



# Army Public Health Center (Provisional) Army Vector-borne Disease Report

13 October 2015

Data are preliminary and subject to change

- **West Nile Virus:** Nationally, 1,197 cases and 63 deaths have been reported this WNV season; 1 previously reported case of WNV in an AD Soldier from Fort Bliss, TX has been reported in 2015.
- **Saint Louis Encephalitis:** Nationally, 12 cases and no deaths have been reported; no cases have been reported among Army beneficiaries.
- **RMSF:** 10 cases of Rocky Mountain Spotted Fever have been reported in Army beneficiaries; 4 AD cases reported duty-related exposure.

## West Nile Virus (WNV) United States

- From 1 January through 6 October 2015, 1,197 WNV cases and 63 deaths have been reported nationally (53 additional deaths since the previous report).
- 743 (62%) of the 1,197 cases were classified as neuroinvasive (i.e., meningitis or encephalitis); the remaining 454 (38%) were non-neuroinvasive.
- As of 6 October, all states in the contiguous United States report WNV activity of some type (infections in humans, birds, or mosquitoes), an increase of 3 additional states compared to the last report.



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### Cases in Army AD and Other Beneficiaries

- 1 previously reported case of WNV in an AD Soldier from Fort Bliss, TX has been reported in 2015.

## DoD Army Laboratory Mosquito Surveillance

- 77/987 (7%) total mosquito pools tested from RHC-Atlantic were positive for WNV, an increase of 36 positive pools from the last report. Since the prior report, 14 additional mosquito pools from RHC-Central tested positive for WNV, bringing the cumulative percent positive to 4% (28/724).
- 52 mosquito pools from RHC-Atlantic and 39 mosquito pools from RHC-Central were tested for chikungunya virus; all mosquito pools tested negative.
- RHC-Atlantic tested mosquito samples from Fort Bliss, TX submitted by JB Lewis-McChord for Saint Louis Encephalitis (SLE) virus and dengue virus. Of the 27 pools tested for dengue virus and 95 pools tested for SLE virus, no mosquito pools tested positive.

Source: Official Communication

| WNV Human Cases <sup>β</sup> |                               |           |                        |
|------------------------------|-------------------------------|-----------|------------------------|
| Population                   | Reporting Period <sup>γ</sup> | Cum. 2015 | Cum. 2014 <sup>Δ</sup> |
| United States                | 782                           | 1,197     | 2,006                  |
| Army Cases <sup>±</sup>      |                               |           |                        |
| Confirmed and Probable       |                               |           |                        |
| Army AD <sup>‡</sup>         | 0                             | 1         | 1                      |
| Army Non-AD <sup>†</sup>     | 0                             | 0         | 0                      |
| WNV Human Deaths             |                               |           |                        |
| United States                | 0                             | 63        | 43                     |
| Army                         | 0                             | 0         | 0                      |

Sources: CDC 06 OCT, DRISi 02 OCT 2015  
Note: Reporting location may differ from exposure location.

<sup>β</sup> Confirmed and probable neuroinvasive and non-neuroinvasive cases.

<sup>γ</sup> Difference between last published and this week's cumulative 2015 value.

<sup>±</sup> Only cases whose case status is verified as confirmed/probable.

<sup>‡</sup> Active duty, recruits, cadets.

<sup>Δ</sup> Cumulative through 27 SEP 2014.

| WNV Mosquito Pool Testing | RHC      | Reporting Period <sup>γ</sup> | Year to Date 2015         | * Absolute difference between last published report and this week's year to date number. |
|---------------------------|----------|-------------------------------|---------------------------|--|
|                           |          | No. Positive (No. Tested)     | No. Positive (No. Tested) |  |
| Testing                   | Atlantic | 36 (281)                      | 77 (967)                  |  |
|                           | Central  | 14 (194)                      | 28 (724)                  |  |

