

### Report Highlight:

- **No new human cases of West Nile virus (WNV) have been added this week. To date, there have been 3 human cases from Essex and Monmouth (2) counties.**
- **West Nile virus (WNV) has been detected in 237 mosquito pools in 16 counties. These levels are lower than historical averages. No WNV in animals has been reported this year.**
- **One equine case of Eastern equine encephalitis (EEE) was reported from Atlantic County in week 37. EEE has been detected in 8 mosquito pools in 4 counties (Atlantic, Burlington, Camden and Salem). No human EEE cases have been reported this year.**
- **The number of tickborne disease reports and tick-related ED visits in 2020 is significantly below seasonal trends observed in past 5 years.**

## 1. Human Testing

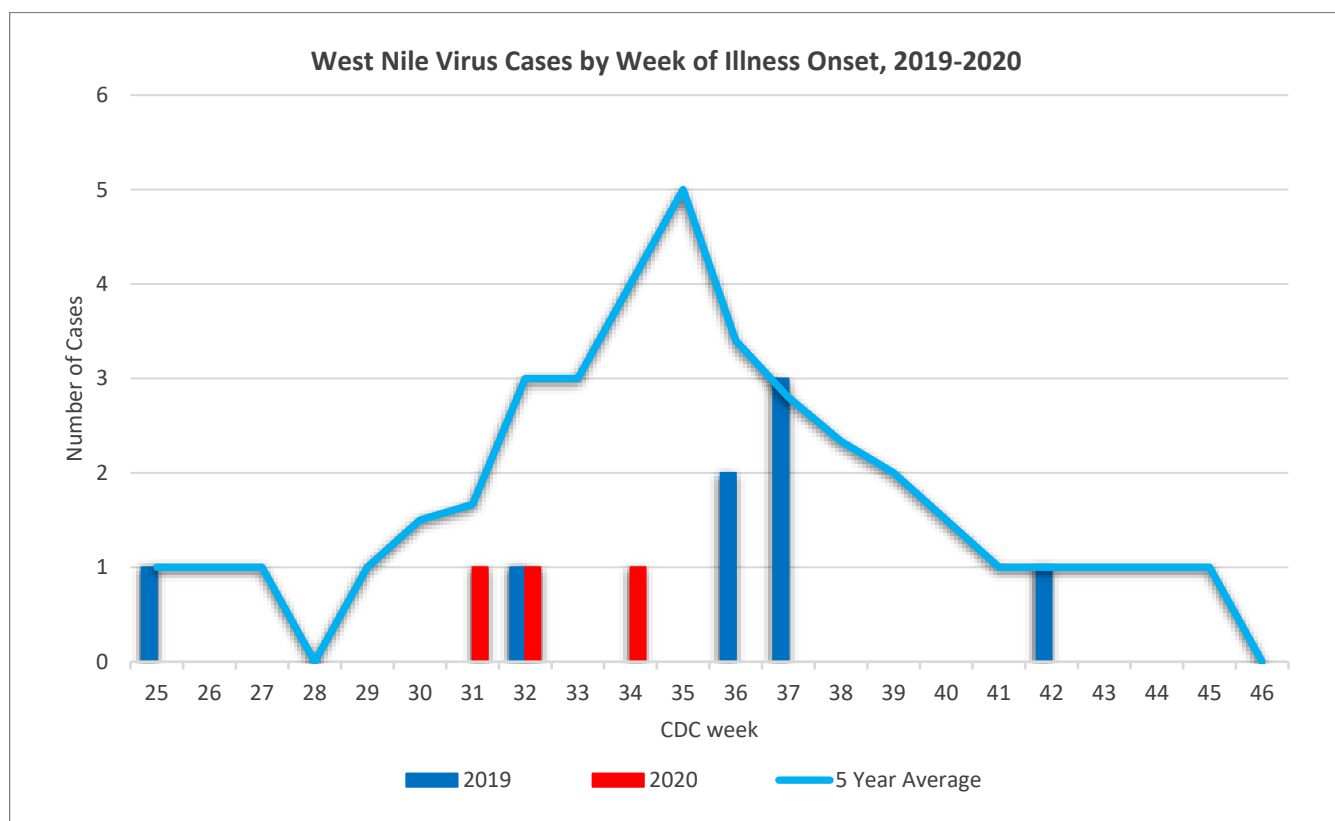
New Jersey Administrative Code (N.J.A.C.) Title 8 Chapter 57 mandates public health reporting of specified vector-borne diseases to prevent further disease spread.

