

# Vector-Borne Disease

## 2021 Weekly Surveillance Report

Iowa Department of Public Health | Center for Acute Disease Epidemiology | [West Nile Virus Website](#)

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

Date Issued: October 29, 2021

### West Nile Virus (WNV)

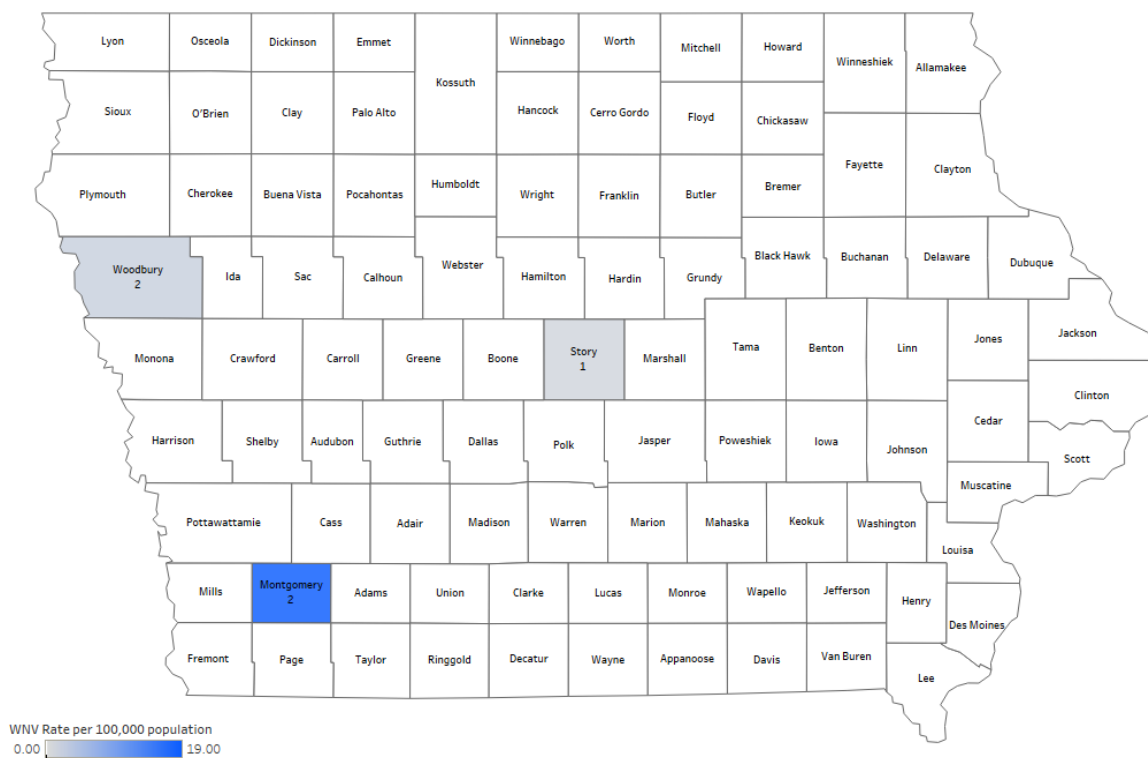
WNV is endemic in Iowa and activity usually peaks in late summer and early fall. IDPH works in collaboration with Local Public Health (LPH) and other appropriate partners to investigate all reported cases.

In 2020, three human cases were identified. Thus far in 2021, five human cases of WNV and three presumptive viremic blood donors have been identified. Eighty-one mosquito samples have tested positive for WNV [Table 1].

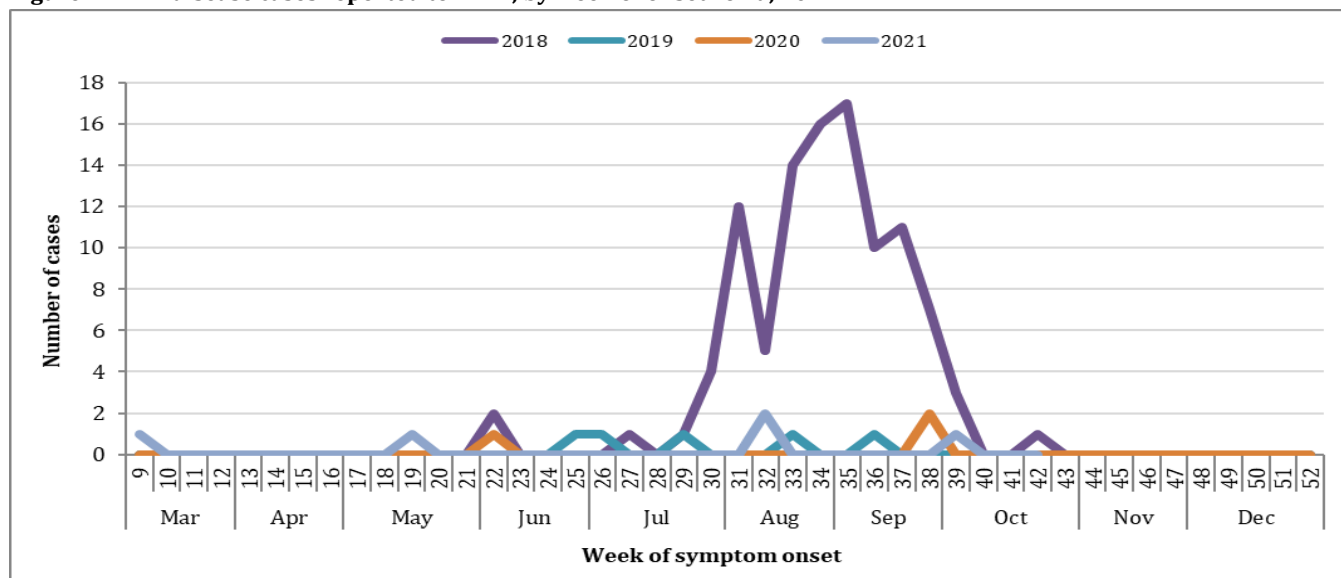
**Table 1. Human /Equine/ Mosquito Surveillance, 2021 Positive Samples**