## Saint Louis Encephalitis (SLE) and Chikungunya

- SLE virus is transmitted to humans from infected mosquitoes. Though most SLE infections are asymptomatic, some infections can result in more severe neuroinvasive disease. In the U.S., historically most cases of SLE occur in eastern and central states. Nationally, the annual number of reported SLE neuroinvasive disease cases varies widely as a result of periodic epidemics.
- During 2015, 12 cases of SLE have been reported; all from Arizona. Arizona is also reporting high human WNV case numbers this season. A concurrent outbreak of these two diseases is extremely rare. For more information about SLE, visit the [CDC's SLE page](#).
- Chikungunya cases have declined in 2015 with only 4 Army cases reported to date compared to 33 for the same time frame in 2014. All cases were locally acquired from endemic areas.



## Rocky Mountain Spotted Fever (RMSF)

- 10 cases of RMSF have been reported in Army AD and beneficiaries compared to 12 cases during the same time period in 2014.
- Of the 10 cases, 8 (80%) were AD, four (50%) of whom reported duty-related exposure.
- 60% of all cases were reported by RHC-Atlantic and 30% by RHC-Pacific.



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### Army Tick Testing

- To date, 21 tick pools (consisting of *Dermacentor occidentalis*, *D. variabilis*, and *Amblyomma americanum* ticks) from RHC-Pacific and 2 tick pools (*D. variabilis*) from RHC-Central were tested for *Rickettsia rickettsii*, the pathogen that causes RMSF; all ticks tested negative for the pathogen.
- 38 *D. variabilis* ticks from RHC-Atlantic were tested for *R. rickettsii*; all ticks tested negative for the pathogen.

| Human Tick Test Program           | <i>A. phagocytophilum</i> | <i>B. microti</i> | <i>B. burgdorferi</i> | <i>E. chaffeensis</i> | <i>E. ewingii</i> | <i>E. muris-like</i> | <i>R. parkeri</i> | <i>R. rickettsii</i> |
|-----------------------------------|---------------------------|-------------------|-----------------------|-----------------------|-------------------|----------------------|-------------------|----------------------|
| YTD No. Positive (YTD No. Tested) | 21(333)                   | 8(233)            | 83(233)               | 40(1795)              | 39(1795)          | 0(233)               | 0(0)              | 0(311)               |

Note: CONUS data only.

## Rocky Mountain Spotted Fever Cases

| Population                 | Reporting Period <sup>γ</sup> | Cum. 2015 | Cum. 2014 |
|----------------------------|-------------------------------|-----------|-----------|
| United States <sup>β</sup> | 0                             | 117       | 101       |
| Army Cases                 |                               |           |           |
| Confirmed and Probable     |                               |           |           |
| Army AD <sup>‡</sup>       | 1                             | 8         | 2         |
| Army Non-AD <sup>†</sup>   | 0                             | 2         | 10        |

Sources: CDC and AIPH DRISi as of 2 October 2015.

Note: Reporting location may differ from exposure location. CDC data is for Spotted Fever Rickettsiosis (including RMSF).

<sup>γ</sup> Cases reported in the most recent EpiWeek (week 38) and DRISi cases reported during 2 September - 29 September 2015

<sup>β</sup> Provisional confirmed and probable cases.

<sup>‡</sup> Active duty, recruits, cadets.

<sup>†</sup> Army-associated beneficiaries.

**Resources:** [CDC WNV](#) • [CDC Tickborne Diseases](#) • [Human Tick Test Program](#) • [USAPHC WNV Fact Sheet](#) • [Army Vector-borne Disease Reports](#) • [USAPHC](#)

