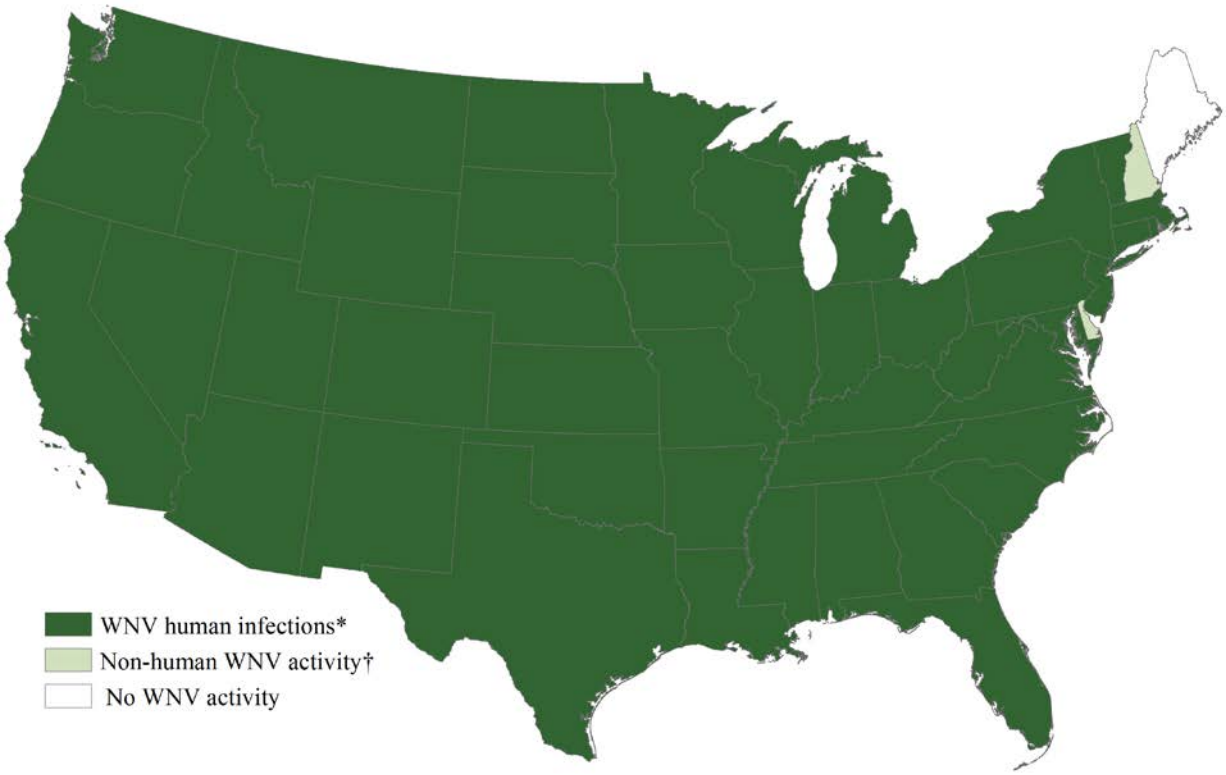
West Nile virus and other domestic arboviral activity -- United States, 2017
Provisional data reported to ArboNET
Tuesday, October 10, 2017

This update from the CDC Arboviral Disease Branch includes provisional data reported to ArboNET for **January 1 – October 10, 2017** for West Nile virus and selected other nationally notifiable domestic arboviruses. Additional resources for ArboNET and arboviral diseases are provided on page 10.

West Nile virus (WNV) activity in 2017

As of October 10th, 1,044 counties from 47 states and the District of Columbia have reported WNV activity to ArboNET for 2017, including 45 states and the District of Columbia with reported WNV human infections (i.e., disease cases or viremic blood donors) and two 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, 2017 (as of October 10, 2017)



*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, 1,295 human WNV disease cases have been reported from 458 counties in 45 states and the District of Columbia **[Table 1]**. Dates of illness onset for cases ranged from March–September **[Figure 2]**.