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	77	142
Dengue	2	73	Babesiosis	152	236
Eastern equine encephalitis	-	4	<i>Borrelia miyamotoi</i>	8	16
Jamestown Canyon	-	-	Ehrlichiosis	66	142
Malaria	14	102	Lyme disease	1719	3621
West Nile	3	8	Powassan	1	4
Zika	3	12	Spotted fever group rickettsioses	29	209

<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 41: October 4-10, 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):

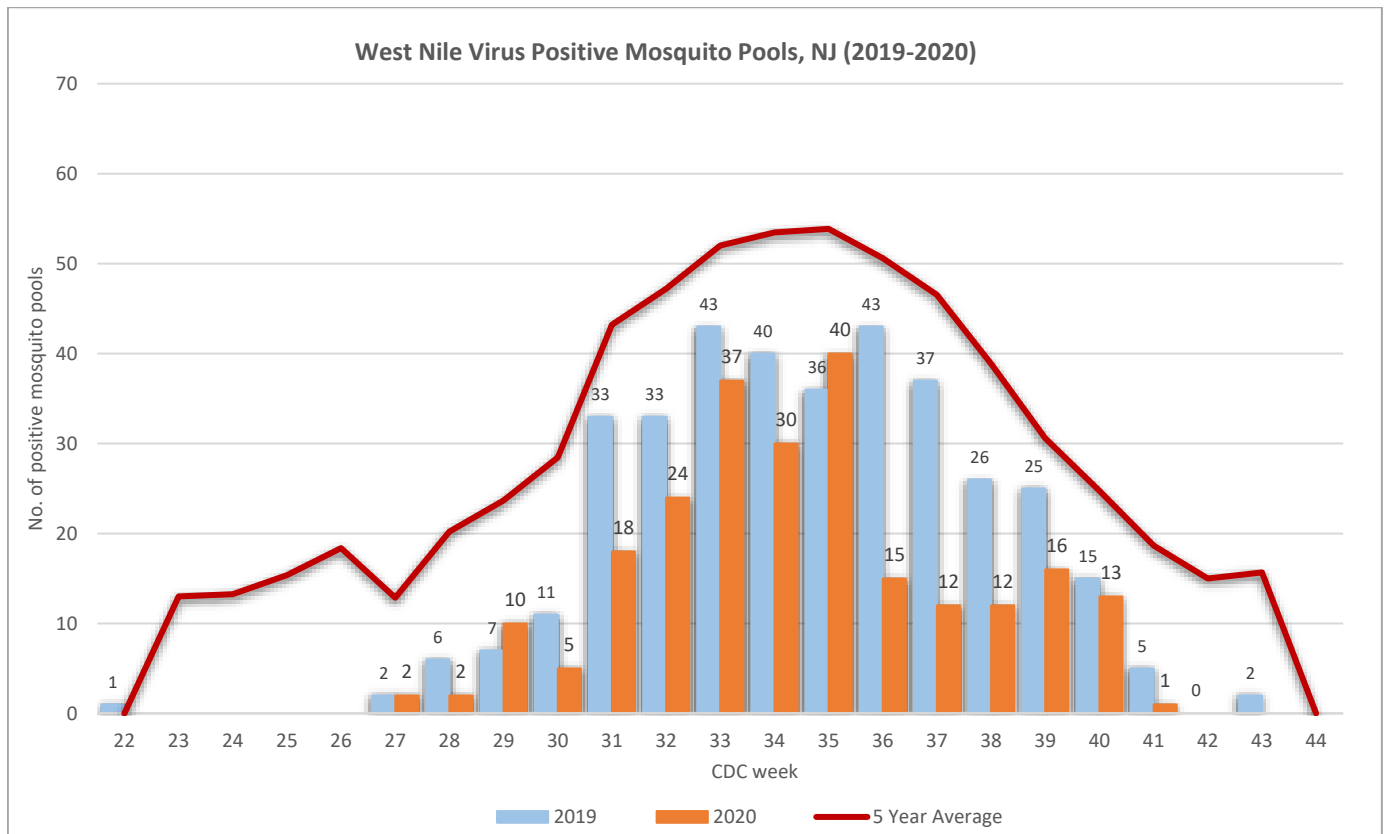
- A total of 7900 mosquito pools have been tested for WNV.
- 237 mosquito pools were positive for WNV.
- The highest number of positive pools are reported in Bergen, Monmouth and Union counties.
- The highest number of positive pools this season was reported in week 35 ( $n=40$ ).
- The first WNV positive 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*, *Aedes canadensis*, *Culex pipiens*, *Culex* species mix and *Culiseta melanura* species .
- 97% ( $n=229$ ) 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 and CMBSL3 as of October 15, 2020

