / # Tested | 295 / 10,281 | 152 / 9,157 |

| YTD WNV Activity by Element and County, 2018 | | | | | |
|--|------------|-----------|------------|----------------|-------------------|
| County | Humans | Horses | Dead Birds | Mosquito Pools | Sentinel Chickens |
| Alameda | | | 19 | 15 | |
| Amador | 1 | 1 | | | |
| Butte | 10 | | 4 | 48 | 34 |
| Colusa | | | | | 6 |
| Contra Costa | 3 | | 13 | 17 | 16 |
| El Dorado | | | 2 | | |
| Fresno | 5 | | | 118 | |
| Glenn | 2 | | | 4 | |
| Humboldt | 1 | | 1 | | |
| Imperial | | | | 1 | |
| Kern | 5 | 1 | 1 | 48 | |
| Kings | | | | 22 | |
| Lake | 1 | | | 4 | 1 |
| Los Angeles | 38 | | 19 | 66 | 24 |
| Madera | 2 | | | 55 | |
| Merced | 2 | 2 | | 12 | 16 |
| Nevada | 1 | | | | |
| Orange | 6 | | 12 | 96 | |
| Placer | 8 | 1 | 44 | 230 | 4 |
| Riverside | 12 | | 6 | 35 | |
| Sacramento | 2 | 2 | 241 | 300 | 4 |
| San Benito | | | | | 1 |
| San Bernardino | 4 | | | 12 | |
| San Diego | | | | 3 | |
| San Joaquin | 9 | 1 | 16 | 533 | |
| San Mateo | | | 5 | 2 | |
| Santa Clara | 1 | | 53 | 5 | 8 |
| Santa Cruz | | | 2 | | |
| Shasta | 1 | 1 | 5 | 8 | 4 |
| Solano | | | | 3 | 6 |
| Sonoma | | | | 1 | |
| Stanislaus | 11 | 1 | 1 | 111 | |
| Sutter | 1 | | 4 | 28 | 20 |
| Tehama | 1 | | | | 1 |
| Tulare | 3 | | | 77 | |
| Tuolumne | 1 | | 1 | | |
| Ventura | 1 | | | | |
| Yolo | 9 | | 41 | 90 | 5 |
| Yuba | 2 | | | 8 | 2 |
| Totals | 143 | 10 | 490 | 1,952 | 152 |

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TESTING SUMMARIES

Humans

| | | WNV | SLE | WEE |
|-------------|------|-----|-----|-----|
| Human Cases | Week | 11 | 0 | 0 |
| | YTD | 143 | 1 | 0 |

Dead Birds

| | | Number Tested | WNV Positive |
|------------|------|---------------|--------------|
| Dead Birds | Week | 76 | 7 |
| | YTD | 1,999 | 490 |

Chickens

| | | Number Tested | WNV Positive | SLEV Positive | WEEV Positive |
|--------------|------|---------------|--------------|---------------|---------------|
| Chicken Sera | Week | 301 | 2 | 0 | 0 |
| | YTD | 9,157 | 152 | 1 | 0 |

Mosquitoes

| | | Positive / Total Tested | | | | | | |
|----------------|------|-------------------------|----------------|--------------|------------|-----------|-----------|-----------|
| Mosquito Pools | Week | WNV | SLEV | WEEV | CHIK | DENV | ZIKA | |
| | | Week | 5 / 837 | 4 / 826 | 0 / 740 | 0 / 74 | 0 / 74 | 0 / 74 |
| | | YTD | 1,952 / 40,453 | 387 / 32,607 | 0 / 27,776 | 0 / 1,739 | 0 / 1,739 | 0 / 1,739 |

New Positives

Dead Birds

| County | Submitting Agency | City | Zip Code | Species | Reported | Virus |
|-------------|-----------------------------|-------------|----------|---------------|------------|-------|
| Los Angeles | Los Angeles Co Veterinarian | Venice | 90291 | American Crow | 10/15/2018 | WNV |
| Orange | Orange Co VCD | Anaheim | 92804 | American Crow | 10/2/2018 | WNV |
| Placer | Placer MVCD | Rocklin | 95765 | Purple Finch | 10/5/2018 | WNV |
| Riverside | Northwest Mosquito VCD | Riverside | 92509 | American Crow | 10/3/2018 | WNV |
| San Joaquin | San Joaquin Co MVCD | Tracy | 95376 | American Crow | 10/11/2018 | WNV |
| Santa Clara | Santa Clara Co VCD | Santa Clara | 95051 | American Crow | 10/17/2018 | WNV |
| Santa Clara | Santa Clara Co VCD | San Jose | 95112 | American Crow | 10/11/2018 | WNV |

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Mosquito Pools

| County | Site Code | Pool # | Species | City | # in Pool | Trap Type | Collected | Virus |
|-------------|-----------|--------|----------------------|--------------|-----------|-----------|-----------|-------|
| Fresno | CNSL0000 | 1178 | Cx. tarsalis | | 3 | BGSENT | 9/28/18 | SLEV |
| Kings | KNGS3018 | 289 | Cx. tarsalis | Lemoore | 50 | CO2 | 10/1/18 | SLEV |
| Kings | KNGS5506 | 286 | Cx. pipiens | Hanford | 50 | BGSENT | 10/1/18 | SLEV |
| Kings | KNGS8033 | 304 | Cx. pipiens | Hanford | 50 | CO2 | 10/8/18 | SLEV |
| Los Angeles | GRLA2580 | 5972 | Cx. quinquefasciatus | Sherman Oaks | 50 | GRVD | 10/10/18 | WNV |
| San Joaquin | SJCM8018 | 3334 | Cx. pipiens | Stockton | 25 | CO2 | 10/16/18 | WNV |
| San Joaquin | SJCM8160 | 3398 | Cx. tarsalis | Lodi | 50 | CO2 | 10/17/18 | WNV |
| San Joaquin | SJCM8160 | 3399 | Cx. tarsalis | Lodi | 51 | CO2 | 10/17/18 | WNV |
| San Joaquin | SJCM8160 | 3400 | Cx. pipiens | Lodi | 22 | CO2 | 10/17/18 | WNV |

Sentinel Chickens

| County | Site Code | City | Date Bled | Virus | Band 01 |
|--------|-----------|---------|-----------|-------|---------|
| Butte | BUCO004 | Gridley | 10/9/2018 | WNV | 1544 |
| Colusa | CLSA0001 | Colusa | 10/8/2018 | WNV | 1572 |

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 with a plaque reduction neutralization test (PRNT).

Dead Birds

Oral swab samples collected from bird carcasses are tested at the UC Davis Arbovirus Research and Training laboratory (DART) or at a local agency for West Nile virus by RT-qPCR.

Sentinel Chickens:

Dried blood spot samples from sentinel chickens are tested at the California Department of Public Health Vector-Borne Disease Laboratory for IgG antibodies to West Nile, St. Louis encephalitis, and western equine encephalomyelitis viruses by an EIA. Positive samples are confirmed by IFA, western-blot, or PRNT.

Mosquito Pools:

Mosquito pools are tested at DART or at a local agency for West Nile, western equine encephalomyelitis, and St. Louis encephalitis viral RNA using a multiplex RT-qPCR. Invasive *Aedes* mosquitoes (*Ae. aegypti* and *Ae. albopictus*) are also tested at DART for chikungunya, dengue, and Zika viral RNA by a separate RT-qPCR.

Website Information: For updated information on WNV and SLEV in California, please visit the California WNV website, www.westnile.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 websites: www.cdc.gov and https://wwwn.cdc.gov/arbovet/maps/ADB_Diseases_Map/index.html

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