

2019 Season highlight:

- One human case of Eastern equine encephalitis (EEE) has been reported in Somerset County.
- Nine equine cases of EEE have been reported in Atlantic (1), Monmouth (1), Morris (1), Ocean (5) and Salem (1) counties. One alpaca case of EEE was reported from Camden County.
- EEE has been detected in 49 mosquito pools in 11 counties. This is the highest number of positive pools reported at this point in the season in the past 7 years.
- One case of West Nile virus was reported in Hunterdon County. WNV has been detected in mosquito pools in 19 counties. The number of WNV positive pools is significantly lower than historical averages.

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	5	16	Anaplasmosis	101	118
Dengue	29	20	Babesiosis	139	249
Eastern equine encephalitis	1	-	<i>Borrelia miyamotoi</i>	13	8
Jamestown Canyon	-	-	Ehrlichiosis	91	94
Malaria	68	93	Lyme disease	1788	4000
West Nile	1	61	Powassan	3	1
Zika	6	10	Spotted fever group rickettsioses	103	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 35 (week ending August 31, 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 7091 mosquito pools have been tested for WNV; 175 mosquito pools from 19 counties were positive for WNV with the highest number reported from Burlington County.
- 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 total number of positive mosquito pools detected this season is significantly lower than historical averages (see chart below).
- The positive pools were detected in *Aedes albopictus*, *Aedes cantator*, *Aedes japonicus*, *Aedes triseriatus*, *Anopheles punctipennis*, *Coquillettidia perturbans*, *Culex pipiens*, *Culex* spp and *Culiseta melanura* species.
- 94% (n=165) of the positive pools were *Culex* sp.

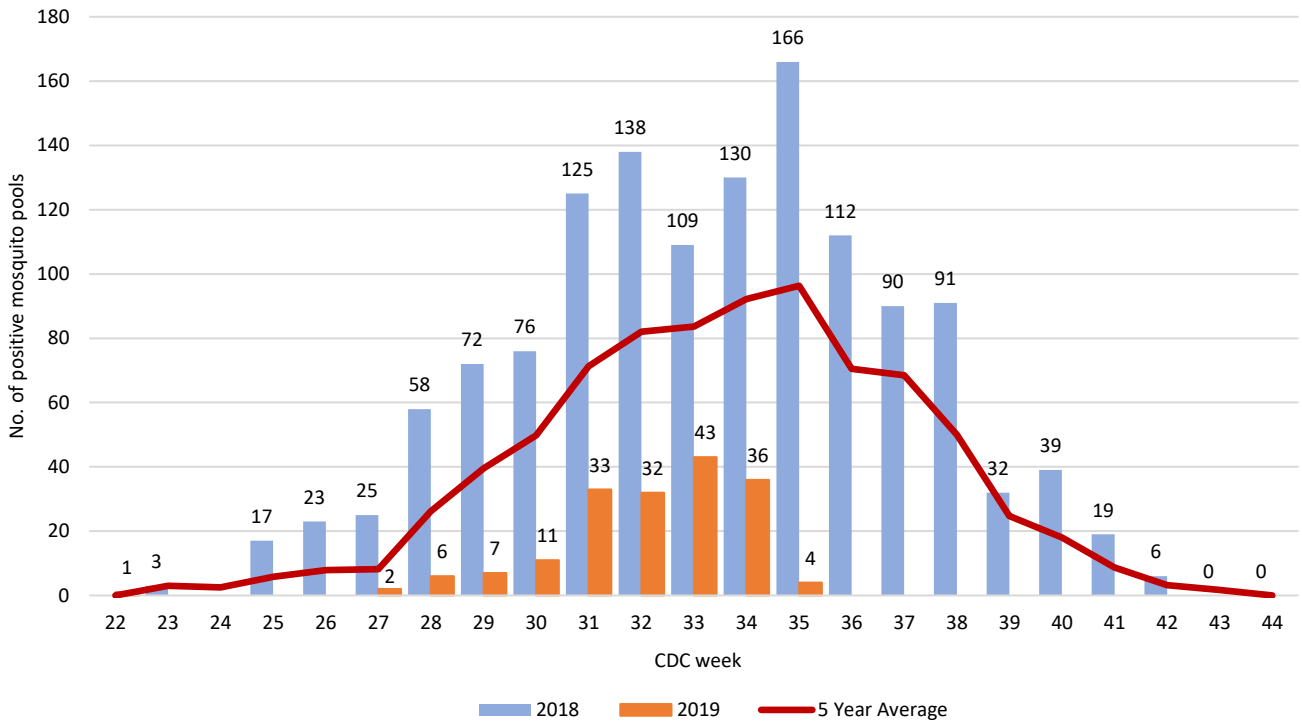
*Test results may be incomplete; Counties submit pools for testing on specific weekdays. Mosquito testing data reflects test results received from PHEL, CMBSL3 and US Army Public Health as of September 3, 2019

