

West Nile virus and other domestic arboviral activity -- United States, 2017
Provisional data reported to ArboNET
Tuesday, January 9, 2018

This update from the CDC Arboviral Disease Branch includes provisional data reported to ArboNET for **January 1 – December 31, 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 January 9th, 1,210 counties from 47 states and the District of Columbia have reported WNV activity to ArboNET for 2017. All of the 47 states and the District of Columbia 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 January 9, 2018)



*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, 2,002 human WNV disease cases have been reported from 624 counties in 47 states and the District of Columbia [**Table 1**]. Dates of illness onset for cases ranged from March–November [**Figure 2**].

Of these, 1,339 (67%) were classified as neuroinvasive disease (such as meningitis or encephalitis) and 663 (33%) were classified as non-neuroinvasive disease [**Figure 3**].

Presumptive viremic donors (PVDs)

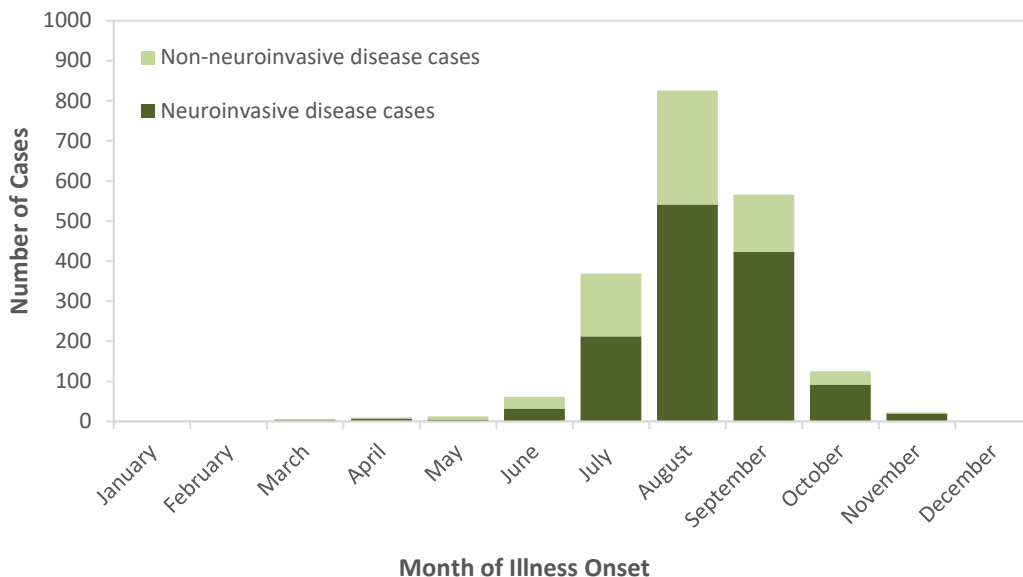
Overall, 247 WNV PVDs have been reported from 35 states [**Table 1**].

