

West Nile virus and other domestic arboviral activity -- United States, 2017
Provisional data reported to ArboNET
Tuesday, November 14, 2017

This update from the CDC Arboviral Disease Branch includes provisional data reported to ArboNET for **January 1 – November 14, 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 November 14th, 1,178 counties from 47 states and the District of Columbia have reported WNV activity to ArboNET for 2017; all of which have reported WNV human infections (i.e., disease cases or viremic blood donors) [**Figure 1**].

Figure 1. West Nile virus (WNV) activity reported to ArboNET, by state — United States, 2017 (as of November 14, 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, 1,832 human WNV disease cases have been reported from 582 counties in 47 states and the District of Columbia [**Table 1**]. Dates of illness onset for cases ranged from March–October [**Figure 2**].

Of these, 1,210 (66%) were classified as neuroinvasive disease (such as meningitis or encephalitis) and 622 (34%) were classified as non-neuroinvasive disease [**Figure 3**].

Presumptive viremic donors (PVDs)

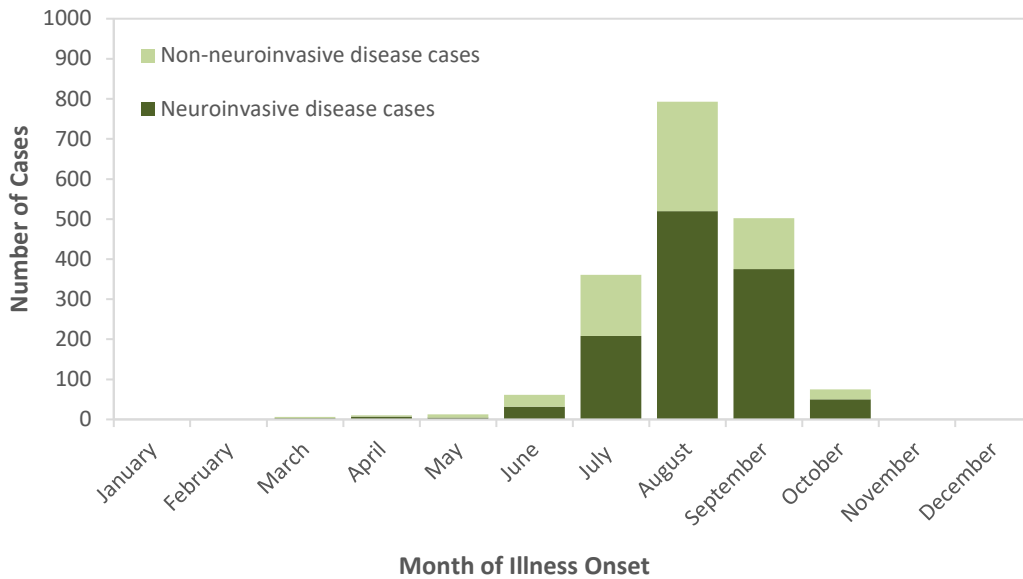
Overall, 221 WNV PVDs have been reported from 34 states [**Table 1**].

Table 1. West Nile virus disease cases* and presumptive viremic blood donors reported to ArboNET, 2017

