



Reported WNV disease cases

To date, 1,264 human WNV disease cases have been reported from 419 counties in 41 states and the District of Columbia [Table 1]. Dates of illness onset for cases ranged from January–October [Figure 2].

Of these, 645 (51%) were classified as neuroinvasive disease (such as meningitis or encephalitis) and 619 (49%) were classified as non-neuroinvasive disease [Figure 3]. Additional demographic and clinical characteristics of reported cases are provided [Table 7].

Presumptive viremic donors (PVDs)

Overall, 193 WNV PVDs have been reported from 26 states [Table 1]. Of these, 20 (10%) developed clinical illness.

Figure 2. WNV disease cases reported to ArboNET, by week of onset — United States, 2016

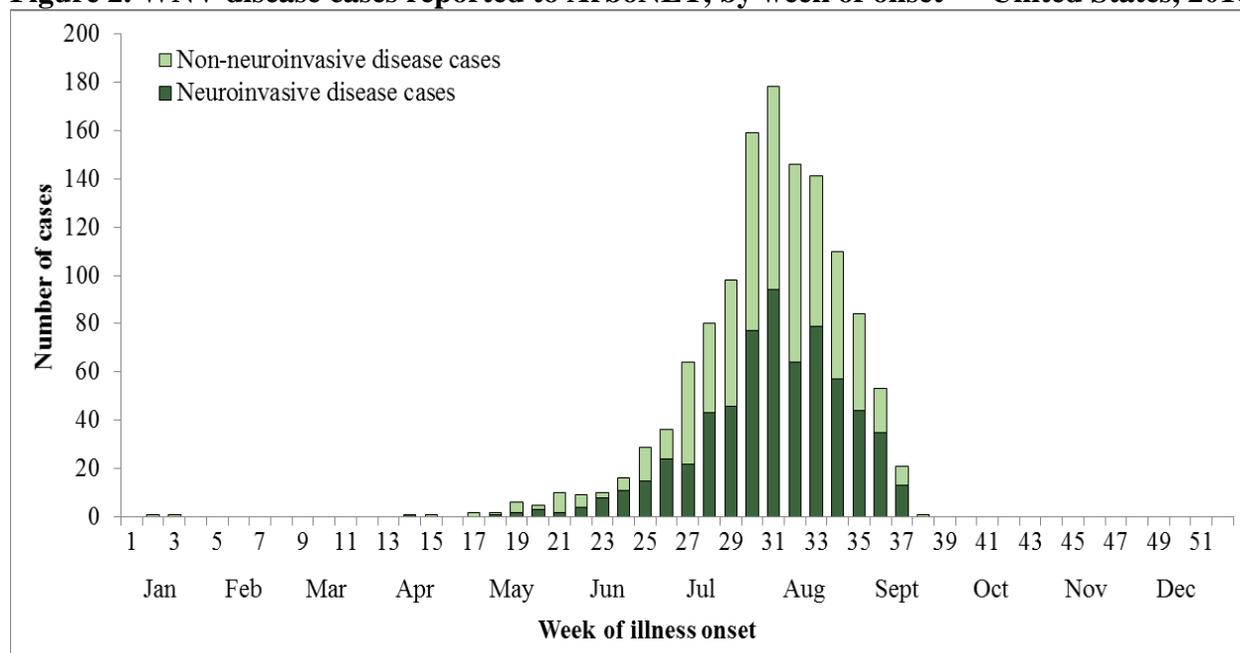
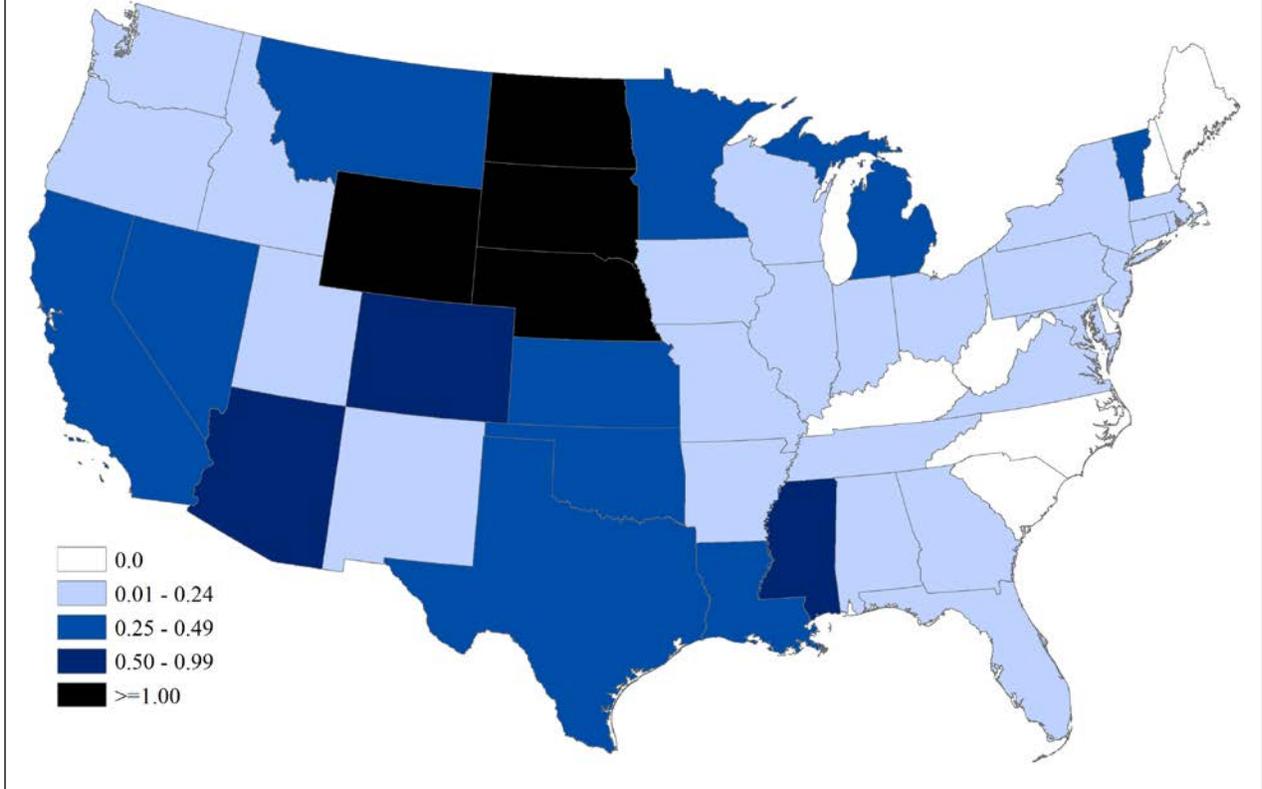