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	38	18	56	2	11
Arizona	91	18	109	8	16
Arkansas	12	3	15	3	5
California	376	133	509	28	47
Colorado	29	39	68	4	4
Connecticut	2	1	3	0	0
Delaware	0	1	1	0	0
District of Columbia	1	3	4	0	0
Florida	4	0	4	0	0
Georgia	42	5	47	7	14
Idaho	14	10	24	0	0
Illinois	68	19	87	5	0
Indiana	16	10	26	4	6
Iowa	10	2	12	2	5
Kansas	10	15	25	0	4
Kentucky	9	1	10	1	0
Louisiana	36	11	47	3	4
Maryland	4	1	5	0	0
Massachusetts	5	1	6	0	1
Michigan	32	8	40	1	8
Minnesota	9	14	23	1	19
Mississippi	46	17	63	2	3
Missouri	15	1	16	1	1
Montana	3	8	11	0	3
Nebraska	20	48	68	2	18
Nevada	24	29	53	2	3
New Hampshire	0	1	1	0	0
New Jersey	6	2	8	2	0
New Mexico	23	10	33	1	2
New York	42	14	56	4	7
North Carolina	7	0	7	2	0
North Dakota	20	42	62	2	1
Ohio	23	11	34	4	8
Oklahoma	28	13	41	4	6
Oregon	3	4	7	1	2
Pennsylvania	14	6	20	3	2
Rhode Island	1	1	2	0	1
South Carolina	15	2	17	2	5
South Dakota	27	46	73	4	2
Tennessee	19	10	29	1	2
Texas	85	48	133	5	14
Utah	39	23	62	5	6
Vermont	2	1	3	0	1
Virginia	12	1	13	1	4
Washington	10	3	13	0	1
West Virginia	1	0	1	0	0
Wisconsin	42	6	48	4	11
Wyoming	4	3	7	0	0
Totals	1,339	663	2,002	121	247

