

WNV human infections reported for 2014

Reported WNV disease cases

To date, a total of 1,177 human cases of WNV disease have been reported from 353 counties in 39 states and the District of Columbia [Table 1]. Dates of illness onset for cases ranged from January–September [Figure 2].

Of all WNV disease cases reported, 521 (44%) were classified as non-neuroinvasive disease and 656 (56%) were classified as neuroinvasive disease (e.g., meningitis, encephalitis, acute flaccid paralysis) [Figure 3]. Additional demographic and clinical characteristics of reported cases are provided [Table 7].

Presumptive viremic donors (PVDs)

To date, a total of 220 WNV presumptive viremic blood donors have been reported from 27 states [Table 1]. Of these, 24 (11%) developed clinical illness.

Table 1. West Nile virus infections in humans reported to ArboNET, 2014

State	Human disease cases reported to CDC*				Presumptive viremic blood donors
	Neuroinvasive	Non-neuroinvasive	Total	Deaths	
Alabama	0	1	1	1	3
Arizona	35	7	42	6	6
Arkansas	4	1	5	1	0
California	240	134	374	12	58
Colorado	36	54	90	2	6
Connecticut	2	1	3	0	3
District of Columbia	1	2	3	0	0
Florida	5	2	7	0	4
Georgia	9	1	10	1	0
Idaho	5	13	18	0	0
Illinois	12	7	19	1	0
Indiana	3	0	3	0	0
Iowa	3	8	11	0	3
Kansas	3	20	23	0	2
Louisiana	53	49	102	5	14
Maryland	2	0	2	0	1
Massachusetts	2	1	3	0	1
Michigan	1	0	1	0	0
Minnesota	2	7	9	0	6
Mississippi	26	14	40	5	5
Missouri	8	1	9	1	4
Montana	2	2	4	0	0
Nebraska	23	59	82	1	25
Nevada	3	0	3	0	0
New Jersey	3	2	5	0	0
New Mexico	10	4	14	1	3
New York	7	8	15	0	5
North Dakota	11	6	17	1	1
Ohio	5	1	6	1	0
Oklahoma	5	8	13	0	7
Pennsylvania	5	1	6	0	2
South Carolina	2	0	2	0	2
South Dakota	12	37	49	0	0
Tennessee	5	1	6	0	1
Texas	100	55	155	2	42
Utah	0	1	1	0	0
Virginia	2	1	3	1	1
Washington	5	3	8	0	2
West Virginia	0	0	0	0	2
Wisconsin	4	4	8	1	11
Wyoming	0	5	5	0	0
Totals	656	521	1,177	43	220

*Includes confirmed and probable cases

Figure 2. WNV disease cases reported to ArboNET, by week of onset — United States, 2014

