

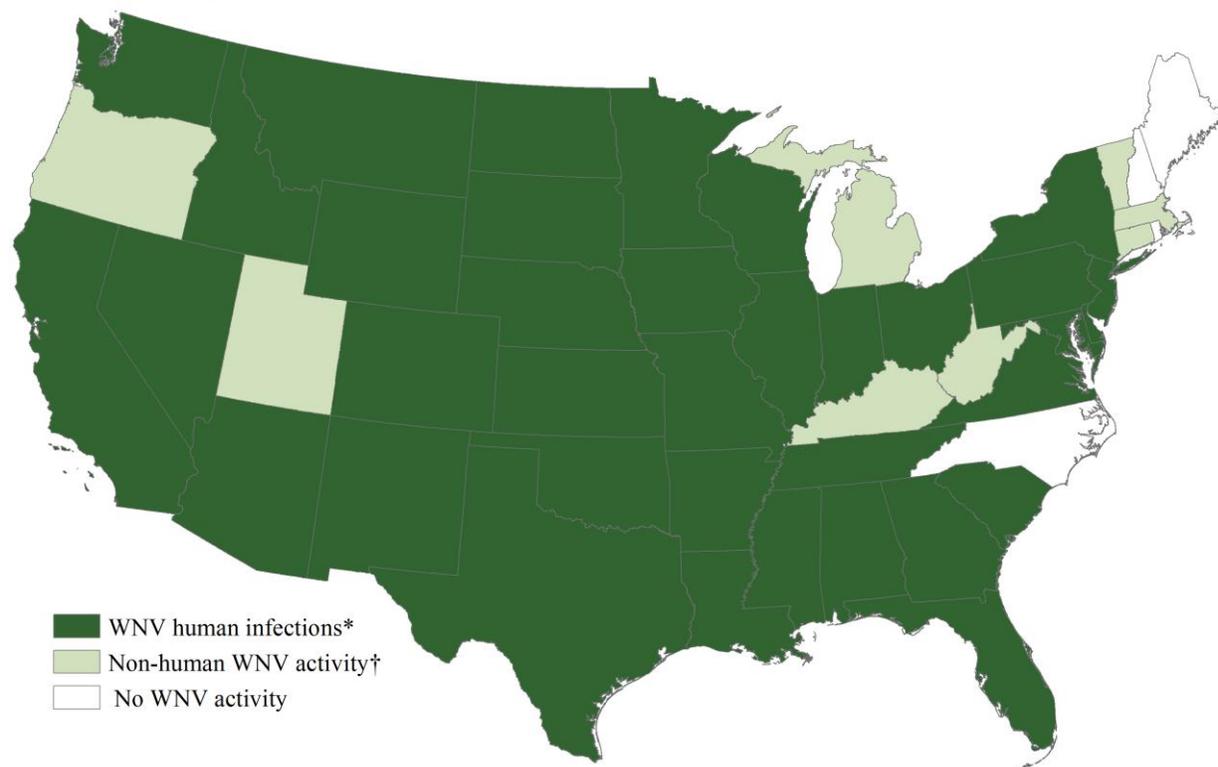
West Nile virus and other arboviral activity -- United States, 2015
Provisional data reported to ArboNET
Tuesday, August 25, 2015

This update from the CDC Arboviral Disease Branch includes provisional data reported to ArboNET for **January 1 – August 25, 2015** for nationally notifiable arboviruses other than dengue and chikungunya viruses. Additional resources for ArboNET and arboviral diseases are provided on page 10.

West Nile virus (WNV) activity in 2015

As of August 25th, 648 counties from 44 states and the District of Columbia have reported WNV activity to ArboNET for 2015, including 36 states and the District of Columbia with reported WNV human infections (i.e., disease cases or viremic blood donors) and eight 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, 2015 (as of August 25, 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

Reported WNV disease cases

To date, 303 human WNV disease cases have been reported from 155 counties in 32 states and the District of Columbia [Table 1]. Dates of illness onset for cases ranged from April–August [Figure 2].

Of these, 173 (57%) were classified as neuroinvasive disease (such as meningitis or encephalitis) and 130 (43%) were classified as non-neuroinvasive disease [Figure 3]. Additional demographic and clinical characteristics of reported cases are provided [Table 7].

Presumptive viremic donors (PVDs)

Seventy five WNV PVDs have been reported from 21 states [Table 1].

