

### Report Highlight:

- One case of Powassan virus was reported in Sussex County.
- West Nile virus (WNV) has been detected in mosquito pools in 8 counties (Bergen, Burlington, Camden, Hudson, Mercer, Monmouth, Somerset and Union).
- A mosquito pool collected from Atlantic County tested positive for Eastern equine encephalitis (EEE) in week 25.
- Jamestown Canyon virus (JCV) has been detected in mosquito pools in 3 counties (Bergen, Cumberland and Monmouth)
- There have been no WNV or EEE positive cases detected in humans or animals this season.
- The number of tick related ED visits in 2020 is significantly below seasonal trends observed in past 5 years.

## 1. Human Testing

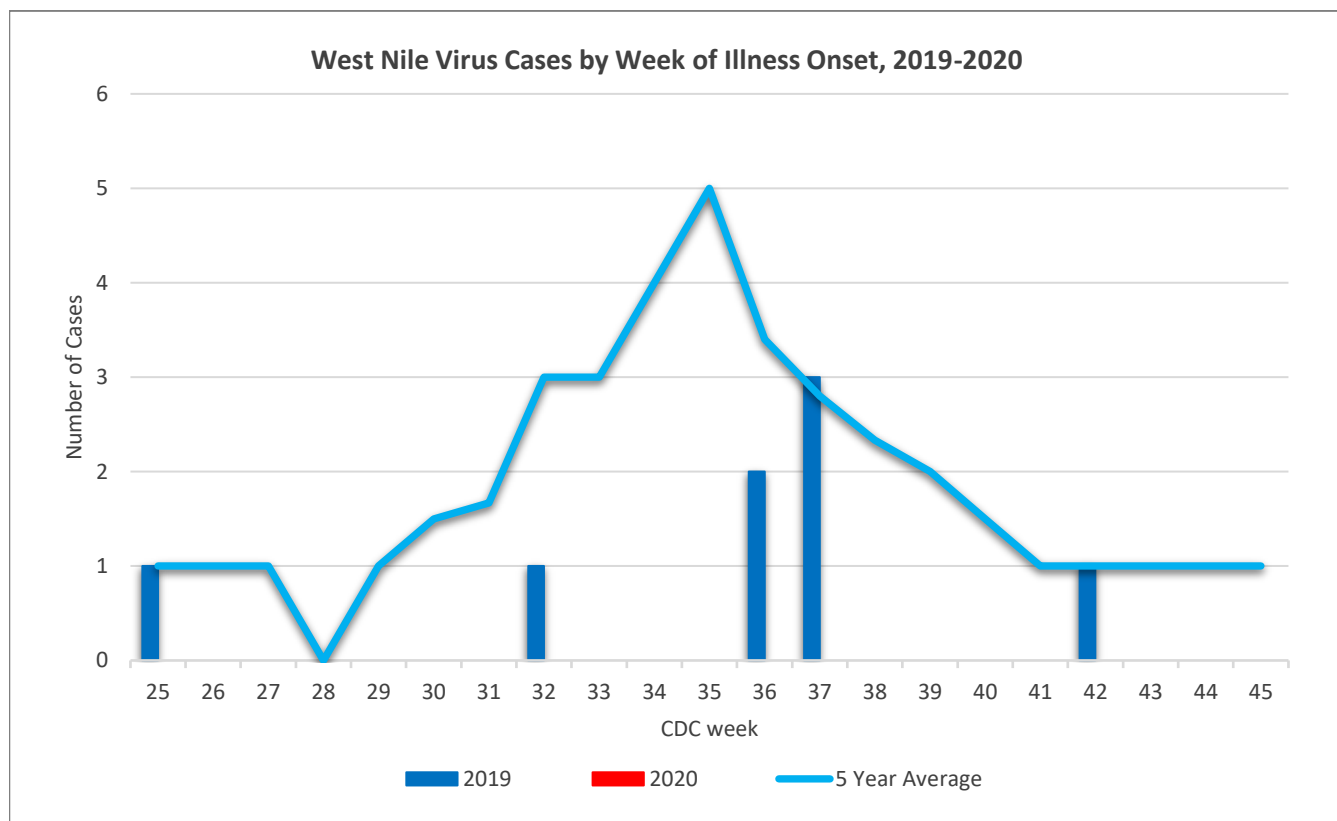
New Jersey Administrative Code (N.J.A.C.) Title 8 Chapter 57 mandates public health reporting of specified vector-borne diseases to prevent further disease spread.