Of these, 840 (65%) were classified as neuroinvasive disease (such as meningitis or encephalitis) and 455 (35%) were classified as non-neuroinvasive disease **[Figure 3]**.

Presumptive viremic donors (PVDs)

Overall, 187 WNV PVDs have been reported from 31 states **[Table 1]**.

Table 1. West Nile virus infections in humans reported to ArboNET, 2017

State	Human disease cases reported to CDC*				Presumptive viremic blood donors
	Neuroinvasive	Non-neuroinvasive	Total	Deaths	
Alabama	1	0	1	0	0
Arizona	61	13	74	5	15
Arkansas	11	3	14	3	6
California	208	50	258	13	32
Colorado	23	30	53	3	4
Connecticut	2	1	3	0	0
District of Columbia	0	1	1	0	0
Florida	1	0	1	0	1
Georgia	32	5	37	5	7
Idaho	6	5	11	0	0
Illinois	32	9	41	0	0
Indiana	12	4	16	3	6
Iowa	8	2	10	2	5
Kansas	7	12	19	0	3
Kentucky	5	1	6	0	0
Louisiana	29	8	37	3	2
Maryland	4	0	4	0	0
Massachusetts	1	0	1	0	0
Michigan	29	7	36	0	9
Minnesota	9	14	23	1	19
Mississippi	43	16	59	2	3
Missouri	13	0	13	0	0
Montana	2	8	10	0	3
Nebraska	13	39	52	0	14
Nevada	22	27	49	2	2
New Jersey	4	1	5	0	0
New Mexico	17	9	26	1	2
New York	26	7	33	2	2
North Carolina	1	0	1	0	0
North Dakota	18	43	61	2	1
Ohio	14	8	22	2	8
Oklahoma	18	10	28	2	6
Oregon	0	5	5	1	0
Pennsylvania	8	5	13	1	0
Rhode Island	0	1	1	0	1
South Carolina	8	1	9	1	2
South Dakota	26	43	69	4	2
Tennessee	13	6	19	1	2
Texas	56	36	92	3	12
Utah	30	20	50	3	5
Vermont	1	0	1	0	1
Virginia	8	1	9	0	3
Washington	6	1	7	0	1
West Virginia	1	0	1	0	0
Wisconsin	11	2	13	2	8
Wyoming	0	1	1	0	0
Totals	**840**	**455**	**1,295**	**67**	**187**

*Includes confirmed and probable cases

Figure 2. West Nile virus disease cases reported to ArboNET, by month of onset — United States, 2017 (As of October 10, 2017)