Table 1. West Nile virus infections in humans reported to ArboNET, 2016

State	Human disease cases reported to CDC*			Deaths	Presumptive viremic blood donors
	Neuroinvasive	Non-neuroinvasive	Total		
Alabama	4	1	5	0	1
Arizona	40	16	56	2	9
Arkansas	3	1	4	0	0
California	111	50	161	11	27
Colorado	49	76	125	6	8
Connecticut	1	0	1	0	0
District of Columbia	1	0	1	0	0
Florida	5	1	6	0	1
Georgia	2	0	2	0	3
Idaho	2	4	6	0	1
Illinois	15	86	101	3	9
Indiana	7	1	8	1	0
Iowa	7	16	23	0	4
Kansas	12	10	22	3	3
Louisiana	16	8	24	0	4
Massachusetts	4	2	6	0	0
Maryland	6	0	6	0	0
Michigan	34	0	34	2	5
Minnesota	17	24	41	1	15
Mississippi	19	9	28	1	7
Missouri	1	1	2	0	0
Montana	2	3	5	1	2
Nebraska	27	42	69	0	29
Nevada	8	2	10	0	1
New Jersey	7	0	7	0	2
New Mexico	5	0	5	1	0
New York	7	4	11	1	0
North Dakota	14	54	68	2	0
Ohio	8	5	13	1	5
Oklahoma	10	6	16	0	4
Oregon	2	1	3	0	1
Pennsylvania	7	5	12	0	4
Rhode Island	2	0	2	0	0
South Dakota	34	109	143	3	16
Tennessee	3	2	5	1	0
Texas	129	66	195	7	29
Utah	4	8	12	1	0
Vermont	2	1	3	0	0
Virginia	1	2	3	0	1
Washington	8	1	9	1	2
Wisconsin	1	0	1	0	0
Wyoming	7	2	9	0	0
Totals	645	619	1,264	49	193

