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 2019, five human cases were identified. Thus far in 2020, one human case of WNV has been identified [Table 1].

Table 1. Human /Equine Surveillance, 2020 Positive Samples

<table>
<thead>
<tr>
<th>County</th>
<th>Human</th>
<th>Blood Donor</th>
<th>Horse</th>
</tr>
</thead>
<tbody>
<tr>
<td>Polk</td>
<td>1</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Total</td>
<td>1</td>
<td>0</td>
<td>0</td>
</tr>
</tbody>
</table>

Figure 1. 2020 West Nile virus case count and incidence rate by county of residence.
National WNV Activity:
As of July 14th, 58 counties from 16 states have reported WNV activity to ArboNET for 2020, including nine states with reported WNV human infections (i.e., disease cases or viremic blood donors) and seven 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, 13 human WNV disease cases have been reported from 11 counties in eight states. Of the 13 reported cases, 10 (76.9%) were classified as neuroinvasive disease (e.g., meningitis or encephalitis) and three (23.1%) was classified as non-neuroinvasive disease [Figure 4]. Dates of illness onset for cases ranged from January-June [Figure 5].

Sixteen WNV presumptive viremic donors have been reported from three states.

Figure 3. WNV activity reported to ArboNET, by state – United States, 2020 (as of July 14, 2020)

*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
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 2020. In 2019, nine cases of dengue were 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.

Two 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 2019, 23 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.

Two cases of RMSF have been reported in Iowa. In 2019, 11 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*. *Ehrlichia* 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.

Four cases of ehrlichiosis/anaplasmosis have been reported in Iowa. In 2019, 34 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 24th, 42 confirmed and probable cases of Lyme disease have been reported in Iowa [Figure 6]. In 2019, 304 cases of Lyme disease were reported to IDPH.

Figure 6. 2020 Lyme disease case count and incidence rate by county of residence.