

### Report Highlight:

- One new case of West Nile virus (WNV) has been added this week in Monmouth County. To date, there have been 3 WNV cases in Essex and Monmouth (2) counties. Travel-associated mosquito-borne disease reports are much lower than previous years, likely associated with lower international travel due to COVID-19.
- West Nile virus (WNV) has been detected in 174 mosquito pools in 15 counties and eastern equine encephalitis (EEE) has been detected in 3 mosquito pools in 2 counties. Both are below historical levels.
- Jamestown Canyon virus (JCV) in 6 mosquito pools in 4 counties.
- There have been no WNV or EEE positive cases detected in animals this season.
- The number of tickborne disease reports and tick-related emergency department visits in 2020 is significantly below seasonal trends observed in past 5 years.

## 1. Human Testing

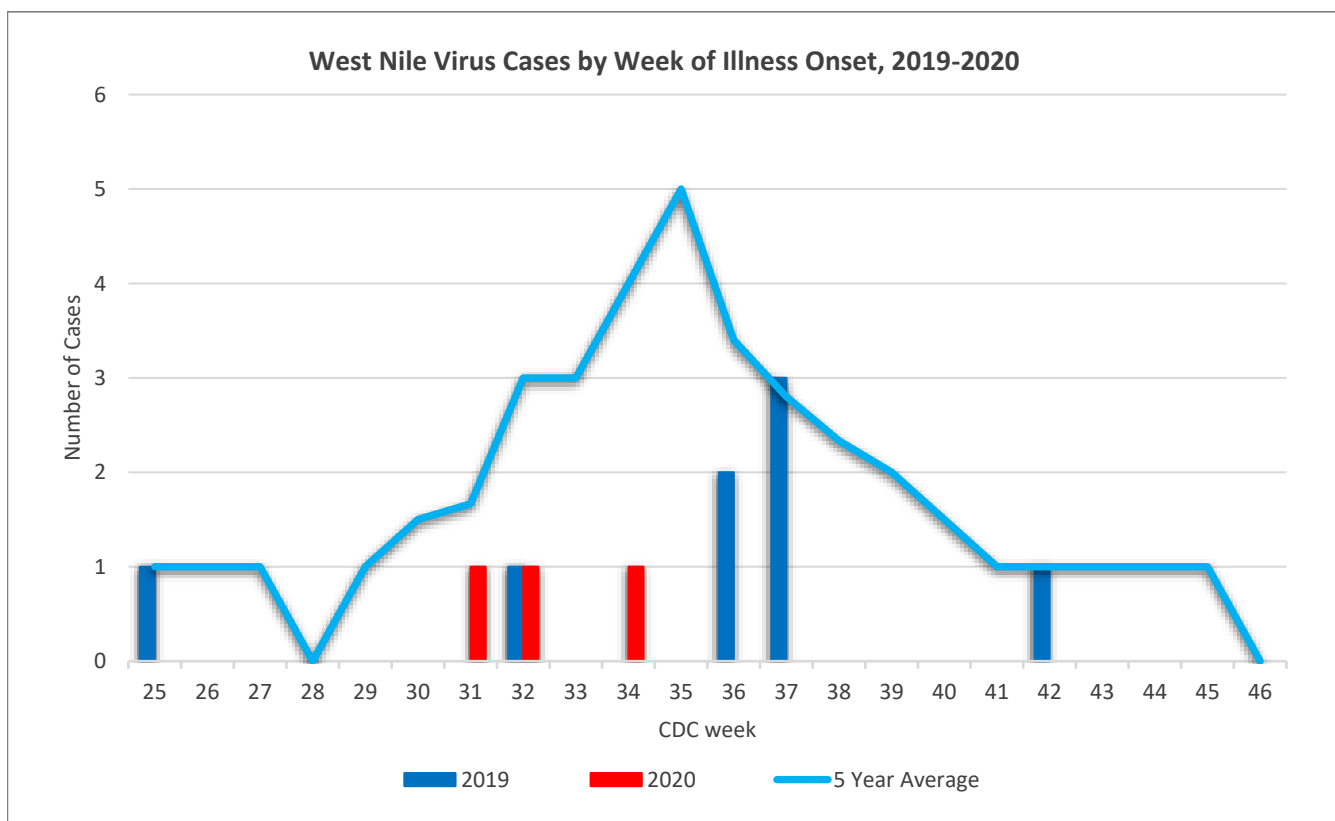
New Jersey Administrative Code (N.J.A.C.) Title 8 Chapter 57 mandates public health reporting of specified vector-borne diseases to prevent further disease spread.