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	37	142
Dengue	2	73	Babesiosis	69	236
Eastern equine encephalitis	-	4	<i>Borrelia miyamotoi</i>	4	16
Jamestown Canyon	-	-	Ehrlichiosis	22	142
Malaria	12	102	Lyme disease	909	3587
West Nile	-	8	Powassan	1	4
Zika	3	12	Spotted fever group rickettsioses	7	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 31: July 26-August 1, 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):

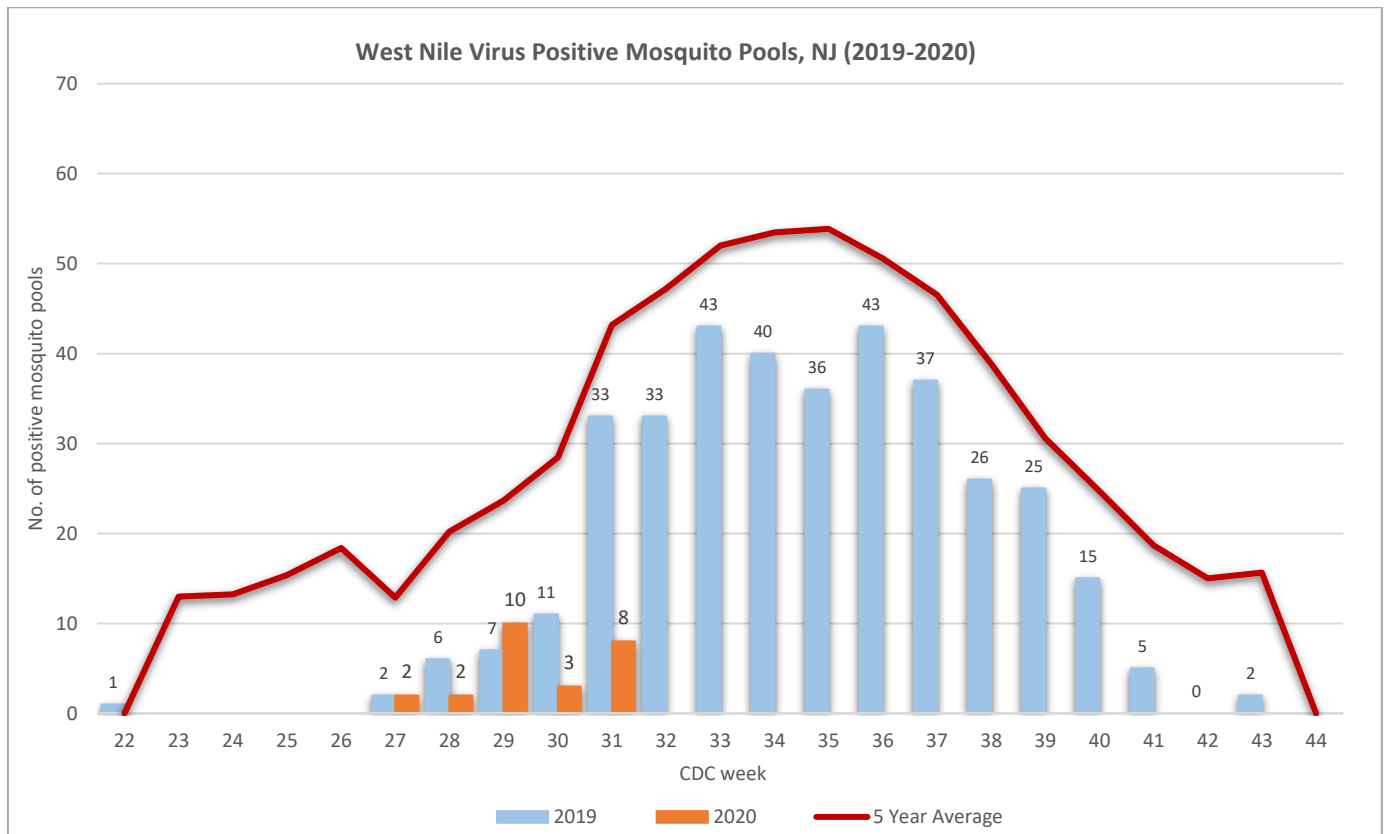
- A total of 3143 mosquito pools from 20 counties (Atlantic, Bergen, Burlington, Camden, Cumberland, Essex, Gloucester, Hudson, Hunterdon, Mercer, Middlesex, Monmouth, Morris, Ocean, Passaic, Salem, Somerset, Sussex, Union and Warren) have been tested for WNV.
- 25 mosquito pools were positive for WNV.
- The positive pools were detected in *Aedes albopictus*, *Culex pipiens/restuans/salinarius* and *Culex* species mix.
- 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.