Table 1. West Nile virus infections in humans reported to ArboNET, 2015

State	Human disease cases reported to CDC*			Deaths	Presumptive viremic blood donors
	Neuroinvasive	Non-neuroinvasive	Total		
Alabama	2	1	3	0	0
Arizona	28	17	45	1	13
Arkansas	6	1	7	0	0
California	31	26	57	2	10
Colorado	5	3	8	0	2
Delaware	0	1	1	0	0
District of Columbia	1	0	1	0	0
Florida	5	0	5	0	0
Georgia	3	1	4	0	0
Idaho	2	3	5	0	1
Illinois	1	0	1	0	1
Indiana	0	1	1	0	0
Iowa	0	1	1	0	0
Kansas	2	5	7	0	2
Louisiana	10	2	12	0	6
Maryland	2	2	4	1	0
Minnesota	0	0	0	0	4
Mississippi	9	4	13	0	1
Missouri	2	0	2	0	1
Montana	0	0	0	0	1
Nebraska	2	12	14	0	10
Nevada	0	0	0	0	3
New Jersey	3	0	3	0	0
New Mexico	2	0	2	0	1
New York	1	0	1	0	0
North Dakota	1	3	4	0	0
Ohio	6	3	9	1	0
Oklahoma	4	6	10	0	2
Pennsylvania	3	3	6	0	1
South Carolina	0	0	0	0	1
South Dakota	4	10	14	0	1
Tennessee	2	1	3	0	1
Texas	27	8	35	2	9
Virginia	2	2	4	0	0
Washington	5	11	16	0	4
Wisconsin	0	1	1	0	0
Wyoming	2	2	4	0	0
Totals	173	130	303	7	75

*Includes confirmed and probable cases

Figure 2. WNV disease cases reported to ArboNET, by week of onset — United States, 2015