Table 1.1 Human Cases<sup>a</sup>

Mosquito-borne diseases			Tickborne Diseases		
	2020 <sup>b</sup>	2019		2020 <sup>b</sup>	2019
Chikungunya	3	15	Anaplasmosis	65	142
Dengue	2	73	Babesiosis	115	234
Eastern equine encephalitis	-	4	<i>Borrelia miyamotoi</i>	4	16
Jamestown Canyon	-	-	Ehrlichiosis	51	142
Malaria	13	102	Lyme disease	1317	3587
West Nile	3	8	Powassan	1	4
Zika	3	12	Spotted fever group rickettsioses	15	208

<sup>a</sup> Data for 2020 reflect confirmed and probable cases that have been approved by NJDOH. This does not include cases under investigation. All 2020 numbers are preliminary and are subject to change.

<sup>b</sup> Cumulative through week 36: August 30-September 5, 2020.



## 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):

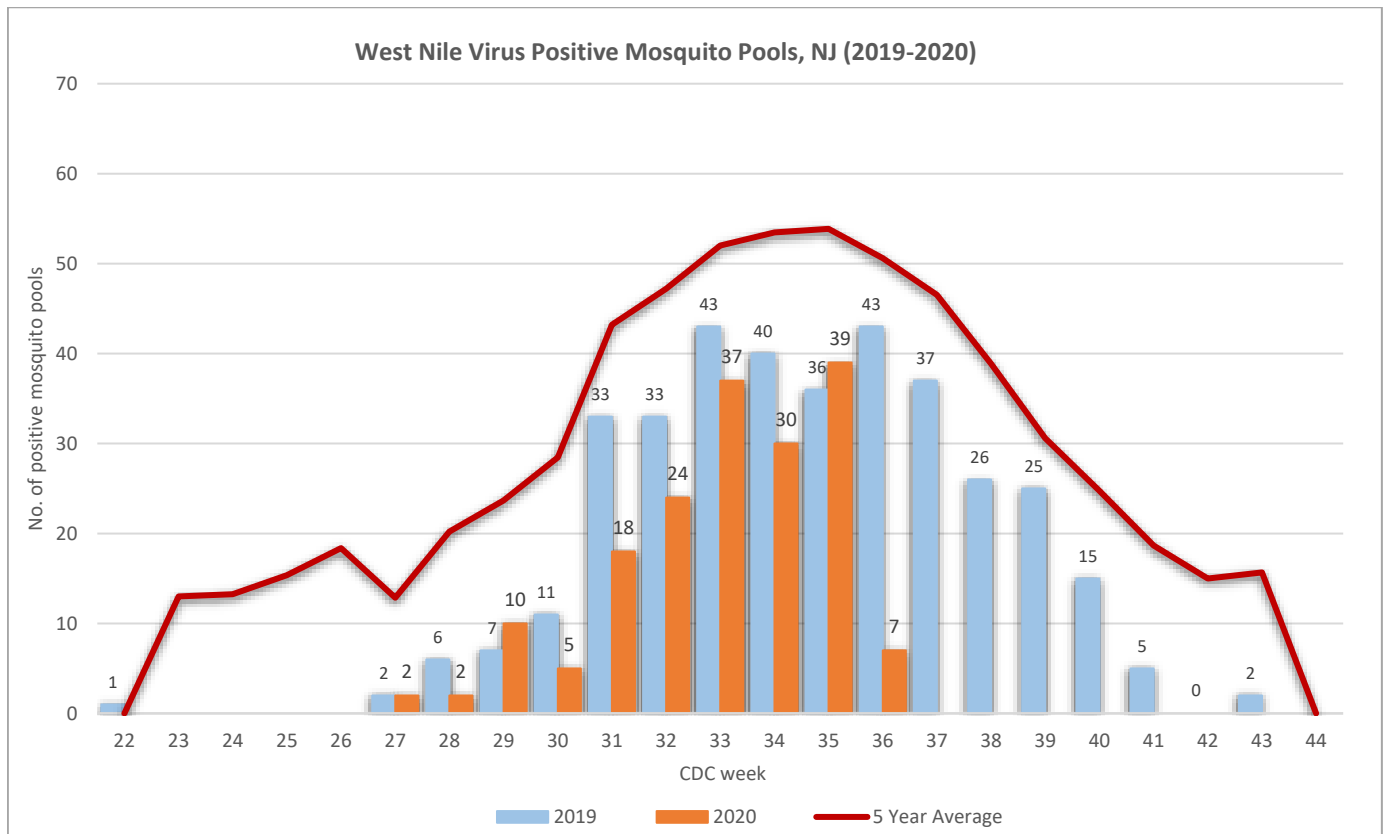
- A total of 5856 mosquito pools have been tested for WNV.
- 174 mosquito pools were positive for WNV.
- The highest number of positive pools are reported in Bergen, Monmouth and Union counties.
- The first WNV positive pools were detected in week 27 from Mercer and Monmouth counties. In 2019 the first WNV positive mosquito pool was identified in week 22 in Passaic County.
- The positive pools were detected in *Aedes albopictus*, *Culex pipiens/restuans/salinarius* and *Culex* species mix.
- 98% (n=170) 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 10, 2020

