

California Arbovirus Surveillance Bulletin #27

Week 40 Friday, October 5, 2018



Weekly Update

Humans

A human case of St. Louis encephalitis virus (SLEV) disease was reported this week from Los Angeles County. This is the first human case of SLEV disease reported in California in 2018. At this time last year, no SLEV disease cases had been reported.

West Nile Virus

A total of 4 human cases of West Nile virus (WNV) illness were reported this week from 3 counties: Contra Costa (1), Riverside (2), and Santa Clara (1). **This is the first human WNV case reported from Santa Clara County this year.** In 2018, a total of 118 human WNV cases have been reported from 26 counties. Of the 118 case patients, 79 (67%) had neuroinvasive illness and 5 (4.2%) fatalities have been reported. The median age of the individuals is 59 years (range: 1–90 years) and 76 (64%) are male. Dates of symptom onset ranged from May 6 – September 15. In addition to the 118 cases, 19 asymptomatic infections have been reported from Butte (5), Contra Costa (2), Fresno (1), Los Angeles (3), Orange (2), Sacramento (1), San Joaquin (1), Stanislaus (3), and Yolo (1) counties. At this time last year, 258 human WNV cases had been reported from 20 counties.

Dead Birds

A total of 9 WNV positive dead birds were reported this week from 5 counties: Los Angeles (2), Placer (1), Sacramento (2), Santa Clara (3), and Yolo (1). In 2018, a total of 478 WNV positive dead birds have been reported from 20 counties. At this time last year, 449 WNV positive dead birds had been reported from 38 counties.

Mosquito Pools

West Nile virus

A total of 50 WNV positive mosquito pools were reported this week from 8 counties: Fresno (1), Los Angeles (4), Madera (3), Orange (16), Sacramento (3), San Joaquin (18), Sonoma (1), and Stanislaus (4). **This is the first detection of WNV activity in Sonoma County this year.** In 2018, 1,939 mosquito pools have tested positive for WNV from 29 counties. At this time last year, 3,234 WNV positive mosquito pools had been reported from 26 counties.

St. Louis encephalitis virus

A total of 5 SLEV positive mosquito pools were reported this week from 2 counties: Madera (2) and Tulare (3). In 2018, 375 SLEV positive mosquito pools have been reported from 8 counties: Fresno (49), Imperial (3), Kern (65), Kings (27), Los Angeles (1), Madera (14), Riverside (54), and Tulare (162). At this time last year, 175 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: Contra Costa (1) and Tehama (1). **This is the first WNV positive chicken reported from Tehama County this year.** In 2018, 141 WNV positive chickens have been reported from 16 counties. At this time last year, 282 WNV positive chickens had been reported from 17 counties.

St. Louis encephalitis virus

No new seroconversions were reported this week. In 2018, 1 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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Week 40 Friday, October 5, 2018

| 2017 & 2018 YTD West Nile Virus Comparisons | | |
|--|----------------|----------------|
| | 2017 | 2018 |
| Total # Dead Bird Reports | 6,778 | 7,020 |
| # Positive Counties | 45 | 38 |
| # Human Cases | 258 | 118 |
| # Positive Dead Birds / # Tested | 449 / 1,766 | 478 / 1,875 |
| # Positive Mosquito Pools / # Tested | 3,234 / 40,050 | 1,939 / 38,786 |
| # Seroconversions / # Tested | 282 / 9,707 | 141 / 8,520 |

