

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

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## 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, two human cases of WNV have been identified. Two horses and one mosquito sample have tested positive for WNV [Table 1].

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

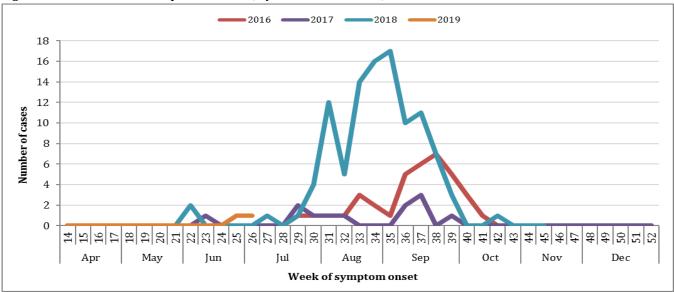
	Mosquitoes			
		Blood		Culex
County	Human	Donor	Horse	restuans
Audubon	1	0	0	0
Davis	0	0	1	0
Polk	0	0	0	1
Union	0	0	1	0
Woodbury	1	0	0	0
Total	2	0	2	1

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



/IDPH

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

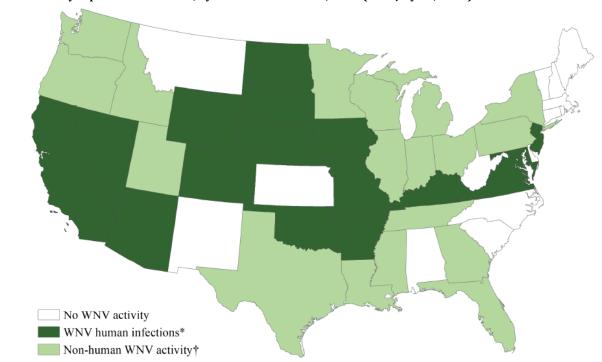


#### National WNV Activity:

As of July 23<sup>rd</sup>, 129 counties from 34 states have reported WNV activity to ArboNET for 2019, including 16 states with reported WNV human infections (i.e., disease cases or viremic blood donors) and 18 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, 76 human WNV disease cases have been reported from 21 counties in 16 states. Of the 76 reported cases, 53 (70%) were classified as neuroinvasive disease (e.g., meningitis or encephalitis) and 23 (30%) were classified as non-neuroinvasive disease [Figure 4]. Dates of illness onset for cases ranged from January-July [Figure 5].

Overall, 17 WNV PVD has been reported from two states.

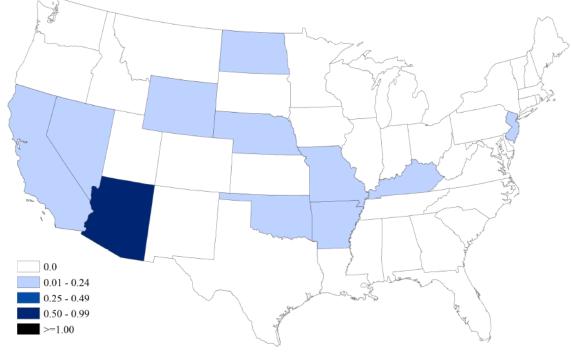


#### Figure 3. WNV activity reported to ArboNET, by state - United States, 2019 (as of July 23, 2019)

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

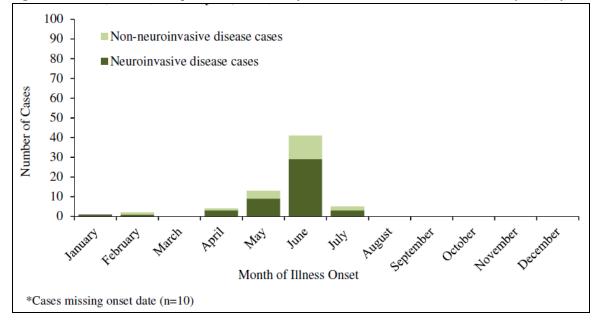
†WNV veterinary disease cases, or infections in mosquitoes, birds, or sentinel animals

#### Figure 4. WNV neuroinvasive disease incidence\* reported to ArboNET, by state - United States, 2019 (as of July 23, 2019)



\*Incidence per 100,000 population

Figure 5. WNV disease cases reported to ArboNET, by month of onset\*- United States, 2019 (as of July 23, 2019)



### **Mosquito Surveillance**

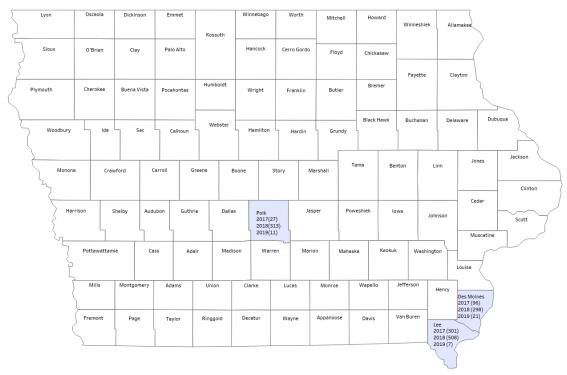
IDPH in collaboration with the State Hygienic Laboratory (SHL), Iowa State University (ISU), and local public environmental health partners conducts ecological surveillance in 16 counties across the state by monitoring mosquitoes and testing for WNV infected populations.

	# of Samples		
Species	Tested	WNV Negative	WNV Positive
Cx. pipiens	142	142	0
Cx. pipiens group	294	294	0
Cx. tarsalis	62	62	0
Cx. restuans	342	341	1
Cx. territans	7	7	0
Cx. erraticus	0	0	0
Cx. salinarius	9	9	0
Cx. species	1	1	0
Ae. japonicus	0	0	0
An. punctipennis	0	0	0
Ae. atropalpus	0	0	0
Ae. sticticus	0	0	0
Ae. triseriatus	0	0	0
Total	857	856	1
10101	037	030	

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

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 6] below shows where and when Aedes albopictus mosquitoes were detected 2017-2019.

#### Figure 6. Aedes albopictus identified in Iowa, 2017-2019



# Malaria

Malaria is a serious and sometimes fatal disease caused by a parasite that commonly infects *Anopheles* mosquitoes. Malaria is spread to humans by the bite of the infected female mosquito. Only *Anopheles* mosquitoes can transmit malaria and they must have been infected through a previous blood meal taken from an infected person.

Twelve cases of malaria have been reported in Iowa. Cases are in travelers and immigrants returning from parts of the world where malaria transmission occurs. In 2018, 22 cases of malaria were reported to IDPH.

# **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.

Five 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.

Fourteen 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 July 26<sup>th</sup>, 128 confirmed and probable cases of Lyme disease have been reported in Iowa [Figure 7]. In 2018, 284 cases of Lyme disease were reported to IDPH.

