



Vector Borne Disease 2019 Surveillance Report

Summit County Public Health

Report Weeks 3 and 4 (June 9 to June 22, 2019)
MMWR Weeks 24 and 25



Public Health
Prevent. Promote. Protect.

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: 5/26 to 6/8	2	1	2	1	50.0%
Weeks 3 & 4: 6/9 to 6/22	5	0	7	1	14.3%
Weeks 5 & 6: 6/23 to 7/6					
Weeks 7 & 8: 7/7 to 7/20					
Weeks 9 & 10: 7/21 to 8/3					
Weeks 11 & 12: 8/4 to 8/17					
Weeks 13 & 14: 8/18 to 8/30					
Weeks 15 & 16: 9/1 to 9/14					
Weeks 17 & 18: 9/15 to 9/28					
Weeks 19 & 20: 9/29 to 10/12					
Weeks 21 & 22: 10/13 to 10/26					

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 2 tests for West Nile virus ordered by Summit County hospitals. There was one positive result, which was determined to be due to a past exposure and was not a current infection (Table 1).

Lyme Disease testing (Table 2): There were 36 diagnostic test series performed for Lyme disease during Weeks 1 and 2, none of which were 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: 5/26 to 6/8	52	2	52	2	3.5%
Weeks 3 & 4: 6/9 to 6/22	73	9	109	9	8.3%
Weeks 5 & 6: 6/23 to 7/6					
Weeks 7 & 8: 7/7 to 7/20					
Weeks 9 & 10: 7/21 to 8/3					
Weeks 11 & 12: 8/4 to 8/17					
Weeks 13 & 14: 8/18 to 8/30					
Weeks 15 & 16: 9/1 to 9/14					
Weeks 17 & 18: 9/15 to 9/28					
Weeks 19 & 20: 9/29 to 10/12					
Weeks 21 & 22: 10/13 to 10/26					

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

Reported Vector-borne diseases in 2019 (Table 3): As of June 28, there were 6 reported cases of Lyme disease; 2 were confirmed by laboratory testing and 4 were suspected. There was also one suspected case of Powassan virus disease, testing results are pending.

Table 3: Vector-borne diseases reported in Summit County, 2019 cumulative totals

	Confirmed	Suspected	Notes
Tick-borne diseases:			
Babesiosis	0	0	
Ehrlichiosis / anaplasmosis	0	0	
Lyme disease	2	4	
Powassan virus disease	0	1	
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	1	0	Case was imported
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. Notable mosquito and tick species identifications in Summit County

Species name	Diseases associated	# identified
Mosquito species		
<i>Aedes albopictus</i>	Chikungunya, dengue fever, yellow fever	0
<i>Aedes triseriatus</i>	La Crosse encephalitis	41
Tick species		
<i>Ixodes scapularis</i>	Lyme disease, babesiosis, anaplasmosis	81

Source: Ohio Department of Health (Identification via mailed specimens, emailed photos and iNaturalist observations)

Table 5. 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 5/25/2019)	3	-
Weeks 1 & 2: 5/26 to 6/8	1	1
Weeks 3 & 4: 6/9 to 6/22	2	3
Weeks 5 & 6: 6/23 to 7/6		
Weeks 7 & 8: 7/7 to 7/20		
Weeks 9 & 10: 7/21 to 8/3		
Weeks 11 & 12: 8/4 to 8/17		
Weeks 13 & 14: 8/18 to 8/30		
Weeks 15 & 16: 9/1 to 9/14		
Weeks 17 & 18: 9/15 to 9/28		
Weeks 19 & 20: 9/29 to 10/12		
Weeks 21 & 22: 10/13 to 10/26		

Source: Ohio Disease Reporting System (ODRS)

Reported aseptic/viral meningitis cases (Table 5): Prior to the reporting season, there were 3 reported cases of aseptic meningitis, and 2 cases were reported during Weeks 3 and 4. 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.

Mosquito testing (Table 6): Based on the ODH mosquito testing summary released on June 28, over 25,495 mosquitoes were collected as 601 pooled samples throughout Summit County. None of the samples tested positive for West Nile virus or St. Louis encephalitis virus.