\*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 August 6, 2020

WNV Positive Mosquito Pools

County	Week 31		Cumulative Total (week 31)	
	2020*	2019	2020*	2019
Atlantic				1
Bergen		10	3	11
Burlington	1	5	5	12
Camden	1	1	1	1
Cape May			4	1
Cumberland				1
Essex				
Gloucester				2
Hudson		3		8
Hunterdon				
Mercer	1		3	1
Middlesex		4		4
Monmouth		2	2	2
Morris				
Ocean				1
Passaic				1
Salem				
Somerset	1	1	1	2
Sussex				
Union	4	6	6	11
Warren		1		1
<b>Total</b>	<b>8</b>	<b>33</b>	<b>25</b>	<b>60</b>

Week 31: July 28-August 3, 2019; July 26-August 1, 2020



### Eastern equine encephalitis virus (EEE)

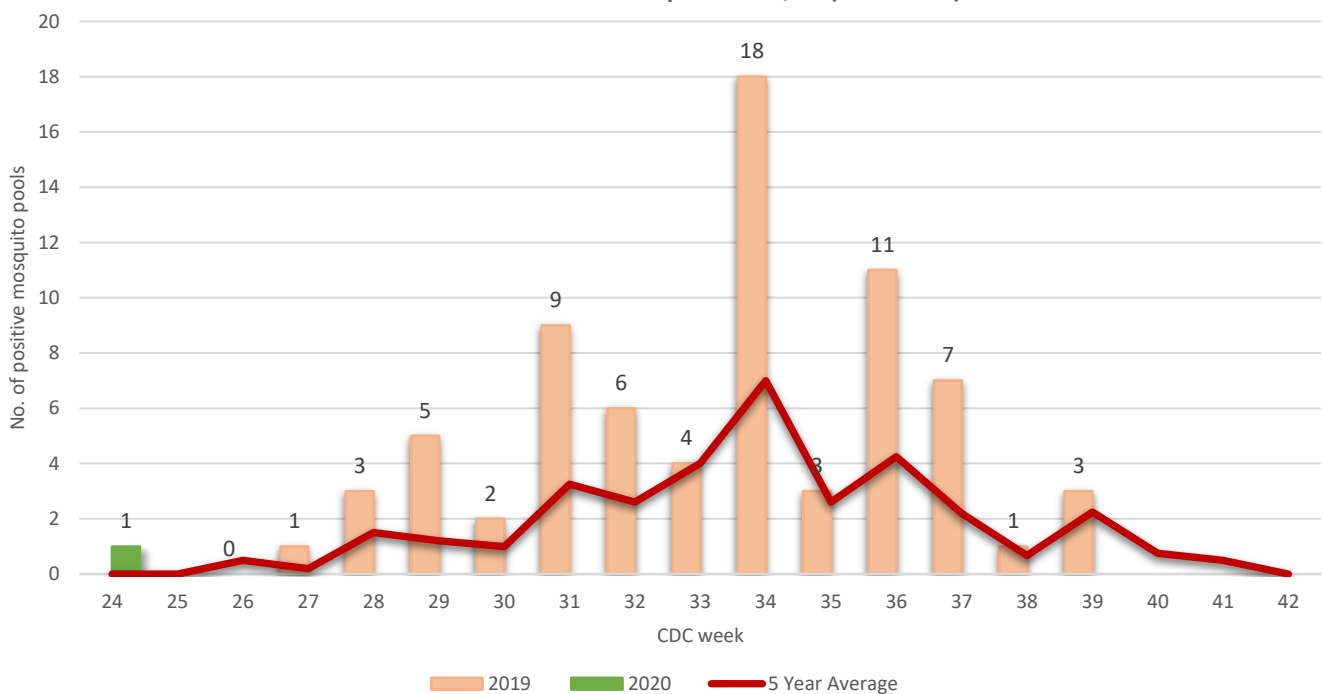
- A total of 3083 mosquito pools from 20 counties (Atlantic, Bergen, Burlington, Camden, Cumberland, Essex, Gloucester, Hudson, Hunterdon, Mercer, Middlesex, Monmouth, Morris, Ocean, Passaic, Salem, Somerset, Sussex, Union and Warren) have been tested for EEE.
- The first positive pool was detected in week 25 (Atlantic County). This is the earliest detection of EEE in mosquito pools in the state in at least 8 years.
- The positive pool was 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 31		Cumulative Total (week 31)	
	2020*	2019	2020*	2019
Atlantic		4	1	5
Bergen				
Burlington		2		2
Camden				2
Cape May				
Cumberland				
Essex				
Gloucester		1		4
Hudson				
Hunterdon				
Mercer				
Middlesex				
Monmouth		1		3
Morris				
Ocean		1		3
Passaic				
Salem				1
Somerset				
Sussex				
Union				
Warren				
<b>Total</b>	<b>-</b>	<b>9</b>	<b>1</b>	<b>20</b>