State	Human disease cases reported to CDC			Deaths	Presumptive viremic blood donors
	Neuroinvasive	Non-neuroinvasive	Total		
Alabama	32	12	44	2	9
Arizona	86	18	104	8	16
Arkansas	11	3	14	3	5
California	336	116	452	25	39
Colorado	28	38	66	4	4
Connecticut	2	1	3	0	0
Delaware	0	1	1	0	0
District of Columbia	1	2	3	0	0
Florida	1	0	1	0	1
Georgia	38	5	43	7	8
Idaho	14	9	23	0	0
Illinois	61	21	82	5	0
Indiana	14	4	18	4	6
Iowa	10	2	12	2	5
Kansas	9	15	24	0	4
Kentucky	7	1	8	1	0
Louisiana	36	11	47	3	3
Maryland	4	1	5	0	0
Massachusetts	2	0	2	0	0
Michigan	31	8	39	1	8
Minnesota	9	14	23	1	19
Mississippi	45	17	62	2	3
Missouri	15	0	15	1	0
Montana	3	8	11	0	3
Nebraska	19	47	66	2	17
Nevada	22	28	50	2	2
New Hampshire	0	1	1	0	0
New Jersey	5	2	7	2	0
New Mexico	21	9	30	1	2
New York	36	15	51	4	6
North Carolina	1	0	1	0	0
North Dakota	18	43	61	2	1
Ohio	22	10	32	4	8
Oklahoma	23	12	35	4	6
Oregon	3	4	7	1	2
Pennsylvania	13	6	19	3	2
Rhode Island	1	1	2	0	1
South Carolina	15	2	17	1	3
South Dakota	27	46	73	4	2
Tennessee	19	10	29	1	2
Texas	79	45	124	4	14
Utah	38	23	61	4	6
Vermont	1	0	1	0	1
Virginia	12	1	13	1	3
Washington	9	3	12	0	1
West Virginia	1	0	1	0	0
Wisconsin	26	4	30	2	9
Wyoming	4	3	7	0	0
Totals	1,210	622	1,832	111	221