| YTD WNV Activity by Element and County, 2018 | | | | | |
|---|------------|-----------|------------|----------------|-------------------|
| County | Humans | Horses | Dead Birds | Mosquito Pools | Sentinel Chickens |
| Alameda | | | 17 | 15 | |
| Amador | 1 | 1 | | | |
| Butte | 10 | | 4 | 48 | 33 |
| Colusa | | | | | 5 |
| Contra Costa | 3 | | 13 | 17 | 16 |
| El Dorado | | | 2 | | |
| Fresno | 3 | | | 117 | |
| Glenn | 2 | | | 4 | |
| Humboldt | 1 | | 1 | | |
| Imperial | | | | 1 | |
| Kern | 5 | 1 | 1 | 48 | |
| Kings | | | | 22 | |
| Lake | 1 | | | 4 | 1 |
| Los Angeles | 26 | | 17 | 61 | 17 |
| Madera | 2 | | | 55 | |
| Merced | 2 | 2 | | 12 | 16 |
| Orange | 5 | | 11 | 96 | |
| Placer | 8 | 1 | 43 | 230 | 4 |
| Riverside | 11 | | 5 | 35 | |
| Sacramento | 2 | 2 | 240 | 299 | 4 |
| San Benito | | | | | 1 |
| San Bernardino | 3 | | | 12 | |
| San Diego | | | | 3 | |
| San Joaquin | 9 | 1 | 14 | 527 | |
| San Mateo | | | 5 | 2 | |
| Santa Clara | 1 | | 51 | 5 | 7 |
| Santa Cruz | | | 2 | | |
| Shasta | 1 | 1 | 5 | 8 | 4 |
| Solano | | | | 3 | 5 |
| Sonoma | | | | 1 | |
| Stanislaus | 8 | 1 | 1 | 111 | |
| Sutter | | | 4 | 28 | 20 |
| Tehama | 1 | | | | 1 |
| Tulare | 3 | | | 77 | |
| Tuolumne | 1 | | 1 | | |
| Ventura | 1 | | | | |
| Yolo | 7 | | 41 | 90 | 5 |
| Yuba | 1 | | | 8 | 2 |
| Totals | 118 | 10 | 478 | 1,939 | 141 |

California Arbovirus Surveillance Bulletin #27

Week 40 Friday, October 5, 2018

TESTING SUMMARIES

Humans

| | | WNV | SLE | WEE |
|-------------|------|-----|-----|-----|
| Human Cases | Week | 4 | 1 | 0 |
| | YTD | 118 | 1 | 0 |

Dead Birds

| | | Number Tested | WNV Positive |
|------------|------|---------------|--------------|
| Dead Birds | Week | 26 | 9 |
| | YTD | 1,875 | 478 |

Chickens

| | | Number Tested | WNV Positive | SLEV Positive | WEEV Positive |
|--------------|------|---------------|--------------|---------------|---------------|
| Chicken Sera | Week | 344 | 2 | 0 | 0 |
| | YTD | 8,520 | 141 | 1 | 0 |

Mosquitoes

| | | Positive / Total Tested | | | | | |
|----------------|--|-------------------------|--------------|------------|-----------|-----------|-----------|
| Mosquito Pools | | WNV | SLEV | WEEV | CHIK | DENV | ZIKA |
| | | Week | 50 / 1,727 | 5 / 1,222 | 0 / 1,013 | 0 / 0 | 0 / 0 |
| YTD | | 1,939 / 38,786 | 375 / 30,951 | 0 / 26,349 | 0 / 1,543 | 0 / 1,543 | 0 / 1,543 |

New Positives

Dead Birds

| County | Submitting Agency | City | Zip Code | Species | Reported | Virus |
|-------------|-----------------------------|-------------|----------|---------------|-----------|-------|
| Los Angeles | Los Angeles Co Veterinarian | Los Angeles | 90036 | Common Raven | 9/19/2018 | WNV |
| Los Angeles | Los Angeles Co Veterinarian | Tarzana | 91356 | American Crow | 10/2/2018 | WNV |
| Placer | Placer MVCD | Granite Bay | 95746 | House Finch | 9/25/2018 | WNV |
| Sacramento | Sacramento-Yolo MVCD | Sacramento | 95811 | American Crow | 9/27/2018 | WNV |
| Sacramento | Sacramento-Yolo MVCD | Sacramento | 95823 | House Sparrow | 10/1/2018 | WNV |
| Santa Clara | Santa Clara Co VCD | Sunnyvale | 94086 | American Crow | 9/30/2018 | WNV |
| Santa Clara | Santa Clara Co VCD | Sunnyvale | 94087 | American Crow | 9/28/2018 | WNV |
| Santa Clara | Santa Clara Co VCD | San Jose | 95126 | American Crow | 9/28/2018 | WNV |
| Yolo | Sacramento-Yolo MVCD | Woodland | 95776 | American Crow | 10/1/2018 | WNV |