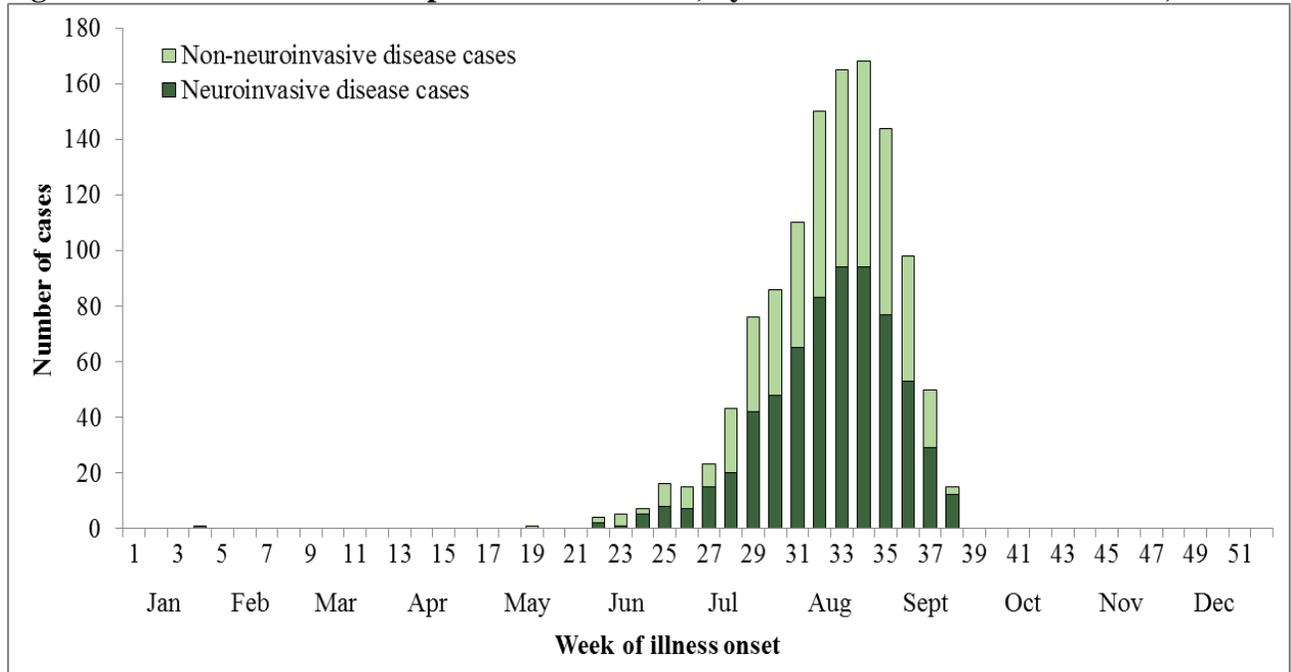