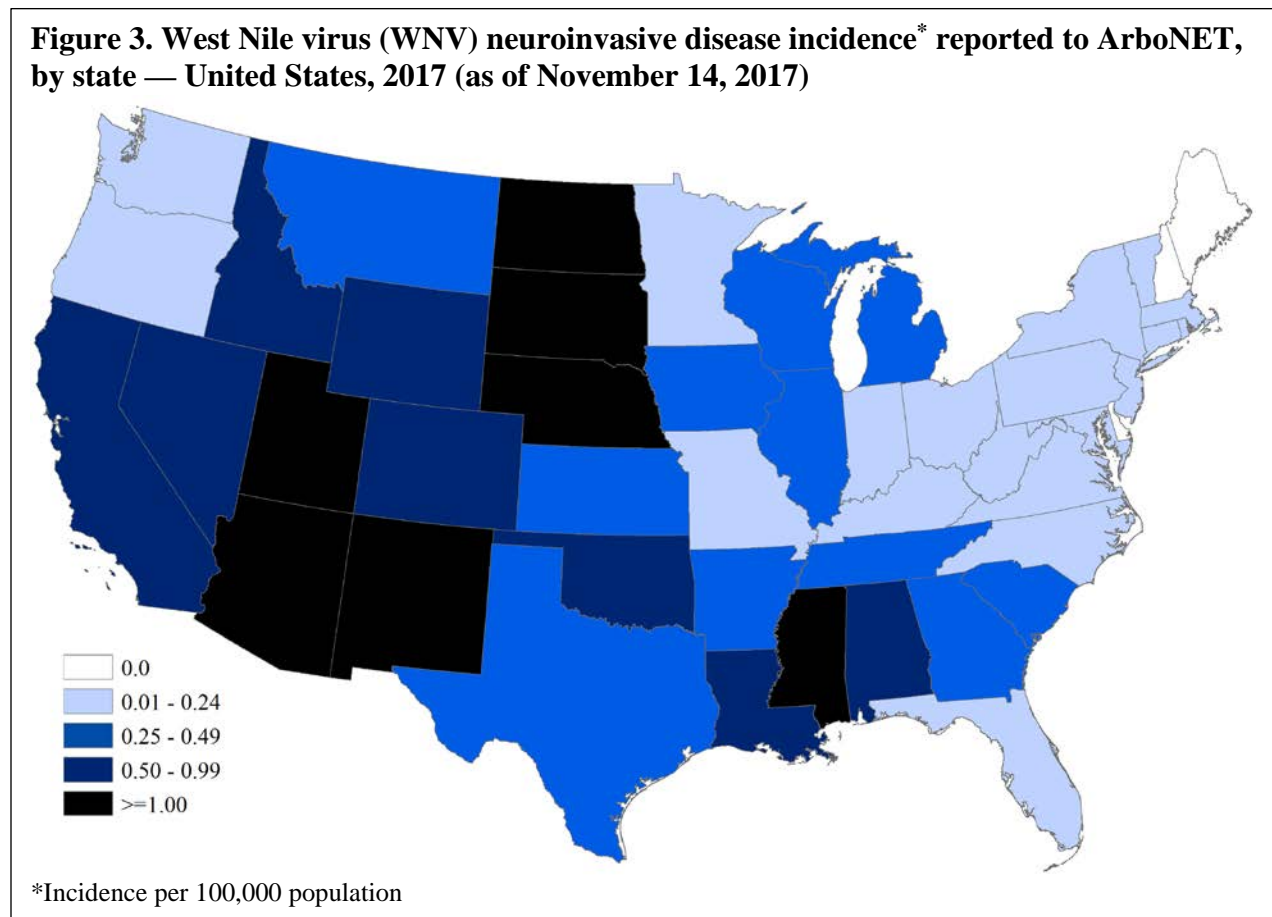
*Includes confirmed and probable cases

Figure 2. West Nile virus disease cases reported to ArboNET, by month of onset* — United States, 2017 (as of November 14, 2017)



*Cases missing onset date (n=11)

Figure 3. West Nile virus (WNV) neuroinvasive disease incidence* reported to ArboNET, by state — United States, 2017 (as of November 14, 2017)



Eastern equine encephalitis virus (EEEV) activity in 2017

As of November 14th, one county in Florida has reported a human case of EEEV disease to ArboNET for 2017 [Figure 4 and Table 2]. Additionally, 78 counties in 18 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 November 14, 2017)