### WNV Positive Mosquito Pools

County	Week 41		Cumulative Total (week 41)	
	2020*	2019	2020*	2019
Bergen		1	38	83
Monmouth			37	18
Burlington		1	34	56
Union			29	34
Hudson			26	41
Mercer			19	8
Camden	1	2	14	8
Somerset			9	17
Hunterdon			7	20
Passaic			7	4
Middlesex			5	9
Morris			5	9
Gloucester		1	3	14
Warren			2	3
Atlantic			1	15
Salem			1	3
Cape May				5
Cumberland				1
Essex				1
Ocean				11
Sussex				3
<b>Total</b>	<b>1</b>	<b>5</b>	<b>237</b>	<b>363</b>

Week 41: October 6-11, 2019; October 4-10, 2020



### Eastern equine encephalitis virus (EEE)

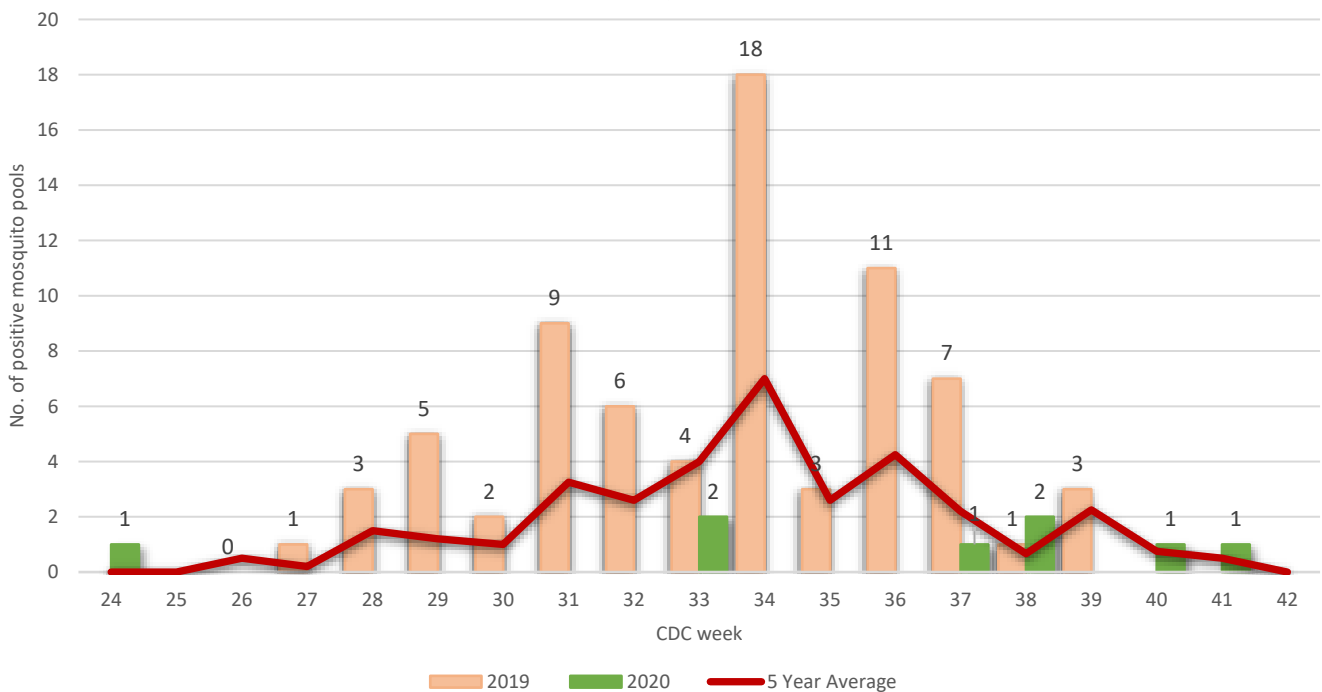
- A total of 7787 mosquito pools have been tested for EEE. Eight pools have tested positive for EEE.
- The first positive pool this season was detected in week 25 (Atlantic County). This is the earliest detection of EEE in mosquito pools in the state in at least 8 years.
- The positive pools were detected 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 41		Cumulative Total (week 41)	
	2020*	2019	2020*	2019
Atlantic			4	10
Camden			2	8
Burlington			1	9
Salem	1		1	3
Bergen				
Cape May				1
Cumberland				
Essex				
Gloucester				6
Hudson				
Hunterdon				2
Mercer				
Middlesex				
Monmouth				8
Morris				10
Ocean				3
Passaic				
Somerset				
Sussex				11
Union				1
Warren				1
<b>Total</b>	<b>1</b>	<b>-</b>	<b>8</b>	<b>73</b>

