Vector Borne Disease
2020 Surveillance Report

Summit County Public Health

Report Weeks 1 and 2 (May 24 to June 6, 2020)
MMWR Weeks 22 and 23

This report will be issued from June through October of each year (or later if West Nile Virus disease is still a concern). Surveillance will include human and veterinary cases and testing of mosquito pools in Summit County. It will also include updates from Ohio and around the nation. It will include vector-borne diseases besides West Nile Virus.

SUMMIT COUNTY SURVEILLANCE

Table 1: West Nile virus (WNV) 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
Weeks 1 & 2: 5/24 to 6/6	0	0	0	0	--
Weeks 3 & 4: 6/7 to 6/20					
Weeks 5 & 6: 6/21 to 7/4					
Weeks 7 & 8: 7/5 to 7/18					
Weeks 9 & 10: 7/19 to 8/1					
Weeks 11 & 12: 8/2 to 8/15					
Weeks 13 & 14: 8/16 to 8/29					
Weeks 15 & 16: 8/30 to 9/12					
Weeks 17 & 18: 9/13 to 9/26					
Weeks 19 & 20: 9/27 to 10/10					
Weeks 21 & 22: 10/11 to 10/24					

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

West Nile virus testing (Table 1): During surveillance period Weeks 1 and 2, there were 0 tests for West Nile virus ordered by Summit County hospitals.

Lyme Disease testing (Table 2): There were 17 diagnostic test series performed for Lyme disease during Weeks 1 and 2, 1 test was positive. The CDC currently recommends a two-step process when testing blood for evidence of antibodies against the Lyme disease bacteria (*Borrelia burgdorferi*). 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.

Table 2. Lyme Disease Tests Ordered in Summit County Hospitals					
Week(s)	**# of Lyme tests ordered this period**	**# of positive Lyme tests this period**	**Cumulative # of tests ordered this season**	**Cumulative # of positive tests this season**	**Percentage of positive tests**
Weeks 1 & 2: 5/24 to 6/6	**17**	**1**	**17**	**1**	**5.9%**
Weeks 3 & 4: 6/7 to 6/20					
Weeks 5 & 6: 6/21 to 7/4					
Weeks 7 & 8: 7/5 to 7/18					
Weeks 9 & 10: 7/19 to 8/1					
Weeks 11 & 12: 8/2 to 8/15					
Weeks 13 & 14: 8/16 to 8/29					
Weeks 15 & 16: 8/30 to 9/12					
Weeks 17 & 18: 9/13 to 9/26					
Weeks 19 & 20: 9/27 to 10/10					
Weeks 21 & 22: 10/11 to 10/24					
Note: Reporting may not be completed each week. Numbers will be updated when reports are received					

Reported Vector-borne diseases in 2020 (Table 3): As of June 6, there were 8 reported cases of Lyme disease; all were suspected. There was also one suspected case of Ehrlichiosis and one suspected case of babesiosis.

Table 3: Vector-borne diseases reported in Summit County, 2020 cumulative totals			
	Confirmed	**Suspected**	**Notes**
Tick-borne diseases:			
Babesiosis	0	**1**	
Erhlichiosis / anaplasmosis	0	**1**	
Lyme disease	0	**8**	
Powassan virus disease	0	**0**	
Rocky Mountain spotted fever	0	0	
Mosquito-borne diseases:			
Chikungunya	0	0	
Dengue	0	0	
Eastern equine encephalitis	0	0	
LaCrosse virus disease	0	0	
Malaria	0	0	
St. Louis encephalitis virus disease	0	0	
Zika virus infection	0	0	
West Nile virus infection	0	0	
Source: Ohio Disease Reporting System (ODRS); only confirmed, probable, and suspected cases are included.			

Table 4. Reported Aseptic/viral Meningitis Cases in Summit County (confirmed & probable)		
Week(s)	**Cases reported this period**	**Cumulative cases for the season**
Aseptic meningitis cases reported prior to season (1/1 to 5/23/2020)	**5**	**-**
Weeks 1 & 2: 5/24 to 6/6	**1**	**1**
Weeks 3 & 4: 6/7 to 6/20		
Weeks 5 & 6: 6/21 to 7/4		
Weeks 7 & 8: 7/5 to 7/18		
Weeks 9 & 10: 7/19 to 8/1		
Weeks 11 & 12: 8/2 to 8/15		
Weeks 13 & 14: 8/16 to 8/29		
Weeks 15 & 16: 8/30 to 9/12		
Weeks 17 & 18: 9/13 to 9/26		
Weeks 19 & 20: 9/27 to 10/10		
Weeks 21 & 22: 10/11 to 10/24		
Source: Ohio Disease Reporting System (ODRS)		

Reported aseptic/viral meningitis cases (Table 4): Prior to the reporting season, there were 5 reported cases of aseptic meningitis, and 1 case was reported during Weeks 1 and 2. Aseptic/viral meningitis is the most common type of meningitis and occurs predominately in the summer and fall. While most aseptic/viral meningitis cases are due to gastrointestinal or respiratory viruses, similar symptoms may be present with arthropod-borne diseases.