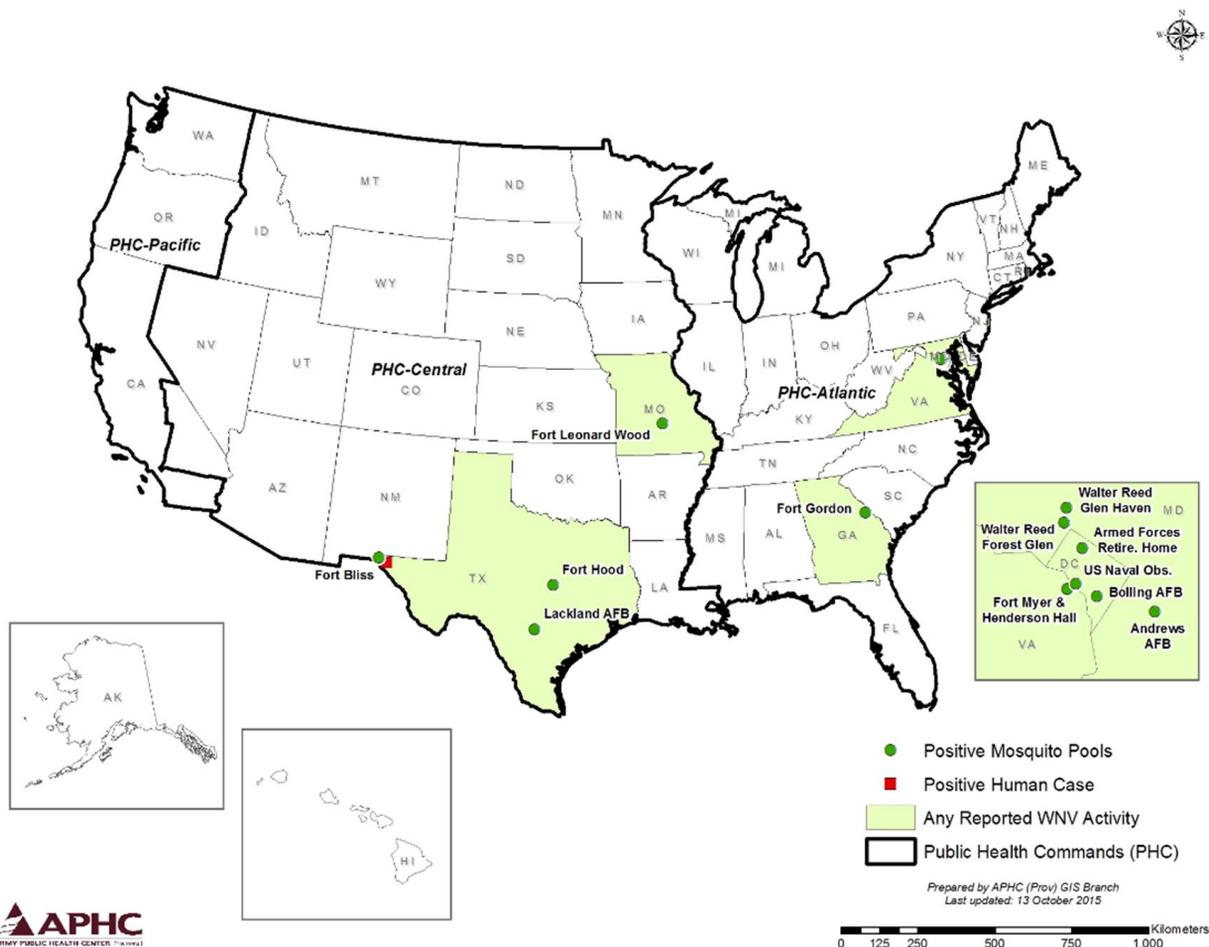
**Key:** CDC Centers for Disease Control and Prevention; DRISi Disease Reporting System Internet; Mosquito pool 1 to 50 mosquitoes; AD Active Duty

Contact us: [USAPHC Disease Epidemiology](#) or 410-417-2377

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# West Nile Virus Activity, by State and Army Regional Health Command (RHC), United States, 2015