*Includes confirmed and probable cases

Figure 3. West Nile virus (WNV) neuroinvasive disease incidence reported to ArboNET, by state — United States, 2016 (as of October 11, 2016)



Eastern equine encephalitis virus (EEEV) activity in 2016

As of October 11th, two counties in two states (Michigan and North Carolina) reported human cases of EEEV disease to ArboNET for 2016 [Figure 4 and Table 2]. Ninety-five additional counties in 16 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, 2016 (as of October 11, 2016)

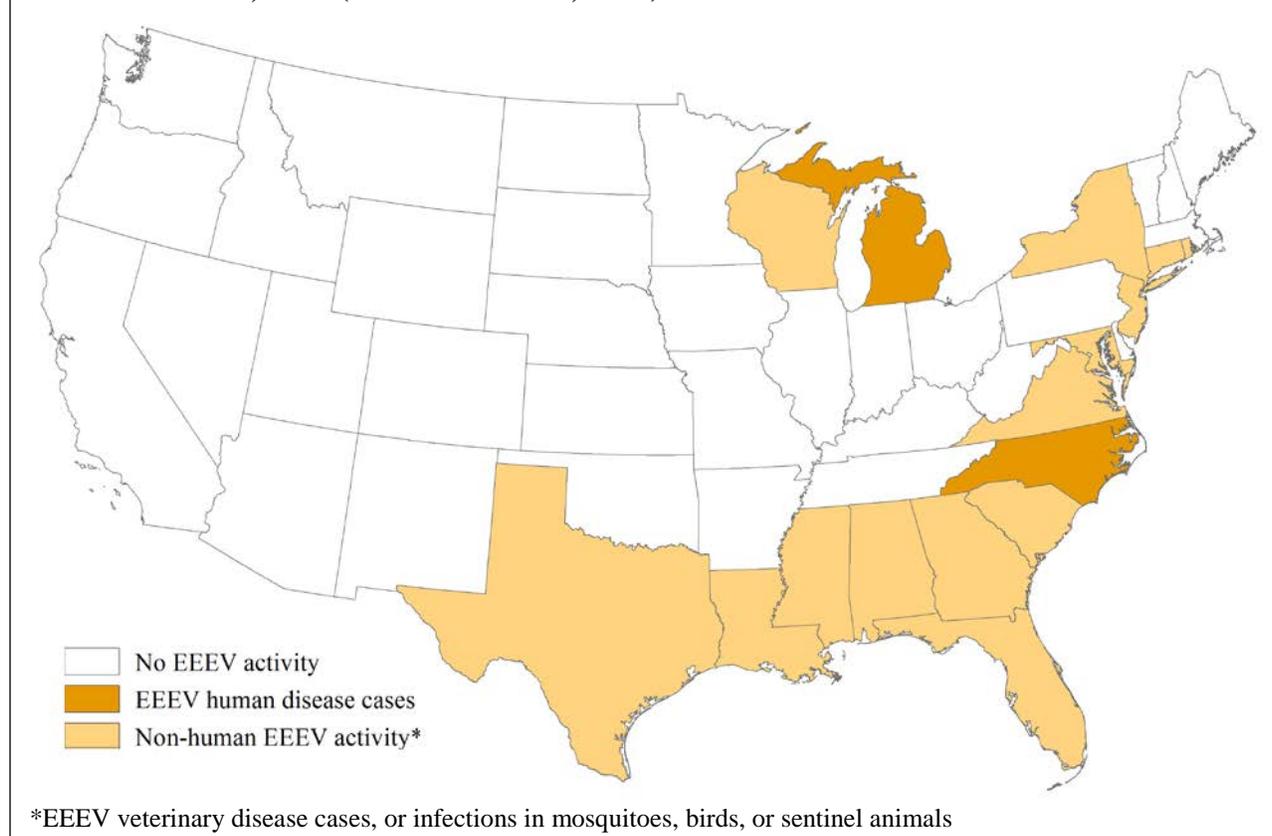


Table 2. Eastern equine encephalitis virus human disease cases reported to ArboNET, United States, 2016

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

*Includes confirmed and probable cases.

