



# Vector-Borne Disease

## Weekly Surveillance Report

Center for Acute Disease Epidemiology | Acute Disease Prevention and Emergency Response & EH | [West Nile Virus Website](#)

All data presented in this report are provisional and may change as additional reports are received

Date Issued: November 27, 2019



### West Nile Virus (WNV)

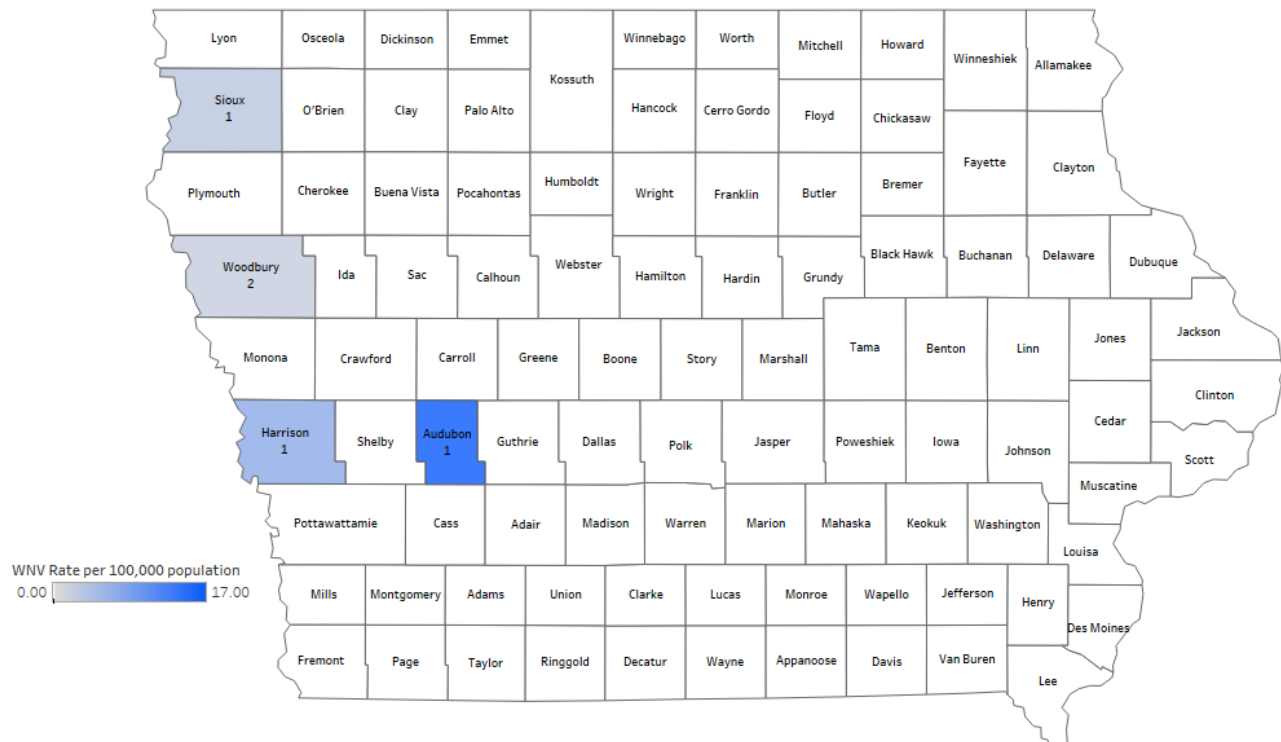
WNV is endemic in Iowa and activity usually peaks in late summer and early fall. IDPH works in collaboration with Local Public Health (LPH) and other appropriate partners to investigate all reported cases.

In 2018, Iowa experienced an increase in WNV activity and 104 human cases were identified. This is the highest number since 2003. Thus far in 2019, five human cases of WNV and one presumptive viremic blood donor have been identified. Three horses and eight mosquito samples have tested positive for WNV [Table 1].