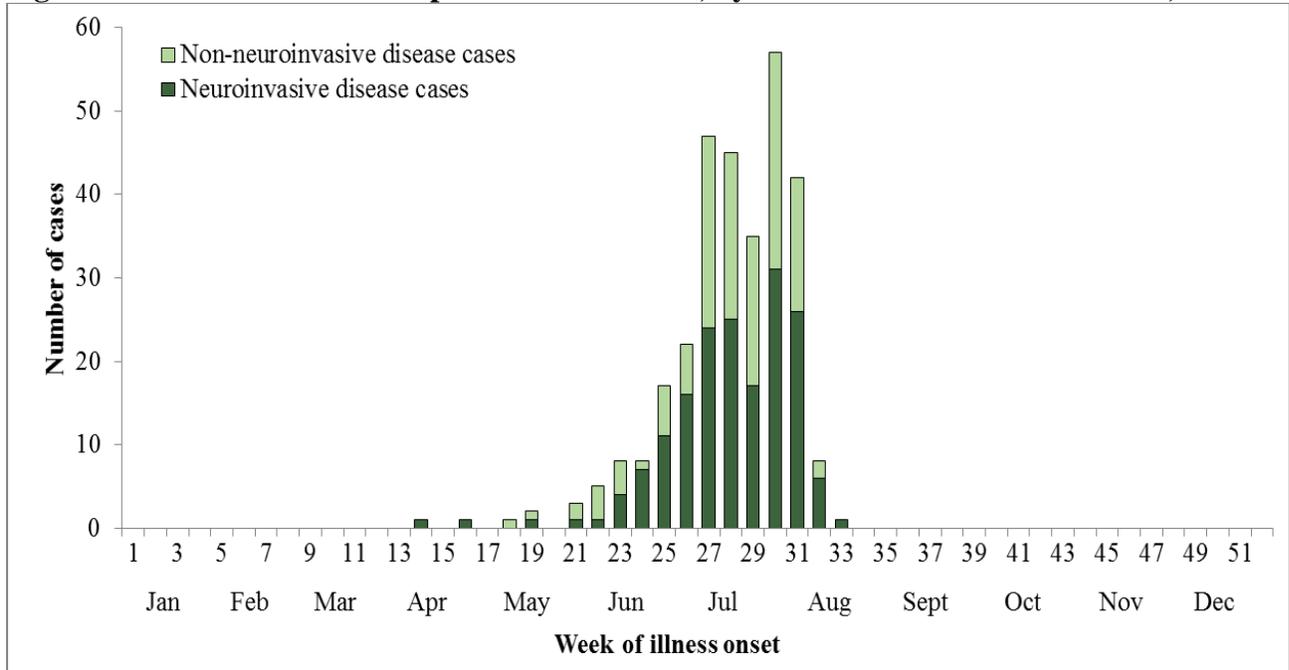
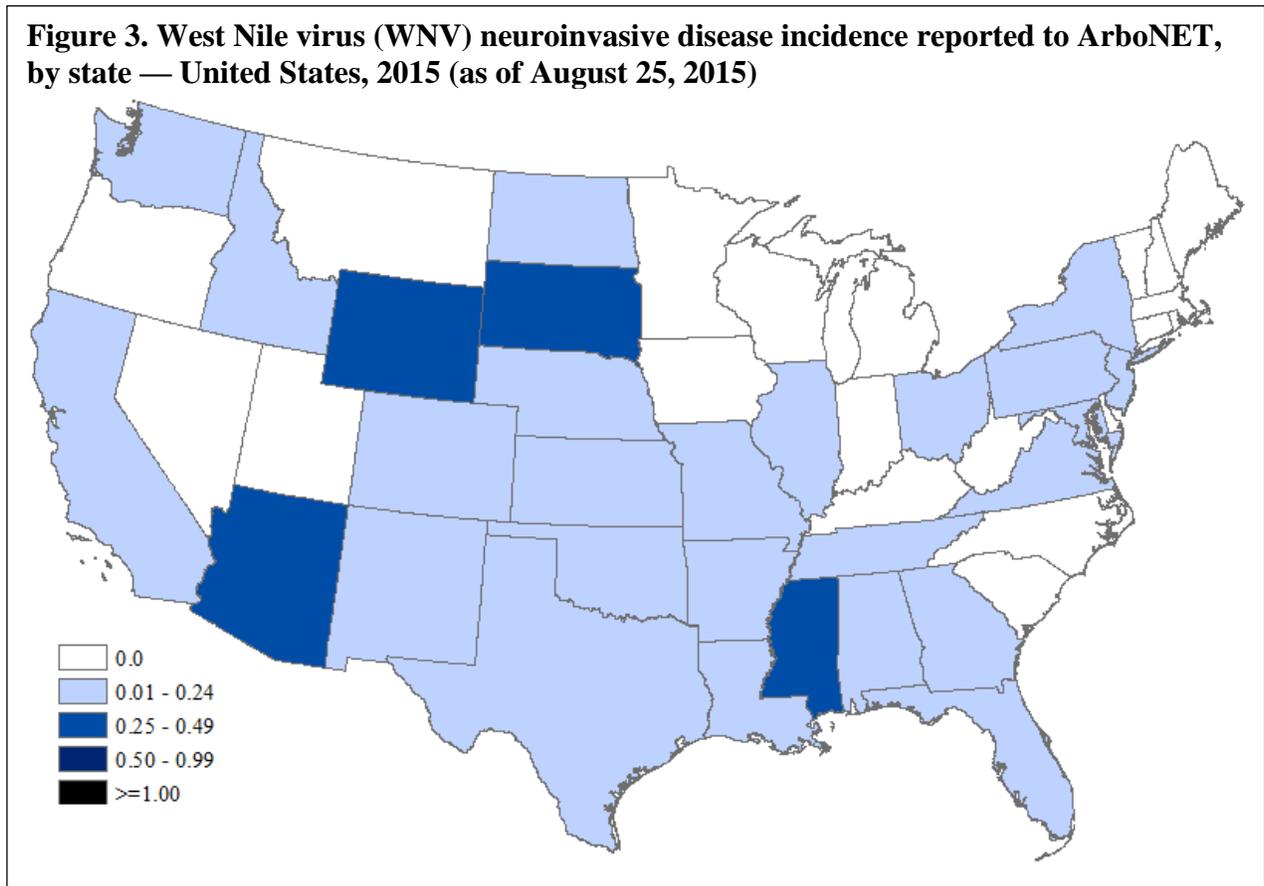


Figure 3. West Nile virus (WNV) neuroinvasive disease incidence reported to ArboNET, by state — United States, 2015 (as of August 25, 2015)



Eastern equine encephalitis virus (EEEV) activity in 2015

As of August 25th, one county in Louisiana reported a human case of EEEV disease to ArboNET for 2015 [Figure 4 and Table 2]. Forty three additional counties in eight states have reported EEEV activity in non-human species only.