WNV Positive Mosquito Pools

County	Week 36		Cumulative Total (week 36)	
	2020*	2019	2020*	2019
Atlantic		2	1	7
Bergen		13	31	60
Burlington	2	6	23	39
Camden	2	1	5	6
Cape May				3
Cumberland				1
Essex		1		1
Gloucester		2	2	6
Hudson		3	22	27
Hunterdon	1	1	3	12
Mercer	2	1	12	7
Middlesex			5	8
Monmouth		3	25	13
Morris		2	4	6
Ocean		1		4
Passaic		1	5	4
Salem				3
Somerset			7	14
Sussex		1		2
Union		5	27	29
Warren			2	3
<b>Total</b>	<b>7</b>	<b>43</b>	<b>174</b>	<b>255</b>

Week 36: Sep 1-7, 2019; Aug 30- Sep 5, 2020



### Eastern equine encephalitis virus (EEE)

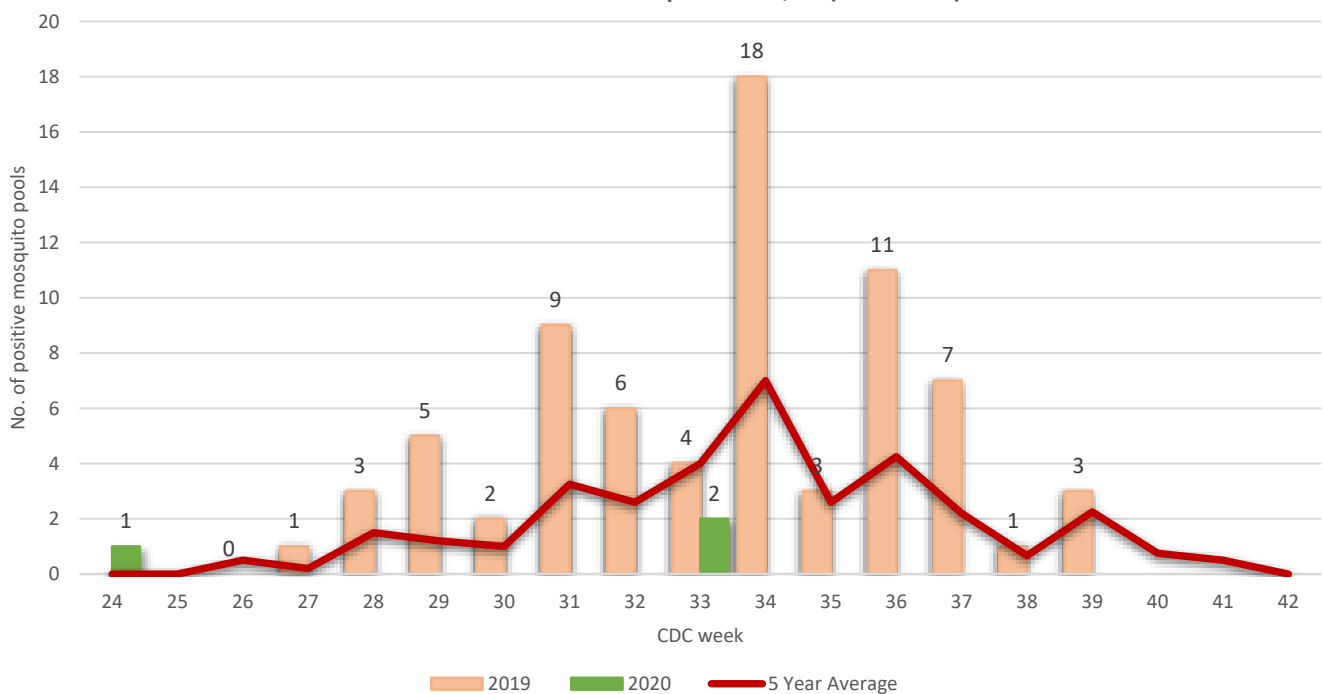
- A total of 5762 mosquito pools have been tested for EEE. Three pools have tested positive for EEE.
- The first positive pool this season was detected in week 25 (Atlantic County). This is the earliest detection of EEE in mosquito pools in the state in at least 8 years.
- The positive pools were detected in *Culiseta melanura* species.
- In 2019, the first EEE mosquito pool was reported from Monmouth County in week 27.

EEE Positive Mosquito Pools

County	Week 36		Cumulative Total (week 36)	
	2020*	2019	2020*	2019
Atlantic		4	2	10
Bergen				
Burlington		1	1	8
Camden		1		7
Cape May				1
Cumberland				