Week 31: July 28-August 3, 2019; July 26-August 1, 2020

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



**Other viruses:**

Mosquito pools from 20 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	175		175				37		37		37	
Bergen	126		126	2								
Burlington	124		124		5							
Camden	51		51									
Cape May												
Cumberland	193		193	1	1							
Essex	61		61									
Gloucester	189		189		3							
Hudson	65		65									
Hunterdon	180		180									
Mercer	189		189		7							
Middlesex	163		163		19		1		1		1	
Monmouth	233		233	1	1							
Morris	213		213									
Ocean	164		164									
Passaic	54		54		2							
Salem	337		337		12							
Somerset	125		125									
Sussex	187		187		7							
Union	109		109									
Warren	145		145									
<b>Total</b>	<b>3083</b>	<b>-</b>	<b>3083</b>	<b>4</b>	<b>62</b>	<b>-</b>	<b>38</b>	<b>-</b>	<b>38</b>	<b>-</b>	<b>38</b>	<b>-</b>

<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):**

- Four mosquito pools from 3 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 Monmouth (week 29).
- The positive pools were detected in *Aedes cantator*, *Aedes taeniorhynchus*, 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 31		Cum. Total (Year)	
	2020*	2019	2020*	2019
Equine (EEE)				
Equine (WNV)				
Avian (WNV)				
Other				