Figure 4. Eastern equine encephalitis virus (EEEV) activity reported to ArboNET, by state — United States, 2015 (as of August 25, 2015)

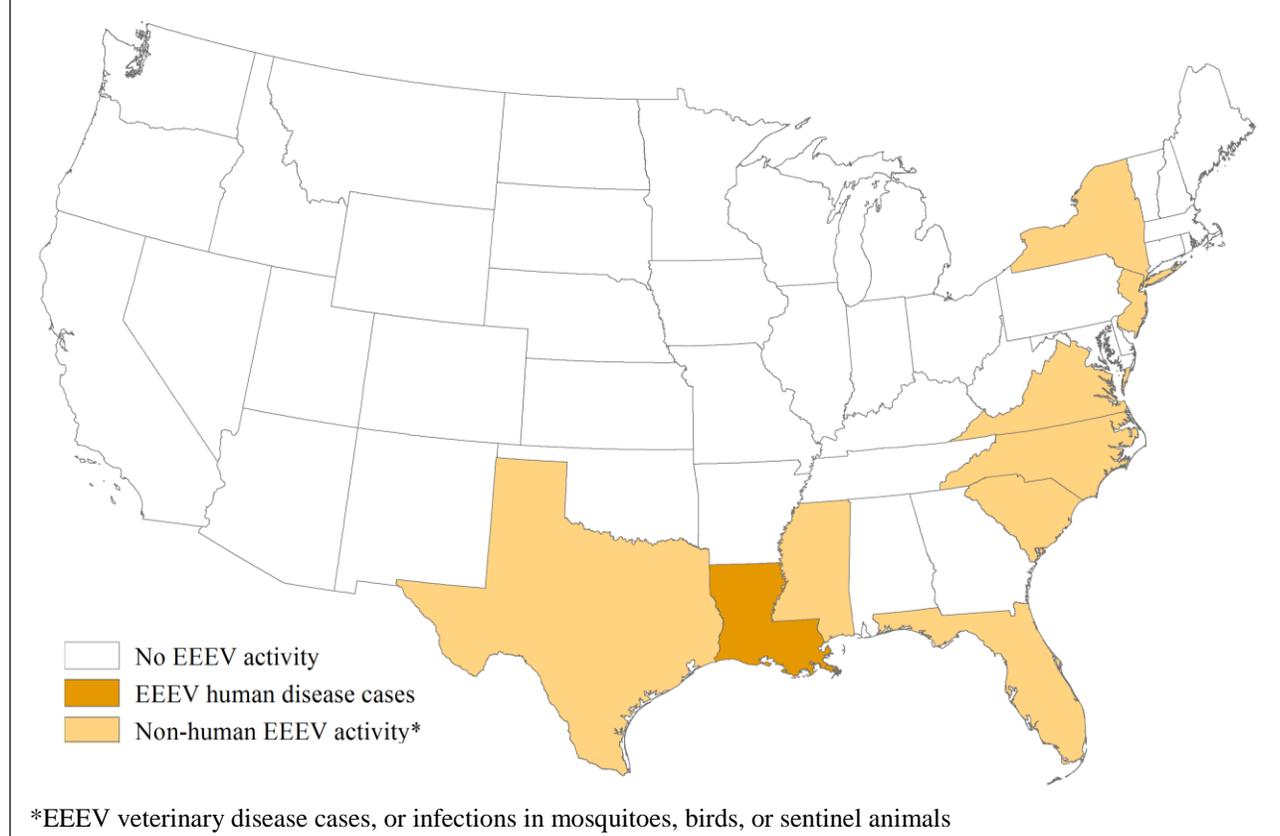


Table 2. Eastern equine encephalitis virus human disease cases reported to ArboNET, United States, 2015

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

*Includes confirmed and probable cases.

Jamestown Canyon virus (JCV) activity in 2015

As of August 25th, three counties in two states reported human cases of JCV disease to ArboNET for 2015 [Figure 5 and Table 3]. Seven 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, 2015 (as of August 25, 2015)