WNV Positive Mosquito Pools

County	Week 35		Cumulative Total (week 35)	
	2019*	2018	2019*	2018
Bergen		5	36	108
Burlington		3	33	26
Union	4	13	24	58
Hudson		5	22	54
Middlesex		7	8	48
Monmouth		9	8	52
Somerset		11	7	59
Hunterdon		19	6	91
Camden		4	5	30
Atlantic		7	3	22
Cape May		2	3	14
Gloucester		13	3	84
Mercer		1	3	41
Morris		23	3	124
Ocean		5	3	22
Passaic		6	3	13
Warren		17	3	50
Cumberland		5	1	10
Sussex		9	1	16
Essex				12
Salem		2		8
Total	4	166	175	945

Week 35: August 26-September 1, 2018; August 25-31, 2019

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



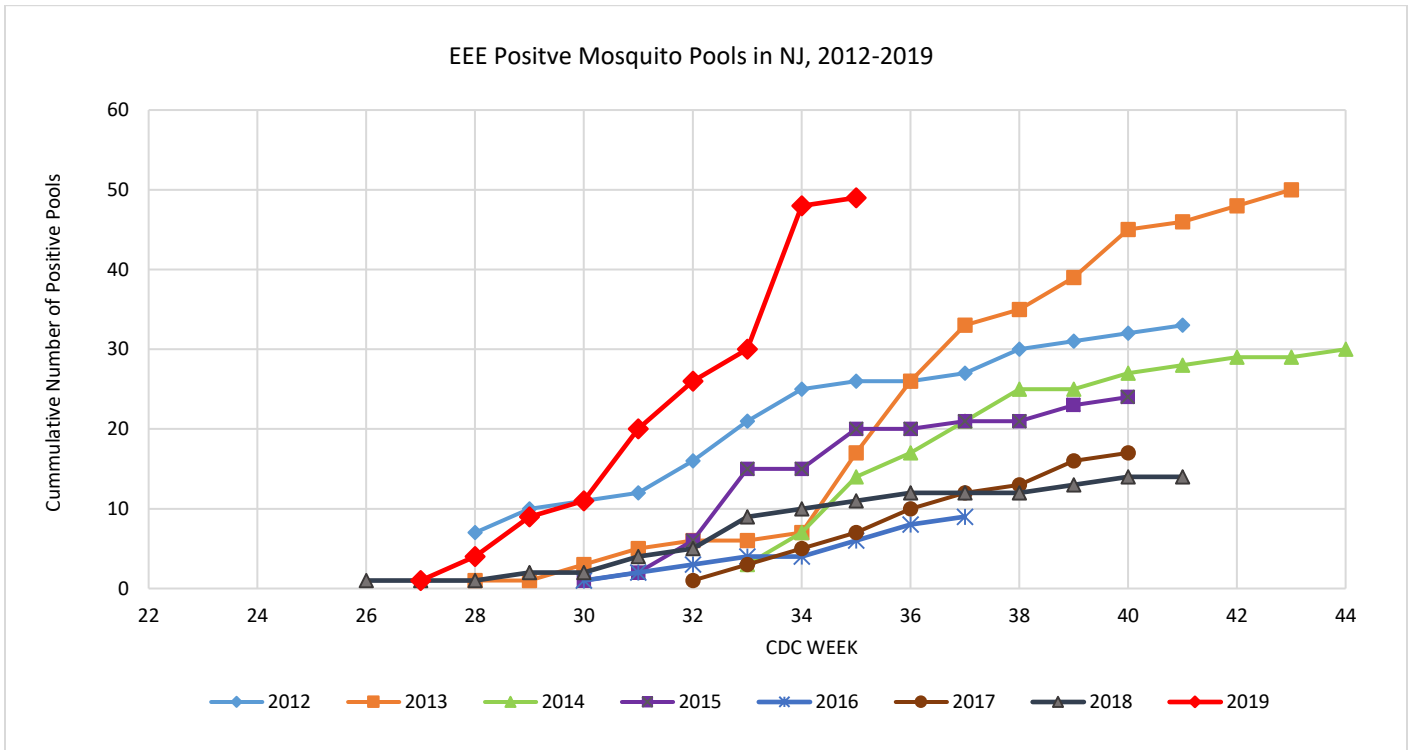
Eastern equine encephalitis virus (EEE)

