

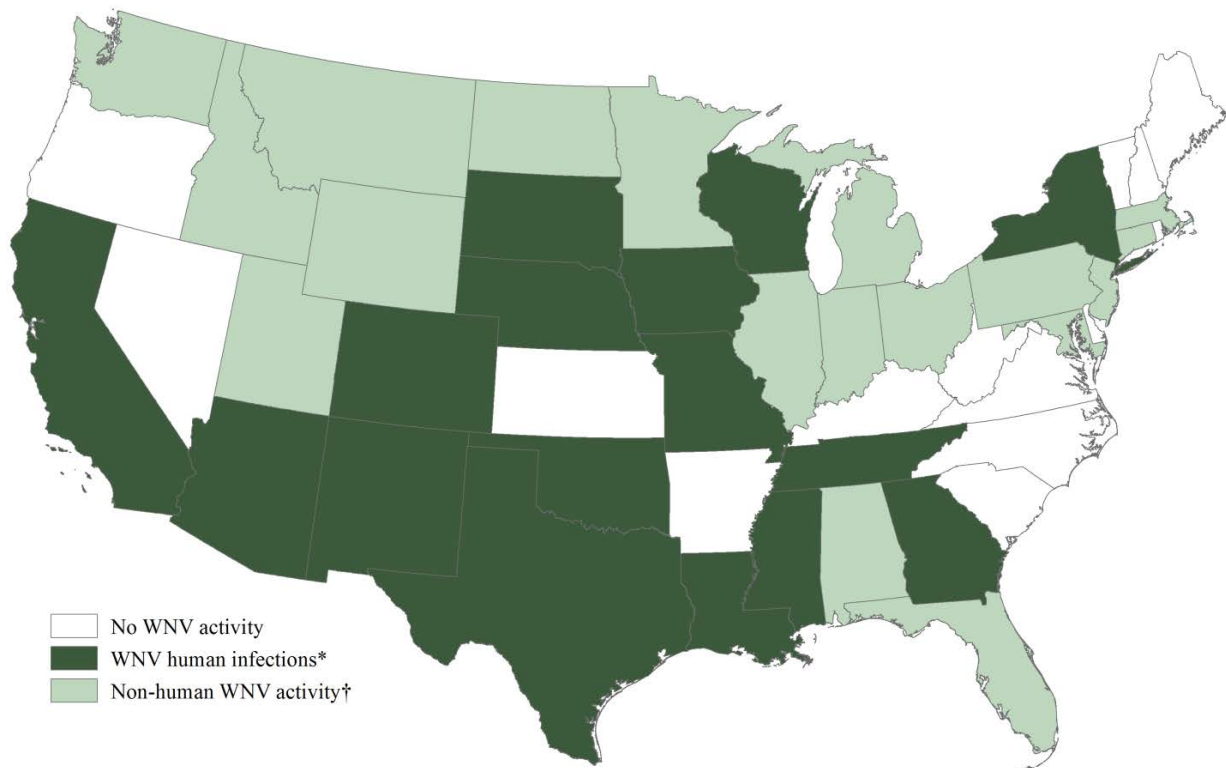
West Nile virus and other arboviral activity -- United States, 2014
Provisional data reported to ArboNET
Tuesday, July 29, 2014

This update from the CDC Arboviral Disease Branch includes provisional data reported to ArboNET for **January 1 – July 29, 2014** for nationally notifiable arboviruses other than dengue. Additional resources for ArboNET and arboviral diseases are provided on page 9.

West Nile virus (WNV) activity in 2014

As of July 29th, 226 counties from 34 states have reported WNV activity to ArboNET for 2014, including 16 states with reported WNV human infections (i.e., disease cases or viremic blood donors) and 18 additional states with reported WNV activity in non-human species only (i.e., veterinary cases, mosquito pools, dead birds, or sentinel animals) [Figure 1].

Figure 1. West Nile virus (WNV) activity reported to ArboNET, by state — United States, 2014 (as of July 29, 2014)



*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

WNV human infections reported for 2014

Reported WNV disease cases

To date, a total of 55 human cases of WNV disease have been reported from 42 counties in 15 states [Table 1]. Dates of illness onset for cases ranged from January–July [Figure 2].