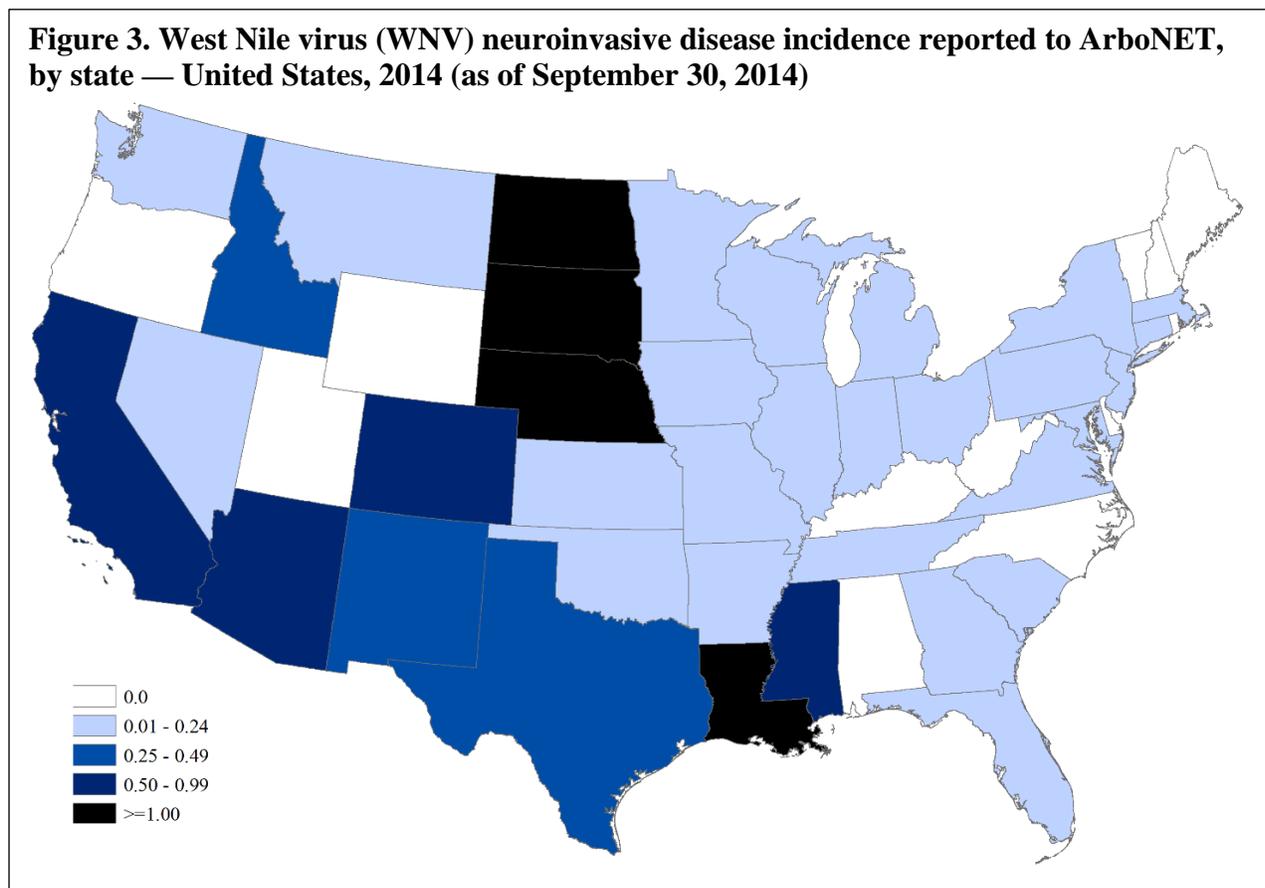