Essex				
Gloucester				5
Hudson				
Hunterdon				
Mercer				
Middlesex				
Monmouth		1		8
Morris		1		9
Ocean				3
Passaic				
Salem				2
Somerset				
Sussex		3		8
Union				
Warren				1
<b>Total</b>		<b>11</b>	<b>3</b>	<b>62</b>

Week 36: Sep 1-7, 2019; Aug 30- Sep 5, 2020

EEE Virus Positive Mosquito Pools, NJ (2019-2020)



**Other viruses:**

Mosquito pools from all counties have been tested for other arboviruses.

**Cumulative 2020 Mosquito Pool Testing (Other Viruses<sup>a</sup>)**

County	SLE		JCV		LAC		CHIKV		DENV		ZIKV	
	Pools	Pos	Pools	Pos	Pools	Pos	Pools	Pos	Pools	Pos	Pools	Pos
Atlantic	296		296				76		76		76	
Bergen	223		223	2								
Burlington	227		227		16							
Camden	159		154									
Cape May	705											
Cumberland	320		320	2	1							
Essex	100		100									
Gloucester	301		297		3							
Hudson	140		140									
Hunterdon	280		280									
Mercer	284		284		16							
Middlesex	241		241	1	19		1		1		1	
Monmouth	367		367	1	1							
Morris	340		340									
Ocean	245		245									
Passaic	130		130		6							
Salem	492		487		22							
Somerset	200		200									
Sussex	302		302		11							
Union	172		172									
Warren	238		238		1							
<b>Total</b>	5762	-	5043	6	96	-	77	-	77	-	77	-