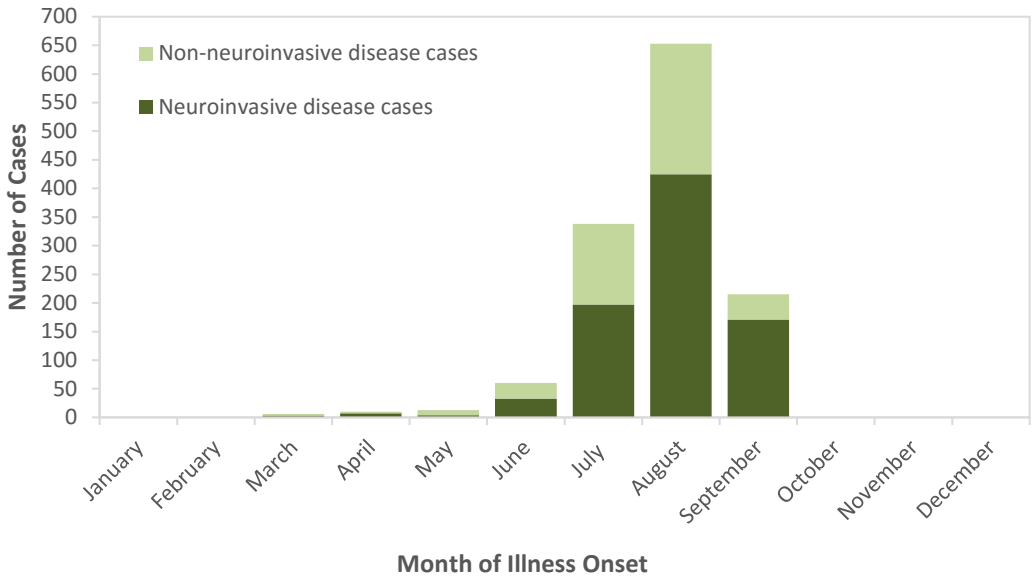
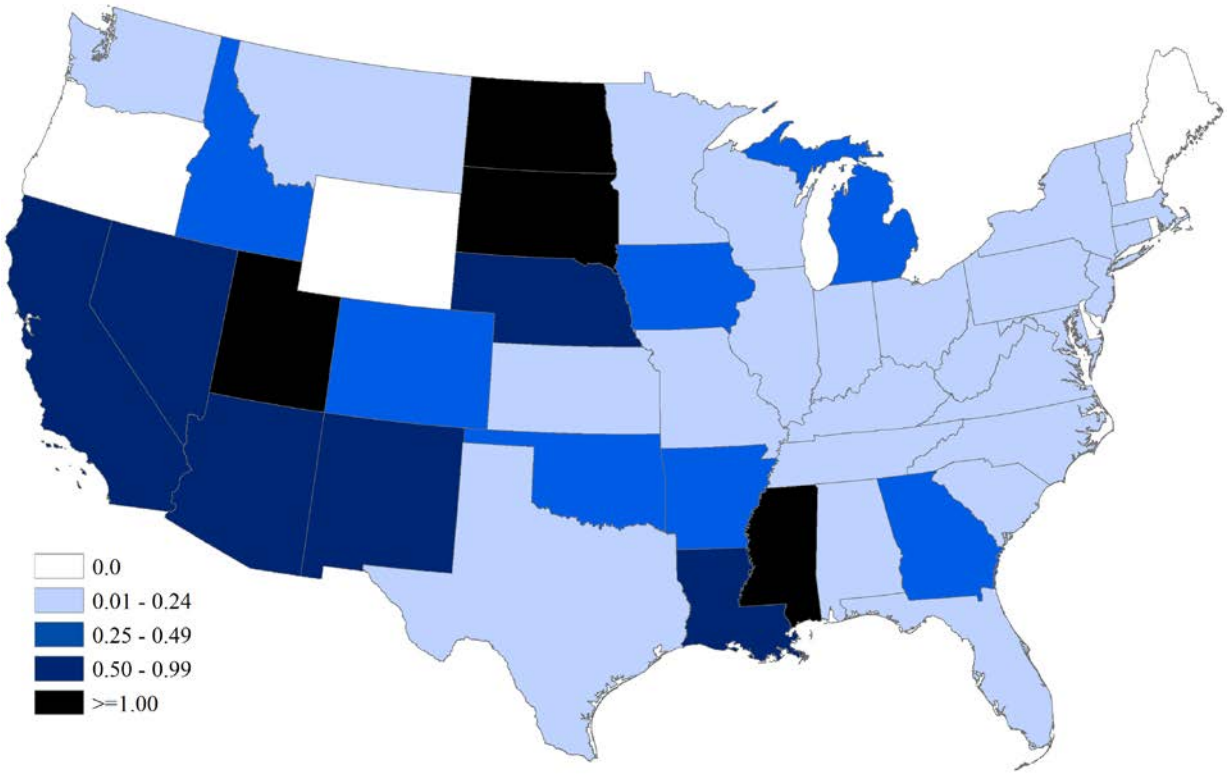


Figure 3. West Nile virus (WNV) neuroinvasive disease incidence* reported to ArboNET, by state — United States, 2017 (as of October 10, 2017)