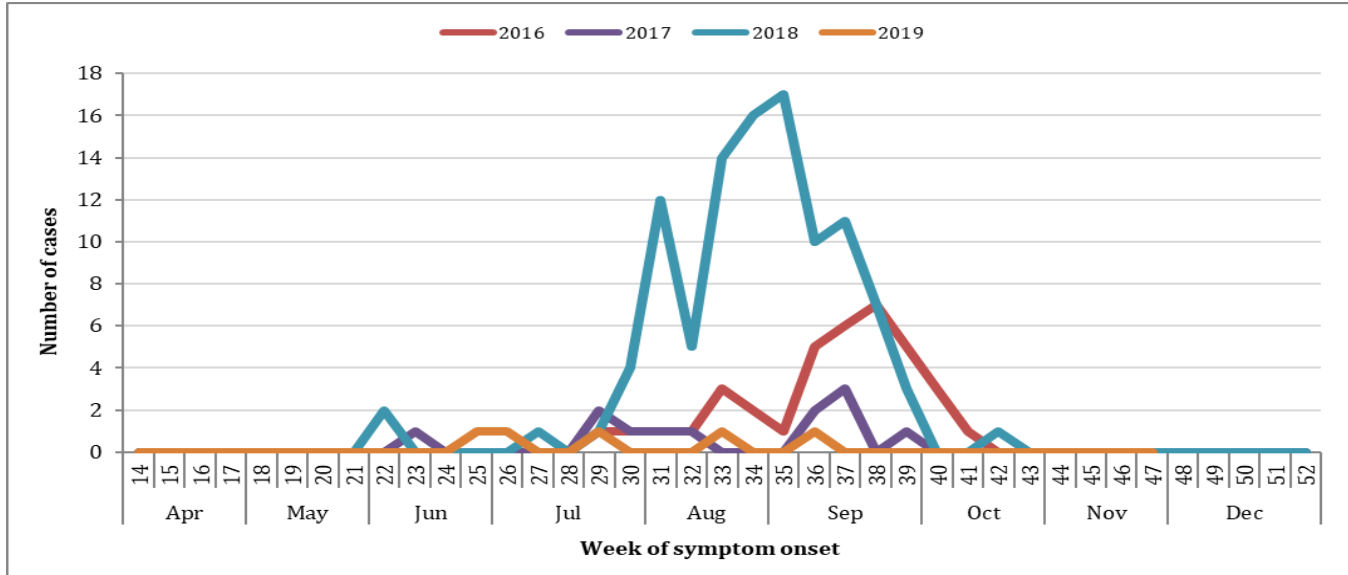
**Table 1. Human /Equine/Mosquito Surveillance, 2019 Positive Samples**

County	Human	Blood Donor	Horse	Mosquitoes	
				<i>Culex pipiens</i> group	<i>Culex restuans</i>
Audubon	1	0	0	0	0
Davis	0	0	1	0	0
Harrison	1	0	0	0	0
Humboldt	0	1	0	0	0
Mitchell	0	0	1	0	0
Polk	0	0	0	7	1
Sioux	1	0	0	0	0
Union	0	0	1	0	0
Woodbury	2	0	0	0	0
<b>Total</b>	<b>5</b>	<b>1</b>	<b>3</b>	<b>7</b>	<b>1</b>

**Figure 1. 2019 West Nile virus case count and incidence rate by county of residence.**



**Figure 2. WNV disease cases reported to IDPH, by week of onset-Iowa, 2019**



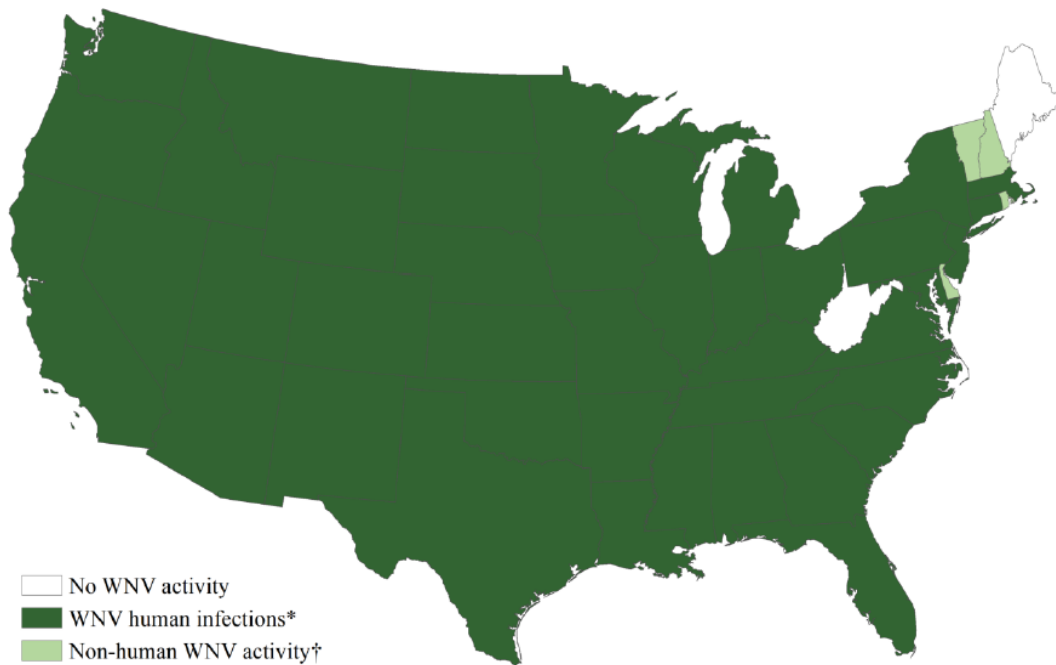
**National WNV Activity:**

As of November 19<sup>th</sup>, 595 counties from 47 states and the District of Columbia have reported WNV activity to ArboNET for 2019, including 43 states and the District of Columbia with reported WNV human infections (i.e., disease cases or viremic blood donors) and four additional states with reported WNV activity in non-human species only (i.e., veterinary cases, mosquito pools, dead birds, or sentinel animals) [Figure 3].