Week 31: July 28-August 3, 2019; July 26-August 1, 2020

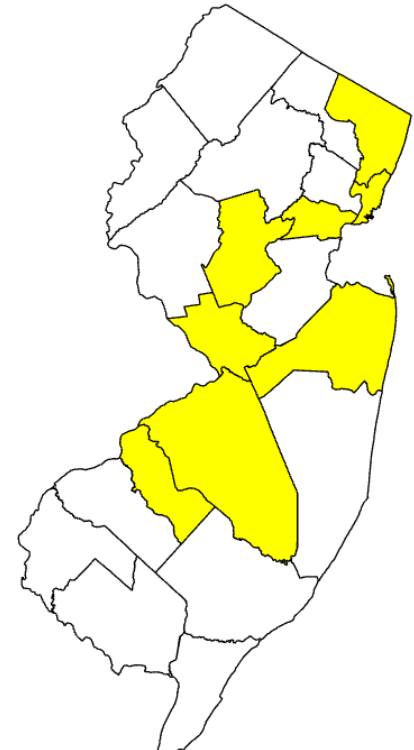
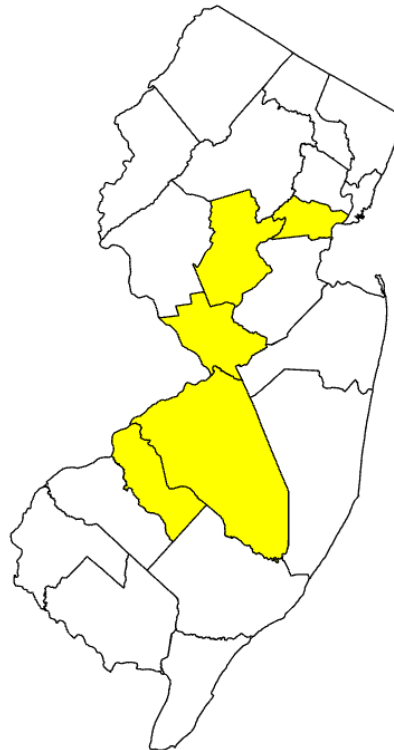
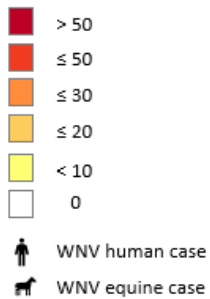
### 4. Surveillance Maps

#### West Nile Virus (WNV)

Week 31 WNV Activity (2020)\*

Cumulative WNV Activity 2020

**WNV Positive Pools**



**Eastern equine encephalitis (EEE)**

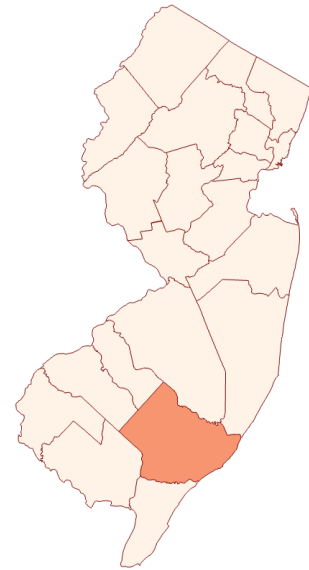
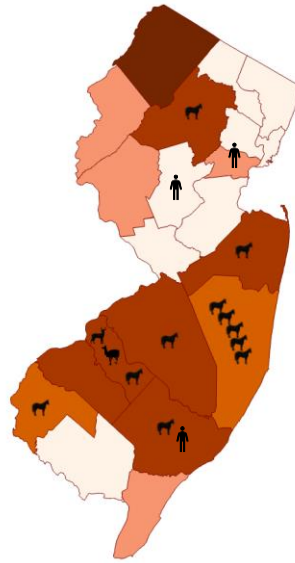
2019 EEE Activity

Cumulative EEE Activity 2020

**EEE Positive Pools**

- > 10
- ≤ 10
- ≤ 6
- ≤ 2
- No EEE activity

- Human case
- Equine case
- Alpaca case
- Deer case



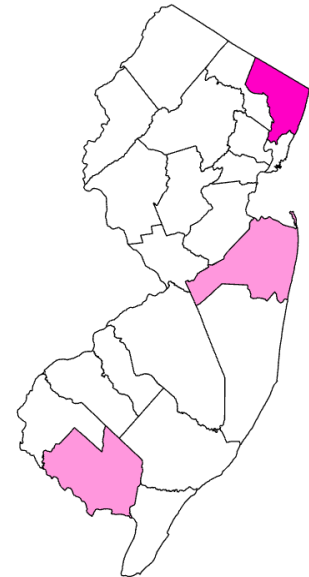
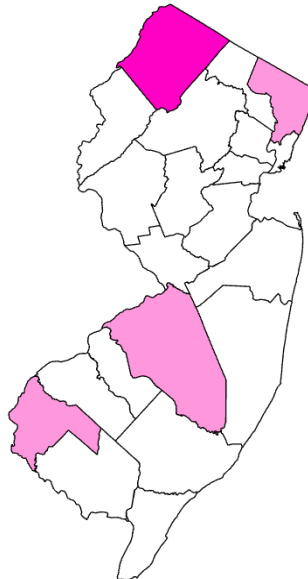
**Jamestown Canyon Virus**