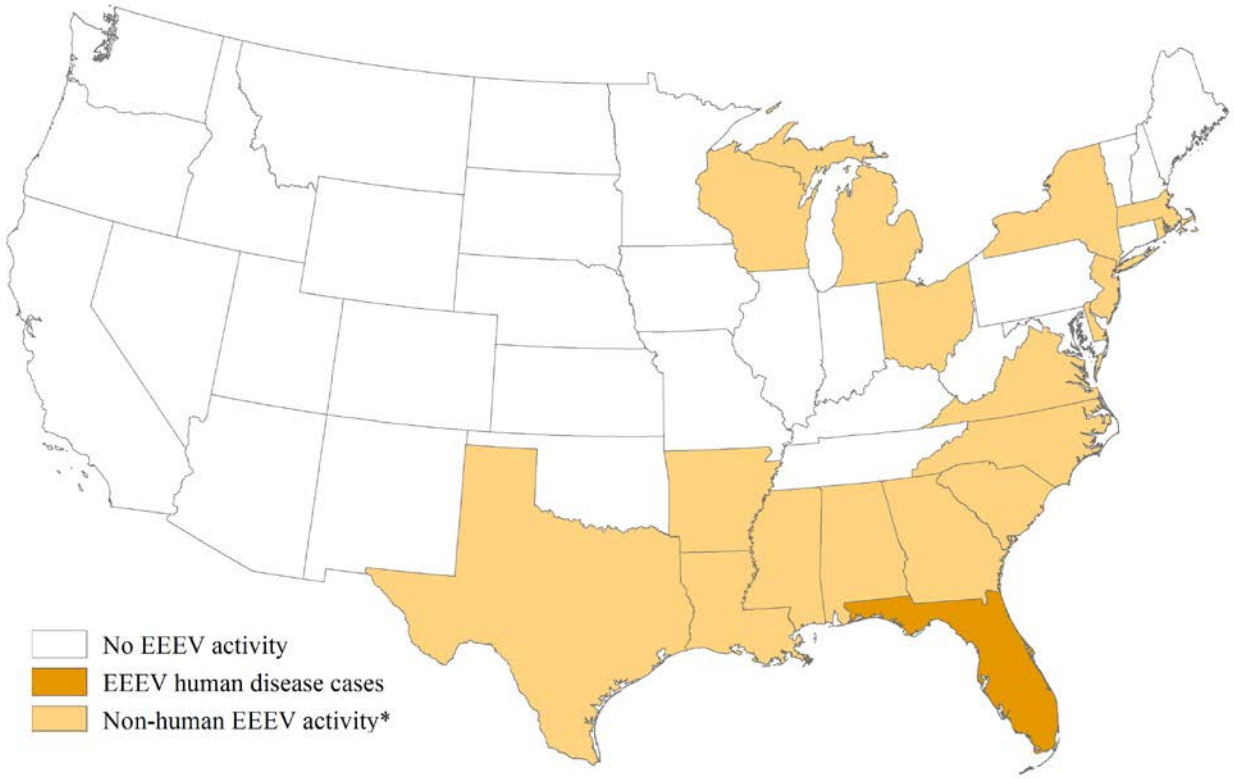


*Incidence per 100,000 population

Eastern equine encephalitis virus (EEEV) activity in 2017

As of October 10th, one county in Florida has reported a human case of EEEV disease to ArboNET for 2017 **[Figure 4 and Table 2]**. Additionally, 63 counties in 17 other states reported EEEV activity in non-human species only.

Figure 4. Eastern equine encephalitis virus (EEEV) activity reported to ArboNET, by state — United States, 2017 (as of October 10, 2017)



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

Table 2. Eastern equine encephalitis virus human disease cases reported to ArboNET, United States, 2017