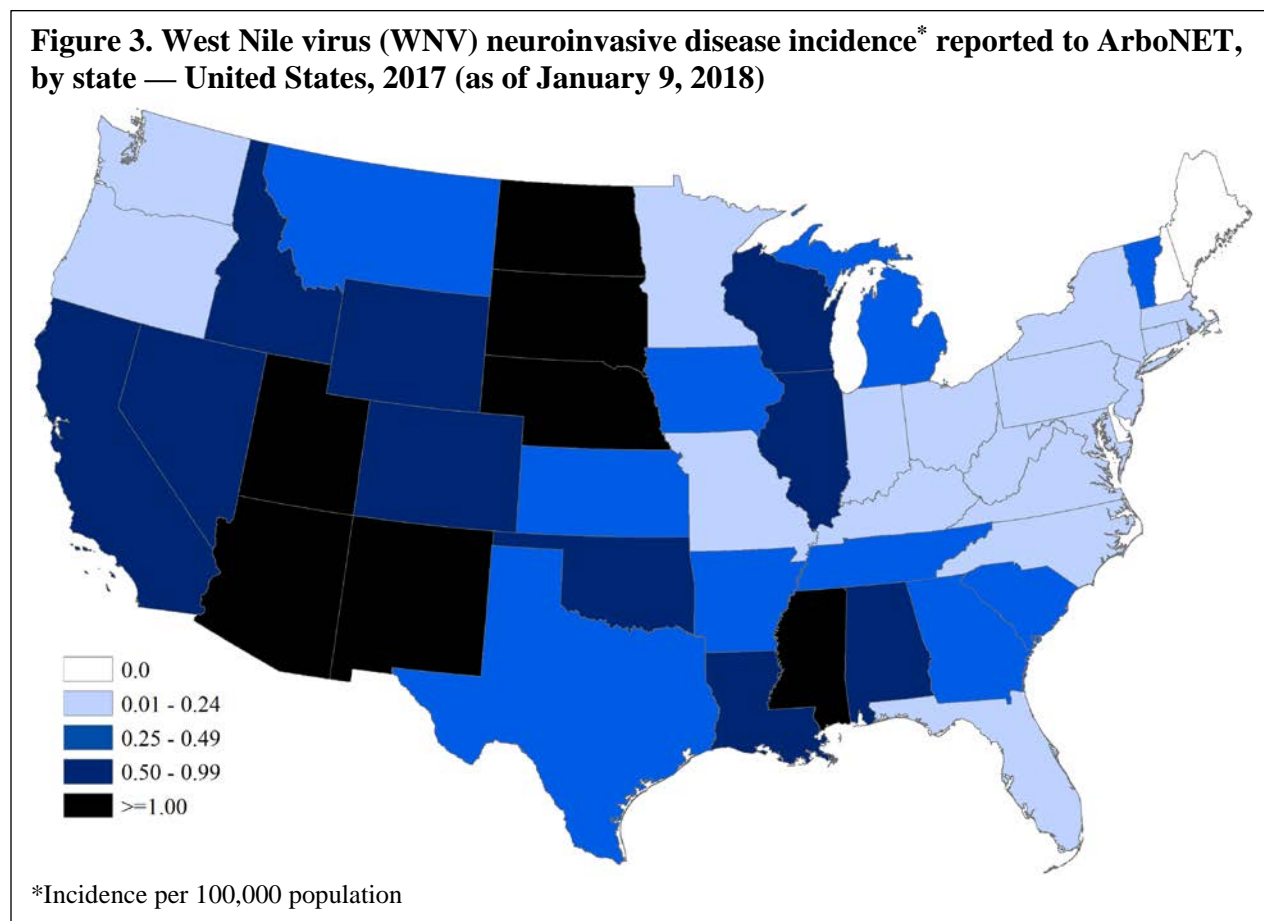
*Includes confirmed and probable cases

Figure 2. West Nile virus disease cases reported to ArboNET, by month of onset* — United States, 2017 (as of January 9, 2018)



*Cases missing onset date (n=4)

Figure 3. West Nile virus (WNV) neuroinvasive disease incidence* reported to ArboNET, by state — United States, 2017 (as of January 9, 2018)



Eastern equine encephalitis virus (EEEV) activity in 2017

As of January 9th, three counties in two states (Florida and Georgia) have reported human cases of EEEV disease to ArboNET for 2017 [Figure 4 and Table 2]. Additionally, 71 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 January 9, 2018)