Figure 3. West Nile virus (WNV) neuroinvasive disease incidence reported to ArboNET, by state — United States, 2014 (as of September 30, 2014)



Eastern equine encephalitis virus (EEEV) activity in 2014

As of September 30th, four counties in three states have reported human cases of EEEV disease to ArboNET for 2014 [Figure 4 and Table 2]. Fourteen 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, 2014 (as of September 30, 2014)

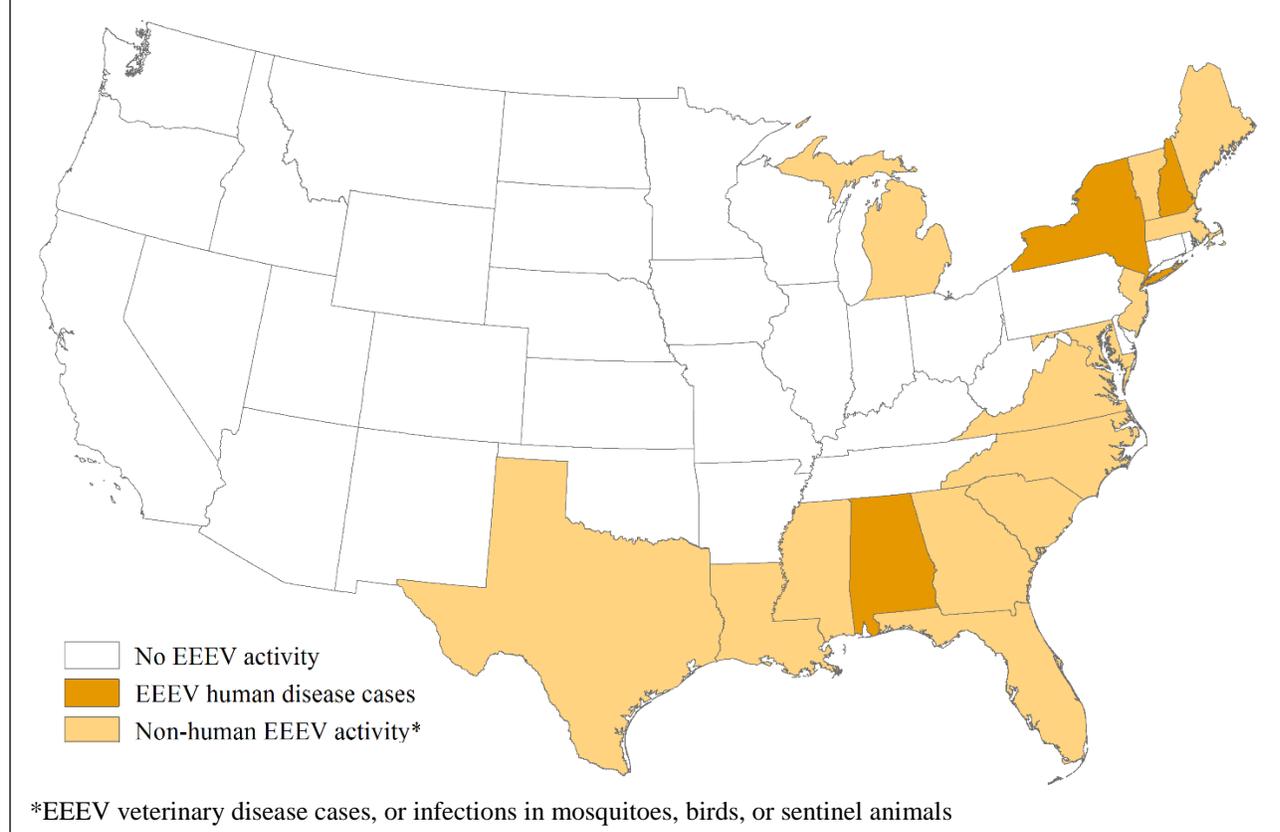


Table 2. Eastern equine encephalitis virus (EEEV) human disease cases reported to ArboNET, United States, 2014

	Neuroinvasive disease cases	Nonneuroinvasive disease cases	Total cases*	Deaths
Alabama	1	0	1	0
New Hampshire	2	0	2	0
New York	1	0	1	0
Totals	4	0	4	0

*Includes confirmed and probable cases.

Jamestown Canyon virus (JCV) activity in 2014

As of September 30th, three counties in two states have reported human cases of JCV disease to ArboNET for 2014 [Figure 5 and Table 3]. Two states have reported JCV activity in non-human species only.

Figure 5. Jamestown Canyon virus (JCV) activity reported to ArboNET, by state — United States, 2014 (as of September 30, 2014)