As of October 6, 2015

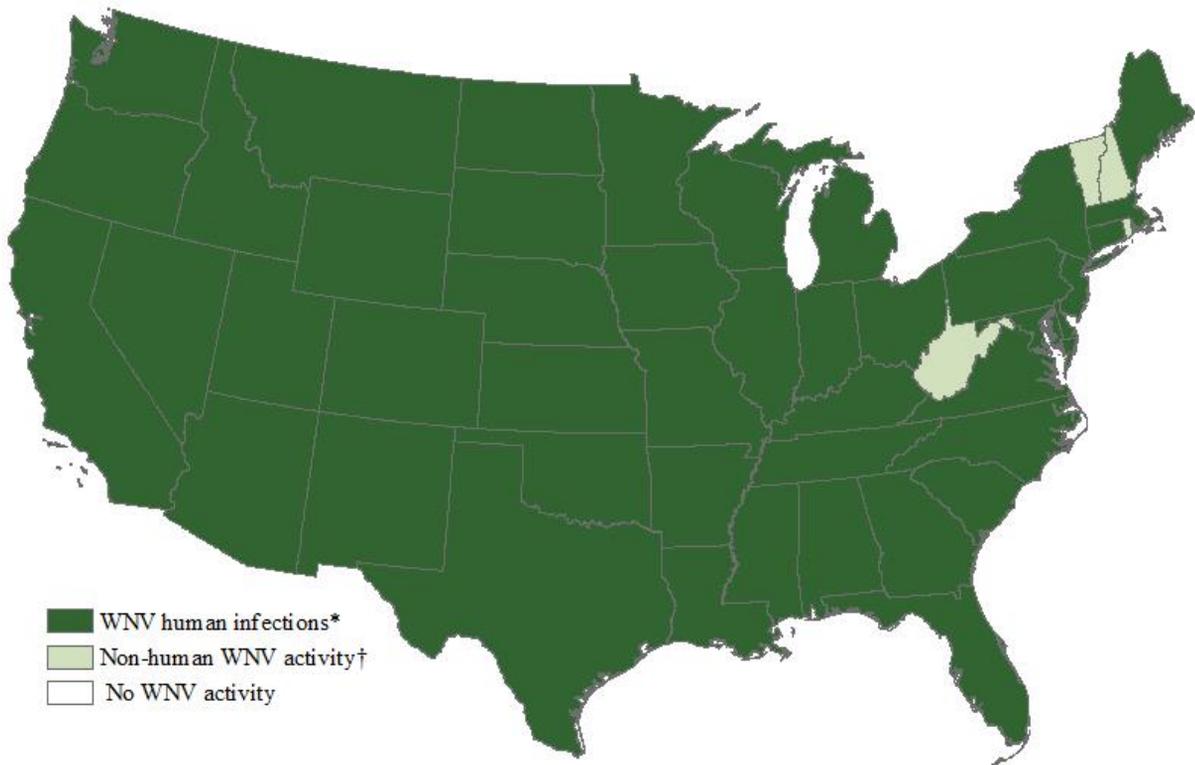


Footnote: The map displays white areas that indicate no reported West Nile virus (WNV) activity. Light green areas represent any reported WNV activity\* within a state and dark green circles represent WNV positive mosquito pools on military installations. If West Nile virus infection is reported from any area of a state, that entire state is shaded light green.

\*Includes WNV Army human disease cases (probable and/or confirmed) and infections in mosquito pools on military installations.

Prepared by: US Army Public Health Command Geographic Information Systems Branch.

# West Nile Virus Activity by State – United States, 2015 (as of October 06, 2015)



\*WNV human disease cases or presumptive viremic blood donors. Presumptive viremic blood donors have a positive screening test which has not necessarily been confirmed.

†WNV veterinary disease cases, or infections in mosquitoes, birds, or sentinel animals.