Jamestown Canyon virus (JCV) activity in 2016

As of October 11th, two counties in Wisconsin reported human cases of JCV disease to ArboNET for 2016 [Figure 5 and Table 3]. Twelve additional counties in three states have reported JCV activity in non-human species only.

Figure 5. Jamestown Canyon virus (JCV) activity reported to ArboNET, by state — United States, 2016 (as of October 11, 2016)

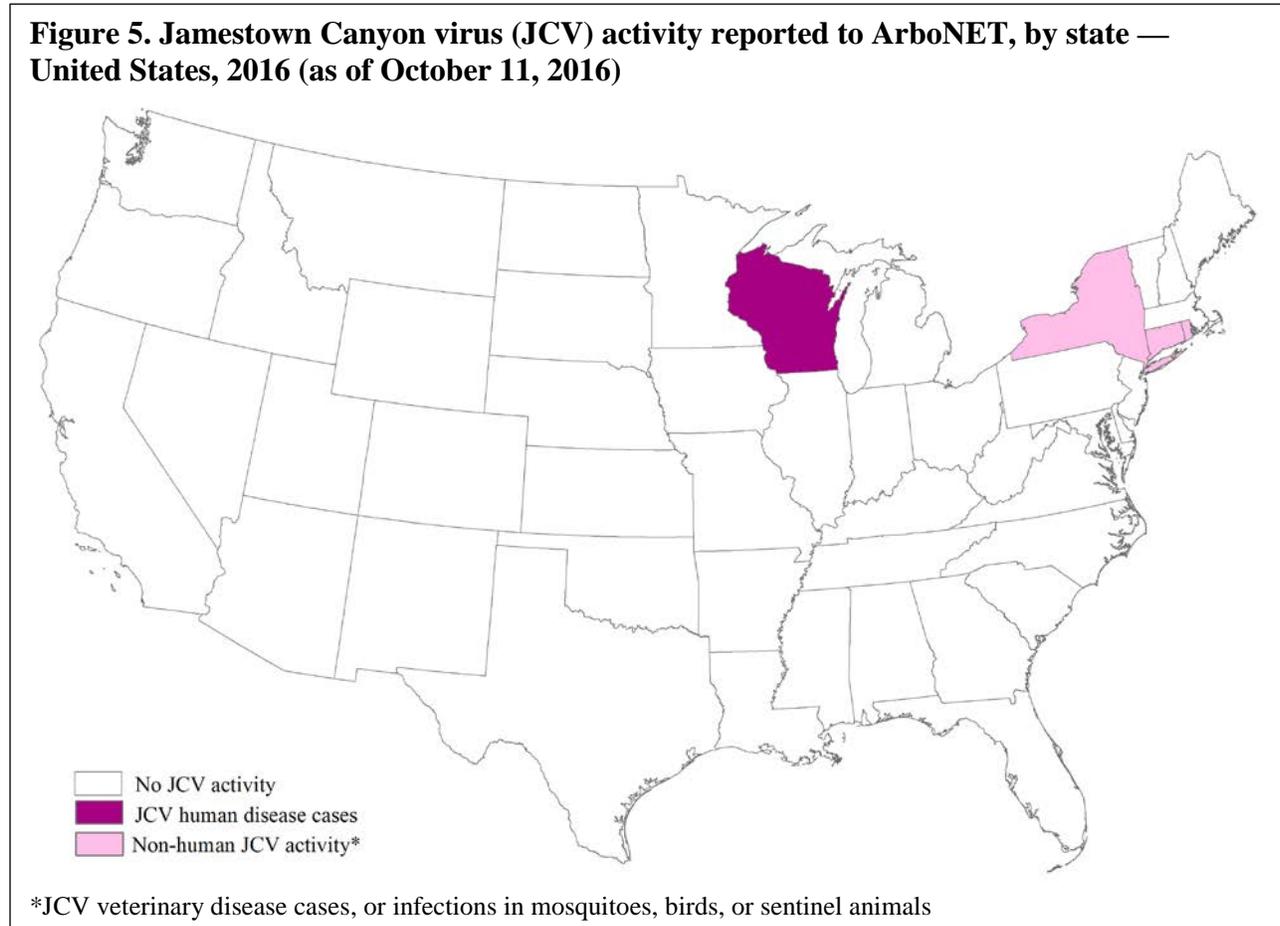


Table 3. Jamestown Canyon virus human disease cases reported to ArboNET, United States, 2016

