

2019 Season highlight:

- To date there has been one human case of West Nile virus (WNV) in Hunterdon County and two cases of Powassan in Sussex County.
- WNV has been detected in mosquito pools in 4 counties (Atlantic, Burlington, Ocean and Passaic).
- Jamestown Canyon (JCV) has been detected in mosquito pools in 3 Counties (Bergen, Burlington and Sussex).

1. Human Testing

New Jersey Administrative Code (N.J.A.C.) Title 8 Chapter 57 mandates public health reporting of specified vector-borne diseases to prevent further disease spread.

Table 1.1 Human Cases^a

Mosquito-borne diseases			Tickborne Diseases		
	2019 ^b	2018		2019 ^b	2018
Chikungunya	3	16	Anaplasmosis	41	118
Dengue	12	20	Babesiosis	38	249
Eastern equine encephalitis	-	-	<i>Borrelia miyamotoi</i>	6	8
Jamestown Canyon	-	-	Ehrlichiosis	41	94
Malaria	47	93	Lyme disease	1160	4000
West Nile	1	61	Powassan	2	1
Zika	4	10	Spotted fever group rickettsioses	56	147

^a Data for 2019 reflect confirmed and probable cases that have been approved by NJDOH. This does not include cases under investigation. All 2019 numbers are preliminary and are subject to change. 2018 numbers represent total number of cases for the year.

^b Cumulative through week 28 (week ending July 13, 2019).

2. Mosquito Testing

The New Jersey Department of Health Public Health and Environmental Laboratories (PHEL) and the Cape May County Department of Mosquito Control Bio-safety Level 3 Laboratory (CMBSL3) perform arboviral testing on mosquito pools collected by county mosquito control agencies throughout New Jersey.

West Nile virus (WNV):

- A total of 3135 mosquito pools have been tested for WNV; 5 mosquito pools were positive for WNV. The first positive pool was detected in week 22 (Passaic county). In 2018 the first WNV positive mosquito pool was identified in week 23.
- The positive pools were detected in *Culex* spp, *Aedes cantator* and *Aedes triseriatus* species.