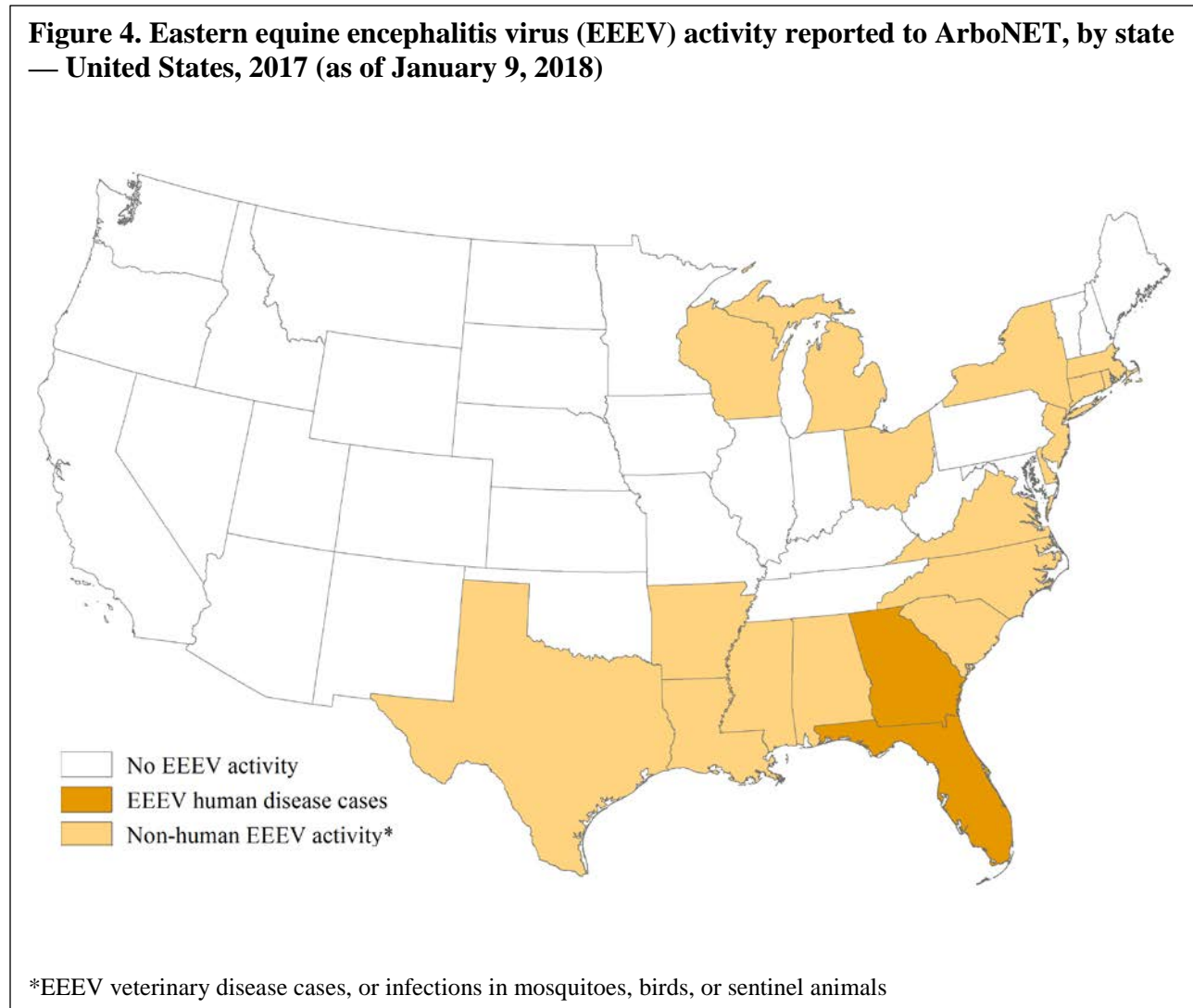


Table 2. Eastern equine encephalitis virus human disease cases reported to ArboNET, United States, 2017

State	Neuroinvasive disease cases	Non-neuroinvasive disease cases	Total cases*	Deaths
Florida	1	0	1	0
Georgia	2	0	2	1
Totals	3	0	3	1

*Includes confirmed and probable cases.

Jamestown Canyon virus (JCV) activity in 2017

As of January 9th, 45 counties in seven states have reported human cases of JCV disease to ArboNET for 2017 [Figure 5 and Table 3]. Additionally, 10 counties in two other states (Connecticut and New York) 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 January 9, 2018)