	Neuroinvasive disease cases	Nonneuroinvasive disease cases	Total cases*	Deaths
Wisconsin	1	1	2	0
Totals	1	1	2	0

*Includes confirmed and probable cases.

La Crosse encephalitis virus (LACV) activity in 2016

As of October 11th, 11 counties in five states have reported human cases of LACV disease to ArboNET for 2016 [Figure 6 and Table 4]. Five additional counties in New York have reported LACV activity in non-human species only. 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, 2016 (as of October 11, 2016)

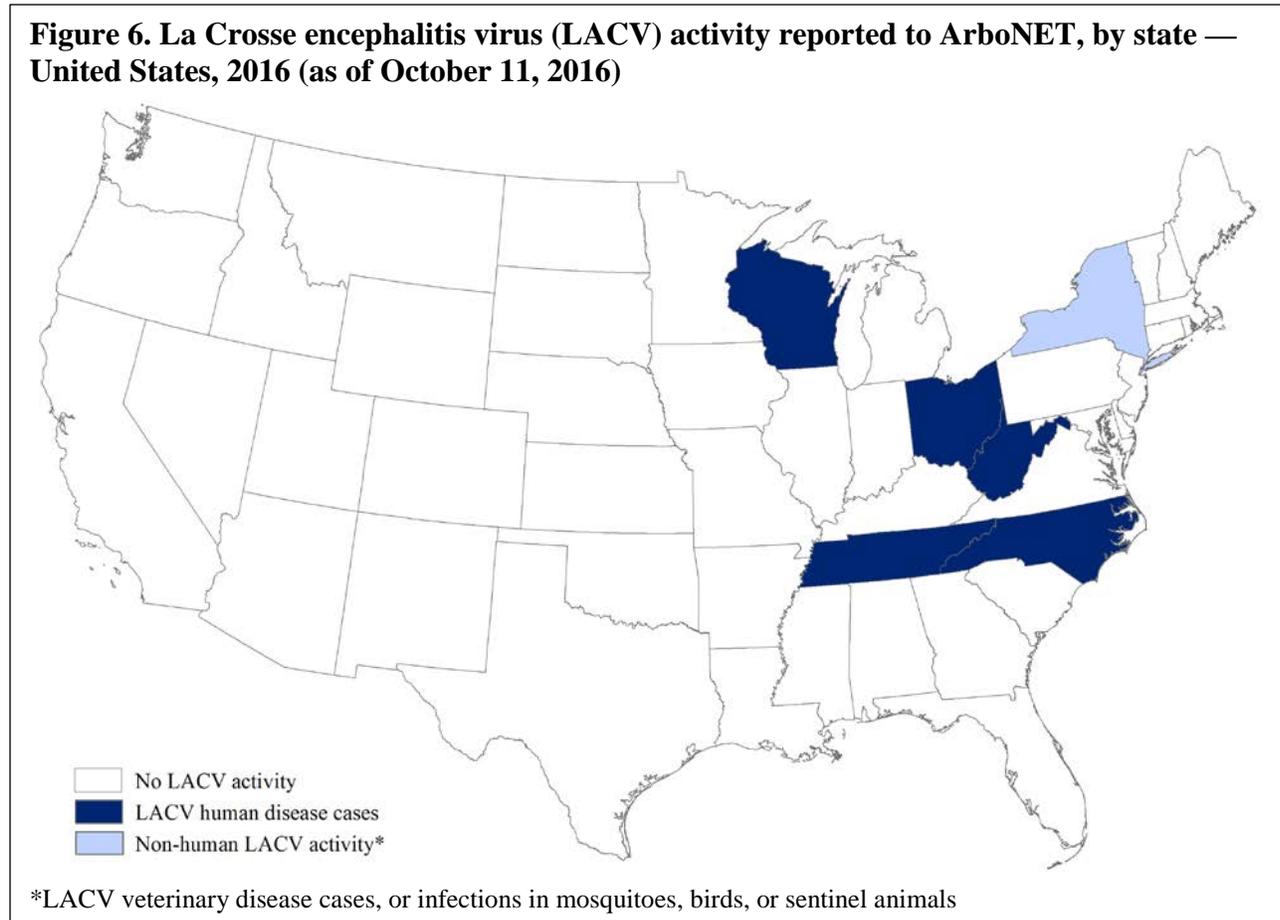


Table 4. La Crosse encephalitis virus human disease cases reported to ArboNET, United States, 2016

	Neuroinvasive disease cases	Nonneuroinvasive disease cases	Total cases*	Deaths
North Carolina	1	0	1	0
Ohio	7	0	7	0
Tennessee	1	0	1	0
West Virginia	1	2	3	0
Wisconsin	0	1	1	0
Totals	10	3	13	0

*Includes confirmed and probable cases.

Powassan virus (POWV) activity in 2016

As of October 11th, six counties in four states have reported human cases of POWV disease to ArboNET for 2016 [Figure 7 and Table 5]. Additional demographic and clinical characteristics of reported cases are provided [Table 7].

Figure 7. Powassan virus (POWV) activity reported to ArboNET, by state — United States, 2016 (as of October 11, 2016)