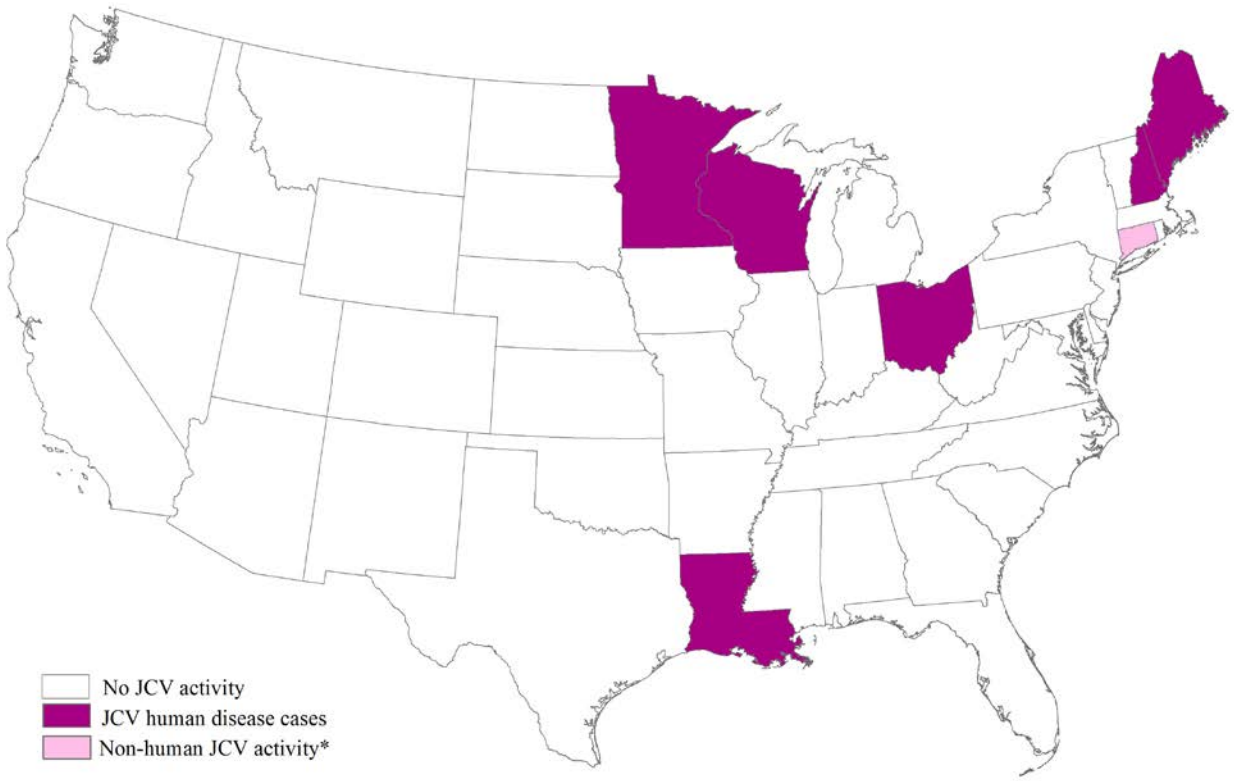
State	Neuroinvasive disease cases	Non-neuroinvasive disease cases	Total cases*	Deaths
Florida	1	0	1	0
Totals	**1**	**0**	**1**	**0**

*Includes confirmed and probable cases.

Jamestown Canyon virus (JCV) activity in 2017

As of October 10th, 33 counties in six states have reported human cases of JCV disease to ArboNET for 2017 **[Figure 5 and Table 3]**. Seven counties in Connecticut reported JCV activity in non-human species only.

Figure 5. Jamestown Canyon virus (JCV) activity reported to ArboNET, by state — United States, 2017 (as of October 10, 2017)



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

Table 3. Jamestown canyon virus human disease cases reported to ArboNET, United States, 2017