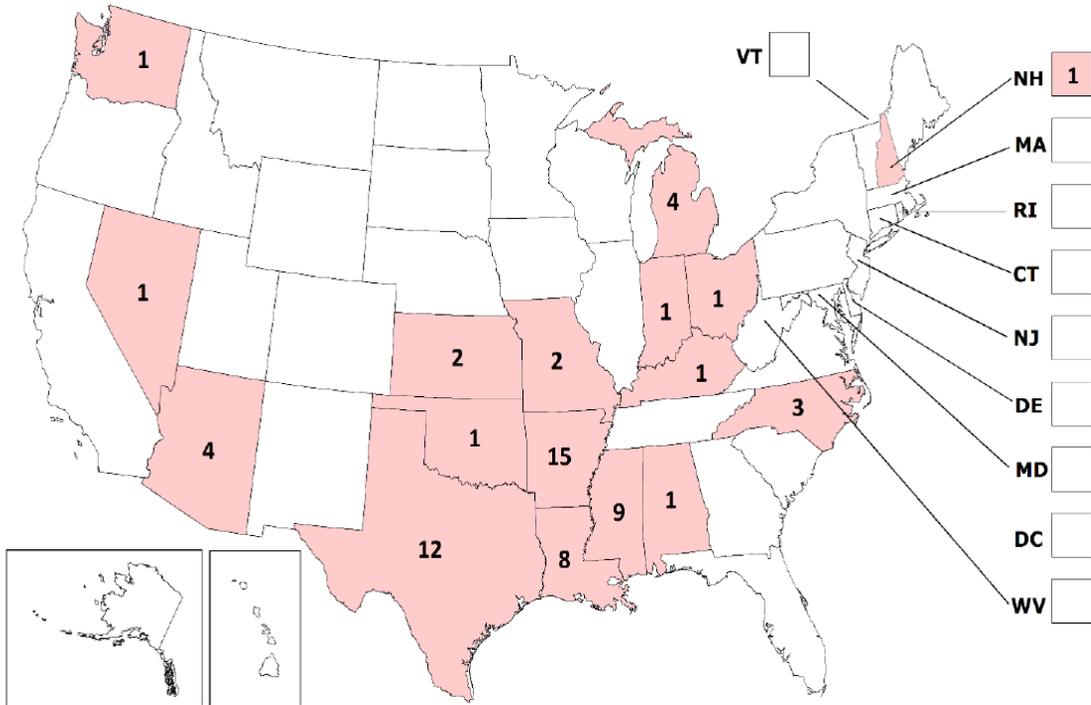
## Data table:

WNV infections in **mosquitoes, birds, sentinel animals, or veterinary animals** have been reported to CDC ArboNET from the following states: California, Florida, Idaho, Illinois, Indiana, Michigan, Mississippi, Missouri, Nebraska, Nevada, New York, Ohio, Oklahoma, Pennsylvania, South Dakota, Texas, Utah, Washington, and Wisconsin.

West Nile virus infections in **humans** have been reported to CDC ArboNET from the following states: Arizona, Delaware, Kansas, New Mexico, Oklahoma, South Dakota, and Texas.

Source: <http://www.cdc.gov/westnile/statsMaps/preliminaryMapsData/activitystatedate.html>

