



**Vector Borne Disease
Surveillance Report**
Summit County Public Health

Report Weeks 9-10
CDC MMWR Weeks 30-31



Public Health
Prevent. Promote. Protect.

This report will run from June through October of each year (or later if West Nile Virus disease is still a concern). Surveillance will include mosquitoes, horses, and humans. It will also include updates from Ohio and around the nation. It will include vector-borne diseases besides West Nile virus. The year 2017 report will include updates on Zika virus.

SUMMIT COUNTY

Table 1: West Nile Virus Tests Ordered in Summit County Hospitals *

Week(s)	# of WNV tests ordered this period	# of positive WNV tests this period	Cumulative # of tests ordered this season	Cumulative # of positive tests this season	Percentage of positive tests
Week 1-2: 5-28 to 6-10	2	0	2	0	0%
Week 3-4: 6-11 to 6-24	1	0	3	0	0%
Week 5-6: 6-25 to 7-8	5	0	8	0	0%
Week 7-8: 7-9 to 7-22	7	0	15	0	0%
Week 9-10: 7-23 to 8-5	4	0	19	0	0%
Week 11-12: 8-6 to 8-19					
Week 13-14: 8-20 to 9-2					
Week 15-16: 9-4 to 9-16					
Week 17-18: 9-17 to 9-30					
Week 19-20: 10-1 to 10-14					
Week 21-22: 10-15 to 10-28					

During the surveillance period Week 9 and 10, there were 4 tests ordered for WNV by Summit County hospitals, and all results were negative (Table 1).

During weeks 9 & 10, there were 2 suspect cases of Lyme disease. Year to date, there have also been 11 suspected cases of Lyme disease reported in Summit County and 1 confirmed. Area labs reported 59 tests for Lyme disease done during weeks 9 & 10. Read more about confirmatory testing for Lyme Disease after Table 2.

Year-to-date there remains one case of Zika, reported in Summit County (January, 2017). This case was travel related.

One case of travel related malaria was reported this year to date.

There was 1 reported case of aseptic meningitis in Weeks 9 and 10 in Summit County (Table 3).

Mosquito Testing in Summit County*

As of August 10, 2017

Mosquitoes identified	53,860
Pooled samples tested	705
Positive WNV samples	37

Table 2: Other Vector-borne Diseases Reported in Summit County, Year-to-date 2017 *

	Confirmed	Suspected
Babesiosis	0	1
Chikungunya	0	0
Dengue	0	0
Ehrlichiosis	0	1
Lyme*	1	11
Malaria	1	0
Rocky Mountain spotted fever	0	0
Zika	1	0

*CDC currently recommends a two-step process when testing blood for evidence of antibodies against the Lyme disease bacteria. Both steps can be done using the same blood sample. The first step uses a testing procedure called "EIA" (enzyme immunoassay) or rarely, an "IFA" (indirect immunofluorescence assay). If this first step is negative, no further testing of the specimen is recommended. If the first step is positive or indeterminate (sometimes called "equivocal"), then the second step should be performed. The second step uses a test called an immunoblot test, commonly, a "Western blot" test. Results are considered positive only if the EIA/IFA and the immunoblot are both positive.

Note:

*Reporting may not be completed each week. Numbers will be updated when reports are received

Table 3: Reported Aseptic Meningitis Cases in Summit County (confirmed & suspected)

Week(s)	Cases reported this period	Cumulative cases for the season
Week 1-2: 5-28 to 6-10	0	0
Week 3-4: 6-11 to 6-24	1	1
Week 5-6: 6-25 to 7-8	3	4
Week 7-8: 7-9 to 7-22	1	5
Week 9-10: 7-23 to 8-5	1	6
Week 11-12: 8-6 to 8-19		
Week 13-14: 8-20 to 9-2		
Week 15-16: 9-3 to 9-16		
Week 17-18: 9-17 to 9-30		
Week 19-20: 10-1 to 10-14		
Week 21-22: 10-15 to 10-28		

*** Aseptic (viral) meningitis is the most common type of meningitis and occurs predominantly during summer and fall. While most aseptic meningitis cases are due to gastrointestinal or respiratory viruses, similar symptoms may be present with arthropod-borne diseases.