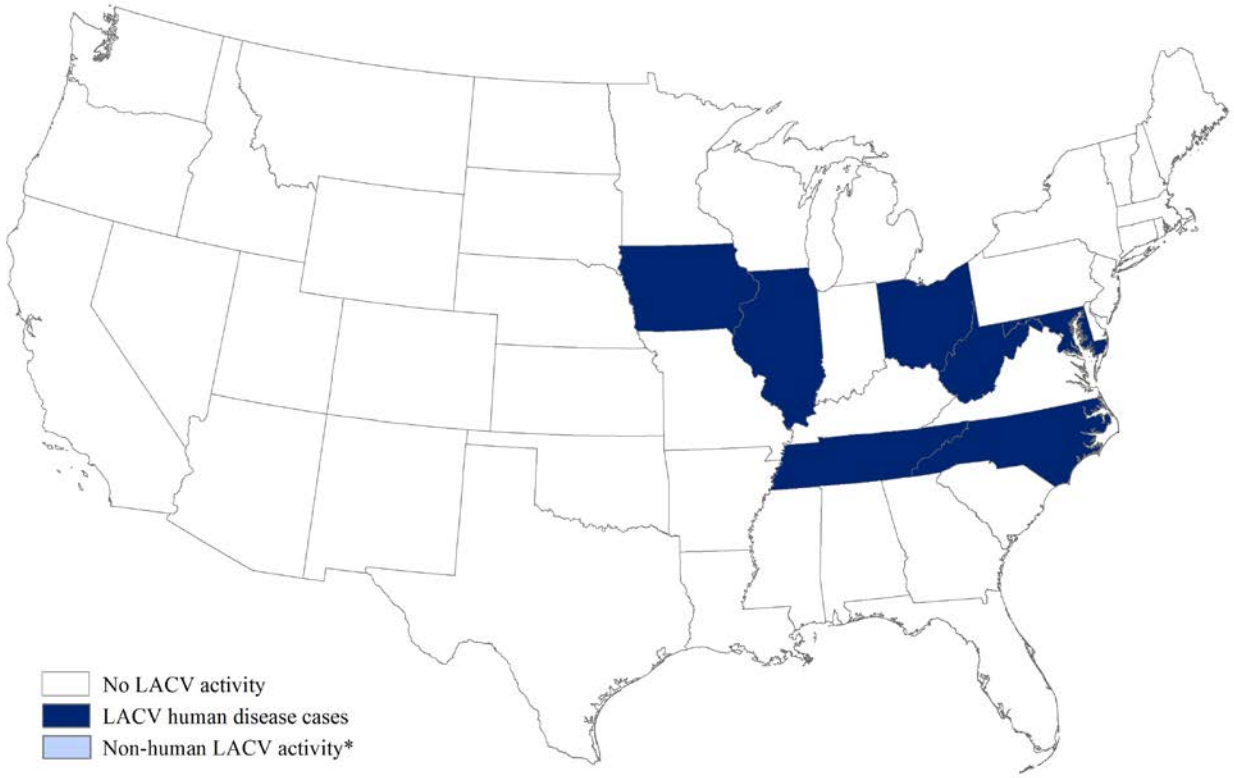
State	Neuroinvasive disease cases	Non-neuroinvasive disease cases	Total cases*	Deaths
Louisiana	1	0	1	0
Maine	1	1	2	0
Minnesota	8	6	14	0
New Hampshire	0	2	2	0
Ohio	1	0	1	0
Wisconsin	14	7	21	1
Totals	**25**	**16**	**41**	**1**

*Includes confirmed and probable cases.

La Crosse encephalitis virus (LACV) activity in 2017

As of October 10th, 22 counties in seven states have reported human cases of LACV disease to ArboNET for 2017 **[Figure 6 and Table 4]**.

Figure 6. La Crosse encephalitis virus (LACV) activity reported to ArboNET, by state — United States, 2017 (as of October 10, 2017)



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

Table 4. La Crosse encephalitis virus human disease cases reported to ArboNET, United States, 2017

State	Neuroinvasive disease cases	Non-neuroinvasive disease cases	Total cases*	Deaths
Illinois	1	0	1	0
Iowa	1	0	1	0
Maryland	1	0	1	0
North Carolina	5	1	6	0
Ohio	5	0	5	0
Tennessee	11	0	11	0
West Virginia	4	0	4	0
Totals	**28**	**1**	**29**	**0**

*Includes confirmed and probable cases.