Of all WNV disease cases reported, 29 (53%) were classified as non-neuroinvasive disease and 26 (47%) were classified as neuroinvasive disease (e.g., meningitis, encephalitis, acute flaccid paralysis) [Figure 3]. Additional demographic and clinical characteristics of reported cases are provided [Table 2].

Presumptive viremic donors (PVDs)

To date, a total of 15 WNV presumptive viremic blood donors were reported from seven states [Table 1]. Of these, four (27%) developed clinical illness.

Table 1. West Nile virus infections in humans reported to ArboNET, 2014

State	Human disease cases reported to CDC*			Deaths	Presumptive viremic blood donors
	Neuroinvasive	Non-neuroinvasive	Total		
Arizona	4	0	4	1	2
California	12	3	15	0	4
Colorado	0	5	5	0	2
Georgia	1	0	1	0	0
Iowa	0	3	3	0	0
Louisiana	4	2	6	1	4
Mississippi	1	1	2	0	0
Missouri	1	0	1	1	0
Nebraska	1	3	4	0	1
New Mexico	0	0	0	0	1
New York	0	1	1	0	0
Oklahoma	1	0	1	0	0
South Dakota	0	9	9	0	0
Tennessee	1	0	1	0	0
Texas	0	1	1	0	1
Wisconsin	0	1	1	0	0
Totals	26	29	55	3	15

*Includes confirmed and probable cases

Figure 2. WNV disease cases reported to ArboNET, by week of onset — United States, 2014

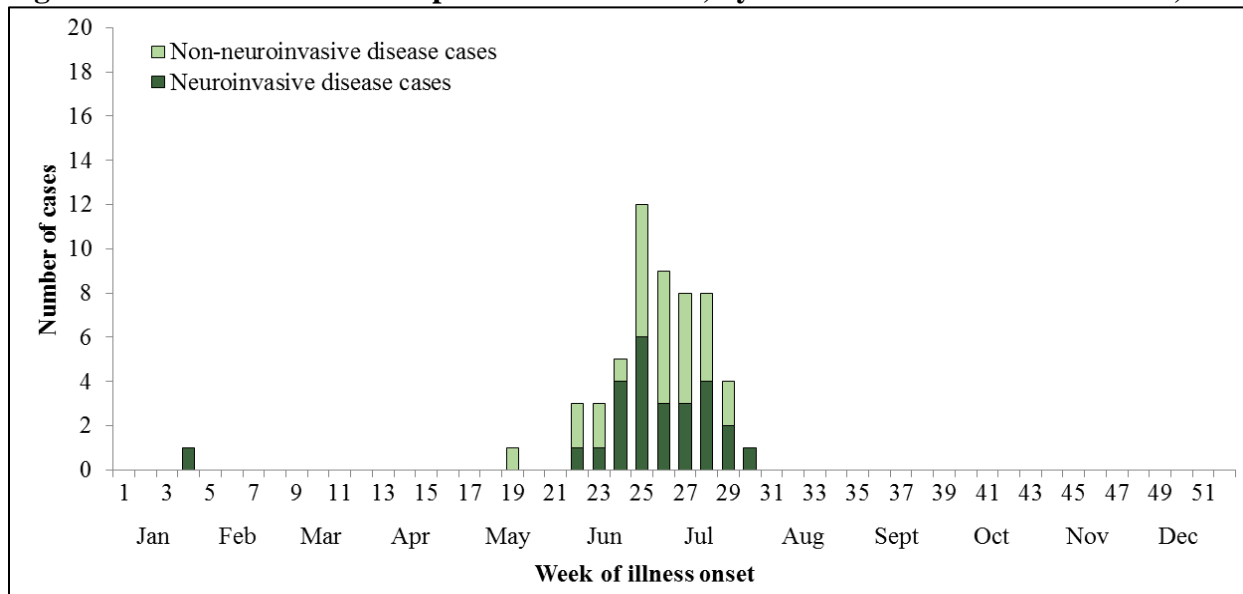


Figure 3. West Nile virus (WNV) neuroinvasive disease incidence reported to ArboNET, by state — United States, 2014 (as of July 29, 2014)