Notable mosquito and tick species identifications in Summit County: Due to the COVID-19 pandemic, ODH has suspended mosquito and tick identification due to lack of funding.

Mosquito testing by the Ohio Department of Health: Due to the COVID-19 pandemic, ODH has suspended mosquito testing due to lack of funding.

Source (includes informative poster for download): https://odh.ohio.gov/wps/portal/gov/odh/know-our-programs/zoonotic-disease-program/resources/mosquito-poster

OHIO AND UNITED STATES SURVEILLANCE

Special note for travelers:

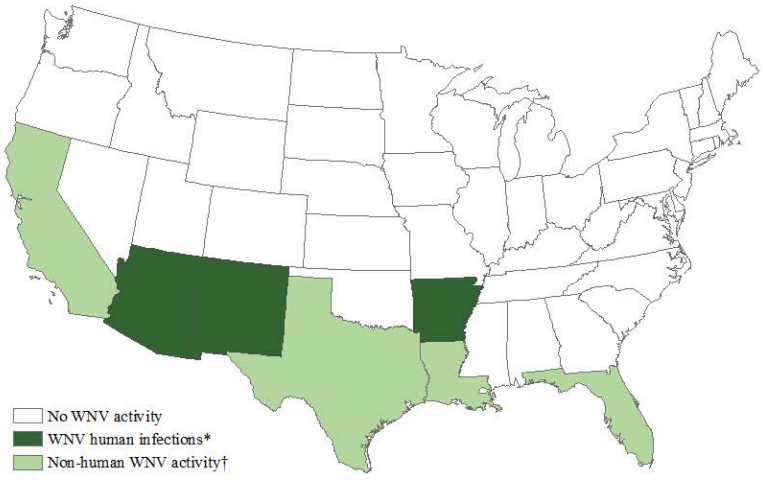
Ohioans traveling to areas where local transmission is occurring should be aware of the ongoing situation and make every effort to avoid mosquito bites. Additional information can be found from the Centers for Disease Control and Prevention (CDC)'s Travelers' Health and Pan-American Health Organization websites.

Table 5. Reported Vector Borne disease in Ohio and the United States, 2020

	OHIO		UNITED STATES	
Disease	2019 (as of 6/6) cumulative		Weeks 1 and 2 (5/26 to 6/6)	2019 (as of 6/6) Cumulative
Babesiosis	1		3	58
Chikungunya	1		0	10
Dengue (includes dengue-like illness)	2		0	127
Eastern equine encephalitis	0		0	0
Erlichiosis / anaplasmosis	7		111	501
Jamestown Canyon virus disease	0		0	0
LaCrosse virus disease	0		0	1
Lyme Disease	145		Not reported weekly by CDC	
Malaria	15		0	218
Powassan virus disease	0		0	0
Spotted fever rickettsiosis	22		Not reported weekly by CDC	
St. Louis encephalitis virus disease	0		0	1
West Nile virus infection	0		0	5
Zika virus infection, non congenital	0		0	1

Note: Data is provisional and subject to change

Source: https://wonder.cdc.gov/nndss/nndss_weekly_tables_menu.asp



*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 1. West Nile virus activity by state – United States, 2020 (as of June 2, 2020)

Ohio has not yet reported West Nile virus activity in humans or non-humans. Human cases of West Nile virus infection have been reported in Arkansas, Arizona, and New Mexico.

Source: https://www.cdc.gov/westnile/statsmaps/preliminarymapsdata2020/activitybystate2020.html

TRENDS IN VECTOR BORNE DISEASE IN SUMMIT COUNTY, 2011 - 2019

Table 6 provides data on the vector borne disease that were reported in Summit County from 2011 to 2019. As indicated in Table 6 and Figure 2, the number of vector borne disease cases has remained at 40 to 44 cases from 2017 to 2019. The majority of these cases were transmitted by ticks. The vector for Lyme disease, the blacklegged tick (*Ixodes scapularis*), was first identified in Ohio in 1989, but populations did not begin to increase dramatically until 2009. The blacklegged tick is now established throughout eastern and southern Ohio, and has been collected in counties near the Michigan border.

