

# Vector-Borne Disease

## 2016 Annual Surveillance Report



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

### West Nile Virus (WNV)

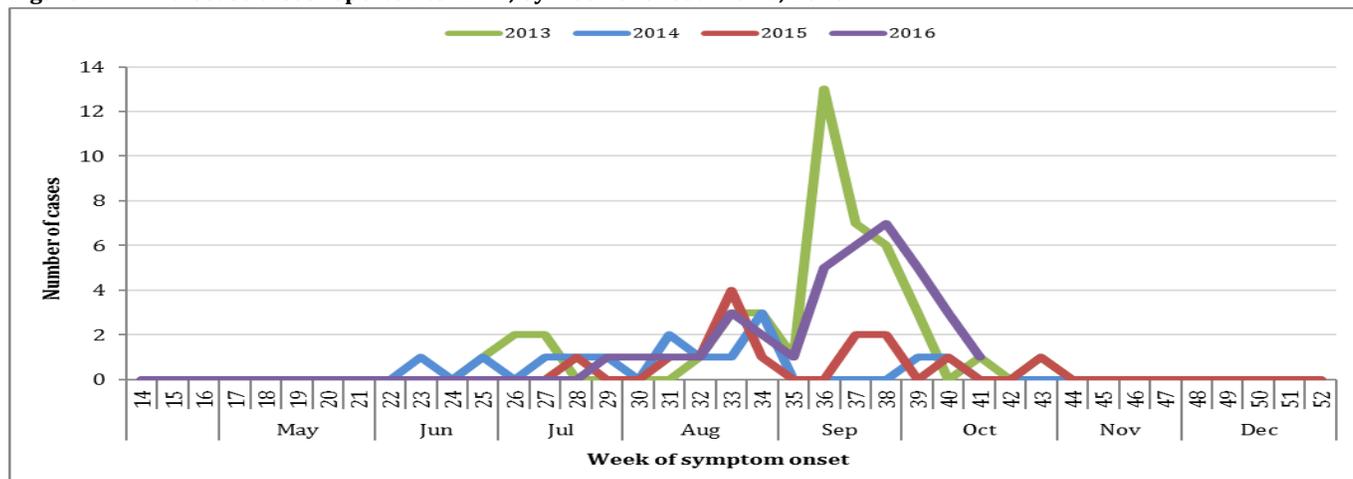
WNV is endemic in Iowa and activity usually peaks in late summer and early fall. IDPH works in collaboration with Local Public Health (LPH) and other appropriate partners to investigate all reported cases.

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

Thirty-seven human cases of WNV and one WNV-related death have been reported in Iowa in 2016 [Table 1]. Forty-six mosquito pools and 15 horses have also tested positive for this virus. During the 2015 surveillance season, 14 human cases of WNV were reported, in 13 Iowa counties [Figure 1].

County	Human	Blood Donor	Horses	Mosquito Pools					
				<i>Aedes japonicus</i>	<i>Culex erraticus</i>	<i>Culex pipiens</i>	<i>Culex pipiens</i> Group	<i>Culex restuans</i>	<i>Culex salinarius</i>
Appanoose	1	0	0	0	0	0	0	0	0
Boone	1	0	0	0	0	0	0	0	0
Clinton	2	0	0	0	0	0	0	0	0
Crawford	0	1	1	0	0	0	0	0	0
Des Moines	1	0	0	0	0	0	0	0	0
Floyd	0	0	1	0	0	0	0	0	0
Franklin	0	0	1	0	0	0	0	0	0
Fremont	1	0	0	0	0	1	0	0	0
Hardin	0	0	1	0	0	0	0	0	0
Harrison	0	0	1	0	0	0	0	0	0
Henry	1	0	0	0	0	0	0	0	0
Humboldt	1	0	0	0	0	0	0	0	0
Jackson	0	1	0	0	0	0	0	0	0
Jefferson	0	0	1	0	0	0	0	0	0
Johnson	2	0	2	0	0	0	0	0	0
Linn	1	0	0	0	0	0	0	0	0
Lyon	3	1	0	0	0	0	0	0	0
Monona	1	0	0	0	0	0	0	0	0
O'Brien	2	0	0	0	0	0	0	0	0
Plymouth	2	0	0	0	0	0	0	0	0
Polk	0	0	0	0	0	10	6	8	1
Pottawattamie	2	1	1	0	0	0	0	1	0
Scott	1	0	0	0	0	0	0	0	0
Shelby	1	1	0	0	0	0	0	0	0
Sioux	11	0	1	0	0	0	0	0	0
Story	0	0	0	1	0	8	2	4	0
Tama	1	0	0	0	0	0	0	0	0
Washington	0	0	3	0	0	0	0	0	0
Webster	0	0	1	0	0	0	0	0	0
Woodbury	2	0	0	0	0	1	0	1	0
Van Buren	0	0	1	0	1	0	0	1	0
<b>Total</b>	<b>37</b>	<b>5</b>	<b>15</b>	<b>1</b>	<b>1</b>	<b>20</b>	<b>8</b>	<b>15</b>	<b>1</b>

**Figure 1. WNV disease cases reported to IDPH, by week of onset - Iowa, 2016**



For additional information on Iowa West Nile virus activity, visit <http://idph.iowa.gov/cade/disease-information/west-nile-virus>.

### Chikungunya

Chikungunya is a viral disease that is spread to people by the bite of an infected *Aedes aegypti* and *Aedes albopictus* mosquito. Mosquitoes become infected when they feed on a person already infected with this virus. These species of mosquitoes are not sustained in Iowa.

In 2015, three imported cases of chikungunya virus disease were reported in Iowa. Cases occurring in Iowa are in travelers returning from parts of the world where Chikungunya transmission occurs. Two cases of chikungunya have been reported in Iowa in 2016.

### 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. Eight cases of Dengue have been reported in Iowa in 2016. In 2015, four 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.

Twenty-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 2015, 17 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.

Eleven cases of RMSF have been reported in Iowa. In 2015, nine 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 2015, eleven 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.

In 2016, one case of Babesiosis was reported to IDPH. In 2015, no cases of Babesiosis 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.

In 2016, 232 confirmed and probable cases of Lyme have been reported in Iowa. In 2015, 318 cases of Lyme disease were reported to IDPH.