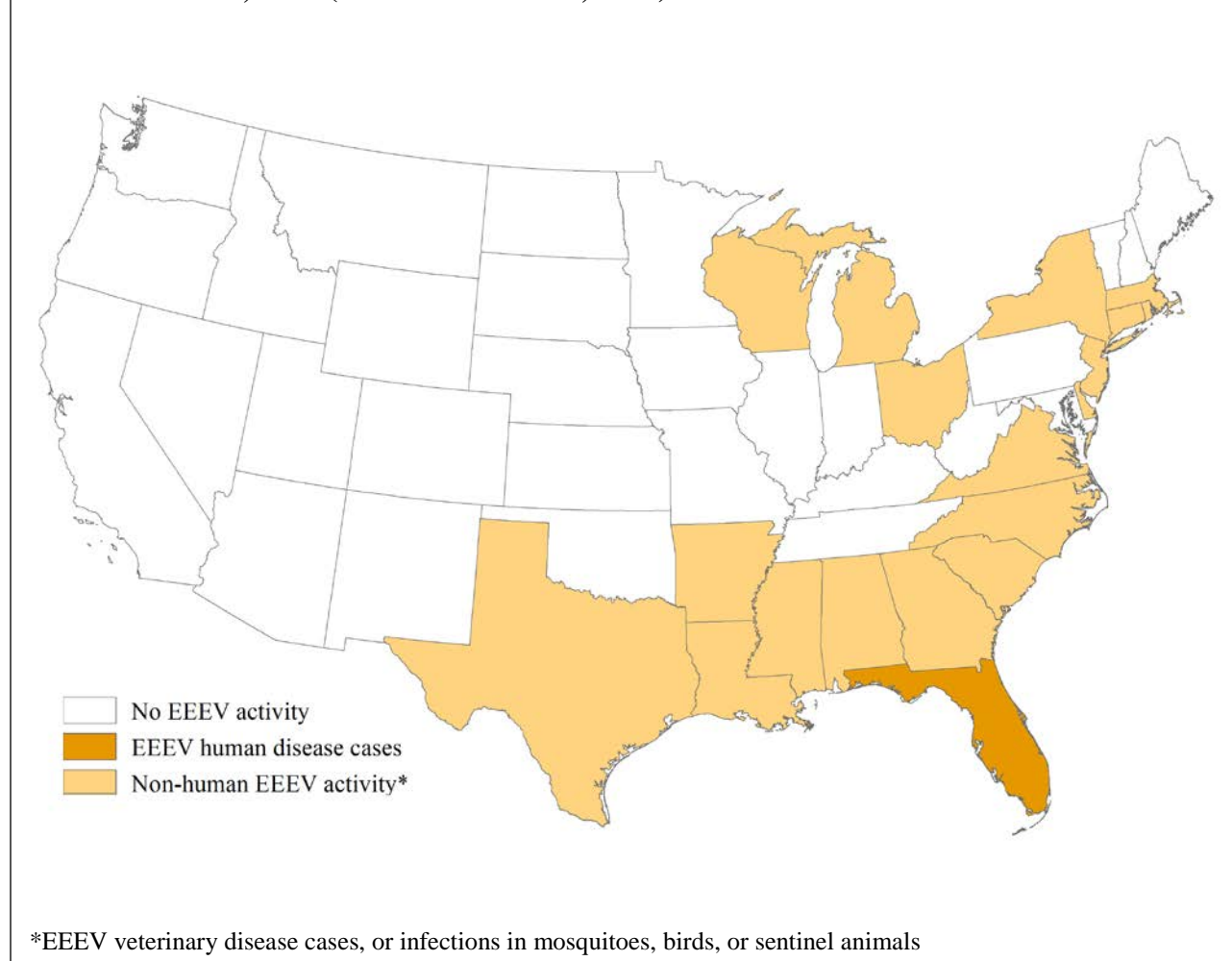


Table 2. Eastern equine encephalitis virus human disease cases reported to ArboNET, United States, 2017

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 November 14th, 40 counties in seven 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 November 14, 2017)