To date, 872 human WNV disease cases have been reported from 246 counties in 43 states and the District of Columbia. Of the 872 reported cases, 570 (65%) were classified as neuroinvasive disease (e.g., meningitis or encephalitis) and 302 (35%) were classified as non-neuroinvasive disease [Figure 4]. Dates of illness onset for cases ranged from January-November [Figure 5].

Overall, 100 WNV PVDs has been reported from 24 states.

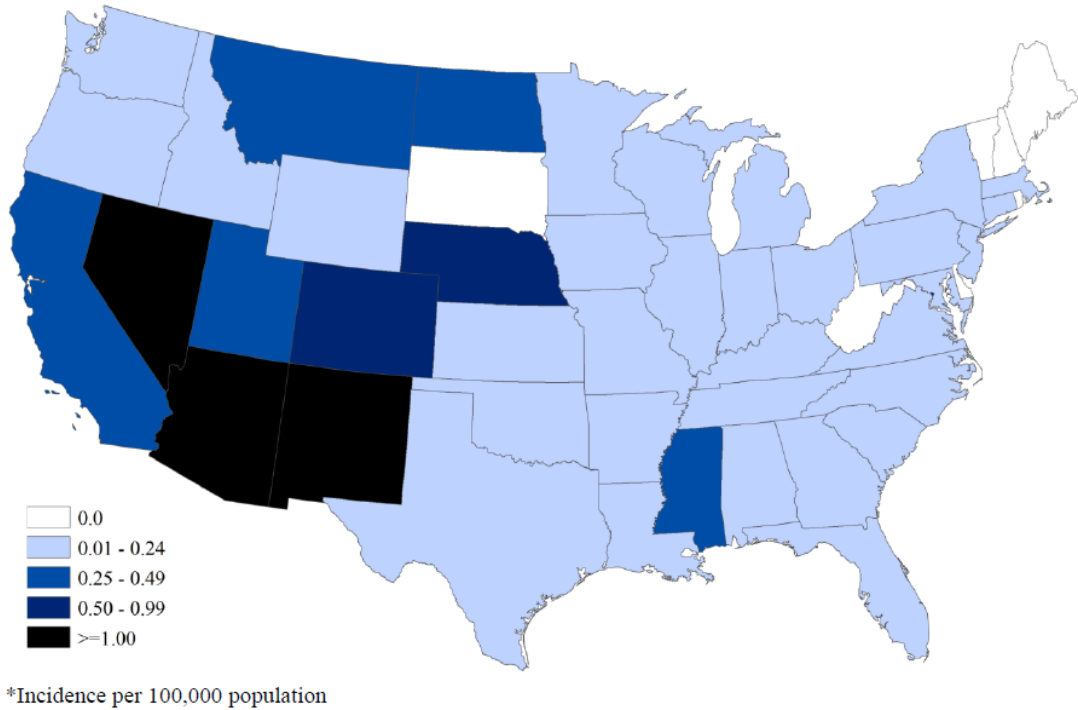
**Figure 3. WNV activity reported to ArboNET, by state – United States, 2019 (as of November 19, 2019)**