<sup>a</sup> 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 2020

Numbers in green shaded columns represent positive pools in 2020

**Jamestown Canyon virus (JCV):**

- Six mosquito pools from 4 counties have tested positive for Jamestown Canyon virus at PHEL. The positive pools were detected in the following counties: Bergen (week 23 and week 25), Cumberland (week 28 and week 32), Middlesex (week 31) and Monmouth (week 29).
- The positive pools were detected in *Aedes cantator*, *Aedes taeniorhynchus*, *Anopheles quadrimaculatus* and *Coquillettidia perturbans* species.
- In 2019, five mosquito pools from 4 counties have tested positive for Jamestown Canyon virus. Positive pools were identified in Sussex, Bergen, Burlington and Salem counties.
- NJ reported its first and only human case of Jamestown Canyon virus in 2015 in a Sussex County resident.

**La Crosse encephalitis virus (LAC):**

- No positive La Crosse virus pools have been identified in 2020.
- In 2019, a mosquito pool collected in Passaic County (week 22) tested positive for La Crosse virus at PHEL.
- There have not been any human La Crosse virus cases reported in at least the past 20 years.

### 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 2020.
- Routine avian testing has been discontinued but is available upon request at PHEL.

**WNV/EEE Positive Test Results**

	Week 36		Cum. Total (Year)	
	2020*	2019	2020*	2019
Equine (EEE)				
Equine (WNV)				
Avian (WNV)				
Other				

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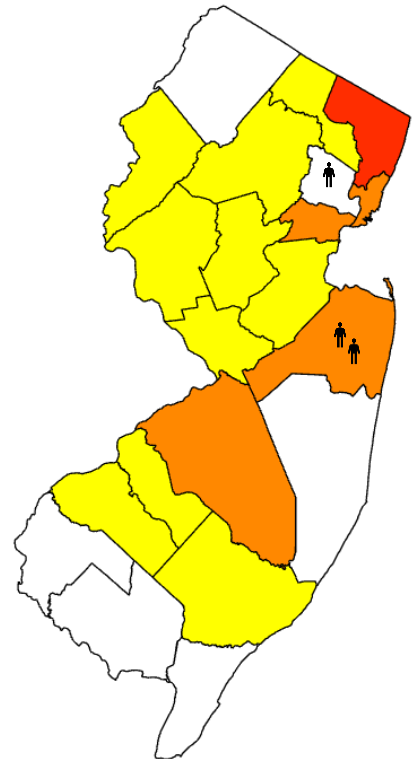
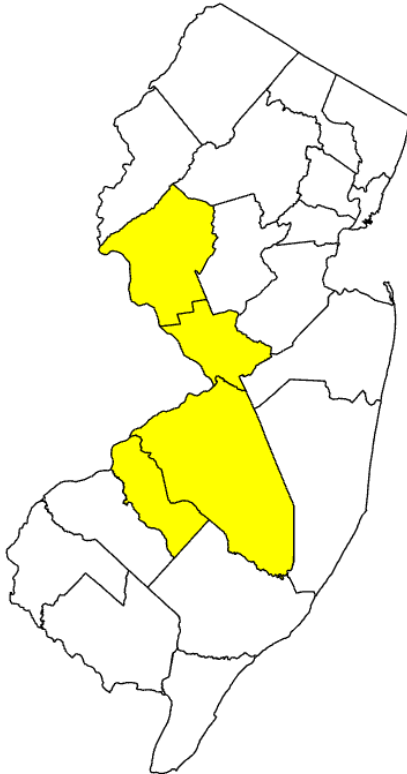
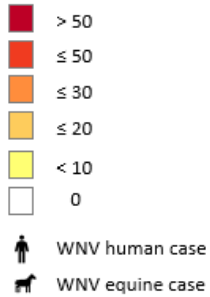
### 4. Surveillance Maps