| County       | Human    | Blood Donor | Horse    | Mosquitoes            |                            |                      |
|--------------|----------|-------------|----------|-----------------------|----------------------------|----------------------|
|              |          |             |          | <i>Culex restuans</i> | <i>Culex pipiens group</i> | <i>Culex pipiens</i> |
| Black Hawk   | 0        | 0           | 0        | 2                     | 2                          | 19                   |
| Johnson      | 0        | 0           | 0        | 1                     | 0                          | 0                    |
| Montgomery   | 2        | 0           | 0        | 0                     | 0                          | 0                    |
| O'Brien      | 0        | 0           | 0        | 0                     | 0                          | 1                    |
| Polk         | 0        | 3           | 0        | 19                    | 8                          | 27                   |
| Story        | 1        | 0           | 0        | 2                     | 0                          | 0                    |
| Woodbury     | 2        | 0           | 0        | 0                     | 0                          | 0                    |
| <b>Total</b> | <b>5</b> | <b>3</b>    | <b>0</b> | <b>24</b>             | <b>10</b>                  | <b>47</b>            |

**Figure 1. 2021 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, 2021**



## Mosquito Surveillance

IDPH in collaboration with Iowa State University (ISU) and local public environmental health partners conducts ecological surveillance in 14 counties across the state by monitoring mosquitoes and testing for WNV infected populations.

**Table 2. 2021 mosquitoes tested for West Nile virus**

| Species                  | # of Samples Tested | WNV Negative | WNV Positive |
|--------------------------|---------------------|--------------|--------------|
| <i>Cx. pipiens</i>       | 518                 | 471          | 47           |
| <i>Cx. pipiens</i> group | 192                 | 182          | 10           |
| <i>Cx. tarsalis</i>      | 45                  | 45           | 0            |
| <i>Cx. restuans</i>      | 584                 | 560          | 24           |
| <i>Cx. territans</i>     | 24                  | 24           | 0            |
| <i>Cx. salinarius</i>    | 2                   | 2            | 0            |
| <i>Cx. erraticus</i>     | 21                  | 21           | 0            |
| <b>Total</b>             | <b>1386</b>         | <b>1305</b>  | <b>81</b>    |

## Dengue Fever

Dengue is a disease caused by any one of four related viruses, which are passed by the bite of an infected *Aedes aegypti* or *Aedes albopictus* mosquito. Infection with one of the four viruses does not protect against the others and consecutive infections put people at greater risk of developing dengue hemorrhagic fever (DHF).

Dengue is not found in Iowa. Cases are in travelers and immigrants returning from parts of the world where dengue transmission occurs. One case of dengue has been reported in Iowa, thus far in 2021. In 2020, one case of dengue was reported to IDPH.

## 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.

Seventeen 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 2020, six 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.

Three cases of RMSF have been reported in Iowa. In 2020, four 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.

Eighteen cases of ehrlichiosis/anaplasmosis have been reported in Iowa. In 2020, nine cases of ehrlichiosis/anaplasmosis were reported to IDPH.

## Babesiosis

Babesiosis is caused by microscopic parasites that infect red blood cells. Most human cases in the United States are caused by the parasite *Babesia microti*. *Babesia microti* is spread by the blacklegged tick (or deer tick, *Ixodes scapularis*). The parasite typically is spread by the young nymph stage of the tick. They are most common during the warm months of spring and summer in areas with woods, brush, or grass.

Four cases of babesiosis have been reported in Iowa. In 2020, one case of babesiosis was 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 October 29<sup>th</sup>, 325 confirmed and probable cases of Lyme disease have been reported in Iowa [Figure 3]. In 2020, 256 cases of Lyme disease were reported to IDPH.

**Figure 3. 2021 Lyme disease case count and incidence rate by county of residence.**