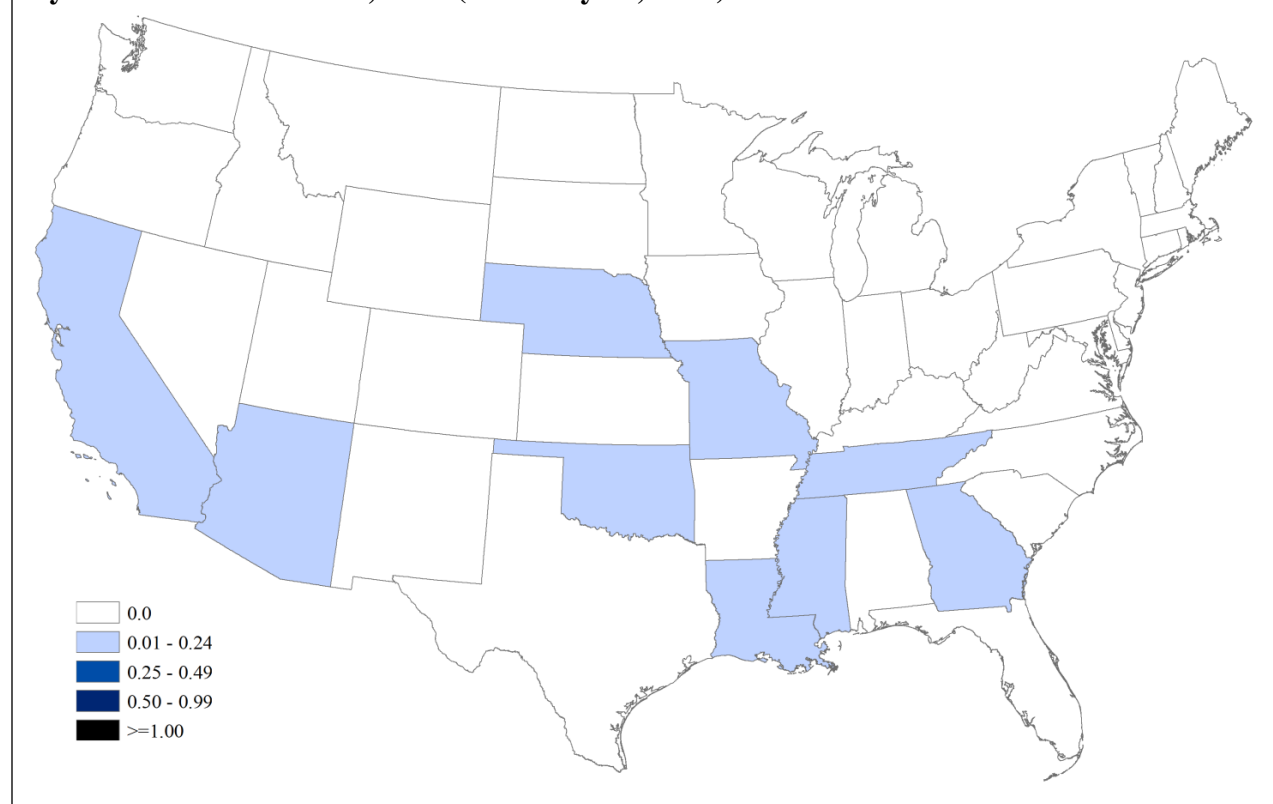


Table 2. Characteristics of reported cases of arboviral disease, United States, 2014

	WNV N=55	
	No.	(%)
Age group		
<20 years	4	(7)
20-39 years	9	(16)
40-49 years	7	(13)
50-59 years	12	(22)
≥60 years	23	(42)
Male sex	36	(65)
Onset of illness		
January	1	(2)
February	0	(0)
March	0	(0)
April	0	(0)
May	5	(9)
June	30	(55)
July	19	(35)
Clinical syndrome		
Nonneuroinvasive	29	(53)
Neuroinvasive		
Encephalitis	12	(22)
Meningitis	6	(11)
Acute flaccid paralysis [†]	7	(13)
Outcome		
Hospitalization	30	(55)
Death	3	(5)