Week 41: October 6-11, 2019; October 4-10, 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	390		390				86		86		86	
Bergen	316		316	2			2		2		2	
Burlington	338		338		23							
Camden	199		209									
Cape May			1252									
Cumberland	444		444	2	1							
Essex	100		100									
Gloucester	383		392		5							
Hudson	184		184									
Hunterdon	355		355									
Mercer	364		364		16							
Middlesex	302		302	1	19		1		1		1	
Monmouth	506		506	1	1							
Morris	437		437									
Ocean	297		297									
Passaic	189		189		6							
Salem	607		617		24							
Somerset	260		260									
Sussex	377		377		18							
Union	186		186									
Warren	272		272		2							
<b>Total</b>	<b>7787</b>	<b>-</b>	<b>6506</b>	<b>6</b>	<b>115</b>	<b>-</b>	<b>89</b>	<b>-</b>	<b>89</b>	<b>-</b>	<b>89</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):**

- 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.

- The first EEE equine case this season was reported from Atlantic county in a 4-year-old unvaccinated mare (onset September 7<sup>th</sup>, euthanized September 8<sup>th</sup>).
- Routine avian testing has been discontinued but is available upon request at PHEL.

**WNV/EEE Positive Test Results**

	Week 41		Cum. Total (Year)	
	2020*	2019	2020*	2019
Equine (EEE)	-	-	1	11
Equine (WNV)				
Avian (WNV)				
Other				