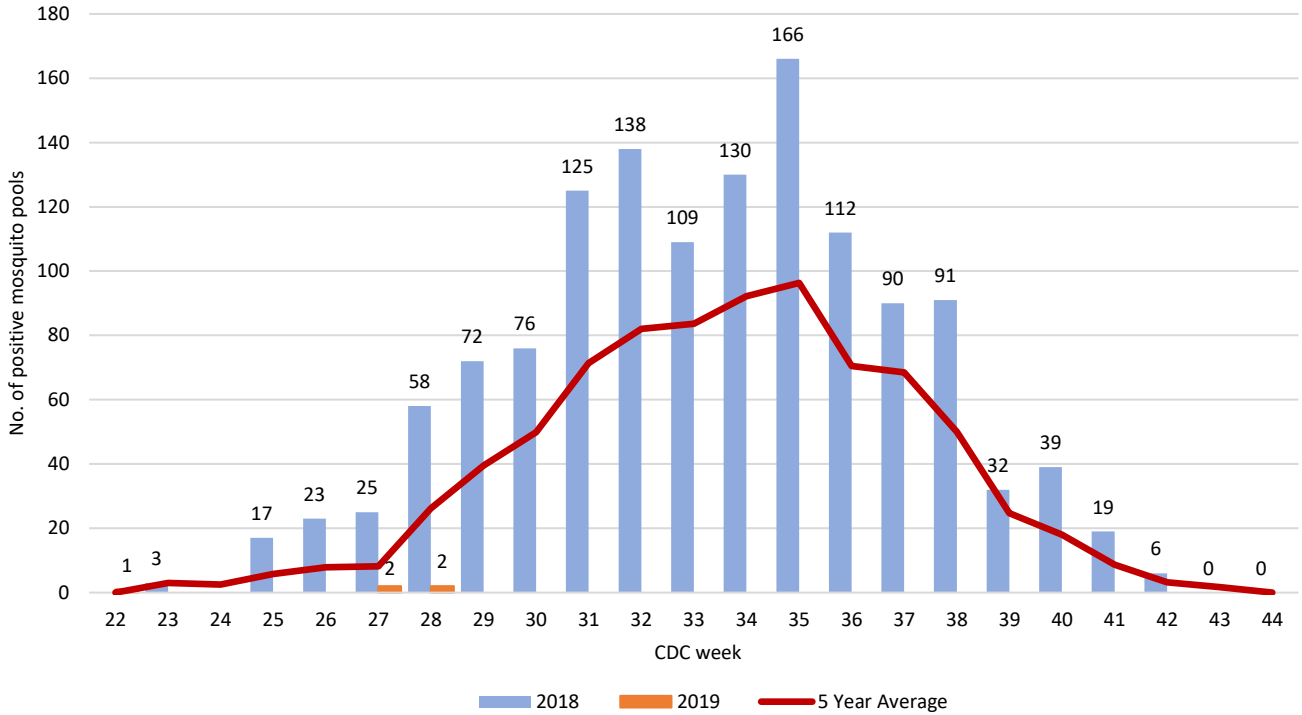
WNV Positive Mosquito Pools

County	Week 28		Cumulative Total (week 28)	
	2019*	2018	2019*	2018
Atlantic	1	1	1	3
Bergen		17		25
Burlington	1	4	2	9
Camden		2		8
Cape May		1		2
Cumberland				4
Essex				
Gloucester		6		12
Hudson		2		3
Hunterdon		2		6
Mercer		6		9
Middlesex		6		13
Monmouth		5		7
Morris		4		5
Ocean			1	4
Passaic			1	
Salem				1
Somerset		1		5
Sussex		1		1
Union				
Warren				9
Total	2	58	5	126

Week 28: July 8-14, 2018; July 7-13, 2019

*Test results may be incomplete; Counties submit pools for testing on specific weekdays. Mosquito testing data reflects test results received from PHEL, CMBSL3 and US Army Public Health as of July 17, 2019

West Nile Virus Positive Mosquito Pools, NJ (2018 - 2019)



Eastern equine encephalitis virus (EEE)

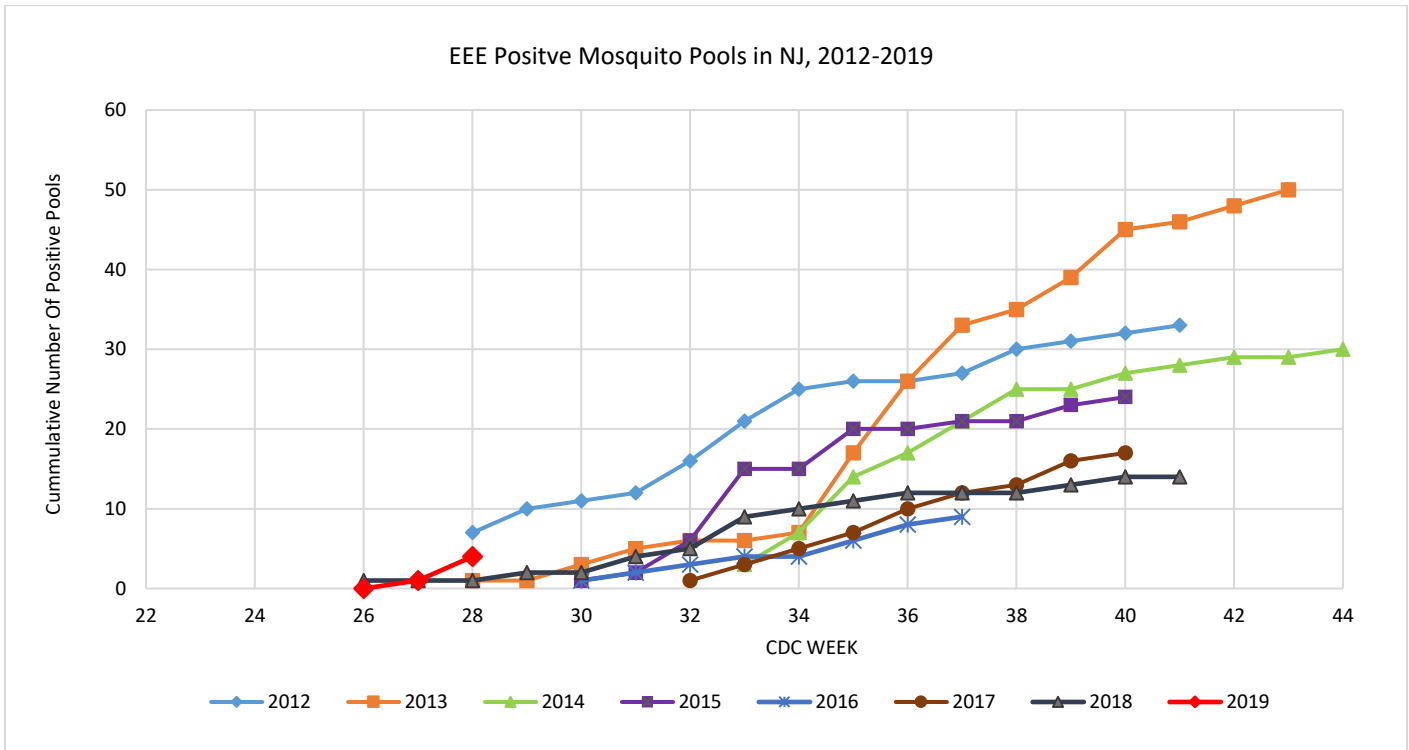
- A total of 2848 mosquito pools have been tested for EEE; 4 EEE positive mosquito pools have been identified in 2019.
- The first positive pool was detected in week 27 (Monmouth county). In 2018, the first EEE mosquito pool was reported in week 26 (see chart below).
- The positive pools were detected in *Culiseta melanura* (Monmouth, Ocean and Salem county) and *Aedes albopictus* (Ocean County).