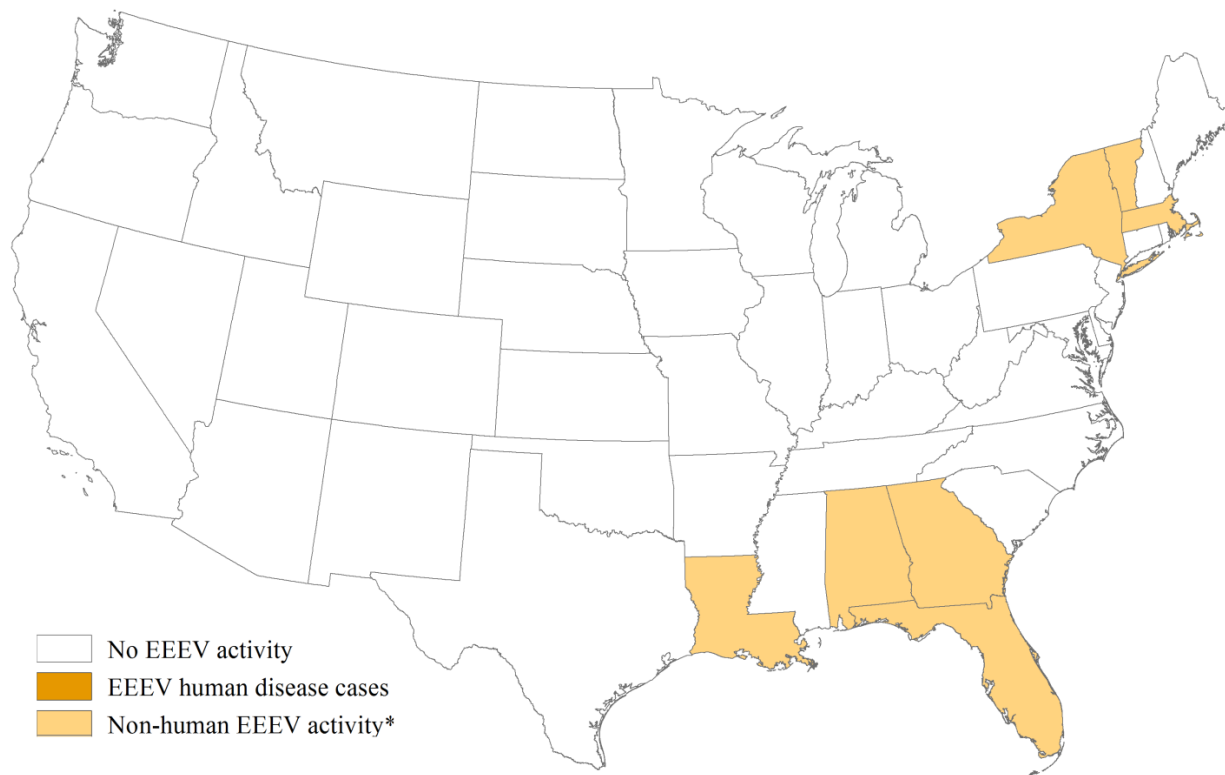
WNV=West Nile virus

[†]Three WNV disease cases classified as acute flaccid paralysis also had encephalitis or meningitis.

Eastern equine encephalitis virus (EEEV) activity in 2014

As of July 29th, 20 counties in seven states have reported EEEV activity in non-human species to ArboNET for 2014 [Figure 4]. To date, no human cases of EEEV disease have been reported.

Figure 4. Eastern equine encephalitis virus (EEEV) activity reported to ArboNET, by state — United States, 2014 (as of July 29, 2014)