# St. Louis encephalitis virus neuroinvasive disease cases reported by year, 2004-2013

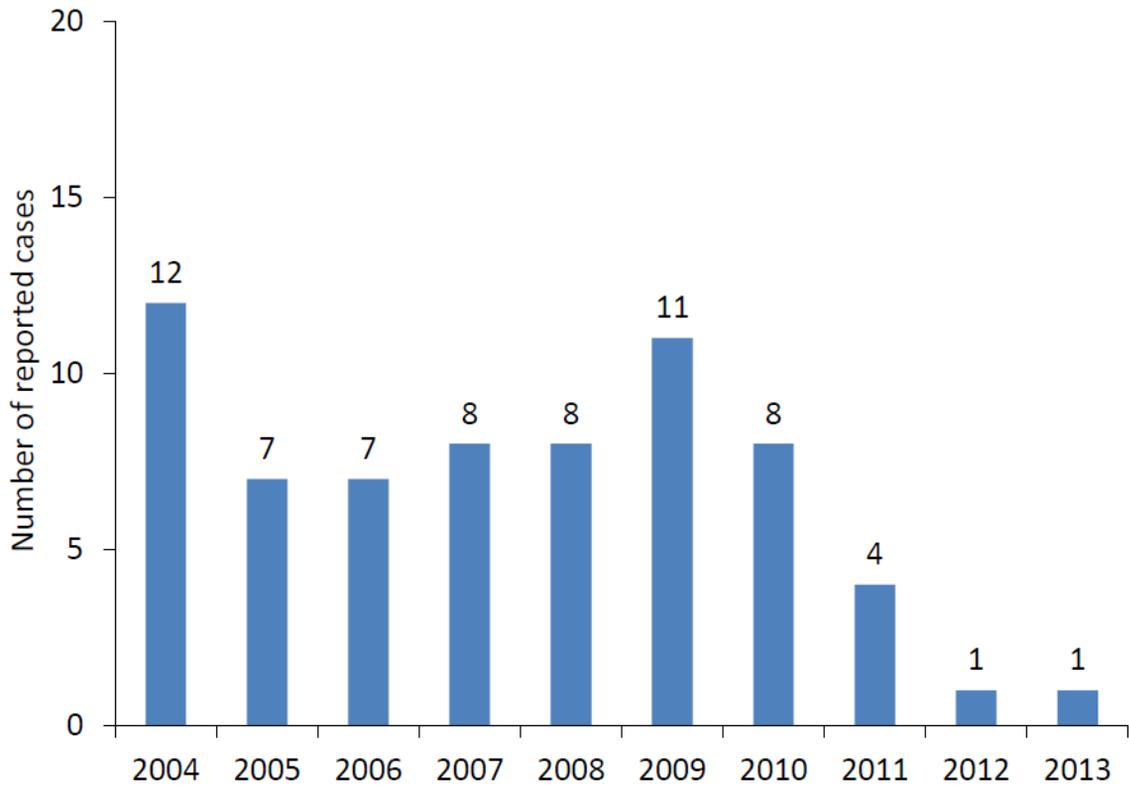


Source: ArboNET, Arboviral Diseases Branch, Centers for Disease Control and Prevention

Data table: From 2004 through 2013, St. Louis encephalitis virus neuroinvasive disease cases have been reported in Alabama (1), Arkansas (15), Arizona (4), Indiana (1), Kansas (2), Kentucky (1), Louisiana (8), Michigan (4), Mississippi (9), Missouri (2), New Hampshire (1), Nevada (1), North Carolina (3), Ohio (1), Oklahoma (1), Texas (12) and Washington (1).