EEE Positive Mosquito Pools

County	Week 28		Cumulative Total (week 28)	
	2019*	2018	2019*	2018
Atlantic				
Bergen				
Burlington				
Camden				
Cape May				
Cumberland				
Essex				
Gloucester				
Hudson				
Hunterdon				1
Mercer				
Middlesex				
Monmouth			1	
Morris				
Ocean	2		2	
Passaic				
Salem	1		1	
Somerset				
Sussex				
Union				
Warren				
Total	3		4	1

Week 28: July 8-14, 2018; July 7-13, 2019

EEE Positive Mosquito Pools in NJ, 2012-2019



Other viruses:

In 2019, PHEL and Cape May County BLS3 brought on new capacity to test for viruses as a panel. Mosquito pools from all counties have been tested for other arboviruses: St. Louis encephalitis virus (SLE), Jamestown Canyon Virus (JCV), La Crosse encephalitis virus (LAC), Chikungunya virus (CHIKV), Dengue virus (DENV), Zika Virus (ZIKV).

Positive pools for other viruses have been detected in 4 counties (Bergen, Burlington, Passaic and Sussex).

La Crosse encephalitis virus (LAC):

- A mosquito pool collected on May 31st (week 22) in Passaic County tested positive for La Crosse virus at PHEL. The positive pool was detected in *Aedes triseriatus* species.
In 2014, 2 mosquito pools collected from the Joint Base MDL (Burlington County) by the Department of the Airforce tested positive for LACV. The virus was detected in both *Ochlerotatus triseriatus* and *Aedes albopictus*.
- There have not been any human La Crosse virus cases reported in at least the past 20 years.

Jamestown Canyon virus (JCV):

- Three mosquito pools have tested positive for Jamestown Canyon virus at PHEL. The first pool was from Sussex County (week 23), second from Bergen County (week 25) and the third from Burlington County (week 27).
- The positive pools were detected in *Aedes abserratus*, *Aedes cantator* and *Anopheles crucians* species.
- NJ reported its first and only human case of Jamestown Canyon virus in 2015 in a Sussex County resident.

Cumulative 2019 Mosquito Pool Testing (Other Viruses ^a)

County	SLE		JCV		LAC		CHIKV		DENV		ZIKV	
	Pools	Pos	Pools	Pos	Pools	Pos	Pools	Pos	Pools	Pos	Pools	Pos
Atlantic	148		148				19		19		19	
Bergen	108		108	1	10							
Burlington	105		105	1	9							
Camden	12		8									
Cape May	830		21		107		148				148	
Cumberland	64		64									
Essex	54		54		1							
Gloucester	122		119									
Hudson	76		76		8							
Hunterdon	86		86		3							
Mercer	133		133		10							
Middlesex	72		72		4		1		1		1	
Monmouth	177		177		7							
Morris	160		160									
Ocean	133		133									
Passaic	83		83		11	1						
Salem	139		136		12							
Somerset	83		83									
Sussex	94		94	1	8							
Union	41		41		5							
Warren	128		128									
Total	2848	-	2029	3	195	1	168		20	-	168	-

^a St. Louis encephalitis virus (SLE), Jamestown Canyon Virus (JCV), La Crosse encephalitis virus (LAC), Chikungunya virus (CHIKV), Dengue virus (DENV), Zika Virus (ZIKV)
 Numbers in white columns represent number of pools tested to date in 2019

Numbers in blue shaded columns represent positive pools in 2019

3. Equine/Avian /Other Animal Testing

Equine testing for WNV and EEE is conducted at the New Jersey Department of Agriculture's Animal Health and Diagnostic Laboratory.