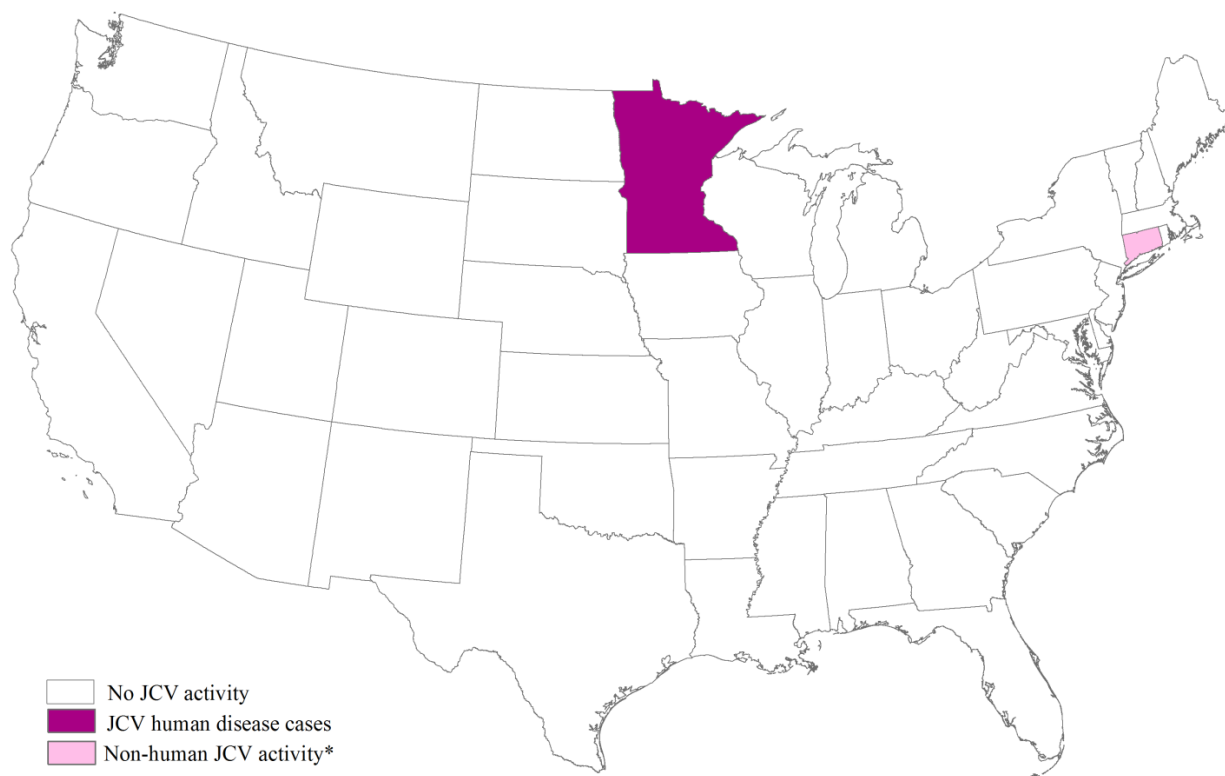


*EEEV veterinary disease cases, or infections in mosquitoes, birds, or sentinel animals

Jamestown Canyon virus (JCV) activity in 2014

As of July 29th, one county in Minnesota reported a human case of JCV disease to ArboNET for 2014 [Figure 5 and Table 3]. Six additional counties in Connecticut have reported JCV activity in non-human species only.

Figure 5. Jamestown Canyon virus (JCV) activity reported to ArboNET, by state — United States, 2014 (as of July 29, 2014)



*JCV veterinary disease cases, or infections in mosquitoes, birds, or sentinel animals

Table 3. Jamestown Canyon virus (JCV) human disease cases reported to ArboNET, United States, 2014