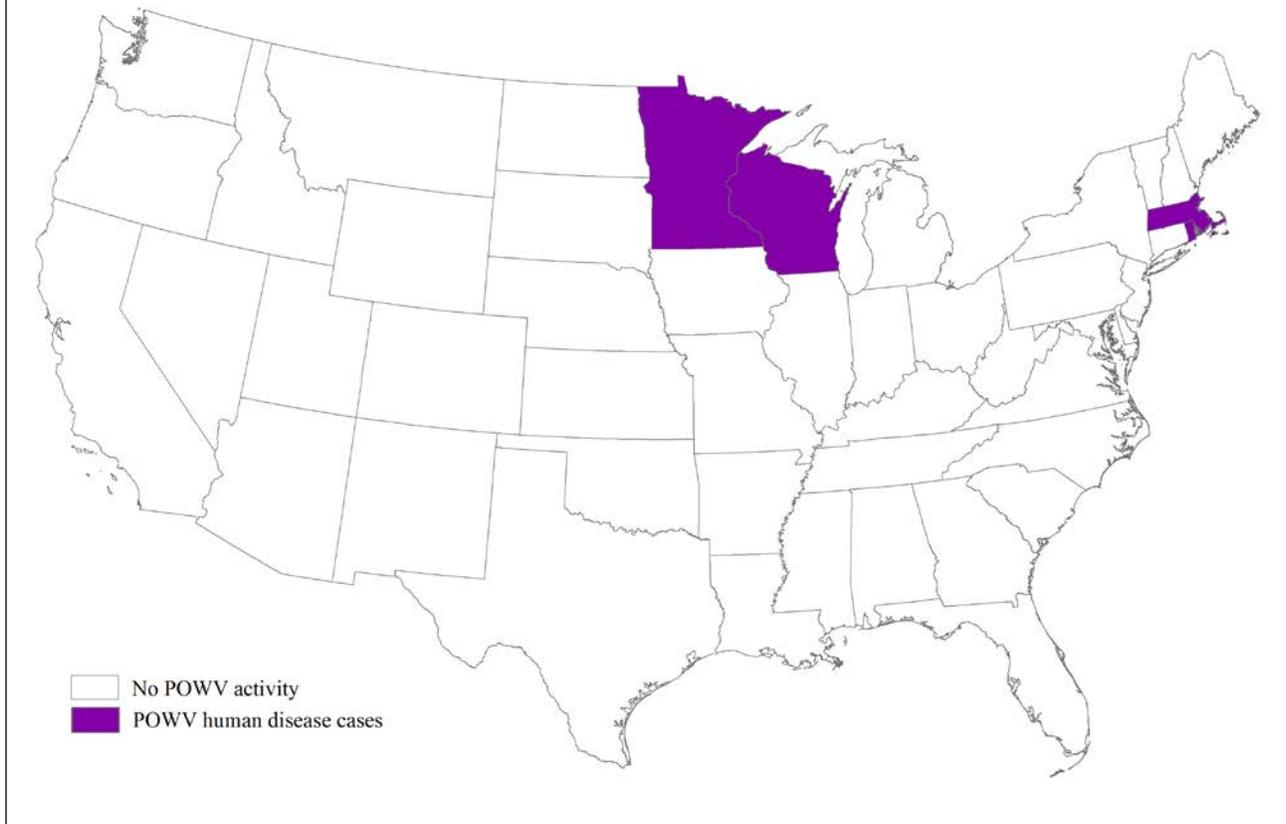


Table 5. Powassan virus human disease cases reported to ArboNET, United States, 2016

	Neuroinvasive disease cases	Nonneuroinvasive disease cases	Total cases*	Deaths
Massachusetts	2	0	2	1
Minnesota	1	1	2	0
Rhode Island	1	0	1	0
Wisconsin	1	0	1	0
Totals	5	1	6	1

*Includes confirmed and probable cases.

St. Louis encephalitis virus (SLEV) activity in 2016

As of October 11th, four counties in four states have reported human cases of SLEV disease to ArboNET for 2016 [Figure 8 and Table 6]. Nineteen additional counties in six states have reported SLEV activity in non-human species only. Additional demographic and clinical characteristics of reported cases are provided [Table 7].

Figure 8. St. Louis encephalitis virus (SLEV) activity reported to ArboNET, by state — United States, 2016 (as of October 11, 2016)