- No animals have tested positive for WNV or EEE in 2019.
- Routine avian testing has been discontinued but is available upon request at PHEL.

WNV/EEE Positive Test Results

	Week 28		Cum. Total (Year)	
	2019	2018	2019	2018
Equine (EEE)				
Equine (WNV)				
Avian (WNV)				
Other				

Week 28: July 8-14, 2018; July 7-13, 2019

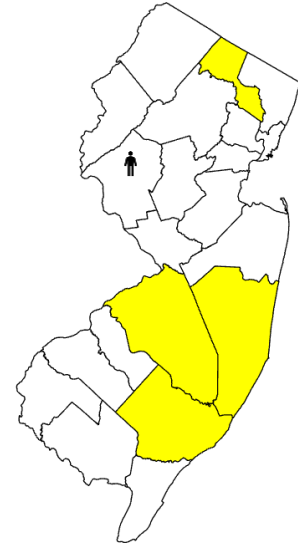
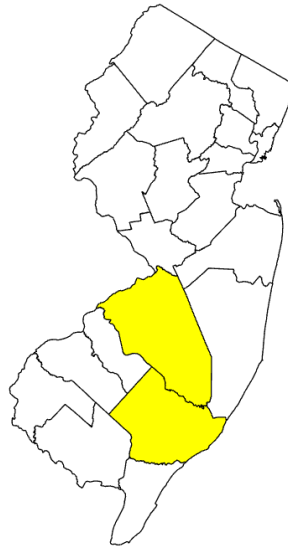
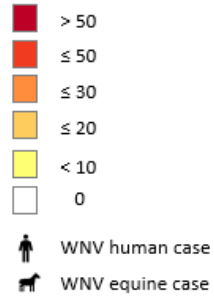
4. Surveillance Maps

West Nile Virus (WNV)

Week 28 WNV Activity (2019)*

Cumulative WNV Activity 2019

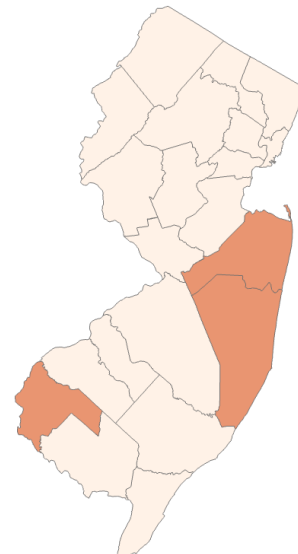
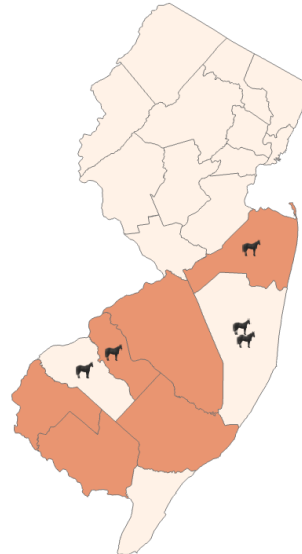
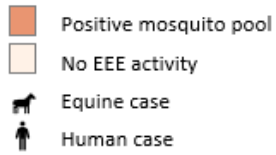
WNV Positive Pools



Eastern equine encephalitis (EEE)

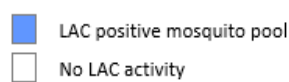
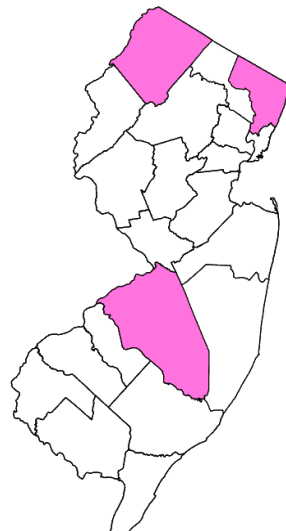
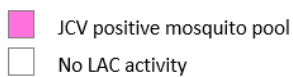
2018 EEE Activity