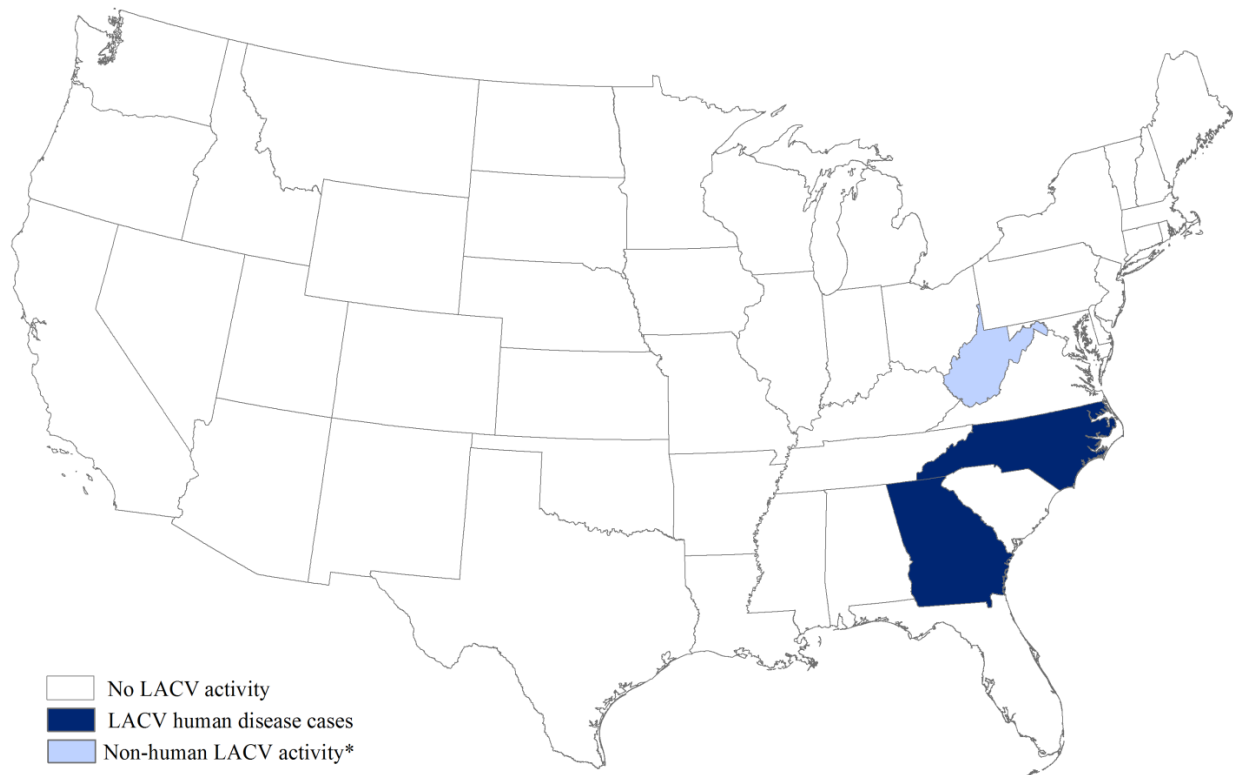
	Neuroinvasive disease cases	Nonneuroinvasive disease cases	Total cases*	Deaths
Minnesota	1	0	1	0
Totals	1	0	1	0

*Includes confirmed and probable cases.

La Crosse virus (LACV) activity in 2014

As of July 29th, two counties in two states have reported human cases of LACV disease to ArboNET for 2014 [Figure 6 and Table 4]. One additional county in West Virginia has reported LACV activity in non-human species only.

Figure 6. La Crosse virus (LACV) activity reported to ArboNET, by state — United States, 2014 (as of July 29, 2014)



*LACV veterinary disease cases, or infections in mosquitoes, birds, or sentinel animals

Table 4. La Crosse virus (LACV) human disease cases reported to ArboNET, United States, 2014

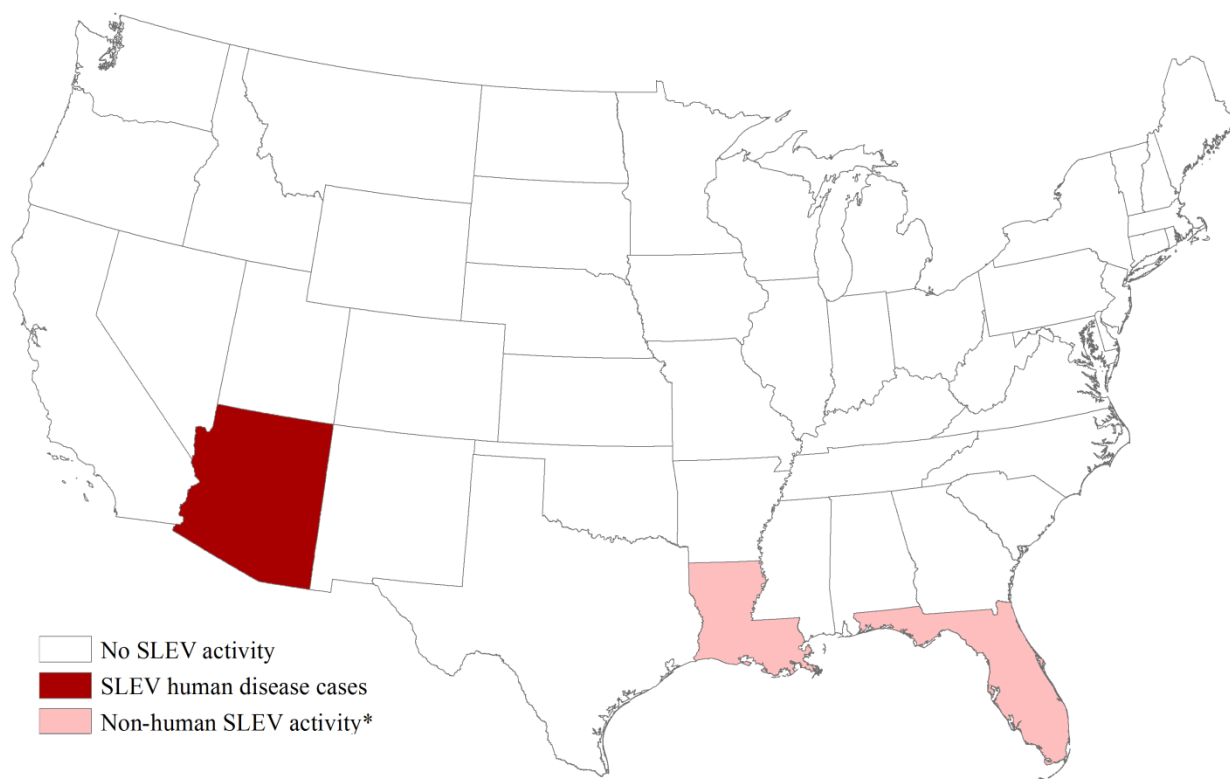
	Neuroinvasive disease cases	Nonneuroinvasive disease cases	Total cases*	Deaths
Georgia	0	1	1	0
North Carolina	1	0	1	0
Totals	1	1	2	0