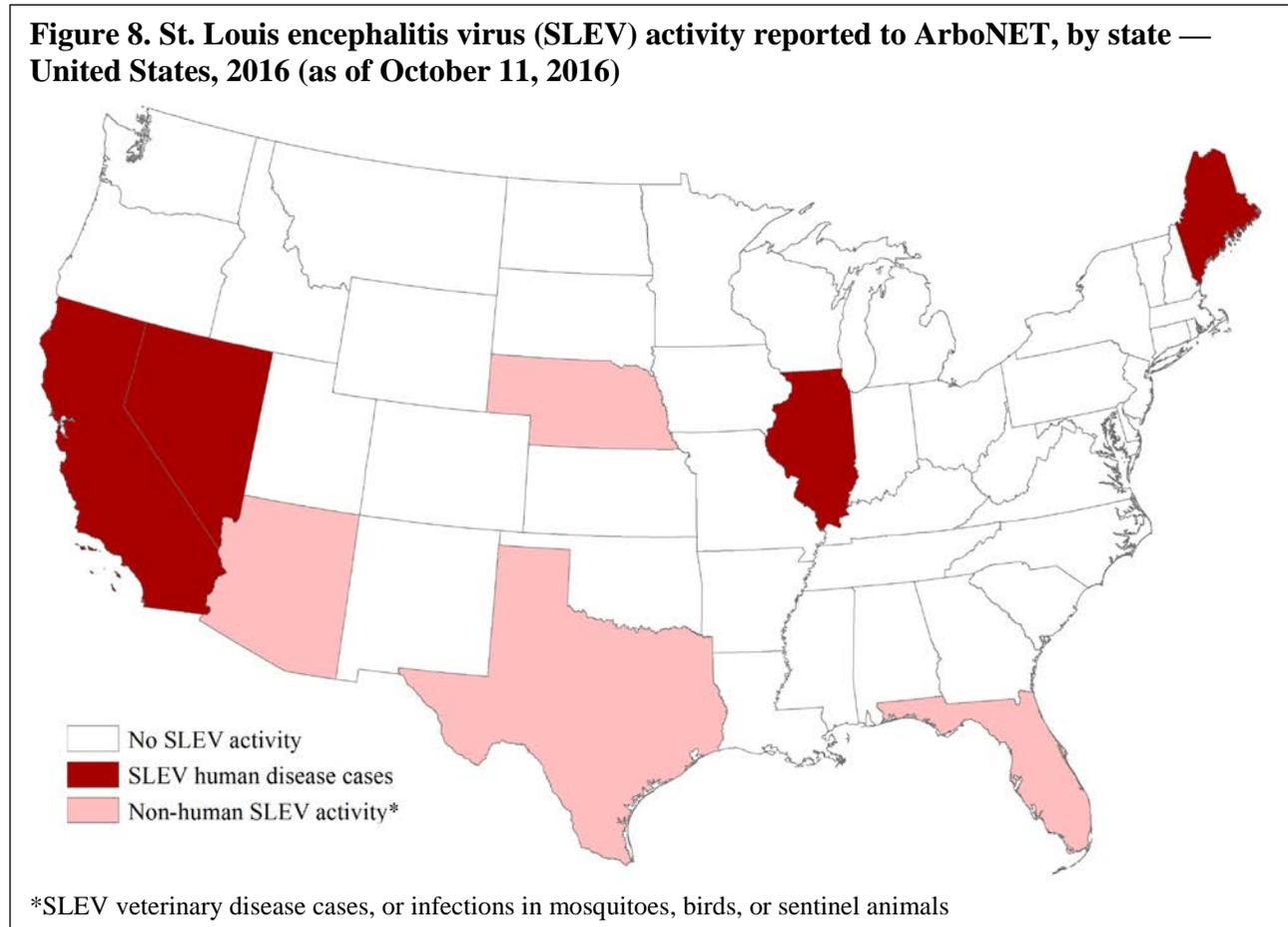


Table 6. St. Louis encephalitis virus human disease cases reported to ArboNET, United States, 2016

	Neuroinvasive disease cases	Nonneuroinvasive disease cases	Total cases*	Deaths
California	1	0	1	0
Illinois	1	0	1	0
Maine	1	0	1	0
Nevada	2	1	3	0
Totals	5	1	6	0

*Includes confirmed and probable cases.

Table 7. Characteristics of reported cases of arboviral disease, United States, 2016

	LAC (N=13)		POW (N=6)		SLE (N=6)		WNV (N=1,264)	
	No.	(%)	No.	(%)	No.	(%)	No.	(%)
Age group								
<20 years	10	(77)	0	(0)	0	(0)	54	(4)
20-39 years	2	(15)	0	(0)	1	(17)	230	(18)
40-49 years	0	(0)	0	(0)	0	(0)	190	(15)
50-59 years	1	(8)	0	(0)	2	(33)	274	(22)
≥60 years	0	(0)	6	(100)	3	(50)	516	(41)
Male sex	8	(62)	5	(83)	3	(50)	752	(59)
Onset of illness								
January	0	(0)	0	(0)	0	(0)	2	(<1)
February	0	(0)	0	(0)	0	(0)	0	(0)
March	0	(0)	0	(0)	0	(0)	0	(0)
April	0	(0)	2	(33)	0	(0)	2	(<1)
May	1	(8)	2	(33)	0	(0)	17	(1)
June	1	(8)	1	(17)	1	(17)	61	(5)
July	5	(38)	1	(17)	4	(67)	302	(24)
August	5	(38)	0	(0)	1	(17)	677	(54)
September	1	(8)	0	(0)	0	(0)	202	(16)
October	0	(0)	0	(0)	0	(0)	1	(<1)
Clinical syndrome*								
Nonneuroinvasive	3	(23)	1	(17)	1	(17)	619	(49)
Neuroinvasive								
Encephalitis	7	(54)	4	(67)	2	(33)	326	(26)
Meningitis	3	(23)	1	(17)	1	(17)	267	(21)
Acute flaccid paralysis	0	(0)	0	(0)	1	(17)	52	(4)
Guillain-Barre	0	(0)	0	(0)	0	(0)	2	(<1)
Other neuroinvasive	0	(0)	0	(0)	1	(17)	27	(2)
Outcome								
Hospitalization	13	(100)	6	(100)	6	(100)	789	(62)
Death	0	(0)	1	(17)	0	(0)	49	(4)

* 29 cases have reported multiple clinical syndromes



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/mapviewer/>
- AABB (American Association of Blood Banks):
www.aabb.org/programs/biovigilance/Pages/wnv.aspx