California Arbovirus Surveillance Bulletin #27
 Week 40 Friday, October 5, 2018

Mosquito Pools

| County | Site Code | Pool # | Species | City | # in Pool | Trap Type | Collected | Virus |
|-------------|------------|--------|----------------------|--------------|-----------|-----------|-----------|-------|
| Fresno | FRWS400017 | 438 | Cx. quinquefasciatus | Mendota | 50 | CO2 | 10/2/18 | WNV |
| Los Angeles | GRLA2724 | 5913 | Cx. quinquefasciatus | Winnetka | 26 | GRVD | 9/26/18 | WNV |
| Los Angeles | GRLA2962 | 5919 | Cx. quinquefasciatus | Chatsworth | 15 | GRVD | 9/26/18 | WNV |
| Los Angeles | GRLA3035 | 5907 | Cx. quinquefasciatus | North Hills | 33 | GRVD | 9/25/18 | WNV |
| Los Angeles | LACW1054 | 276 | Cx. quinquefasciatus | Inglewood | 50 | CO2 | 9/27/18 | WNV |
| Madera | MADR192 | 370 | Cx. tarsalis | Madera | 10 | CO2 | 9/28/18 | SLEV |
| Madera | MADR192 | 370 | Cx. tarsalis | Madera | 10 | CO2 | 9/28/18 | WNV |
| Madera | MADR3334 | 355 | Cx. quinquefasciatus | Madera | 50 | CO2 | 9/25/18 | SLEV |
| Madera | MADR896 | 353 | Cx. tarsalis | Mendota | 50 | CO2 | 9/25/18 | WNV |
| Madera | MADR904 | 378 | Cx. quinquefasciatus | Madera | 50 | CO2 | 9/25/18 | WNV |
| Orange | ORCO1008 | 4399 | Cx. quinquefasciatus | Fullerton | 23 | GRVD | 9/26/18 | WNV |
| Orange | ORCO1008 | 4400 | Cx. quinquefasciatus | Fullerton | 25 | GRVD | 9/26/18 | WNV |
| Orange | ORCO1008 | 4403 | Cx. quinquefasciatus | Fullerton | 27 | GRVD | 9/26/18 | WNV |
| Orange | ORCO1008 | 4404 | Cx. quinquefasciatus | Fullerton | 42 | GRVD | 9/26/18 | WNV |
| Orange | ORCO1008 | 4407 | Cx. quinquefasciatus | Fullerton | 39 | GRVD | 9/26/18 | WNV |
| Orange | ORCO1008 | 4545 | Cx. quinquefasciatus | Fullerton | 26 | GRVD | 10/2/18 | WNV |
| Orange | ORCO1008 | 4549 | Cx. quinquefasciatus | Fullerton | 43 | GRVD | 10/2/18 | WNV |
| Orange | ORCO1008 | 4550 | Cx. quinquefasciatus | Fullerton | 23 | GRVD | 10/2/18 | WNV |
| Orange | ORCO1040 | 4311 | Cx. quinquefasciatus | Orange | 50 | GRVD | 9/25/18 | WNV |
| Orange | ORCO202 | 4390 | Cx. quinquefasciatus | Fullerton | 44 | GRVD | 9/26/18 | WNV |
| Orange | ORCO202 | 4557 | Cx. quinquefasciatus | Fullerton | 50 | GRVD | 10/2/18 | WNV |
| Orange | ORCO202 | 4560 | Cx. quinquefasciatus | Fullerton | 44 | GRVD | 10/2/18 | WNV |
| Orange | ORCO297 | 4494 | Cx. quinquefasciatus | Anaheim | 10 | GRVD | 10/2/18 | WNV |
| Orange | ORCO3 | 4363 | Cx. quinquefasciatus | Garden Grove | 28 | GRVD | 9/26/18 | WNV |
| Orange | ORCO302 | 4346 | Cx. quinquefasciatus | Anaheim | 16 | GRVD | 9/25/18 | WNV |
| Orange | ORCO84 | 4302 | Cx. quinquefasciatus | Orange | 27 | GRVD | 9/25/18 | WNV |
| Sacramento | SAYO205033 | 6414 | Cx. pipiens | Orangevale | 21 | GRVD | 9/27/18 | WNV |
| Sacramento | SAYO233099 | 6456 | Cx. pipiens | Elk Grove | 23 | GRVD | 9/27/18 | WNV |
| Sacramento | SAYO233101 | 6444 | Cx. pipiens | Elk Grove | 50 | CO2 | 9/27/18 | WNV |
| San Joaquin | SJCM8003 | 3065 | Cx. pipiens | Tracy | 28 | CO2 | 10/2/18 | WNV |
| San Joaquin | SJCM8022 | 3078 | Cx. tarsalis | Holt | 50 | CO2 | 10/2/18 | WNV |
| San Joaquin | SJCM8029 | 3178 | Cx. pipiens | Farmington | 34 | CO2 | 10/4/18 | WNV |
| San Joaquin | SJCM8191 | 3137 | Cx. tarsalis | Lodi | 50 | CO2 | 10/2/18 | WNV |
| San Joaquin | SJCM8206 | 3045 | Cx. tarsalis | Lodi | 100 | CO2 | 10/2/18 | WNV |
| San Joaquin | SJCM8206 | 3046 | Cx. tarsalis | Lodi | 100 | CO2 | 10/2/18 | WNV |
| San Joaquin | SJCM8206 | 3047 | Cx. tarsalis | Lodi | 100 | CO2 | 10/2/18 | WNV |
| San Joaquin | SJCM8206 | 3048 | Cx. tarsalis | Lodi | 100 | CO2 | 10/2/18 | WNV |
| San Joaquin | SJCM8206 | 3049 | Cx. tarsalis | Lodi | 100 | CO2 | 10/2/18 | WNV |
| San Joaquin | SJCM8206 | 3050 | Cx. tarsalis | Lodi | 100 | CO2 | 10/2/18 | WNV |
| San Joaquin | SJCM8206 | 3051 | Cx. tarsalis | Lodi | 100 | CO2 | 10/2/18 | WNV |
| San Joaquin | SJCM8206 | 3052 | Cx. tarsalis | Lodi | 100 | CO2 | 10/2/18 | WNV |
| San Joaquin | SJCM8206 | 3054 | Cx. tarsalis | Lodi | 100 | CO2 | 10/2/18 | WNV |
| San Joaquin | SJCM8206 | 3057 | Cx. pipiens | Lodi | 100 | CO2 | 10/2/18 | WNV |
| San Joaquin | SJCM8206 | 3058 | Cx. pipiens | Lodi | 100 | CO2 | 10/2/18 | WNV |
| San Joaquin | SJCM8206 | 3059 | Cx. pipiens | Lodi | 56 | CO2 | 10/2/18 | WNV |