*Includes confirmed and probable cases.

St. Louis encephalitis virus (SLEV) activity in 2014

As of July 29th, one county in Arizona reported a human case of SLEV disease to ArboNET for 2014 [Figure 7 and Table 5]. Five additional counties in two states have reported SLEV activity in non-human species only.

Figure 7. St. Louis encephalitis virus (SLEV) activity reported to ArboNET, by state — United States, 2014 (as of July 29, 2014)



*SLEV veterinary disease cases, or infections in mosquitoes, birds, or sentinel animals

Table 5. St. Louis encephalitis virus (SLEV) human disease cases reported to ArboNET, United States, 2014

	Neuroinvasive disease cases	Nonneuroinvasive disease cases	Total cases*	Deaths
Arizona	0	1	1	0
Totals	0	1	1	0

*Includes confirmed and probable cases.

About ArboNET

ArboNET is a national arboviral surveillance system managed by CDC and state health departments. In addition to human disease, ArboNET maintains data on arboviral infections among presumptive viremic blood donors (PVDs), veterinary disease cases, mosquitoes, dead birds, and sentinel animals. As with other national surveillance data, ArboNET data has several limitations that should be considered in analysis, interpretation, and reporting [Box].

Box: Limitations of ArboNET data

The following should be considered in the analysis, interpretation, and reporting of ArboNET data:

1. ArboNET is a passive surveillance system. It is dependent on clinicians considering the diagnosis of an arboviral disease and obtaining the appropriate diagnostic test, and reporting of laboratory-confirmed cases to public health authorities. Diagnosis and reporting are incomplete, and the incidence of arboviral diseases is underestimated.
2. Reported neuroinvasive disease cases are considered the most accurate indicator of arboviral activity in humans because of the substantial associated morbidity. In contrast, reported cases of nonneuroinvasive arboviral disease are more likely to be affected by disease awareness and healthcare-seeking behavior in different communities and by the availability and specificity of laboratory tests performed. Surveillance data for nonneuroinvasive disease should be interpreted with caution and generally should not be used to make comparisons between geographic areas or over time.

Additional resources

For additional arboviral disease information and data, please visit the following websites:

- CDC's Division of Vector-Borne Diseases:
<http://www.cdc.gov/ncezid/dvbd/>
- National Notifiable Diseases Surveillance System:
<http://wwwn.cdc.gov/NNDSS/script/casedef.aspx?CondYrID=616&DatePub=1/1/2011%2012:00:00%20AM>
- U.S. Geological Survey (USGS):
<http://diseasemaps.usgs.gov/>
- AABB (American Association of Blood Banks):
<http://www.aabb.org/research/hemovigilance/Pages/wnv.aspx>