- A total of 6364 mosquito pools have been tested for EEE; 49 mosquito pools from 11 counties were positive for EEE. This is the highest number of pools reported at week 34 in the past 7 years (see chart below) and exceeds the total number of EEE positive mosquito pools in 2018 (n=14).
- As of week 35, 3 northern counties (Morris, Sussex and Warren) have detected EEE positive pools. These are the first EEE positive pools detected in the northern part of the state in at least 7 years.
- The highest number of positive pools was reported in Morris County.
- The first positive pool was detected in week 27 (Monmouth county). In 2018, the first EEE mosquito pool was reported in week 26.
- 78% (n=38) of the positive pools were *Culiseta melanura*. *Culiseta melanura* species was detected in 10 counties reporting positives.
- Other positive species detected were *Aedes albopictus* (Atlantic and Ocean), *Aedes canadensis* (Morris), *Aedes triseriatus* (Morris) and *Culex* spp (Camden, Morris, Ocean, Sussex and Warren).

EEE Positive Mosquito Pools

County	Week 35		Cumulative Total (week 35)	
	2019*	2018	2019*	2018
Morris			8	
Burlington			7	3
Monmouth			7	1
Atlantic		1	6	1
Camden	1		6	4
Gloucester			5	
Ocean			3	
Sussex			3	
Salem			2	2
Cape May			1	
Warren			1	
Bergen				
Cumberland				
Essex				
Hudson				
Hunterdon				
Mercer				
Middlesex				
Passaic				
Somerset				
Union				
Total	1	1	49	11

Week 35: August 26-September 1, 2018; August 25-31, 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	303		303				44		44		44	
Bergen	215		215	1	21							
Burlington	281		281	1	20							
Camden	87		71				4		4		4	
Cape May	1670		21		187		427				427	
Cumberland	238		238		3							
Essex	114		114		1							
Gloucester	339		329		2		17		17		17	
Hudson	173		173		8							
Hunterdon	206		206		3							
Mercer	265		265		22		1		1		1	
Middlesex	216		216		4		10		10		10	
Monmouth	336		336		20							
Morris	317		317									
Ocean	265		265									
Passaic	161		161		18	1						
Salem	372		363		20							
Somerset	185		185									
Sussex	229		229	1	20							
Union	145		145		10							
Warren	247		247									
Total	6364	-	4680	3	359	1	503		76	-	503	-

^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.

Nine equine cases and one alpaca case of EEE have been reported this season. The first cases were reported in week 30. This is the earliest report of equine cases in the state since 2012.

- Equine cases:
 - Atlantic: One-year-old yearling of unknown vaccination status (onset unknown, euthanized August 24th)
 - Monmouth: One-year-old vaccinated colt (onset August 5th, euthanized August 5th)
 - Morris: 18-year-old gelding of unknown vaccination status (onset August 15th, euthanized August 16th)
 - Ocean: 5 cases. The first case was a 12-year-old mare (onset July 23rd, euthanized July 23rd). The mare was not currently vaccinated. The second case was an unvaccinated 20-year-old gelding (onset July 26th, euthanized July 26th). The third case was a 2-year-old gelding of unknown vaccination status (onset August 15th, euthanized August 16th). The fourth and fifth were geldings of unknown vaccinated status (onset unknown, both euthanized August 26th).
 - Salem: Four-month-old colt of unknown vaccination status (onset unknown, euthanized August 25th)
- The alpaca case was reported from Camden County in a 7-year-old male alpaca of unknown vaccination status (onset August 2nd, euthanized August 3rd).
- Routine avian testing has been discontinued but is available upon request at PHEL.