Table 6. Mosquito Testing in Summit County (samples processed by noon on 6/27/2019)

Mosquitoes identified	25,495
Pooled samples tested	601
Positive WNV pooled samples	0

Note: All mosquitoes pools tested were *Culex sp.*

Keep Ticks & Mosquitoes Out of Your Yard

Ticks and mosquitoes can carry dangerous diseases. Keep your family safe by making your yard less attractive to these insects.

Mass.gov

Sources:
Department of Public Health (DPH)
U.S. Environmental Protection Agency (EPA)

①

Trim Grass, Shrubs & Plants



Mow grass and clear leafy areas ticks love

②

Remove Standing Water



Eliminate mosquito habitats and breeding areas

③

Elevate Wood Piles & Bird Feeders



Keep tick-carrying mice and rodents away

④

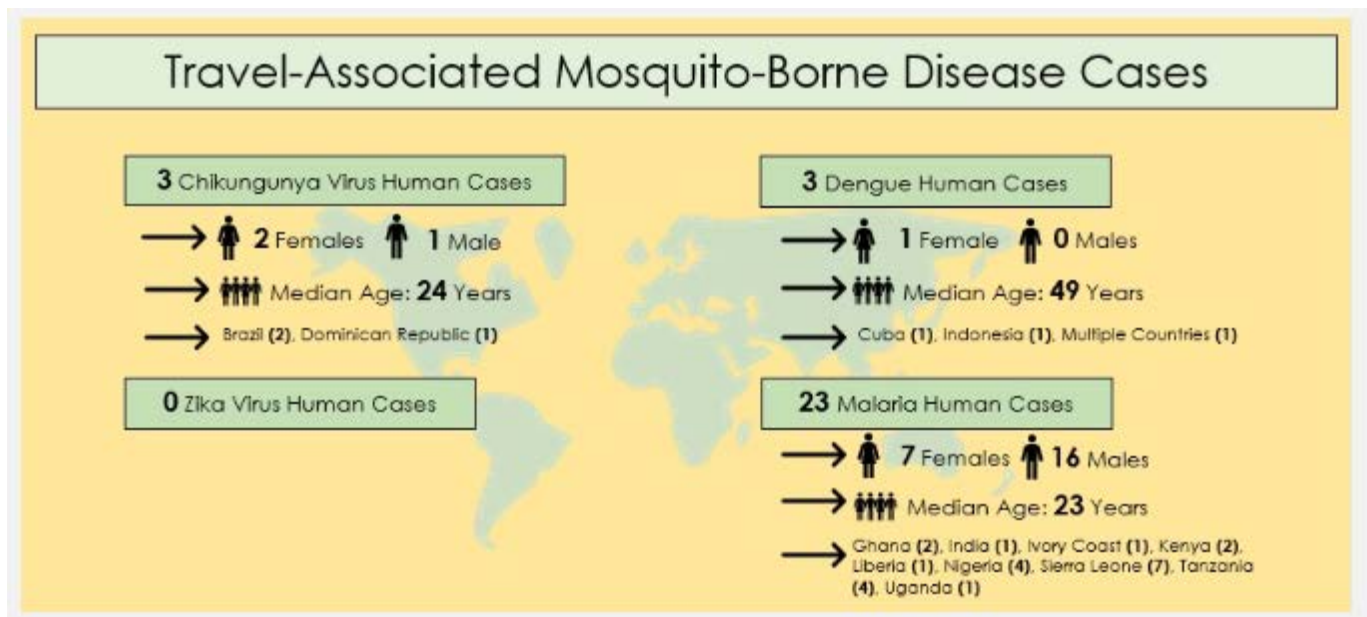
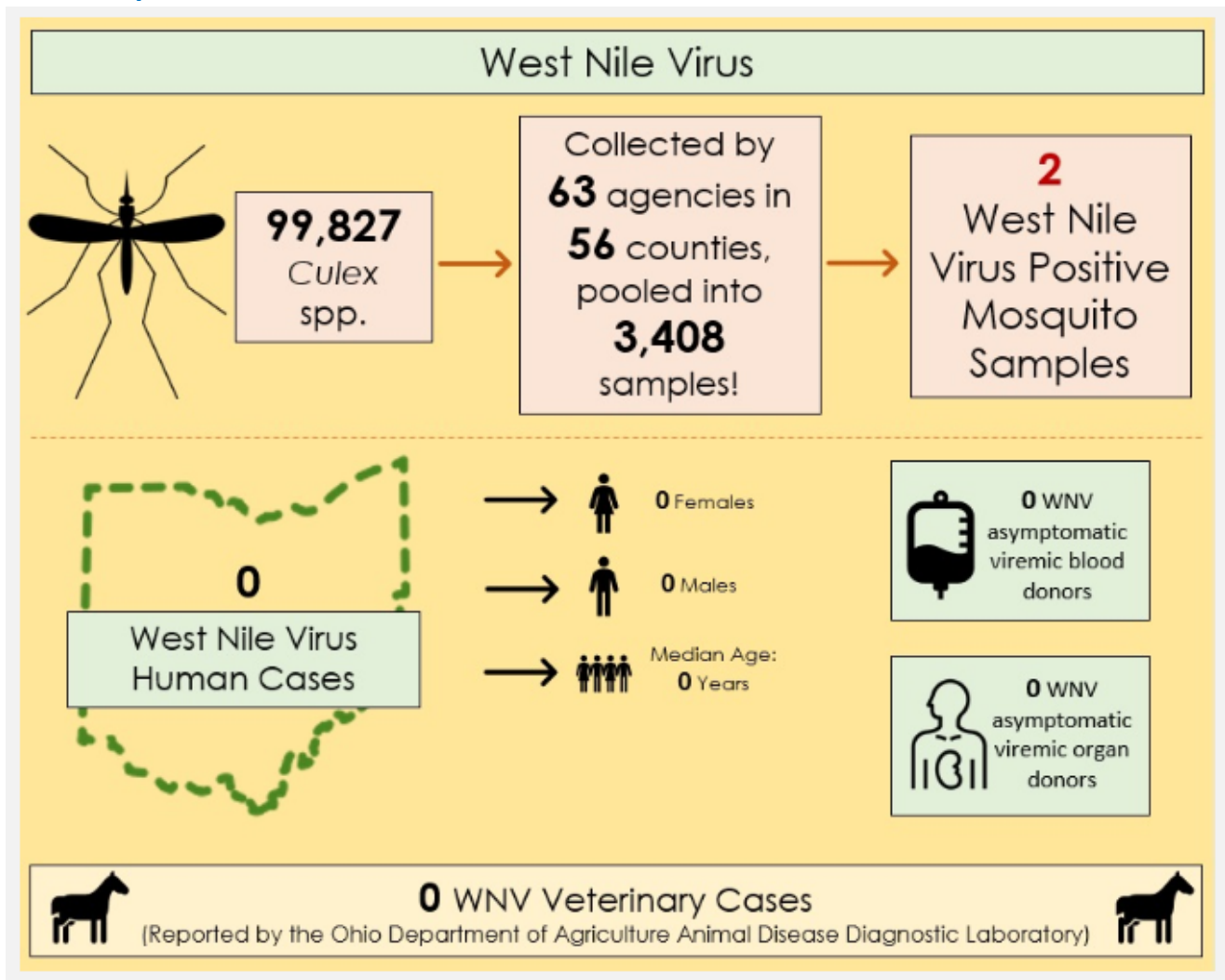
Create Barriers Between Yard & Woods