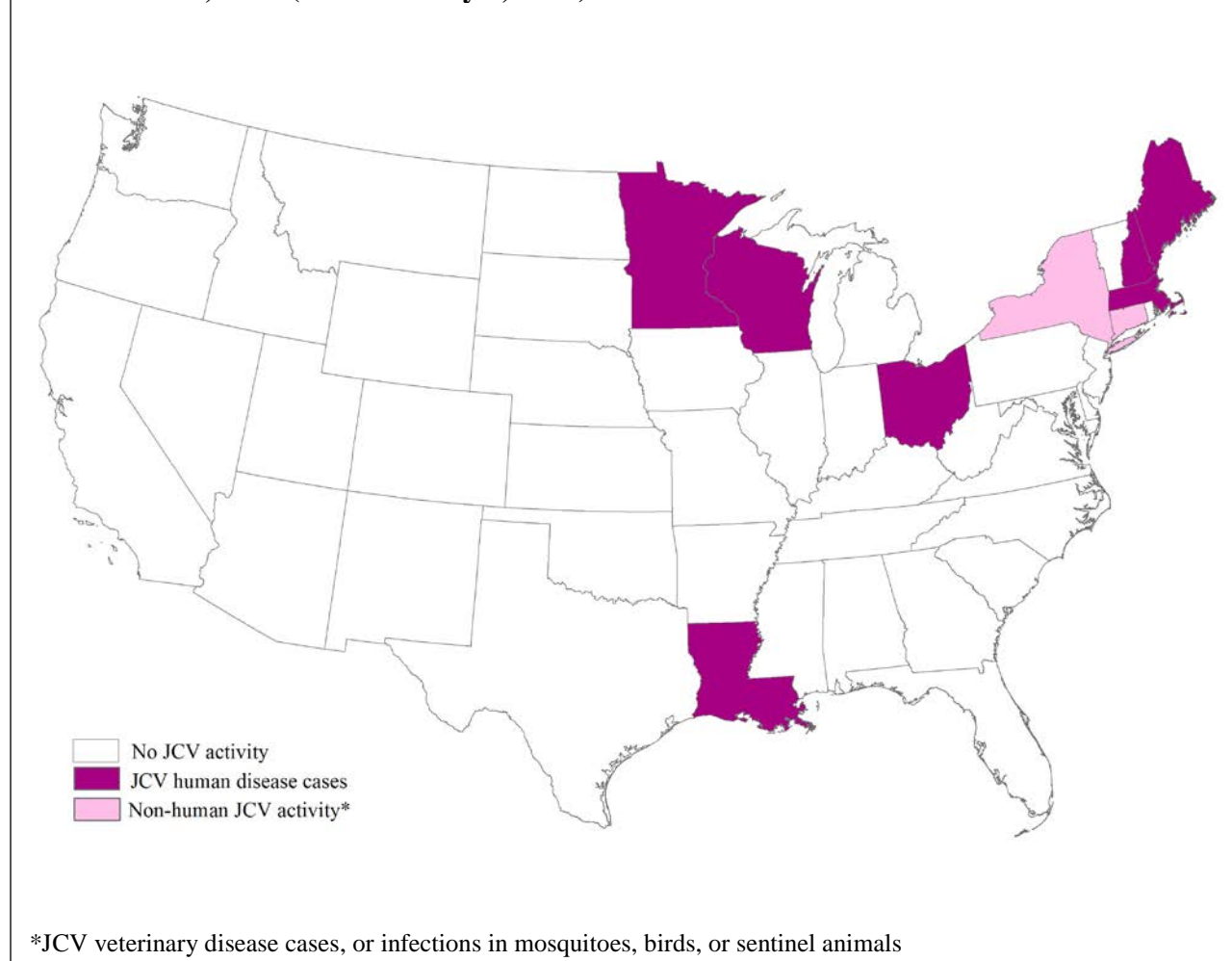


Table 3. Jamestown canyon virus human disease cases reported to ArboNET, United States, 2017

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	30	15	45	2
Totals	43	24	67	2

*Includes confirmed and probable cases.

La Crosse encephalitis virus (LACV) activity in 2017

As of January 9th, 27 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 January 9, 2018)