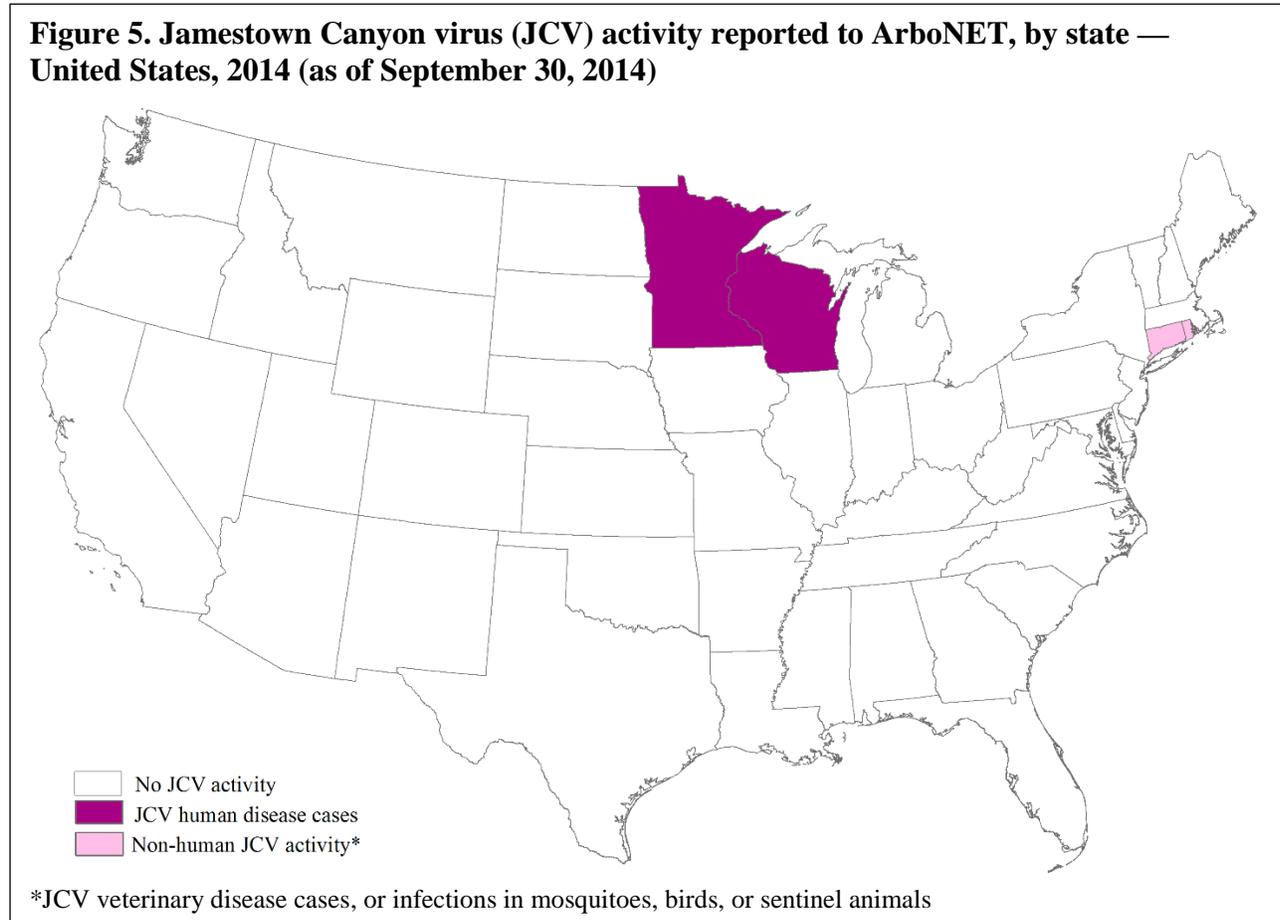


Table 3. Jamestown Canyon virus (JCV) human disease cases reported to ArboNET, United States, 2014

	Neuroinvasive disease cases	Nonneuroinvasive disease cases	Total cases*	Deaths
Minnesota	1	0	1	0
Wisconsin	1	2	3	0
Totals	2	2	4	0

*Includes confirmed and probable cases.

La Crosse virus (LACV) activity in 2014

As of September 30th, 27 counties in seven states have reported human cases of LACV disease to ArboNET for 2014 [Figure 6 and Table 4]. Michigan has reported LACV activity in non-human species only. Additional demographic and clinical characteristics of reported cases are provided [Table 7].

Figure 6. La Crosse virus (LACV) activity reported to ArboNET, by state — United States, 2014 (as of September 30, 2014)