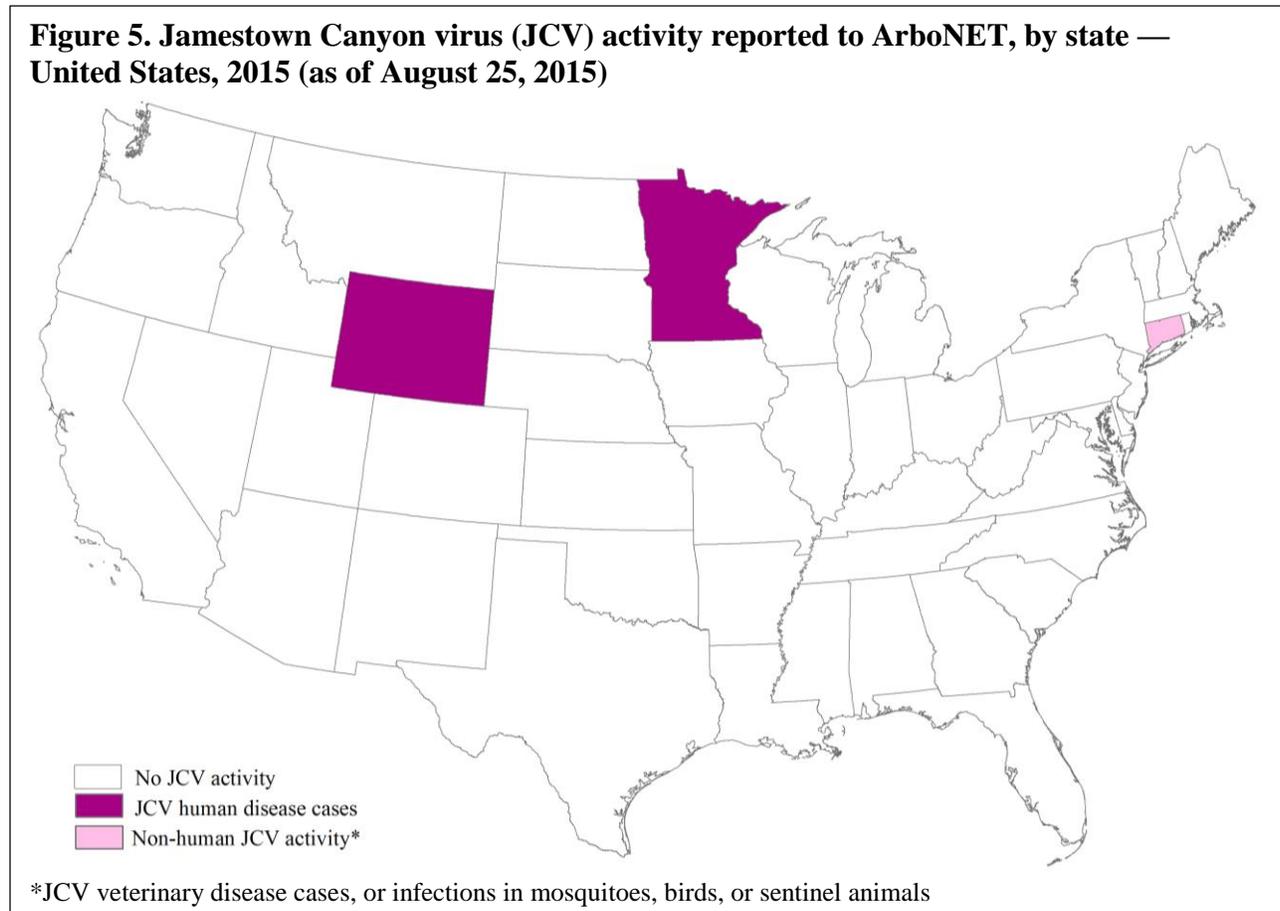


Table 3. Jamestown Canyon virus human disease cases reported to ArboNET, United States, 2015

	Neuroinvasive disease cases	Nonneuroinvasive disease cases	Total cases*	Deaths
Minnesota	1	1	2	0
Wyoming	0	1	1	0
Totals	1	2	3	0

*Includes confirmed and probable cases.

La Crosse encephalitis virus (LACV) activity in 2015

As of August 25th, four counties in four states have reported human cases of LACV disease to ArboNET for 2015 [Figure 6 and Table 4]. Additional demographic and clinical characteristics of reported cases are provided [Table 7].

Figure 6. La Crosse encephalitis virus (LACV) activity reported to ArboNET, by state — United States, 2015 (as of August 25, 2015)