WNV/EEE Positive Test Results

	Week 35		Cum. Total (Year)	
	2019	2018	2019	2018
Equine (EEE)	2	1	9	2
Equine (WNV)				
Avian (WNV)				
Other:				
Alpaca (EEE)	-	-	1	-

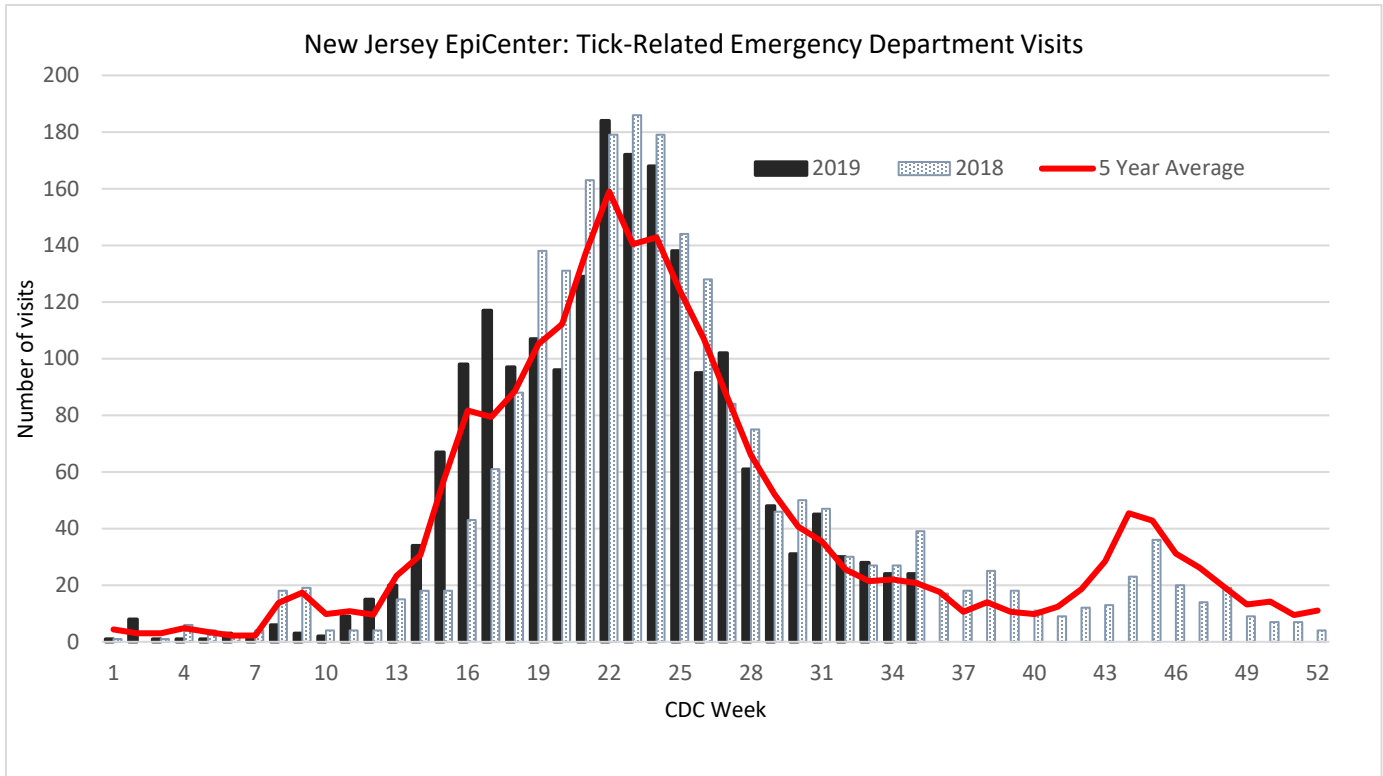
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4. Syndromic Surveillance for Tick-related Emergency Department Visits

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 35, the number of tick related ED visits is comparable to trends observed in past 5 years.



Data reflects ED visits downloaded from EpiCenter as of September 3, 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/>