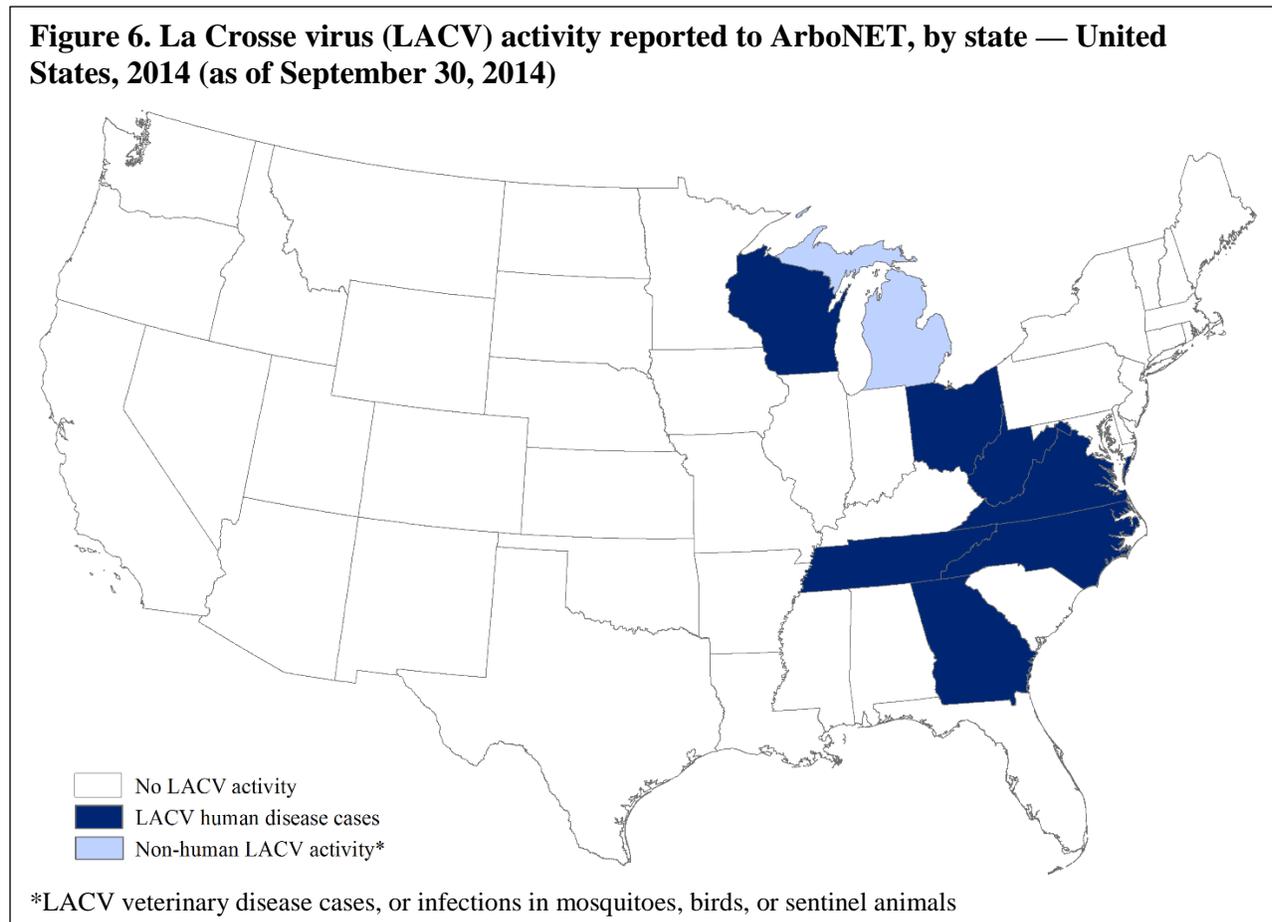


Table 4. La Crosse virus (LACV) human disease cases reported to ArboNET, United States, 2014

	Neuroinvasive disease cases	Nonneuroinvasive disease cases	Total cases*	Deaths
Georgia	0	1	1	0
North Carolina	5	0	5	0
Ohio	13	1	14	0
Tennessee	6	0	6	0
Virginia	1	0	1	0
West Virginia	1	0	1	0
Wisconsin	1	1	2	0
Totals	27	3	30	0

*Includes confirmed and probable cases.

Powassan virus (POWV) activity in 2014

As of September 30th, four counties in two states have reported human cases of POWV disease to ArboNET for 2014 [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, 2014 (as of September 30, 2014)