Reference: <https://www.cdc.gov/meningitis/clinical-resources.html> For this report, the WNV surveillance season will start in mid-June and stop at the end of October. This data comes from the weekly report that the Ohio Department of Health sends to the Centers of Disease Control and Prevention.



Standing water can collect in tires and other containers, which allows mosquitoes to breed around your home.

Reduce mosquitoes at home

Here are a couple of steps you can take to prevent mosquitoes from living and breeding around your home.

Remove standing water

Keep mosquitoes from laying eggs inside and outside of your home. Items in and around people's homes can collect water. **Once a week**, empty and scrub, turn over, cover, or throw out containers that hold water, such as

- Vases
- pet water bowls
- flowerpot saucers
- discarded tires
- buckets
- pool covers
- birdbaths
- trash cans, and
- rain barrels.

These actions can help reduce the number of mosquitoes around areas where people live

Animals associated with West Nile virus in Ohio include:

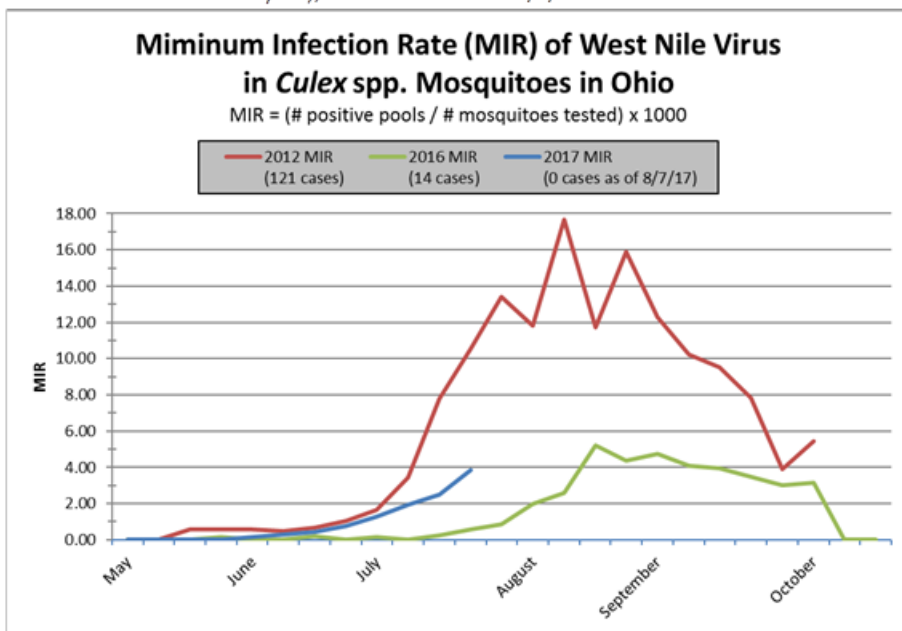
- **Birds:** Birds are the natural reservoir for WNV. If a mosquito bites an infected bird and the virus is transmitted to the mosquito, it may then become a host itself. If the same mosquito then bites a human, it can pass the disease to the human.
- **Horses:** Horses are known as dead-end hosts of WNV, meaning they can become ill with WNV, but they do not maintain sufficient virus in the blood to infect either other mammals (including humans) or mosquitoes. A vaccine is available for horses to prevent WNV.
- **Mosquitoes:** Mosquitoes become infected with WNV primarily through taking blood meals from infected birds. However, the virus can be transmitted from infected female mosquitoes to their eggs, which results in infected offspring.

Vector Borne Surveillance in Ohio: The summary table below from the Ohio Department of Health includes an updated graph of statewide minimum infection rates (MIR) in *Culex* mosquitoes. As you can see, the MIR began increasing earlier this year than we normally see and continues to increase. No human cases have been reported, but the risk for human diseases will increase significantly as the MIR continues to rise.