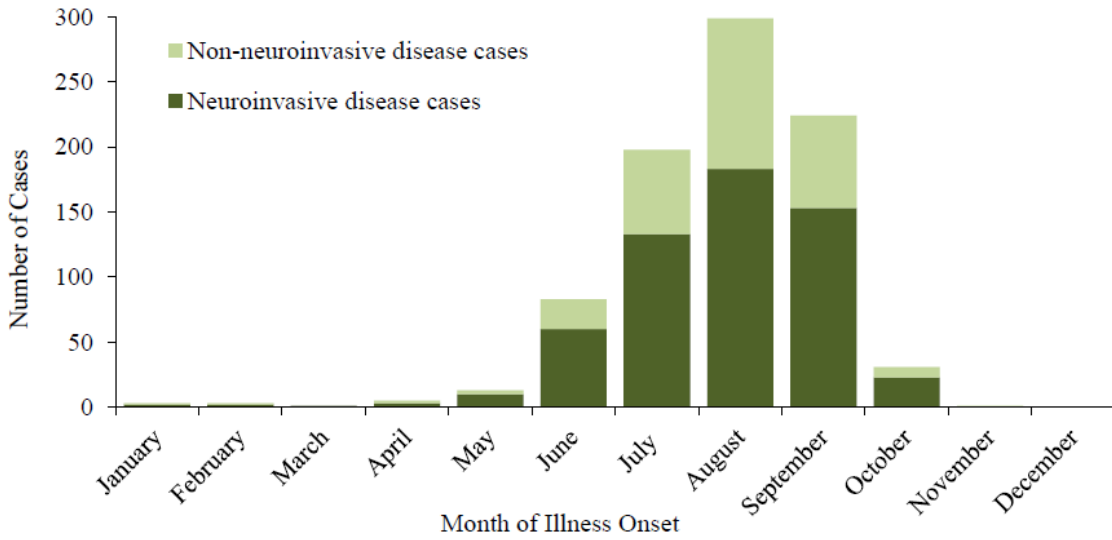
\*WNV human disease cases or presumptive viremic blood donors. Presumptive viremic blood donors have a positive screening test which has not necessarily been confirmed.

†WNV veterinary disease cases, or infections in mosquitoes, birds, or sentinel animals

**Figure 4. WNV neuroinvasive disease incidence\* reported to ArboNET, by state - United States, 2019 (as of November 19, 2019)**



**Figure 5. WNV disease cases reported to ArboNET, by month of onset\*- United States, 2019 (as of November 19, 2019)**



\*Cases missing onset date (n=11)

## Mosquito Surveillance

IDPH in collaboration with the State Hygienic Laboratory (SHL), Iowa State University (ISU), and local public environmental health partners conducts ecological surveillance in 16 counties across the state by monitoring mosquitoes and testing for WNV infected populations.

**Table 2. 2019 mosquitoes tested for West Nile virus**

Species	# of Samples Tested	WNV Negative	WNV Positive
<i>Cx. pipiens</i>	276	276	0
<i>Cx. pipiens</i> group	868	861	7
<i>Cx. tarsalis</i>	157	157	0
<i>Cx. restuans</i>	591	590	1
<i>Cx. territans</i>	39	39	0
<i>Cx. erraticus</i>	1	1	0
<i>Cx. salinarius</i>	11	11	0
<i>Cx. species</i>	2	2	0
<i>Ae. japonicus</i>	0	0	0
<i>An. punctipennis</i>	0	0	0
<i>Ae. atropalpus</i>	0	0	0
<i>Ae. sticticus</i>	0	0	0
<i>Ae. triseriatus</i>	2	2	0
<b>Total</b>	<b>1947</b>	<b>1939</b>	<b>8</b>

In addition to viral testing for WNV, the population of mosquitoes in Iowa is monitored through trapping activities. All trapped mosquitoes are sorted by species. The figure [Figure 7] below shows where and when *Aedes albopictus* mosquitoes were detected 2017-2019.

**Figure 7. *Aedes albopictus* identified in Iowa, 2017-2019**





## Rocky Mountain spotted fever (RMSF)

American dog ticks are carriers of *Rickettsia rickettsii*, the bacteria that causes RMSF. The American dog tick is the most common species of tick in Iowa and can be found in every county in the state. The tick is most active late March through August.

Eleven cases of RMSF have been reported in Iowa. In 2018, 22 cases of RMSF were reported to IDPH.

## Ehrlichiosis/Anaplasmosis

There are at least three species of bacteria responsible for ehrlichiosis/anaplasmosis in the United States: *Ehrlichia chaffeensis*, *Ehrlichia ewingii*, and *Anaplasma phagocytophilum*. Ehrlichiae are transmitted by the bite of an infected lone star tick (*Amblyomma americanum*) which is found in Iowa. *A. phagocytophilum* is transmitted by the bite of an infected blacklegged tick (or deer tick, *Ixodes scapularis*) in Iowa. The clinical signs and symptoms of these infections are similar.

Thirty cases of ehrlichiosis/anaplasmosis have been reported in Iowa. In 2018, 27 cases of ehrlichiosis/anaplasmosis were reported to IDPH.

## Lyme

Lyme disease is caused by *Borrelia burgdorferi* and in Iowa is transmitted to humans by the bite of an infected tick, the blacklegged tick (or deer tick, *Ixodes scapularis*). Ticks are most likely to spread the Lyme disease bacterium during their pre-adult stage (nymph). They are most common between May and July and found in tall grasses and brush of wooded areas.

As of November 27<sup>th</sup>, 286 confirmed and probable cases of Lyme disease have been reported in Iowa [Figure 8]. In 2018, 284 cases of Lyme disease were reported to IDPH.

Figure 8. 2019 Lyme disease case count and incidence rate by county of residence.