Powassan virus (POWV) activity in 2017

As of October 10th, 18 counties in 10 states have reported human cases of POWV disease to ArboNET for 2017 **[Figure 7 and Table 5].**

Figure 7. Powassan virus (POWV) activity reported to ArboNET, by state — United States, 2017 (as of October 10, 2017)

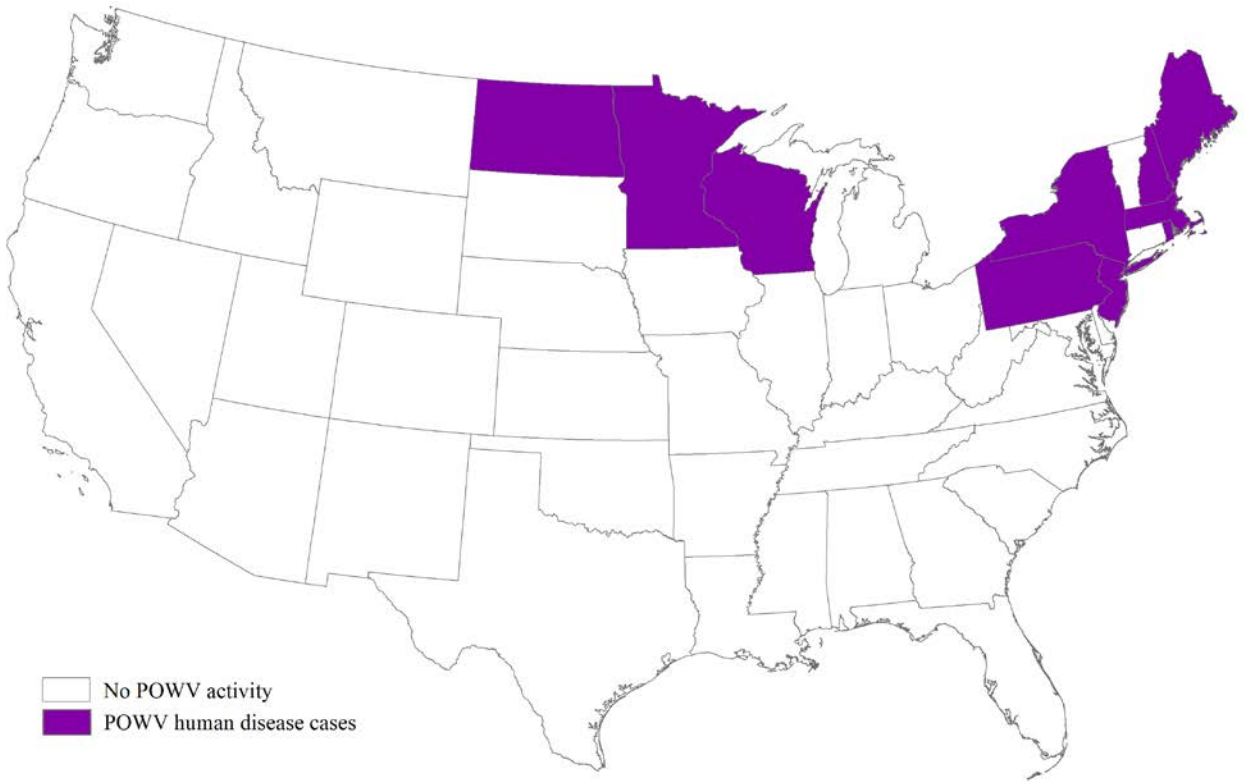


Table 5. Powassan virus human disease cases reported to ArboNET, United States, 2017