Week 41: October 6-11, 2019; October 4-10, 2020

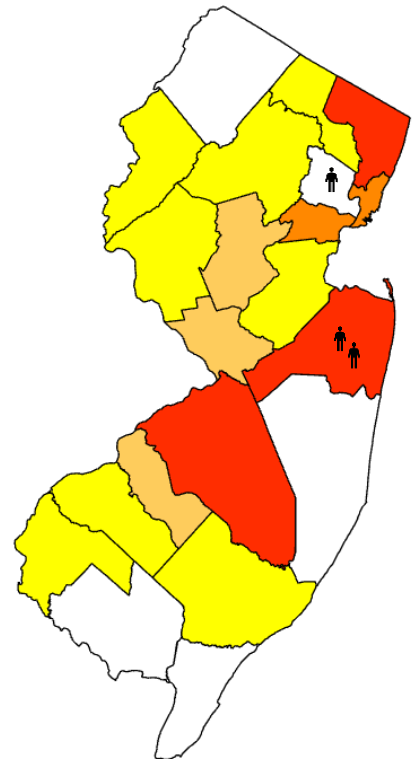
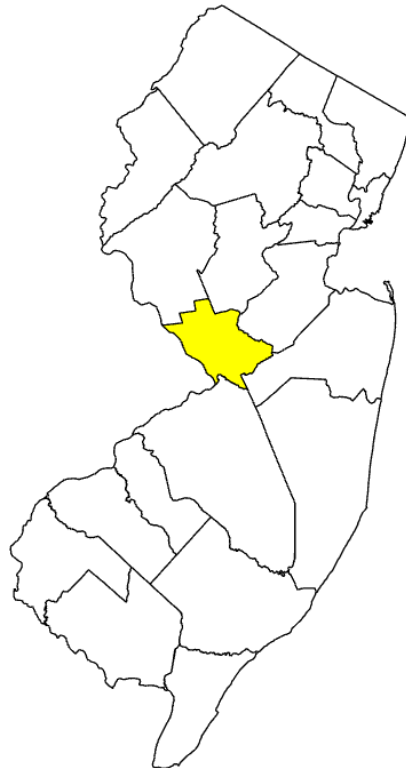
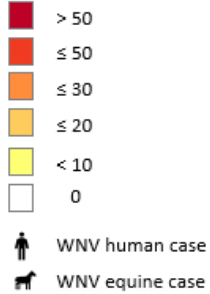
### 4. Surveillance Maps

**West Nile Virus (WNV)**

Week 41 WNV Activity (2020)\*

Cumulative WNV Activity 2020

**WNV Positive Pools**



**Eastern equine encephalitis (EEE)**

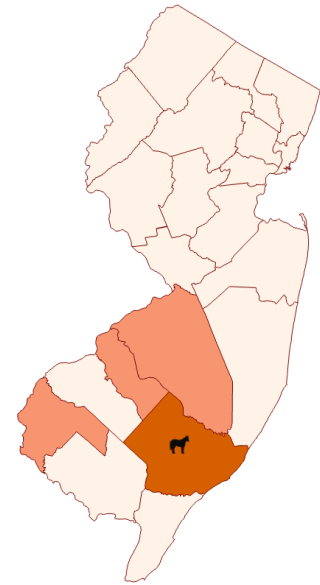
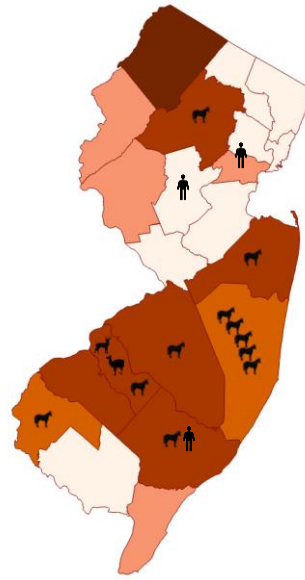
2019 EEE Activity

Cumulative EEE Activity 2020

EEE Positive Pools

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

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



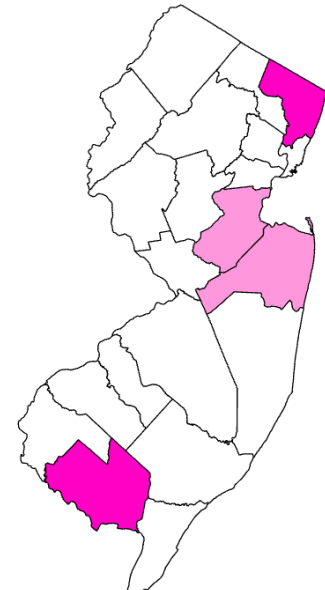
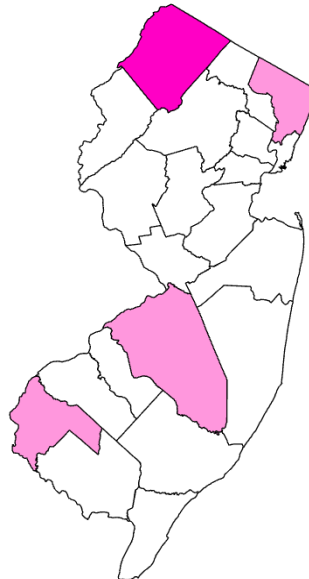
**Jamestown Canyon Virus**