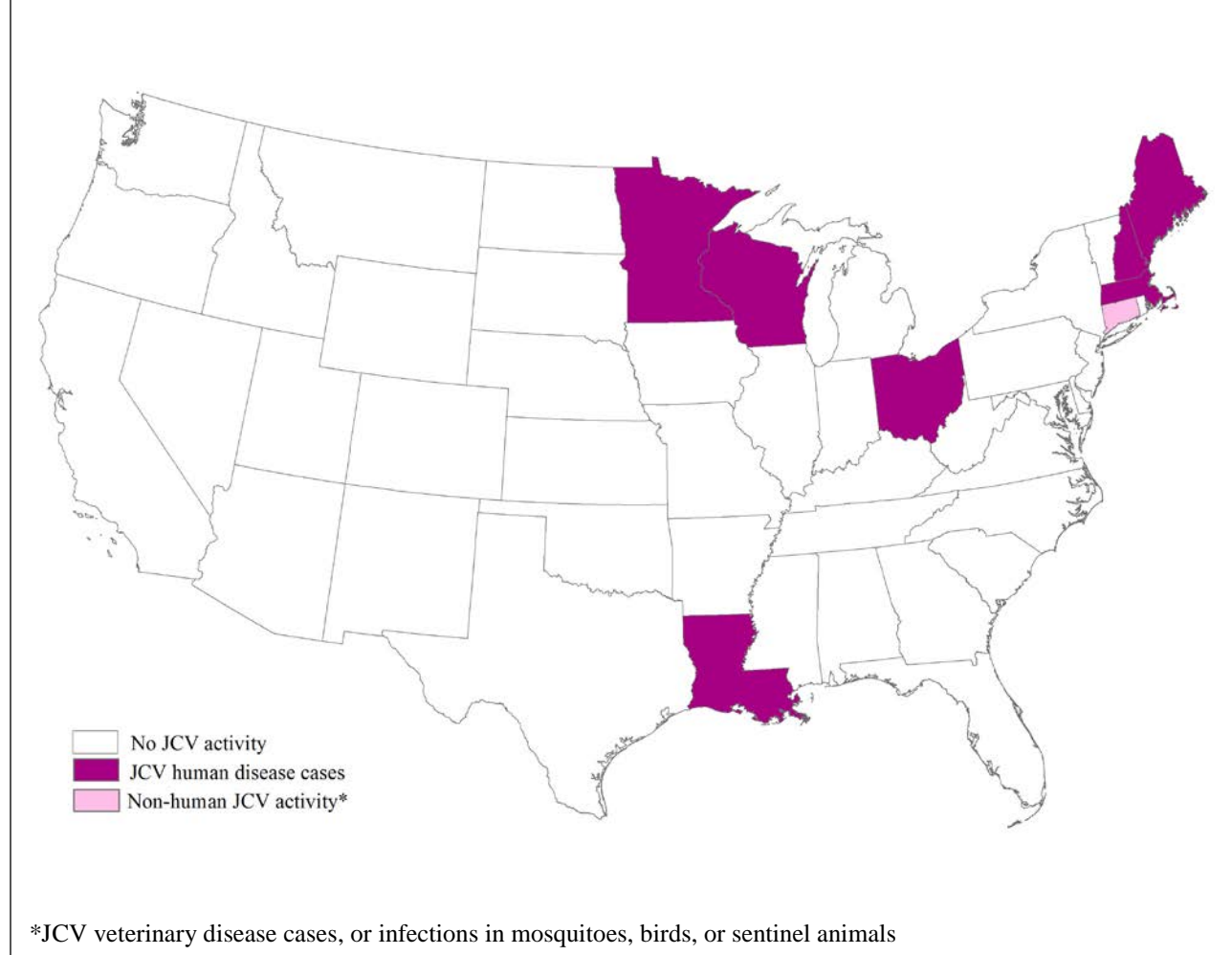


Table 3. Jamestown canyon virus human disease cases reported to ArboNET, United States, 2017

State	Neuroinvasive disease cases	Non-neuroinvasive disease cases	Total cases*	Deaths
Louisiana	1	0	1	0
Maine	1	1	2	0
Massachusetts	1	0	1	0
Minnesota	8	6	14	0
New Hampshire	0	2	2	0
Ohio	2	0	2	0
Wisconsin	19	9	28	1
Totals	32	18	50	1

*Includes confirmed and probable cases.

La Crosse encephalitis virus (LACV) activity in 2017

As of November 14th, 24 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 November 14, 2017)