Ticks are unlikely to cross 3-foot barriers of mulch or gravel

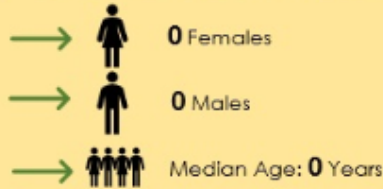
Source <https://blog.mass.gov/blog/health/the-importance-of-protecting-your-home-and-family-against-ticks-and-mosquitoes/>

Ohio Mosquito-borne diseases:

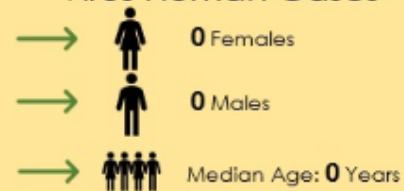


La Crosse/Unspecified California Encephalitis Virus

0 La Crosse Human Cases



0 Unspecified California Virus Human Cases



Ohio Tick-borne diseases

Lyme Disease, Anaplasmosis, Babesiosis



431
Blacklegged
Ticks, *Ixodes*
scapularis,
Identified*

Identified from **40** counties: Ashland (14), Ashtabula (7), Belmont (60), Butler (1), Clark (1), Columbiana (27), Coshocton (1), Cuyahoga (2), Erie (2), Fayette (2), Franklin (1), Gallia (3), Geauga (1), Greene (1), Highland (3), Hocking (2), Huron (2), Jefferson (52), Knox (10), Lake (2), Lawrence (9), Licking (1), Madison (1), Medina (6), Monroe (9), Morgan (30), Muskingum (7), Noble (1), Perry (14), Pike (18), Portage (5), Richland (8), Ross (1), Scioto (6), Stark (34), Summit (81), Trumbull (1), Warren (1), Washington (1), Wood (2), Unknown (1) counties

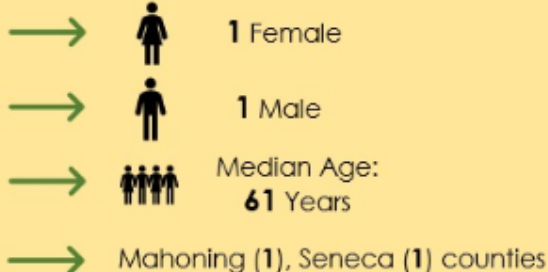
88
Lyme Disease Human Cases

→ 36 Females 52 Males

→ Median Age: 26 Years

→ Athens (1), Belmont (7), Carroll (1), Coshocton (3), Cuyahoga (5), Fayette (1), Franklin (2), Gallia (4), Guernsey (6), Hamilton (4), Hancock (1), Harrison (3), Holmes (8), Jefferson (9), Knox (4), Licking (3), Lorain (1), Mahoning (1), Montgomery (1), Muskingum (1), Noble (1), Pike (1), Portage (1), Richland (1), Ross (1), Sandusky (1), Scioto (2), Seneca (1), Stark (2), Summit (2), Trumbull (1), Tuscarawas (5), Vinton (1), Warren (1), Wayne (1) counties

2 Anaplasmosis Human Cases



0 Babesiosis Human Cases



Rocky Mountain Spotted Fever

249 American Dog Ticks, *Dermacentor variabilis*, Identified*



11 Rocky Mountain Spotted Fever Human Cases

→  **2** Females

→  **9** Males

→  Median Age: **58** Years

→ Cuyahoga (1), Fayette (1), Franklin (2), Hamilton (3), Highland (1), Lawrence (1), Ross (1), Scioto (1) counties

Ehrlichiosis

62 Lone Star Ticks, *Amblyomma americanum*, Identified*



5 Ehrlichiosis Human Cases

→  **2** Females

→  **3** Males

→  Median Age: **56** Years

→ Fairfield (1), Hamilton (1) Scioto (2), Warren (1) counties

Source: <https://odh.ohio.gov/wps/portal/gov/odh/know-our-programs/zoonotic-disease-program/news-and-events/vectorborne-disease-update>

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 and tick bites. Additional information can be found from the [Centers for Disease Control and Prevention \(CDC\)'s Travelers' Health](#) and [Pan-American Health Organization](#) websites.

OHIO AND UNITED STATES SURVEILLANCE

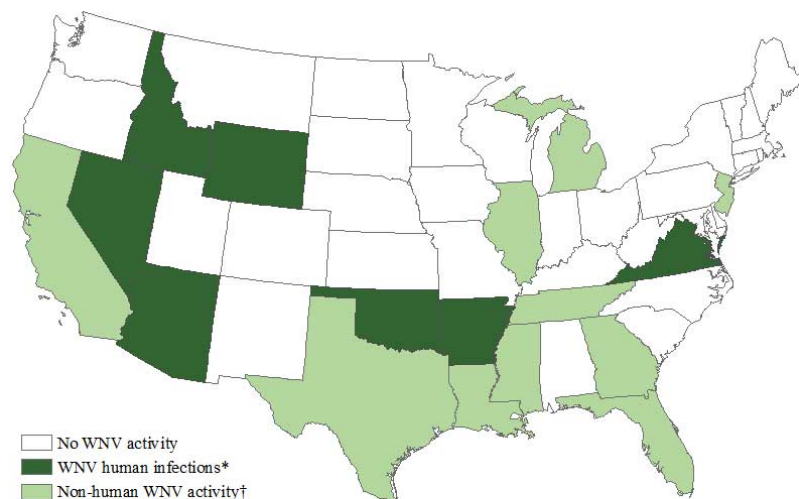
Table 7. Reported Vector Borne disease in Ohio and the United States, 2019