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

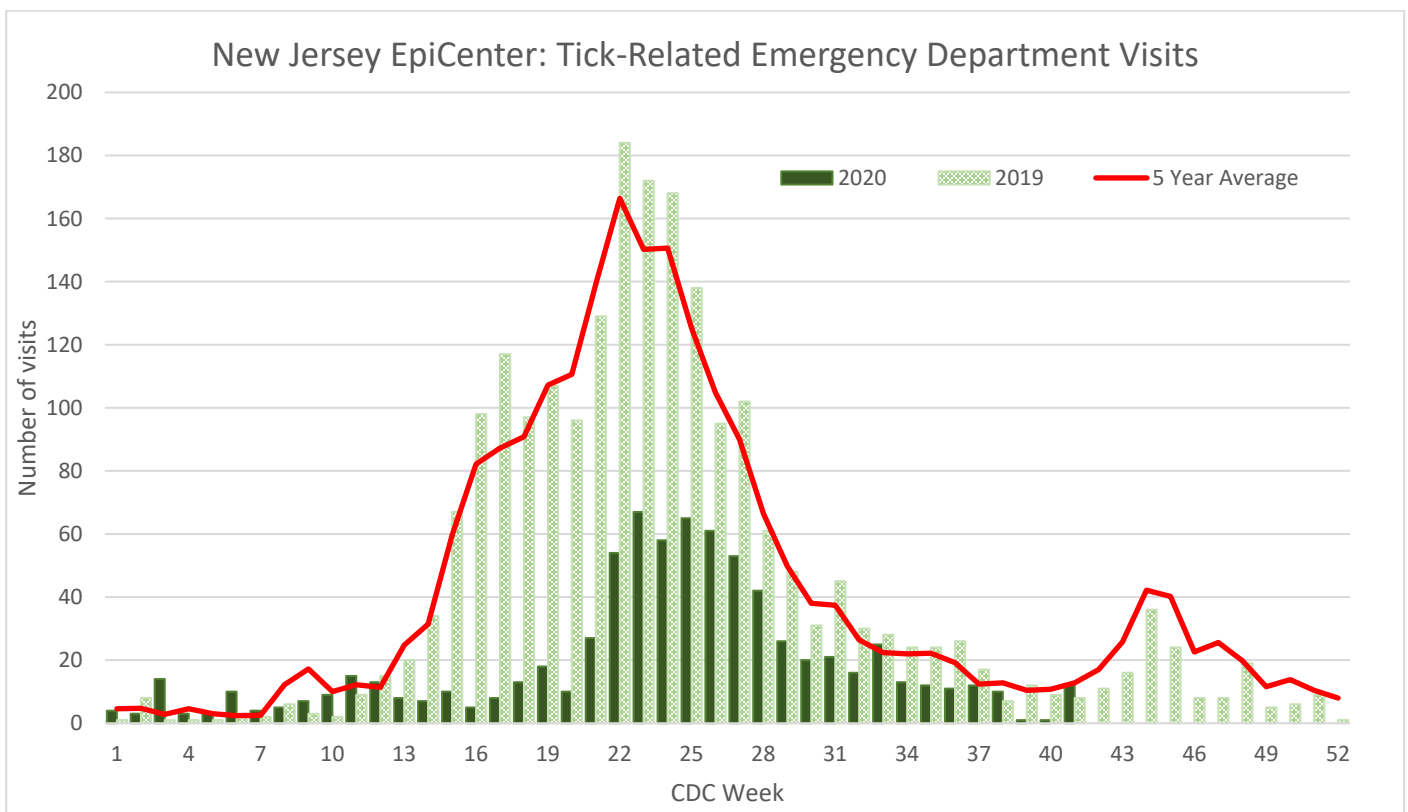


## 5. Syndromic Surveillance for Tick-related Emergency Department Visits

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 41, the number of ED visits is comparable to the 5-year average. Overall, 2020 visits are significantly lower than the 5-year average. This may be due to 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 October 14, 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/>