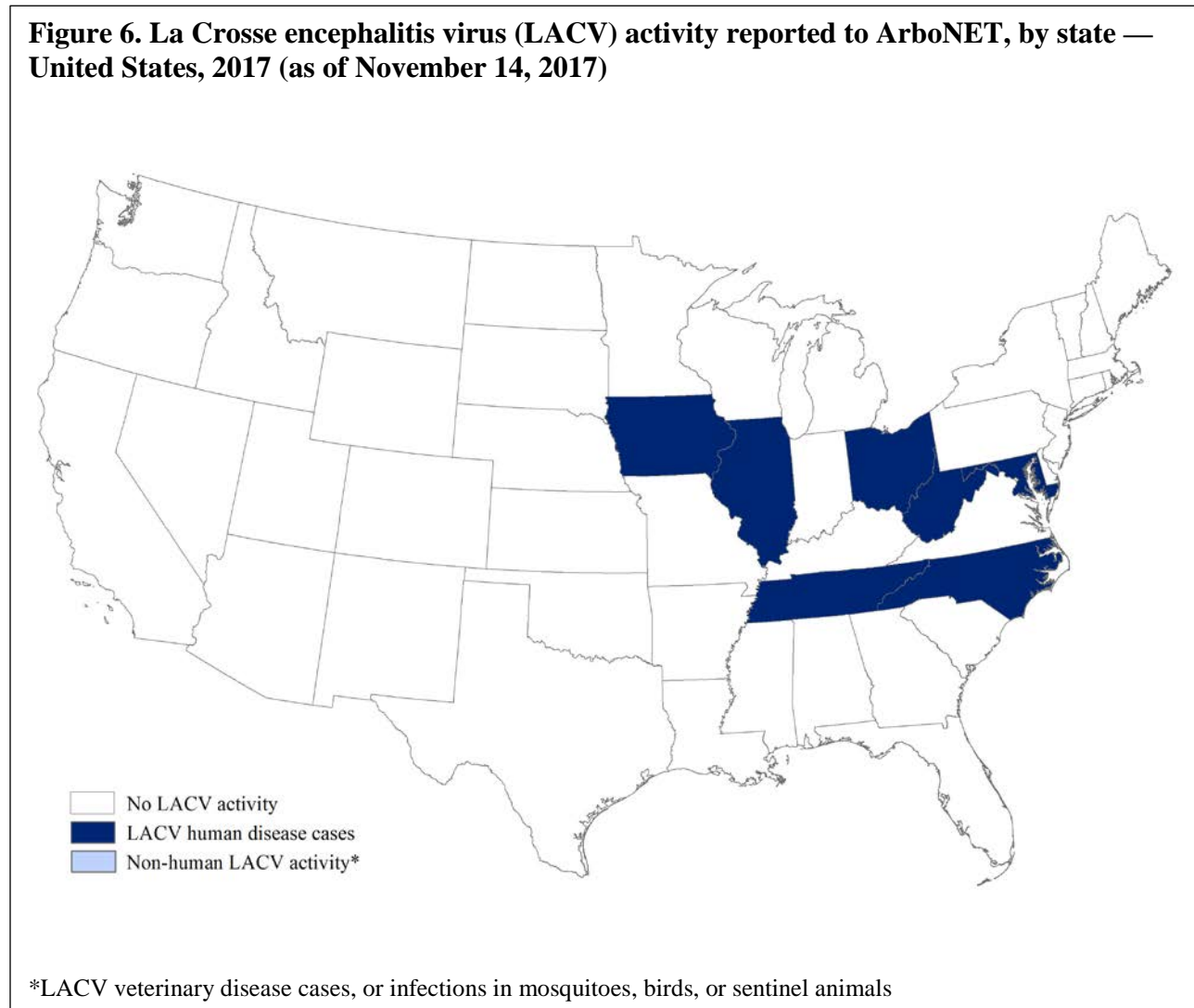


Table 4. La Crosse encephalitis virus human disease cases reported to ArboNET, United States, 2017

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	10	0	10	0
Ohio	4	0	4	0
Tennessee	14	0	14	0
West Virginia	4	0	4	0
Totals	35	0	35	0

*Includes confirmed and probable cases.

Powassan virus (POWV) activity in 2017

As of November 14th, 20 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 November 14, 2017)