Cumulative EEE Activity 2019



Jamestown Canyon Virus Activity 2019

La Crosse Virus Activity 2019

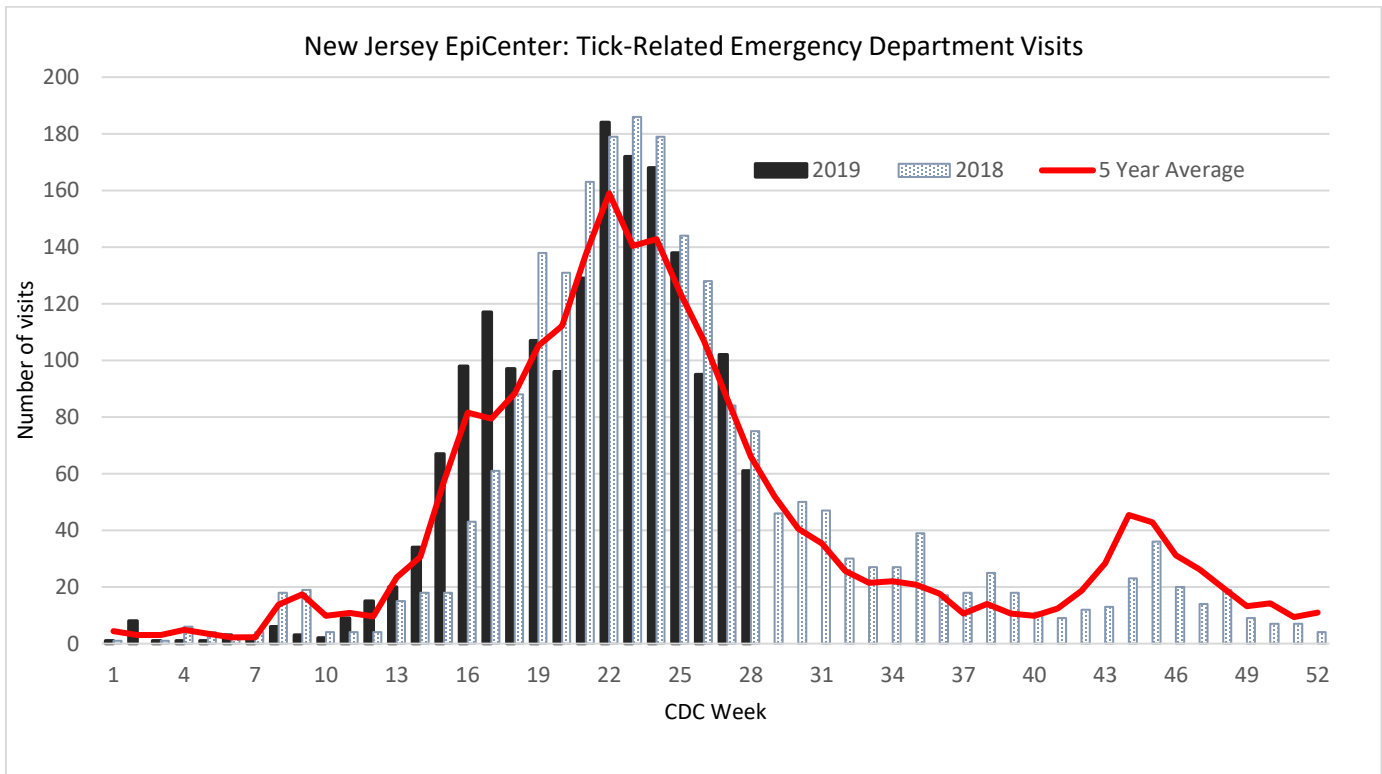


5. Syndromic Surveillance for Tick-related Emergency Department Visits

EpiCenter is a syndromic surveillance system developed and maintained by Health Monitoring Systems, Inc, for monitoring by health departments in the United States. New Jersey's EpiCenter receives real time Emergency Department (ED) data from 78 acute care and satellite health (99 percent reporting) facilities statewide. The system collects "chief complaint" information and limited patient registration data from existing ED computer systems.

The chart below represents NJ residents seen at emergency departments state wide with a tick-bite complaint or signs/symptoms associated with a reported tick-bite. Tick-related ED visits occur throughout the year with peak number of visits in the summer months and a smaller peak in the fall weeks when adult *Ixodes scapularis* (blacklegged ticks) are active.

As of week 28, the number of tick related ED visits was lower than trends observed in past 5 years.



Data reflects ED visits downloaded from EpiCenter as of July 16, 2019

For More Information

- NJDOH Communicable Disease Service: <http://nj.gov/health/cd/topics/vectorborne.shtml>
- NJDEP Office of Mosquito Control Coordination: <http://www.nj.gov/dep/mosquito/>
- NJDA Division of Animal Health: <http://www.nj.gov/agriculture/divisions/ah/>
- Rutgers Center for Vector Biology: <http://vectorbio.rutgers.edu/>