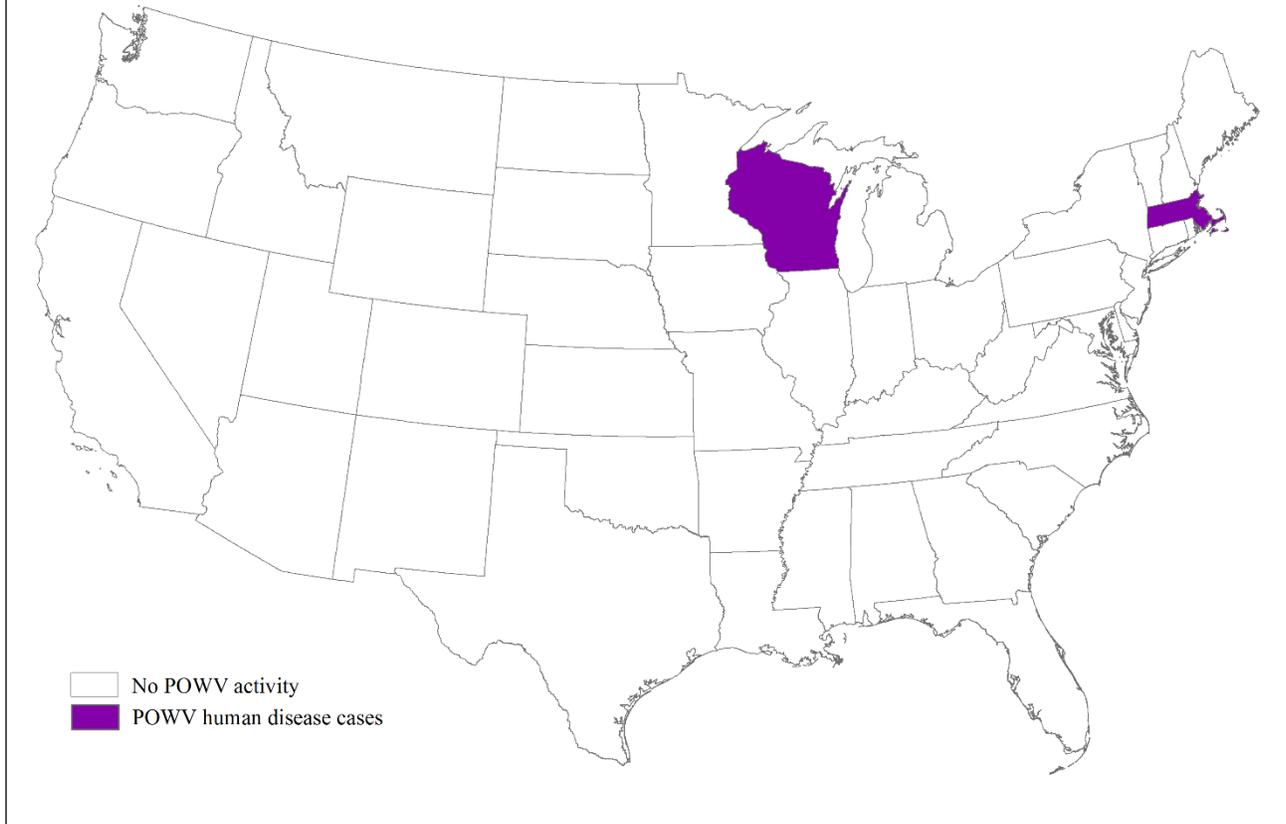


Table 5. Powassan virus (POWV) human disease cases reported to ArboNET, United States, 2014

	Neuroinvasive disease cases	Nonneuroinvasive disease cases	Total cases*	Deaths
Massachusetts	2	0	2	0
Wisconsin	2	1	3	0
Totals	4	1	5	0

*Includes confirmed and probable cases.

St. Louis encephalitis virus (SLEV) activity in 2014

As of September 30th, three counties in three states have reported human cases of SLEV disease to ArboNET for 2014 [Figure 8 and Table 6]. Four 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, 2014 (as of September 30, 2014)