Source: <http://www.cdc.gov/sle/technical/epi.html>

# St. Louis encephalitis virus neuroinvasive disease cases reported by year, 2004-2013

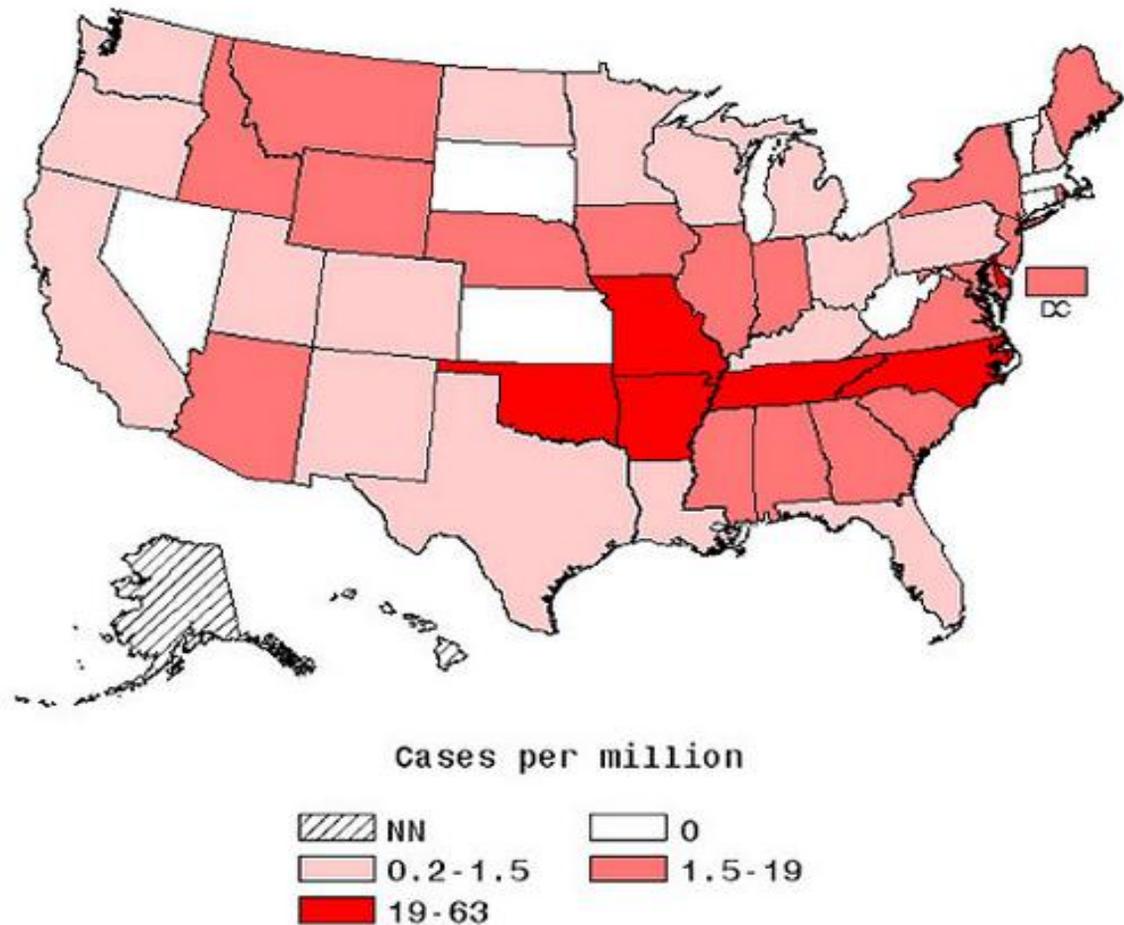


Source: ArboNET, Arboviral Diseases Branch, Centers for Disease Control and Prevention

Data Table: In the United States, the number of St. Louis encephalitis virus neuroinvasive disease cases reported each year varies. From 2004 through 2013, an average of 7 cases were reported annually (range 1–12).

Source: <http://www.cdc.gov/sle/technical/epi.html>

## Geographic Distribution of Reported RMSF Incidence in the United States in 2010



This figure shows the annual reported incidence of RMSF cases by state in 2010 per million persons. RMSF was not notifiable in Alaska and Hawaii in 2010. The incidence rate was zero for Connecticut, Kansas, Massachusetts, Nevada, South Dakota, Vermont and West Virginia. Incidence ranged between 0.2 to 1.5 cases per million persons for California, Colorado, Florida, Kentucky, Louisiana, Michigan, Minnesota, New Hampshire, New Mexico, North Dakota, Ohio, Oregon, Pennsylvania, Texas, Utah, Washington and Wisconsin. Annual incidence ranged from 1.5 to 19 cases per million persons in Alabama, Arizona, the District of Columbia, Georgia, Idaho, Illinois, Indiana, Iowa, Maine, Maryland, Mississippi, Montana, Nebraska, New Jersey, New York, Rhode Island, South Carolina, Virginia and Wyoming. The highest incidence rates, ranging from 19 to 63 cases per million persons were found in Arkansas, Delaware, Missouri, North Carolina, Oklahoma, and Tennessee.

Source: Rocky Mountain Spotted Fever (RMSF): Statistics and Epidemiology. Centers for Disease Control and Prevention. Last updated September, 2013. Available at: <http://www.cdc.gov/rmsf/stats/>.