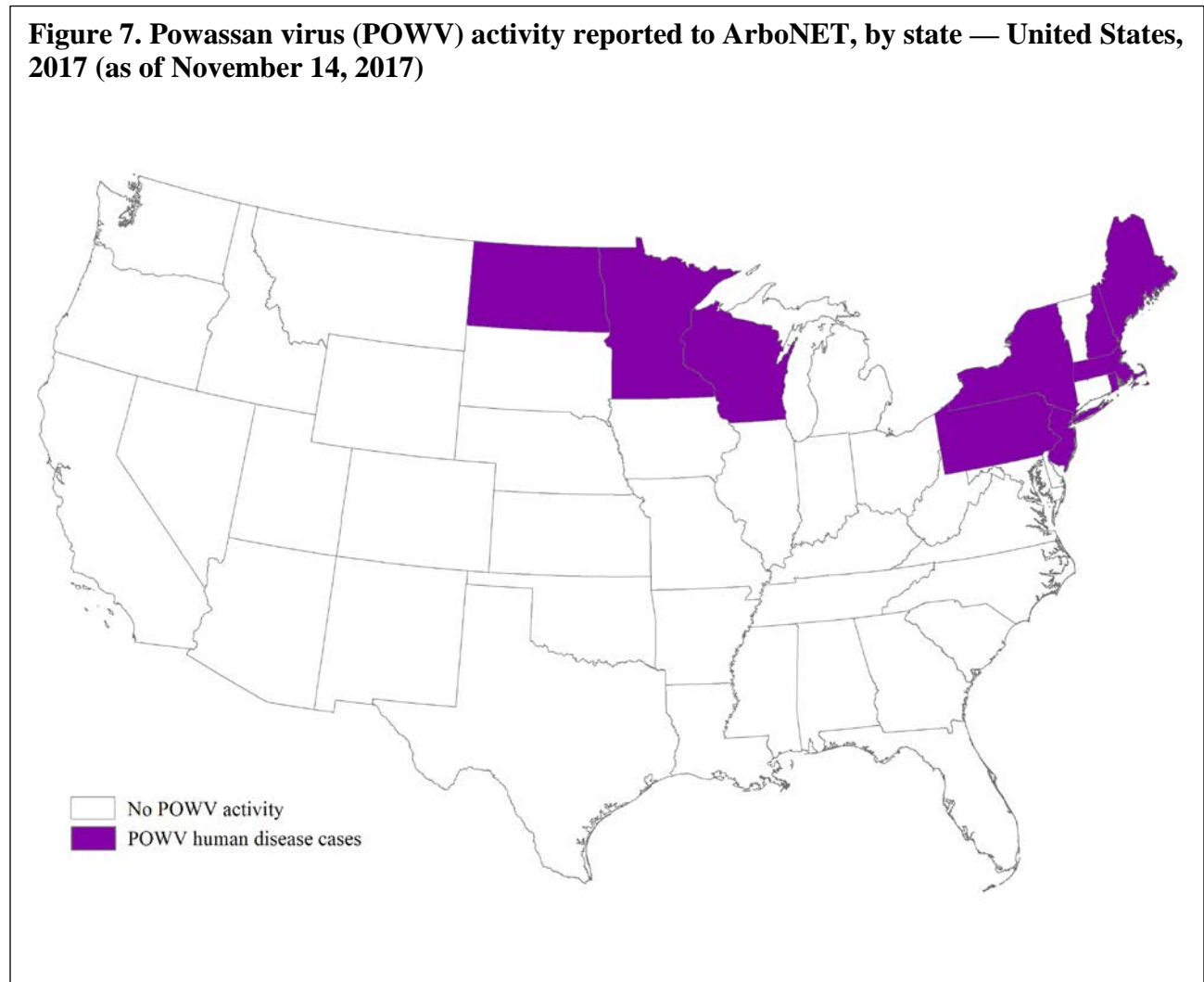


Table 5. Powassan virus human disease cases reported to ArboNET, United States, 2017

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	3	1	4	1
North Dakota	1	0	1	0
Pennsylvania	2	0	2	0
Rhode Island	1	0	1	1
Wisconsin	3	0	3	0
Totals	24	2	26	2

*Includes confirmed and probable cases.