**West Nile Virus (WNV)**

Week 36 WNV Activity (2020)\*

Cumulative WNV Activity 2020

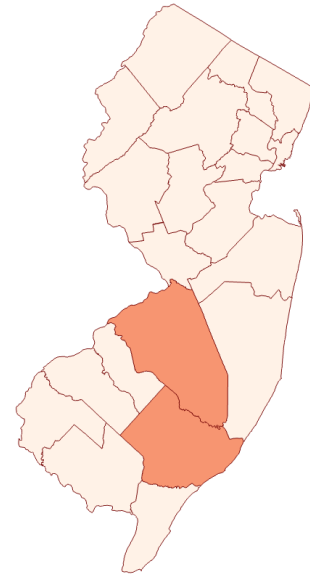
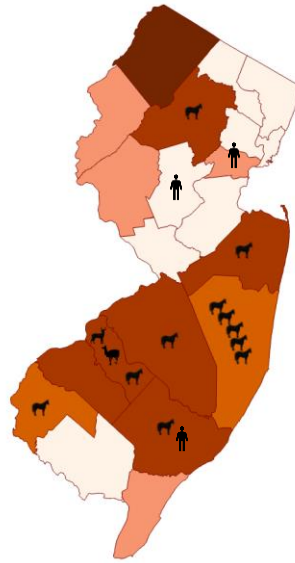
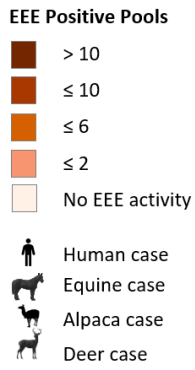
**WNV Positive Pools**



**Eastern equine encephalitis (EEE)**

2019 EEE Activity

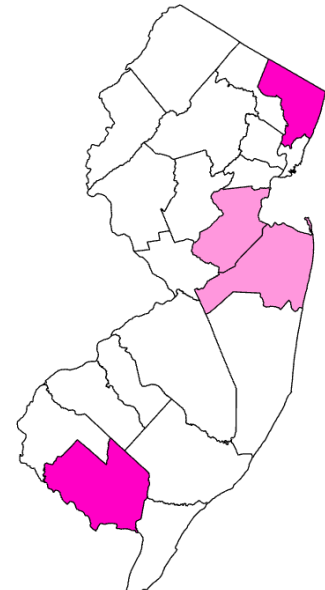
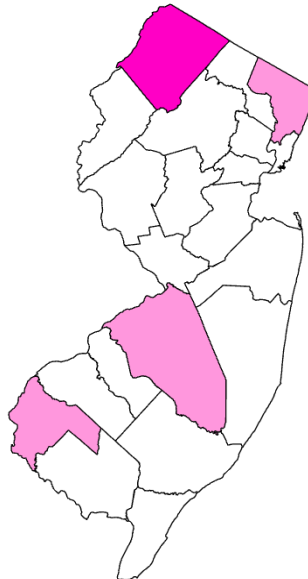
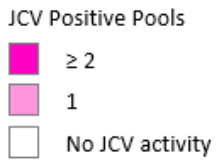
Cumulative EEE Activity 2020