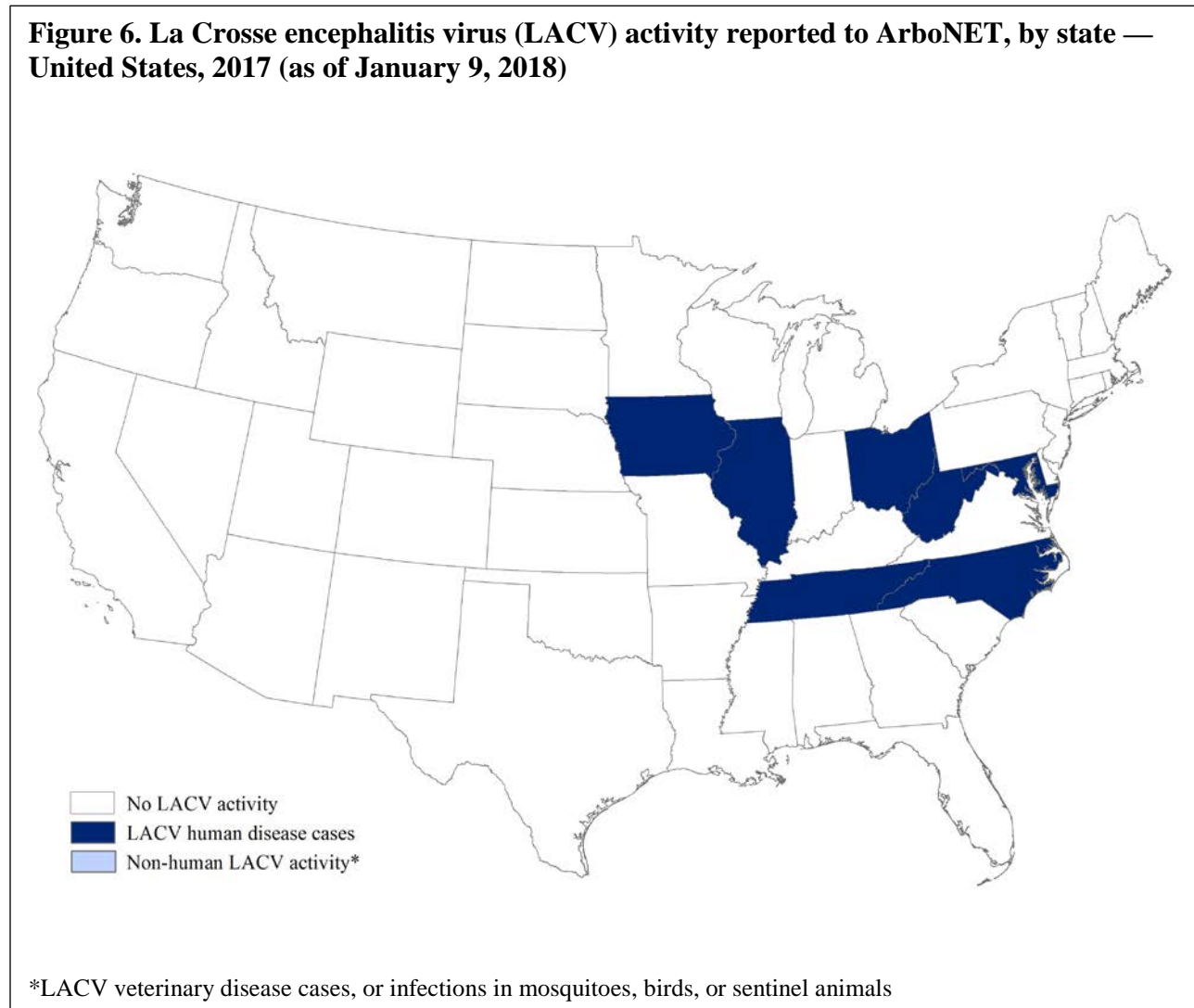


Table 4. La Crosse encephalitis virus human disease cases reported to ArboNET, United States, 2017

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	17	0	17	0
Ohio	4	0	4	0
Tennessee	16	0	16	0
West Virginia	4	0	4	0
Totals	44	0	44	0

*Includes confirmed and probable cases.

Powassan virus (POWV) activity in 2017

As of January 9th, 23 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 January 9, 2018)