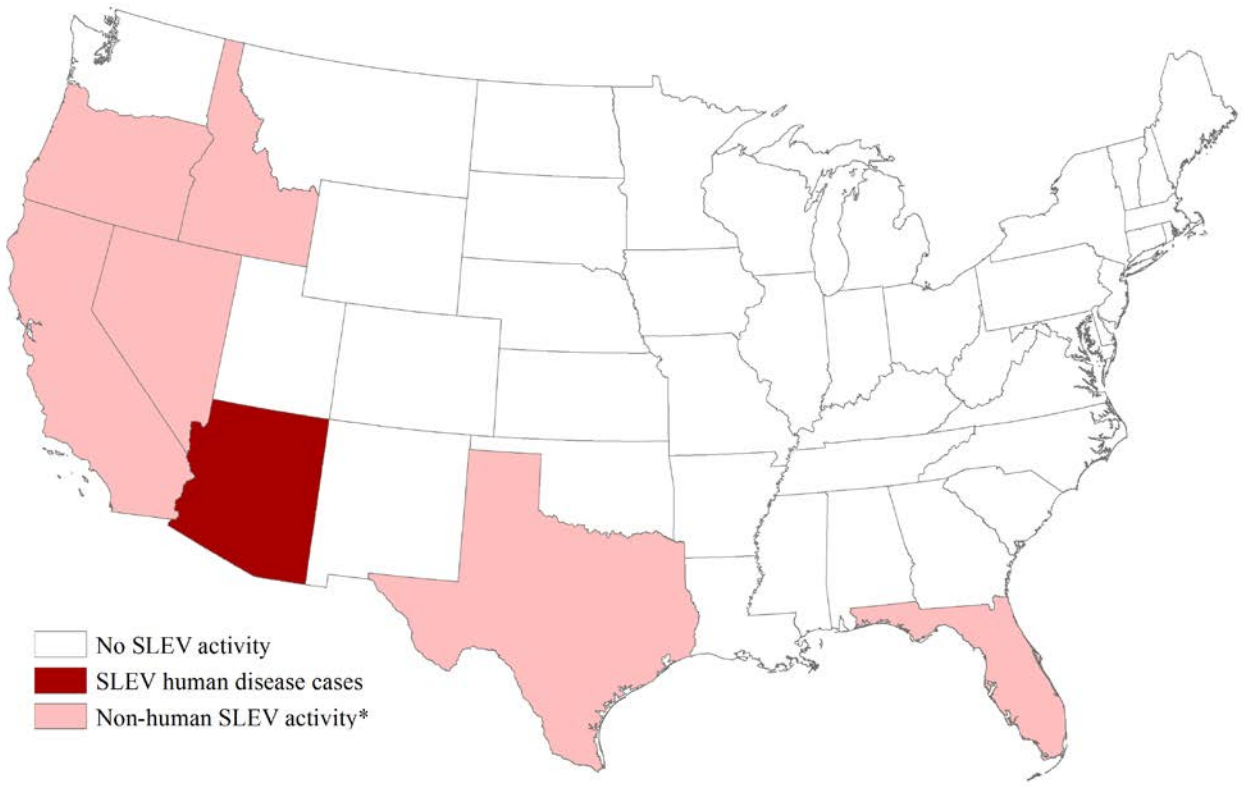
State	Neuroinvasive disease cases	Non-neuroinvasive disease cases	Total cases*	Deaths
Maine	3	0	3	0
Massachusetts	2	0	2	0
Minnesota	5	1	6	0
New Hampshire	1	0	1	0
New Jersey	3	0	3	0
New York	2	1	3	1
North Dakota	1	0	1	0
Pennsylvania	2	0	2	0
Rhode Island	1	0	1	1
Wisconsin	2	0	2	0
Totals	**22**	**2**	**24**	**2**

*Includes confirmed and probable cases.

St. Louis encephalitis virus (SLEV) activity in 2017

As of October 10th, two counties in Arizona have reported human cases of SLEV disease to ArboNET for 2017 **[Figure 8 and Table 6]**. Additionally, 24 counties in six other states reported SLEV activity in non-human species only.

Figure 8. St. Louis encephalitis virus (SLEV) activity reported to ArboNET, by state — United States, 2017 (as of October 10, 2017)



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

Table 6. St. Louis encephalitis virus human disease cases reported to ArboNET, United States, 2017

State	Neuroinvasive disease cases	Non-neuroinvasive disease cases	Total cases*	Deaths
Arizona	1	1	2	0
Totals	**1**	**1**	**2**	**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/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