Disease	OHIO	UNITED STATES	
	2019 (as of 6/22) cumulative	Weeks 3 and 4 (6/9 to 6/22)	2019 (as of 6/22) Cumulative
Babesiosis	3	20	96
Chikungunya	6	0	28
Dengue (includes dengue-like illness)	4	2	133
Eastern equine encephalitis	0	0	0
Erlichiosis / anaplasmosis	19	301	1316
Jamestown Canyon virus disease	0	0	0
LaCrosse virus disease	0	0	0
Lyme Disease	251	Not reported weekly by CDC	
Malaria	24	13	469
Powassan virus disease	0	0	0
Spotted fever rickettsiosis	35	95	1087
St. Louis encephalitis virus disease	0	0	0
West Nile virus infection	0	0	7
Zika virus infection, non congenital	0	0	2

Note: Data is provisional and subject to change

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

Figure 1. West Nile virus activity by state – United States, 2019 (as of June 25, 2019)



*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.

Ohio has not yet reported reported West Nile virus activity in humans or non-humans. **WNV infections in mosquitoes, birds, sentinel animals, or veterinary animals** have been reported to CDC ArboNET from the following states: Arizona, Arkansas, California, Florida, Georgia, Idaho, Illinois, Louisiana, Michigan, Mississippi, Nevada, Oklahoma, Tennessee, Texas, Virginia, and Wyoming.

West Nile virus infections in humans have been reported to CDC ArboNET from the following states: Arizona, Arkansas, Idaho, Nevada, Oklahoma, Virginia, and Wyoming.

Source: <https://www.cdc.gov/westnile/statsmaps/preliminarymapsdata2019/activitybystate2019.html>

CDC Creates Interactive Training for Diagnosis, Management of Rocky Mountain Spotted Fever

The Centers for Disease Control and Prevention (CDC) has created a first-of-its-kind education module to help clinicians recognize and diagnose Rocky Mountain spotted fever (RMSF), a sometimes serious and fatal disease spread by the bite of an infected tick.

“Rocky Mountain spotted fever can be deadly if not treated early – yet cases often go unrecognized because the signs and symptoms are similar to those of many other diseases,” said CDC Director Robert R. Redfield, M.D. “With tickborne diseases on the rise in the U.S., this training will better equip healthcare providers to identify, diagnose, and treat this potentially fatal disease.”

The module includes scenarios based on real cases to help healthcare providers recognize the early signs of RMSF and differentiate it from similar diseases. [Continuing education credit](#) is available for physicians, nurse practitioners, physician assistants, veterinarians, nurses, epidemiologists, public health professionals, educators, and health communicators.

In 2017, [a record number of cases of tickborne spotted fever rickettsiosis](#), including RMSF, were reported to the CDC. While the number of spotted fever cases in 2017 is striking (6,248 cases, up from 4,269 the previous year), fewer than 1% of those cases had sufficient laboratory evidence to be confirmed, pointing to the need to better train health care providers on the best methods to diagnose tickborne diseases.



RMSF is treatable with doxycycline, the antibiotic of choice in people of all ages. Disability and death from RMSF can be prevented when doxycycline is prescribed within the first five days of illness, meaning that early recognition and treatment can save lives. RMSF begins with non-specific symptoms such as fever and headache, and sometimes rash, but when left untreated, the disease can lead to devastating consequences. Severely ill patients may require amputation of fingers, toes, or limbs due to poor blood flow; heart and lung specialty care; and management in intensive care units. Roughly 1 in 5 untreated cases are fatal. Half of those deaths occur within the first 8 days of illness.

For more information about Rocky Mountain spotted fever and other rickettsial diseases:

- www.cdc.gov/rmsf
- www.cdc.gov/ticks
- www.cdc.gov/ticks/avoid/

Source: <https://www.cdc.gov/media/releases/2019/p0513-rocky-mountain-spotted-fever-training.html>

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 Tracy Rodriguez (trodriguez@schd.org), Summit County Public Health Communicable Disease Unit (330-375-2662). This report was issued on **June 28, 2019**.