California Arbovirus Surveillance Bulletin #27

Week 40 Friday, October 5, 2018

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|-------------|----------|------|----------------------|-----------|----|--------|---------|------|
| San Joaquin | SJCM8210 | 3169 | Cx. pipiens | Escalon | 50 | CO2 | 10/4/18 | WNV |
| San Joaquin | SJCM8218 | 3159 | Cx. pipiens | Escalon | 50 | CO2 | 10/4/18 | WNV |
| Sonoma | MARN560 | 594 | Cx. stigmatosoma | Petaluma | 11 | GRVD | 10/2/18 | WNV |
| Stanislaus | TRLK305 | 1829 | Cx. tarsalis | Grayson | 50 | CO2 | 10/2/18 | WNV |
| Stanislaus | TRLK312 | 1783 | Cx. tarsalis | Newman | 50 | CO2 | 9/27/18 | WNV |
| Stanislaus | TRLK424 | 1826 | Cx. pipiens | Patterson | 48 | CO2 | 9/27/18 | WNV |
| Stanislaus | TRLK806 | 1720 | Cx. pipiens | Grayson | 42 | CO2 | 9/27/18 | WNV |
| Tulare | DLTA6408 | 3669 | Cx. quinquefasciatus | Dinuba | 20 | GRVD | 9/27/18 | SLEV |
| Tulare | DLTA8519 | 3441 | Cx. quinquefasciatus | Visalia | 21 | BGSENT | 9/20/18 | SLEV |
| Tulare | DLTA9412 | 3647 | Cx. quinquefasciatus | Visalia | 26 | BGSENT | 9/27/18 | SLEV |

Sentinel Chickens

| County | Site Code | City | Date Bled | Virus | Band 01 |
|--------------|-----------|-----------|-----------|-------|---------|
| Contra Costa | CNTR7402 | Oakley | 9/24/2018 | WNV | 1413 |
| Tehama | TEHA0001 | Red Bluff | 9/25/2018 | WNV | 2088 |

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/arbonet/maps/ADB_Diseases_Map/index.html

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