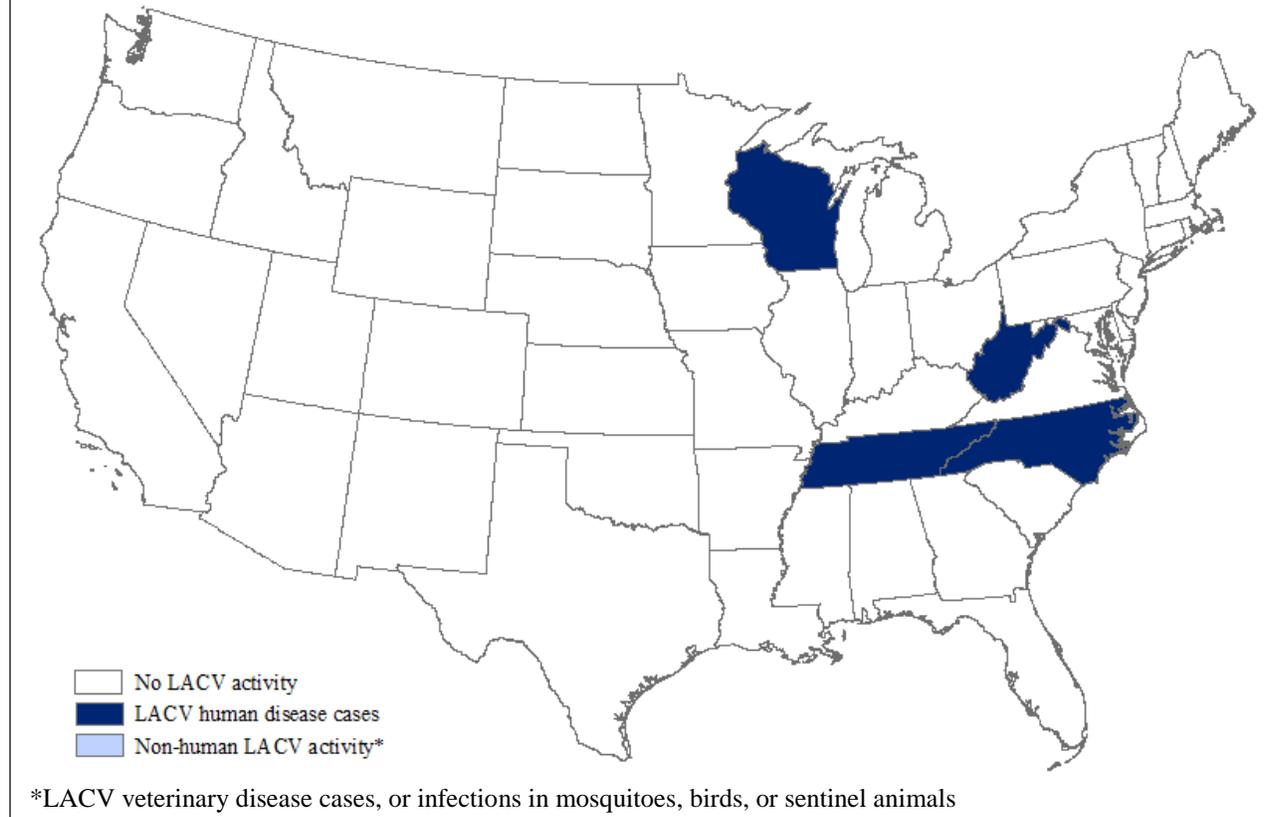


Table 4. La Crosse encephalitis virus human disease cases reported to ArboNET, United States, 2015

	Neuroinvasive disease cases	Nonneuroinvasive disease cases	Total cases*	Deaths
North Carolina	1	0	1	0
Tennessee	1	0	1	0
West Virginia	1	1	2	0
Wisconsin	2	0	2	0
Totals	5	1	6	0

*Includes confirmed and probable cases.

Powassan virus (POWV) activity in 2015

As of August 25th, two counties in two states have reported human cases of POWV disease to ArboNET for 2015 [Figure 7 and Table 5].

Figure 7. Powassan virus (POWV) activity reported to ArboNET, by state — United States, 2015 (as of August 25, 2015)