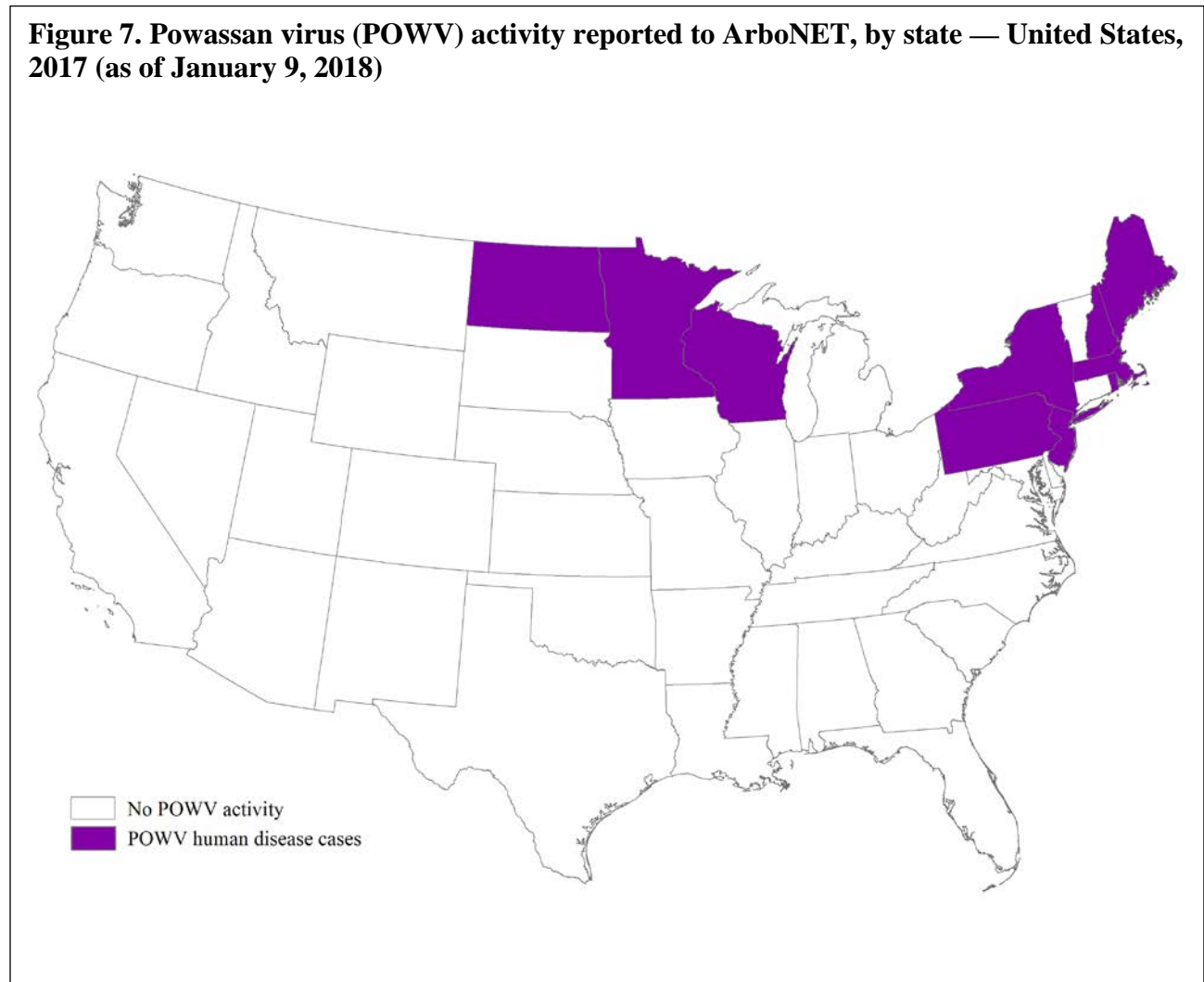


Table 5. Powassan virus human disease cases reported to ArboNET, United States, 2017

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	4	0	4	0
New York	5	1	6	1
North Dakota	1	0	1	0
Pennsylvania	3	0	3	0
Rhode Island	2	0	2	1
Wisconsin	3	0	3	0
Totals	29	2	31	2

*Includes confirmed and probable cases.

St. Louis encephalitis virus (SLEV) activity in 2017

As of January 9th, six counties in three states have reported human cases of SLEV disease to ArboNET for 2017 [Figure 8 and Table 6]. Additionally, 10 counties in four 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 January 9, 2018)