2019 JCV Activity

Cummulative JCV Activity 2020

**JCV Positive Pools**

- ≥ 2
- 1
- No JCV activity



**La Crosse Virus Activity 2020**

2019 LAC Activity

Cummulative LAC Activity 2020

**LAC Positive Pools**

- ≥ 1
- No LAC activity

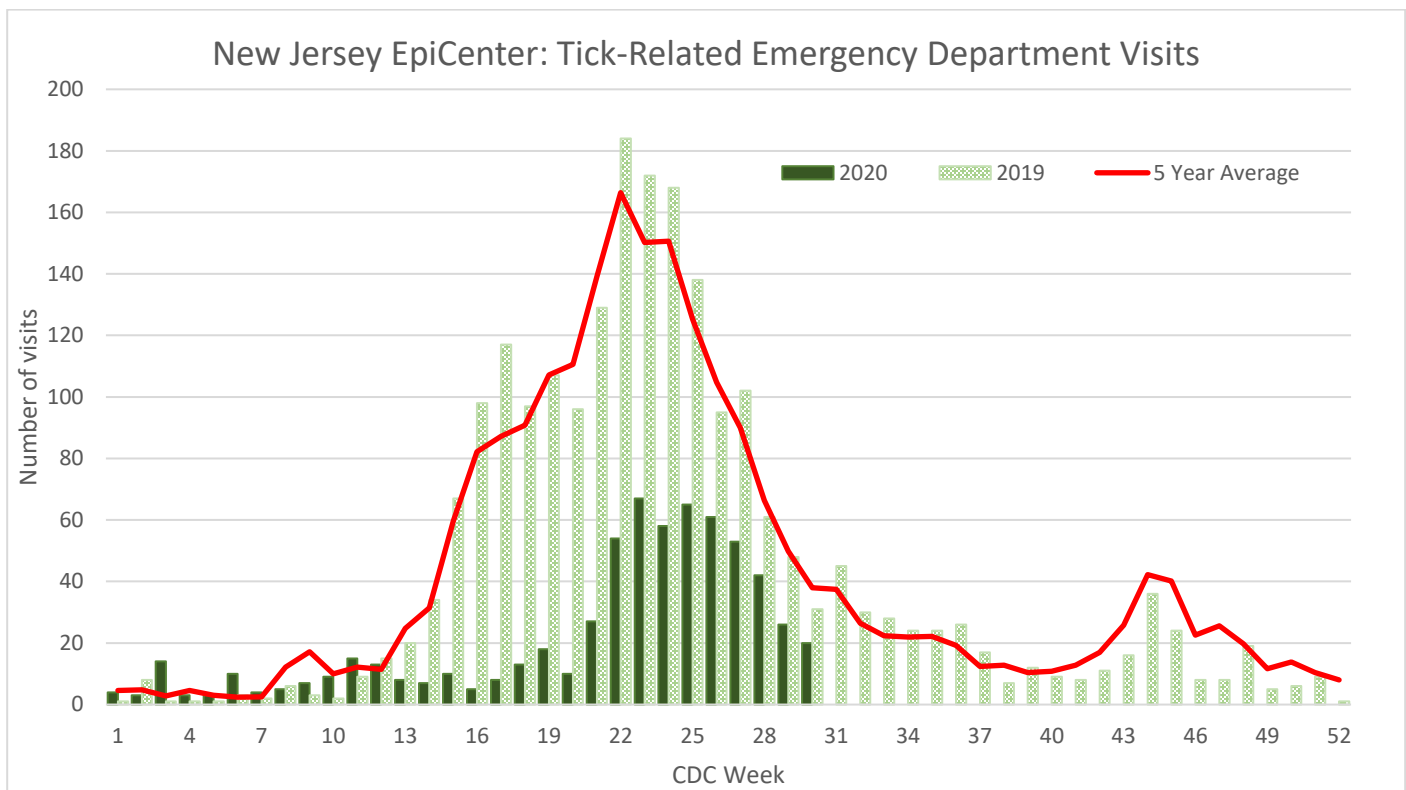


## 5. Syndromic Surveillance for Tick-related Emergency Department Visits

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 31, the number of ED visits is 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 August 5, 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/>