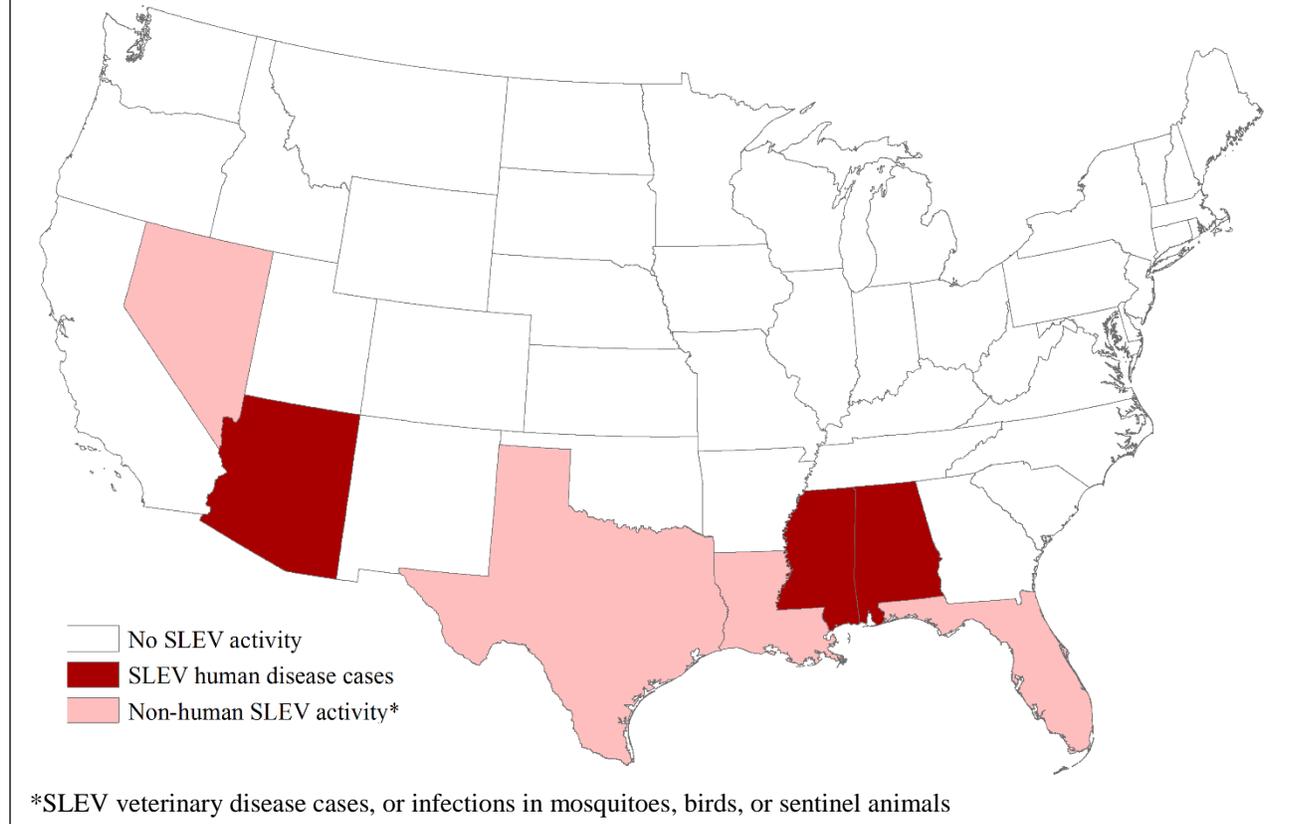


Table 6. St. Louis encephalitis virus (SLEV) human disease cases reported to ArboNET, United States, 2014

	Neuroinvasive disease cases	Nonneuroinvasive disease cases	Total cases*	Deaths
Alabama	1	0	1	0
Arizona	0	1	1	0
Mississippi	1	0	1	0
Totals	2	1	3	0

*Includes confirmed and probable cases.

Table 7. Characteristics of reported cases of arboviral disease, United States, 2014

	LAC N=30		POW N=5		WNV N=1,177	
	No.	(%)	No.	(%)	No.	(%)
Age group						
<20 years	28	(93)	0	(0)	59	(5)
20-39 years	1	(3)	0	(0)	209	(18)
40-49 years	0	(0)	0	(0)	165	(14)
50-59 years	0	(0)	3	(60)	246	(21)
≥60 years	1	(3)	2	(40)	497	(42)
Unspecified	0	(0)	0	(0)	1	(<1)
Male sex						
	15	(50)	4	(80)	733	(62)
Onset of illness						
January	0	(0)	0	(0)	1	(<1)
February	0	(0)	0	(0)	0	(0)
March	1	(3)	0	(0)	0	(0)
April	0	(0)	2	(40)	0	(0)
May	0	(0)	0	(0)	5	(<1)
June	1	(3)	3	(60)	46	(4)
July	15	(50)	0	(0)	289	(25)
August	10	(33)	0	(0)	689	(59)
September	3	(10)	0	(0)	147	(12)
Clinical syndrome						
Nonneuroinvasive	3	(10)	1	(20)	521	(44)
Neuroinvasive						
Encephalitis	20	(67)	2	(40)	305	(26)
Meningitis	7	(23)	2	(40)	280	(24)
Acute flaccid paralysis [†]	0	(0)	0	(0)	58	(5)
Other neuroinvasive presentation	0	(0)	0	(0)	13	(1)
Outcome						
Hospitalization	28	(93)	5	(100)	794	(68)
Death	0	(0)	0	(0)	43	(4)

LAC=La Crosse virus; POW=Powassan virus; WNV=West Nile virus

[†] Forty three WNV disease cases classified as acute flaccid paralysis also had encephalitis or meningitis.



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/script/casedef.aspx?CondYrID=616&DatePub=1/1/2011%2012:00:00%20AM>
- U.S. Geological Survey (USGS):
<http://diseasemaps.usgs.gov/>
- AABB (American Association of Blood Banks):
<http://www.aabb.org/research/hemovigilance/Pages/wnv.aspx>