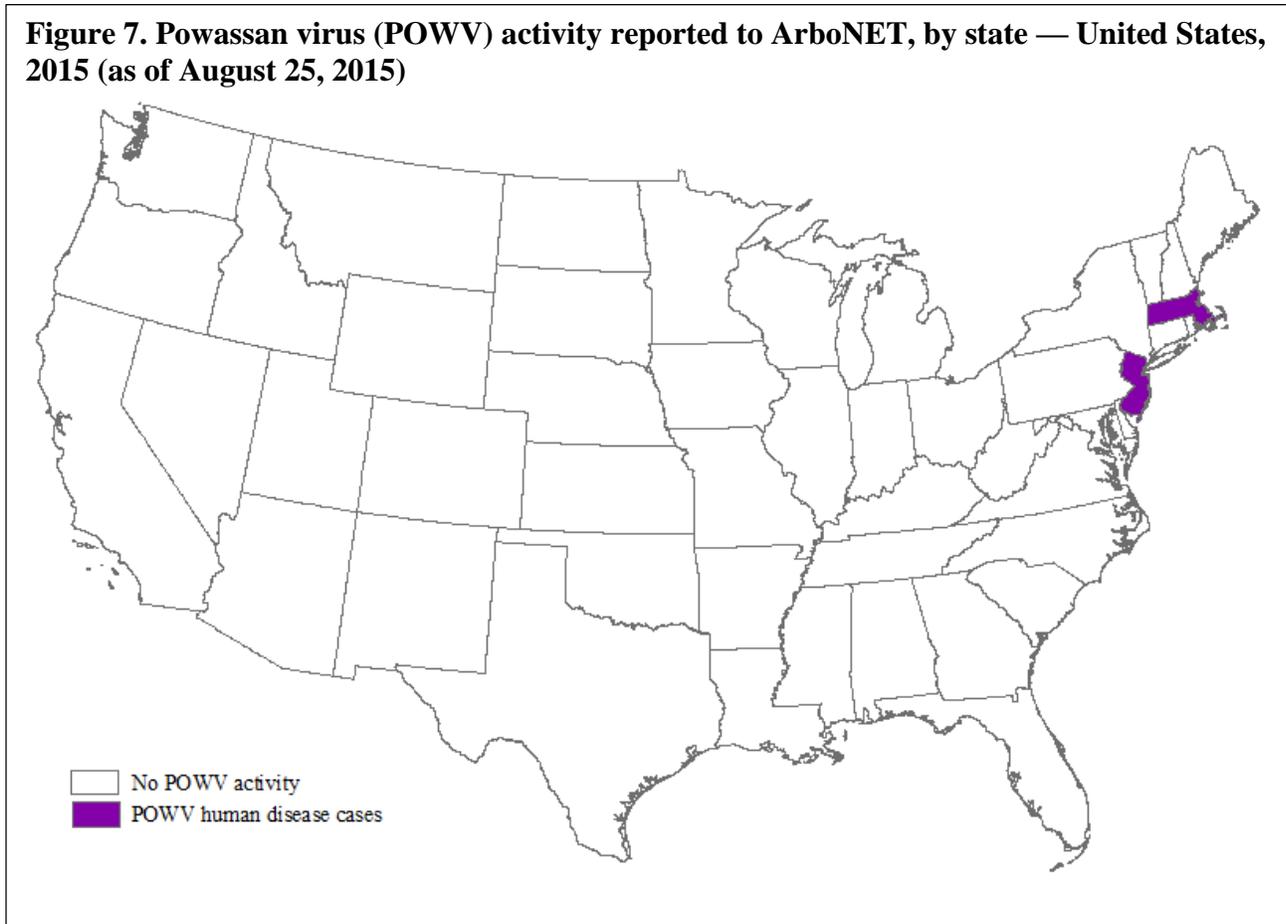


Table 5. Powassan virus human disease cases reported to ArboNET, United States, 2015

	Neuroinvasive disease cases	Nonneuroinvasive disease cases	Total cases*	Deaths
Massachusetts	1	0	1	0
New Jersey	1	0	1	0
Totals	2	0	2	0

*Includes confirmed and probable cases.

St. Louis encephalitis virus (SLEV) activity in 2015

As of August 25th, two counties in Arizona reported human cases of SLEV disease to ArboNET for 2015 [Figure 8 and Table 6]. Seven additional counties in five states have reported SLEV activity in non-human species only.

Figure 8. St. Louis encephalitis virus (SLEV) activity reported to ArboNET, by state — United States, 2015 (as of August 25, 2015)