St. Louis encephalitis virus (SLEV) activity in 2017

As of November 14th, four counties in three states have reported human cases of SLEV disease to ArboNET for 2017 [Figure 8 and Table 6]. Additionally, 11 counties in five 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 November 14, 2017)

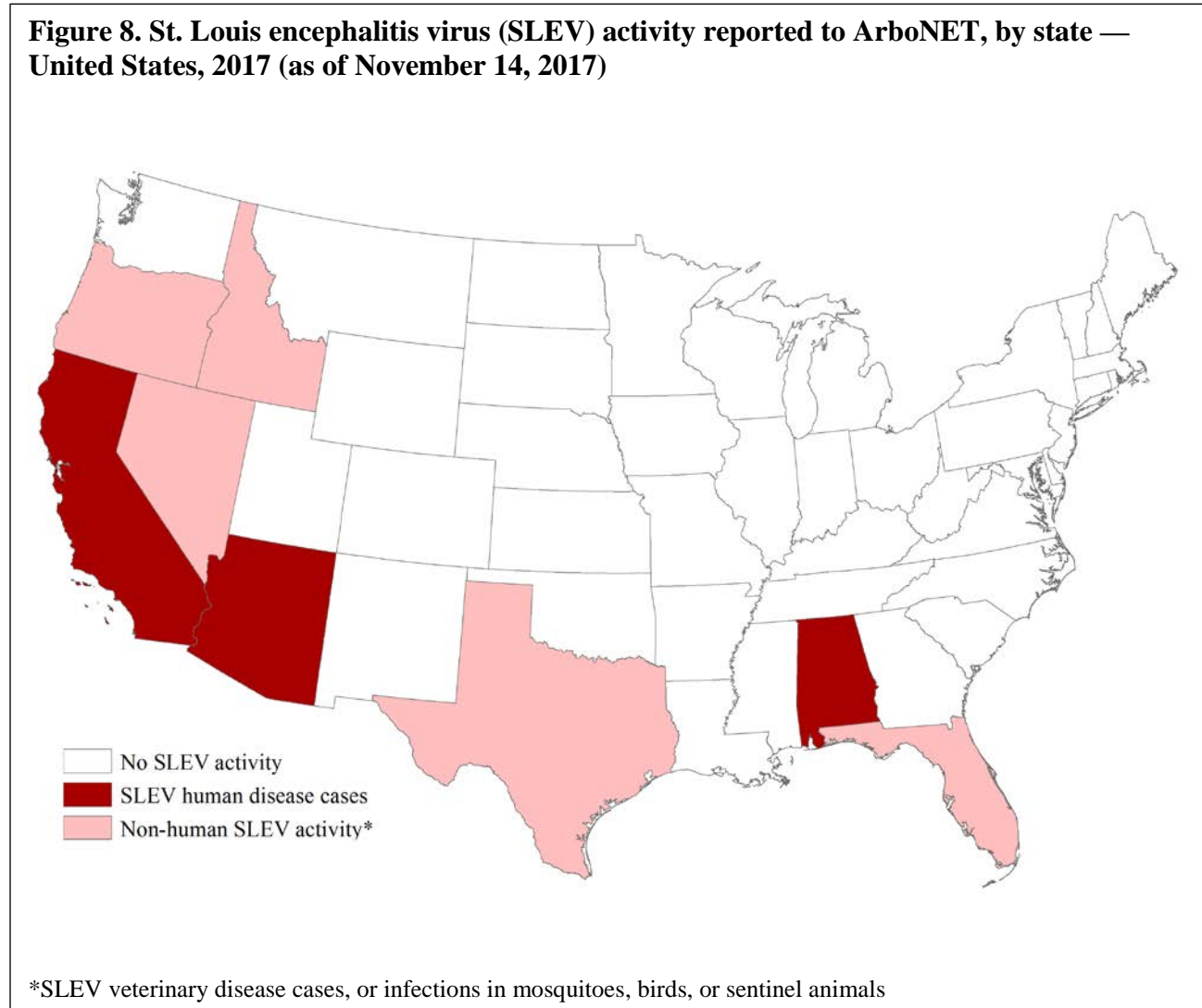


Table 6. St. Louis encephalitis virus human disease cases reported to ArboNET, United States, 2017

State	Neuroinvasive disease cases	Non-neuroinvasive disease cases	Total cases*	Deaths
Alabama	1	0	1	0
Arizona	1	2	3	0
California	1	0	1	0
Totals	3	2	5	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