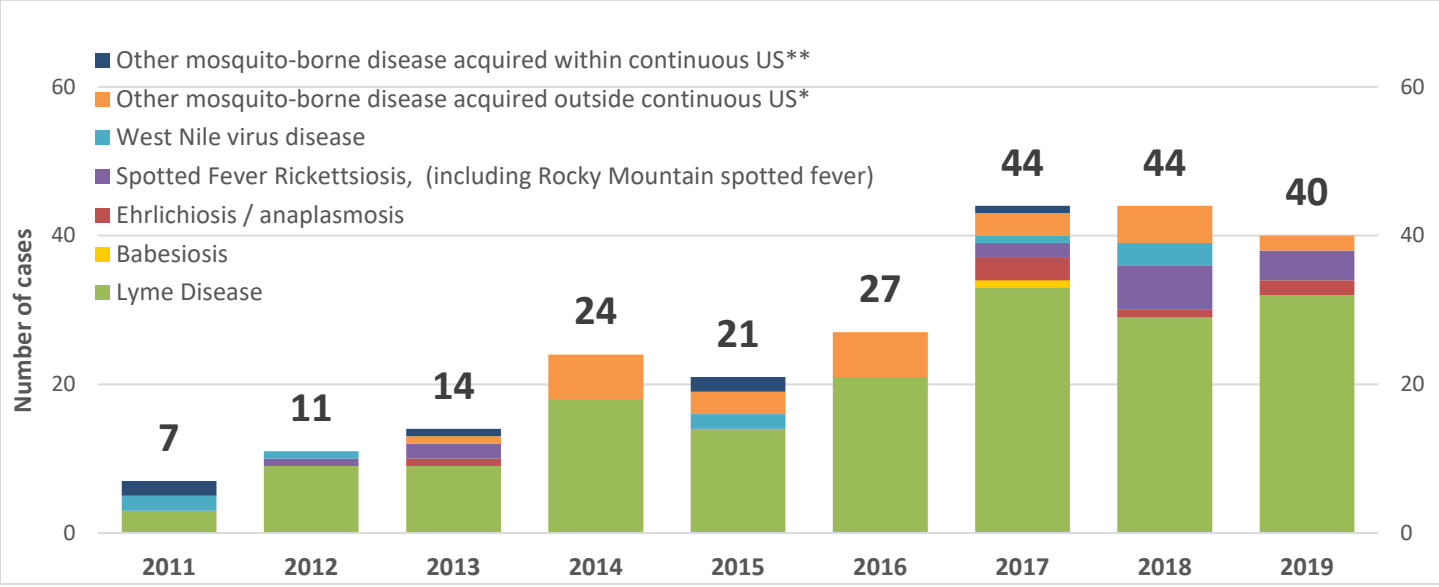
Other notable events in vector borne disease surveillance were the increase in Chikungunya cases in 2014 (reported as other arthropod-borne diseases) and the Zika virus disease epidemic of 2016. Increases in ehrlichiosis and spotted fever rickettsiosis were observed from 2017 to 2019. The incidence of other vector-borne diseases, including West Nile virus disease and other tick-borne illness have remained consistently low.

Table 6. Reported vector-borne disease cases in Summit County, 2011 – 2019

	2011	2012	2013	2014	2015	2016	2017	2018	2019
Babesiosis	0	0	0	0	0	0	**1**	0	0
Ehrlichiosis / anaplasmosis	0	0	**1**	0	0	0	**3**	1	2
Lyme Disease	**3**	**9**	**9**	**18**	**14**	**21**	**33**	**29**	**32**
Spotted Fever Rickettsiosis, (including Rocky Mountain spotted fever)	0	**1**	**2**	0	0	0	**2**	**6**	**4**
West Nile virus disease	**2**	**1**	0	0	**2**	0	**1**	3	0
Other mosquito-borne disease acquired outside continuous US*	0	0	**1**	**6**	**3**	**2**	**3**	**5**	**2**
Other mosquito-borne disease acquired within continuous US**	**2**	0	**1**	0	**2**	0	**1**	0	0
Total vector borne disease cases	**7**	**11**	**14**	**24**	**21**	**27**	**44**	**44**	**40**

Source: Ohio Disease Reporting System (ODRS), confirmed, probable and suspected cases
* Includes imported cases of malaria, dengue and chikungunya
** Includes LaCrosse virus disease and St. Louis encephalitis virus disease

Figure2. Reported vector-borne disease cases in Summit County, 2011 – 2019



Source: Ohio Disease Reporting System

Find the Repellent that is Right for You

The United States Environmental Protection Agency offers a handy tool to search for the repellent that will be the best choice for your needs. You can specify by:

- mosquitoes, ticks or both;
- protection time;
- active ingredient; or
- other product-specific information.

The repellent search tool is located at this link:

Repellent Search Tool

The search tool also give the option to download the entire dataset to PDF format.

Sources: https://www.epa.gov/insect-repellents/find-repellent-right-you#search%20tool

Lyme disease season is here. These are tips on how to avoid it.

The basic symptoms mirror COVID-19, and that's a worry nobody needs. Plus, a serious illness like Lyme could put you at greater risk from COVID. Read the *New York Times* article here:

https://www.caryinstitute.org/news-insights/media-coverage/lyme-disease-season-here-these-are-tips-how-avoid-it

Remember the Longhorn Tick?

There is barely a mention of this invasive species in 2020; this topic is one of many to be eclipsed by COVID-19. If there are any updates during the 2020 season, I will post them in this report.

About this report: *Reporting agencies include Summit County hospital laboratories and the Ohio Department of Health. Vector-borne disease case data for Summit County are obtained from the Ohio Disease Reporting System.*

Many thanks to all agencies who report vector-borne disease data weekly.

Reporting from participants may not be complete each week. Numbers may change as updated reports are received. For questions, please contact Joan Hall (jhall@schd.org) or the Summit County Public Health Communicable Disease Unit (330-375-2662). This report was issued on **June 12, 2020**.