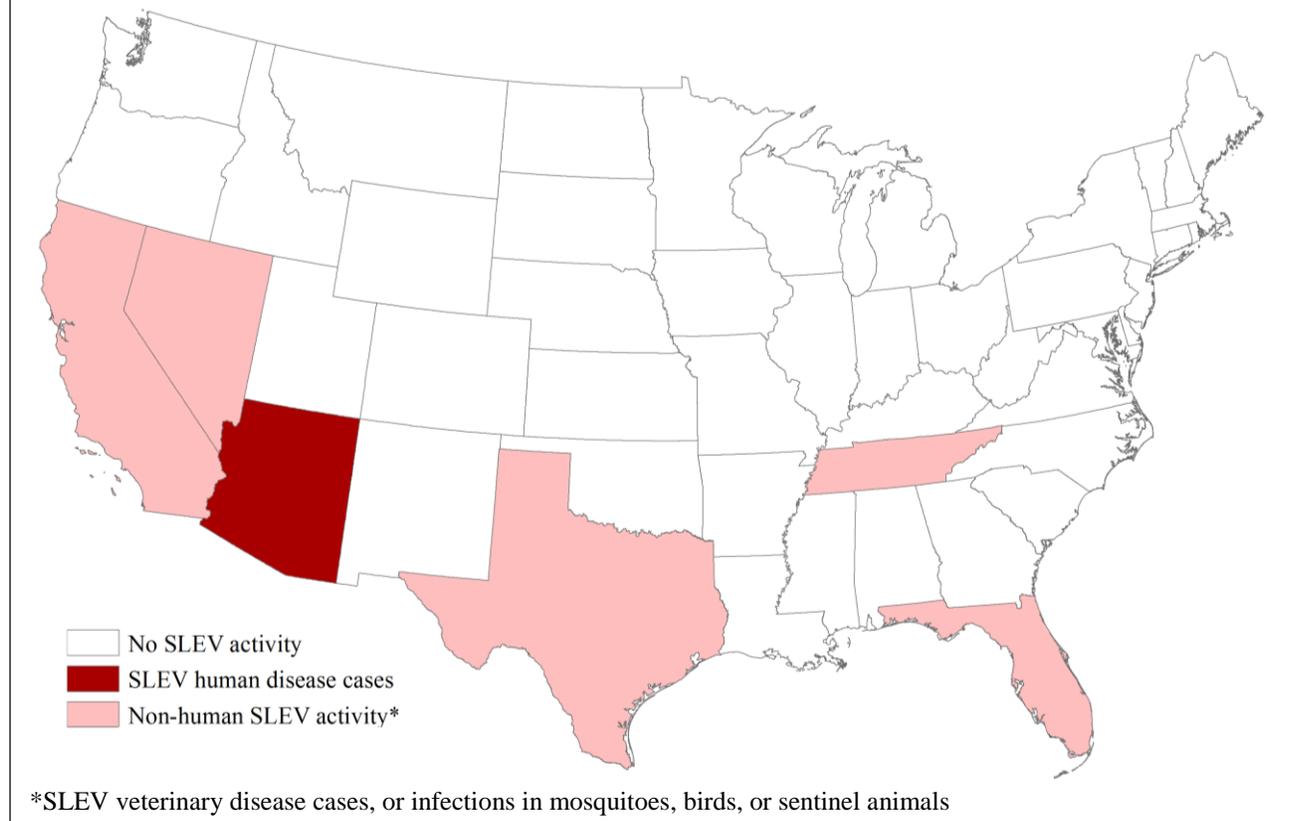


Table 6. St. Louis encephalitis virus human disease cases reported to ArboNET, United States, 2015

	Neuroinvasive disease cases	Nonneuroinvasive disease cases	Total cases*	Deaths
Arizona	8	2	10	1
Totals	8	2	10	1

*Includes confirmed and probable cases.

Table 7. Characteristics of reported cases of arboviral disease, United States, 2015

	LAC N=6		SLE N=10		WNV N=303	
	No.	(%)	No.	(%)	No.	(%)
Age group						
<20 years	6	(100)	0	(0)	13	(4)
20-39 years	0	(0)	0	(0)	54	(18)
40-49 years	0	(0)	1	(10)	48	(16)
50-59 years	0	(0)	1	(10)	74	(24)
≥60 years	0	(0)	8	(80)	114	(38)
Male sex	2	(33)	8	(80)	172	(57)
Onset of illness						
January	0	(0)	0	(0)	0	(0)
February	0	(0)	0	(0)	0	(0)
March	0	(0)	0	(0)	0	(0)
April	0	(0)	0	(0)	2	(1)
May	1	(17)	1	(10)	6	(2)
June	3	(50)	1	(10)	47	(16)
July	2	(33)	7	(70)	186	(61)
August	0	(0)	1	(10)	62	(20)
Clinical syndrome						
Nonneuroinvasive	1	(17)	2	(20)	130	(43)
Neuroinvasive						
Encephalitis	3	(50)	6	(60)	84	(28)
Meningitis	2	(33)	2	(20)	74	(24)
Acute flaccid paralysis	0	(0)	0	(0)	13	(4)
Other neuroinvasive presentation	0	(0)	0	(0)	2	(1)
Outcome						
Hospitalization	6	(100)	7	(70)	184	(61)
Death	0	(0)	1	(10)	7	(2)

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/conditions/arboviral-diseases-neuroinvasive-and-non-neuroinvasive/case-definition/2015/>
- U.S. Geological Survey (USGS):
<http://diseasemaps.usgs.gov/> or <http://diseasemaps.usgs.gov/mapviewer/>
- AABB (American Association of Blood Banks):
www.aabb.org/programs/biovigilance/Pages/wnv.aspx