**Jamestown Canyon Virus**

2019 JCV Activity

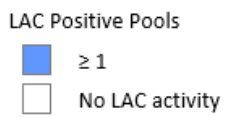
Cummulative JCV Activity 2020



**La Crosse Virus Activity 2020**

2019 LAC Activity

Cummulative LAC Activity 2020

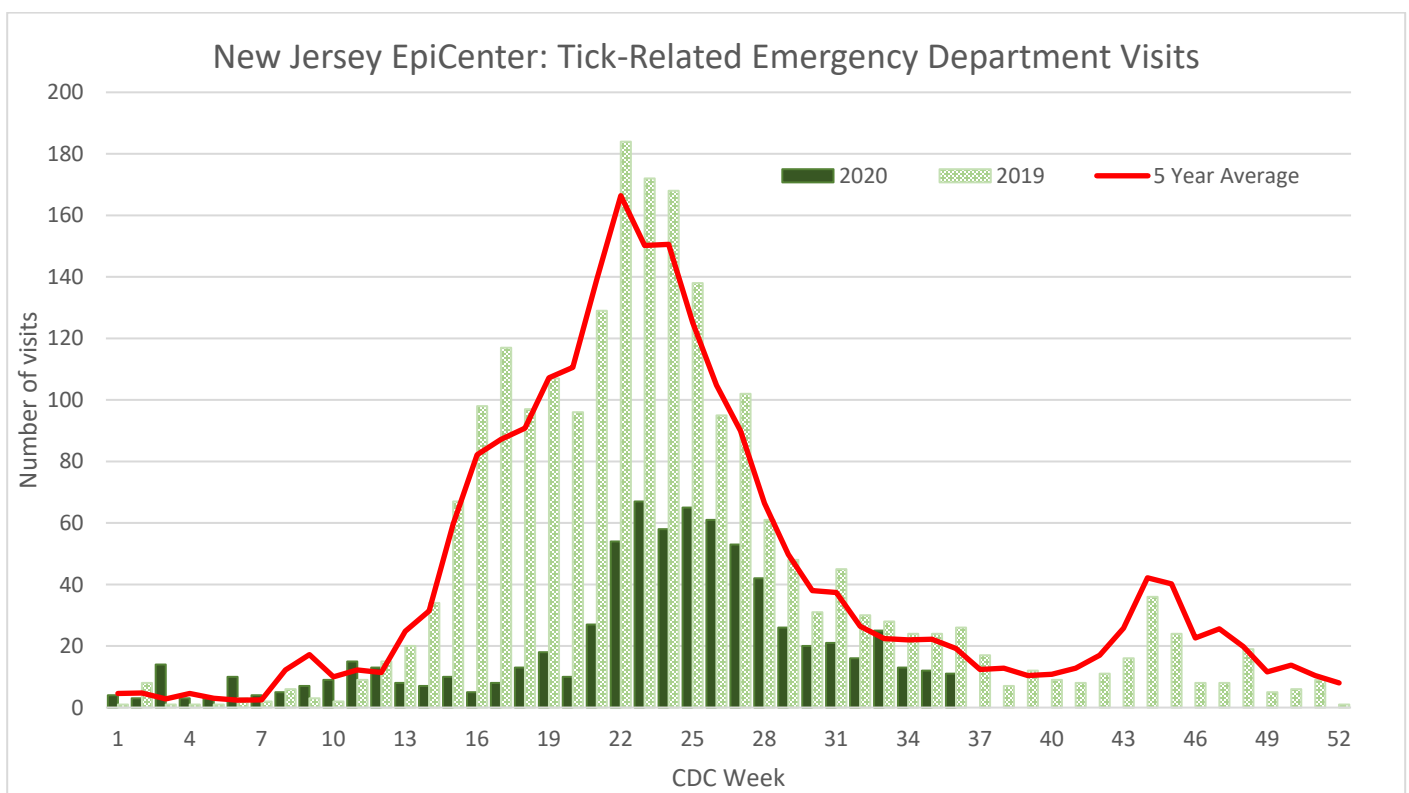


## 5. Syndromic Surveillance for Tick-related Emergency Department Visits

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 statewide 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.

In week 36, the number of ED visits is lower the 5-year average. Overall, 2020 visits are significantly lower than the 5-year average. This is because of the statewide "stay-at-home" orders implemented for the COVID-19 pandemic. A slight increase in numbers is seen starting from week 19 when state parks were reopened.



Data reflects ED visits downloaded from EpiCenter as of September 9, 2020

### For More Information

- NJDOH Communicable Disease Service: <http://nj.gov/health/cd/topics/vectorborne.shtml>
- New Jersey Arboviral Activity Maps: <http://bit.ly/JerseySurv>
- 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/>