Ohio Mosquito-borne Disease 2017 Numbers-At-A-Glance as of August 7, 2017:

West Nile Virus		Notes
Ohio Counties with WNV activity reported	19	Clark, Cuyahoga, Franklin, Greene, Hamilton, Henry, Lake, Licking, Lorain, Lucas, Medina, Montgomery, Pickaway, Portage, Richland, Stark, Summit, Tuscarawas and Wood counties
Human cases	0	
Asymptomatic blood donors	0	
WNV veterinary cases	0	
Mosquitoes tested	208,537	Collected in 43 counties, pooled into 7,690 samples
WNV positive mosquito samples	322	Clark (1), Cuyahoga (1), Franklin (94), Greene (1), Hamilton (3), Henry (3), Lake (14), Licking (20), Lorain (15), Lucas (37), Medina (2), Montgomery (17), Pickaway (4), Portage (29), Richland (12), Stark (13), Summit (54), Tuscarawas (1) and Wood (1) counties

This graph provides a comparison of weekly WNV infection rates of mosquitoes collected and tested in 2012 (our most recent WNV Outbreak year), 2016 and 2017 as of 8/7/17:



Other locally acquired mosquito-borne disease case	Notes
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La Crosse / California serogroup virus	3 1 male, 2 females ranging in age from 4 - 65 years (median 6 years) from Delaware (1), Muskingum (1) and Preble (1) counties.
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Travel associated mosquito-borne disease cases	Notes
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Chikungunya Virus Human Cases*	2 1 male, 1 female ages 16 and 39 years with travel to Mexico
Dengue Human Cases	3 2 males, 1 female ranging in age from 17-60 years (median 27 years) with travel to Asian countries
Zika Human Cases*	4 2 males, 2 females ranging in age from 12-59 years (median 34.5 years) with travel to Caribbean islands
Malaria Human Cases	32 19 males and 13 females ranging in age from 1-77 years (median 27.5 years) with travel to African countries, Afghanistan and Guatemala.

*Ohioans traveling to areas where local transmission is occurring should be aware of this ongoing situation and make every effort to avoid mosquito bites. Additional information can be found from the CDC (www.cdc.gov/chikungunya, www.cdc.gov/zika/geo/index.html) and the Pan American Health Organization (www.paho.org/chikungunya, www.paho.org/zika).

Updated 8/7/16

Arbovirus Cases and Information from Neighboring States:

Indiana: <http://www.in.gov/isdh/23592.htm>

Illinois: <http://www.dph.illinois.gov/topics-services/diseases-and-conditions/west-nile-virus/surveillance>

Michigan: http://www.michigan.gov/emergingdiseases/0,4579,7-186-25805_26531---,00.html

Pennsylvania: <http://www.westnile.state.pa.us/surv.htm>

West Virginia: <http://www.dhhr.wv.gov/oeps/disease/Zoonosis/Mosquito/Pages/default.aspx>

UNITED STATES SURVEILLANCE

Table 4: Reported Vector Borne Disease in the United States*		
Disease	Current Week(s) Weeks 9-10 7/23 to 8/5	2017 Cumulative
West Nile Virus		
Neuroinvasive	1	66
Non neuroinvasive	4	51
Babesiosis	52	464
Chikungunya	0	21
Dengue	0	74
Eastern Equine Encephalitis	0	0
La Crosse Virus	0	3
Malaria	18	803
St Louis Encephalitis	0	1
Zika	0	323

Source: https://www.cdc.gov/mmwr/volumes/66/wr/mm6628md.htm?s_cid=mm6628md_w

*Case counts for reporting years 2016 and 2017 from the CDC are provisional and subject to change.

The CDC's website for WNV is: <http://www.cdc.gov/ncidod/dvbid/westnile/index.htm>

The CDC's website for MMWR reporting is: <https://www.cdc.gov/mmwr/index2017.html> and the reader should select Notifiable Diseases under the week of inquiry.

The CDC's website for Zika updates: <http://www.cdc.gov/zika/>

This report was issued on August 10, 2017.