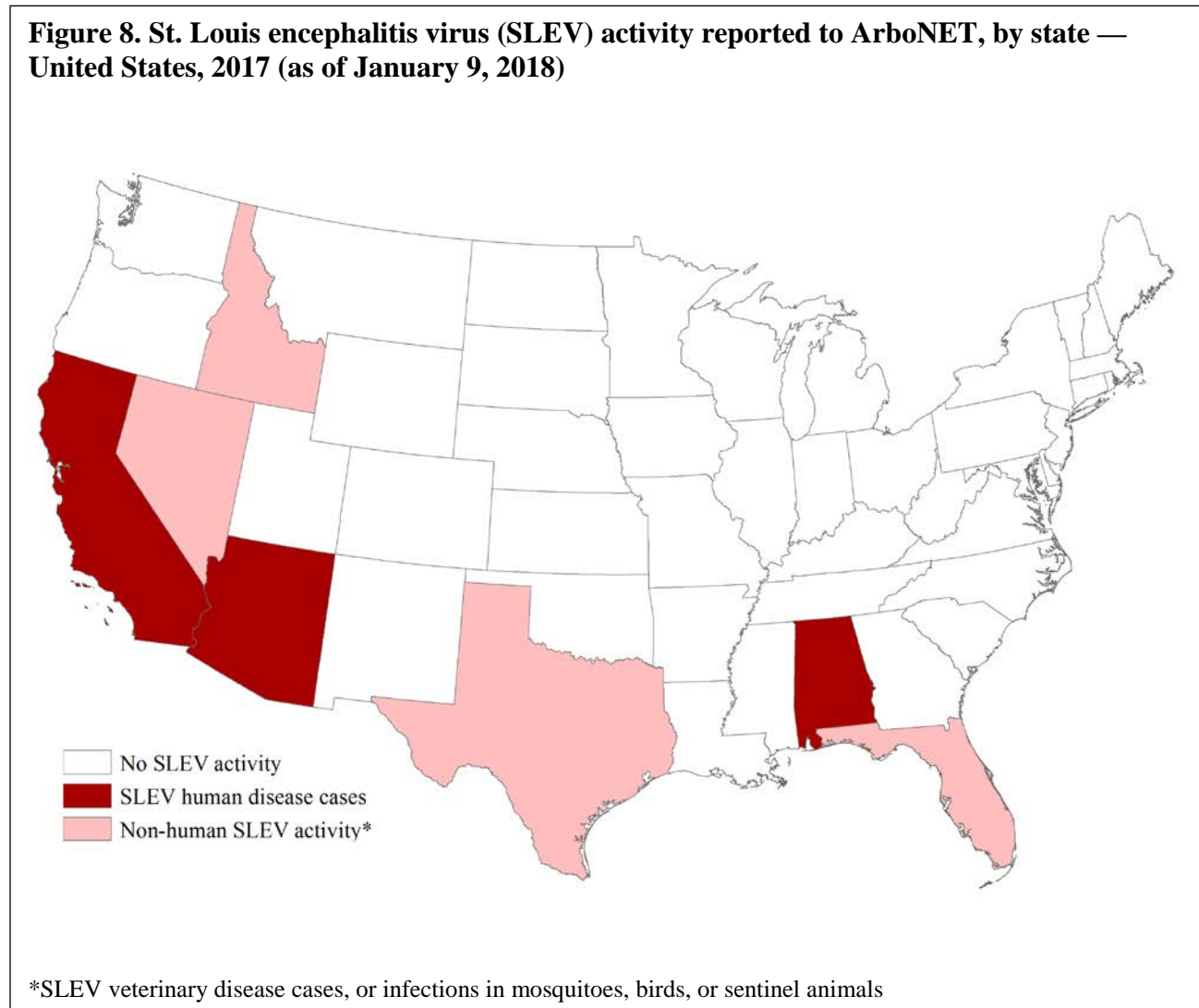


Table 6. St. Louis encephalitis virus human disease cases reported to ArboNET, United States, 2017

State	Neuroinvasive disease cases	Non-neuroinvasive disease cases	Total cases*	Deaths
Alabama	1	0	1	0
Arizona	2	3	5	0
California	1	2	3	0
Totals	4	5	9	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