

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 240 mosquito pools in 16 counties. These levels are lower than historical averages. One avian case of WNV in a red-tailed hawk was reported from Cumberland County in week 41.**
- **One equine case of Eastern equine encephalitis (EEE) was reported from Atlantic County in week 37. EEE has been detected in 10 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

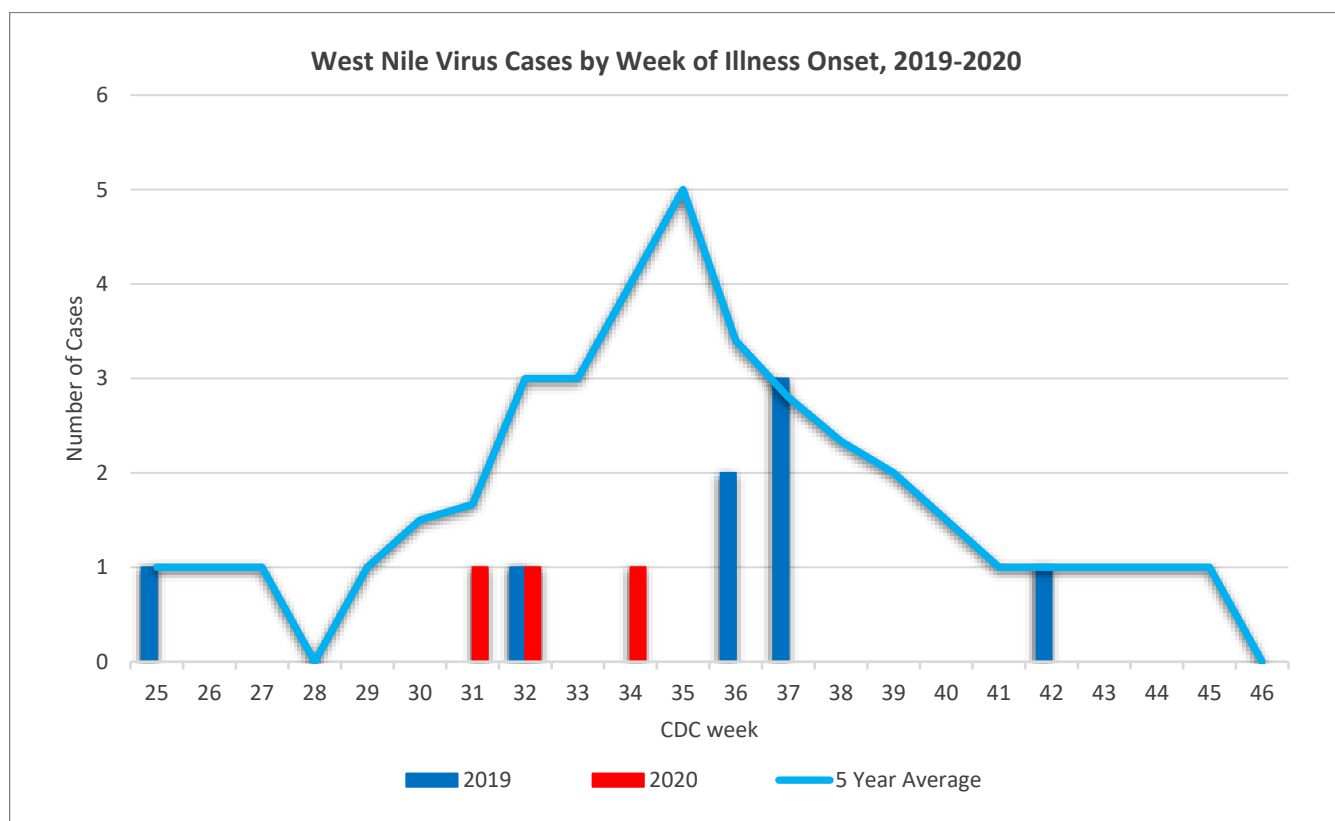
New Jersey Administrative Code (N.J.A.C.) Title 8 Chapter 57 mandates public health reporting of specified vector-borne diseases to prevent further disease spread.

Table 1.1 Human Cases^a

Mosquito-borne diseases			Tickborne Diseases		
	2020 ^b	2019		2020 ^b	2019
Chikungunya	3	15	Anaplasmosis	80	142
Dengue	2	73	Babesiosis	160	236
Eastern equine encephalitis	-	4	<i>Borrelia miyamotoi</i>	8	16
Jamestown Canyon	-	-	Ehrlichiosis	70	142
Malaria	14	102	Lyme disease	1785	3620
West Nile	3	8	Powassan	1	4
Zika	3	12	Spotted fever group rickettsioses	29	209

^a 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.

^b Cumulative through week 43: October 18-24, 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):

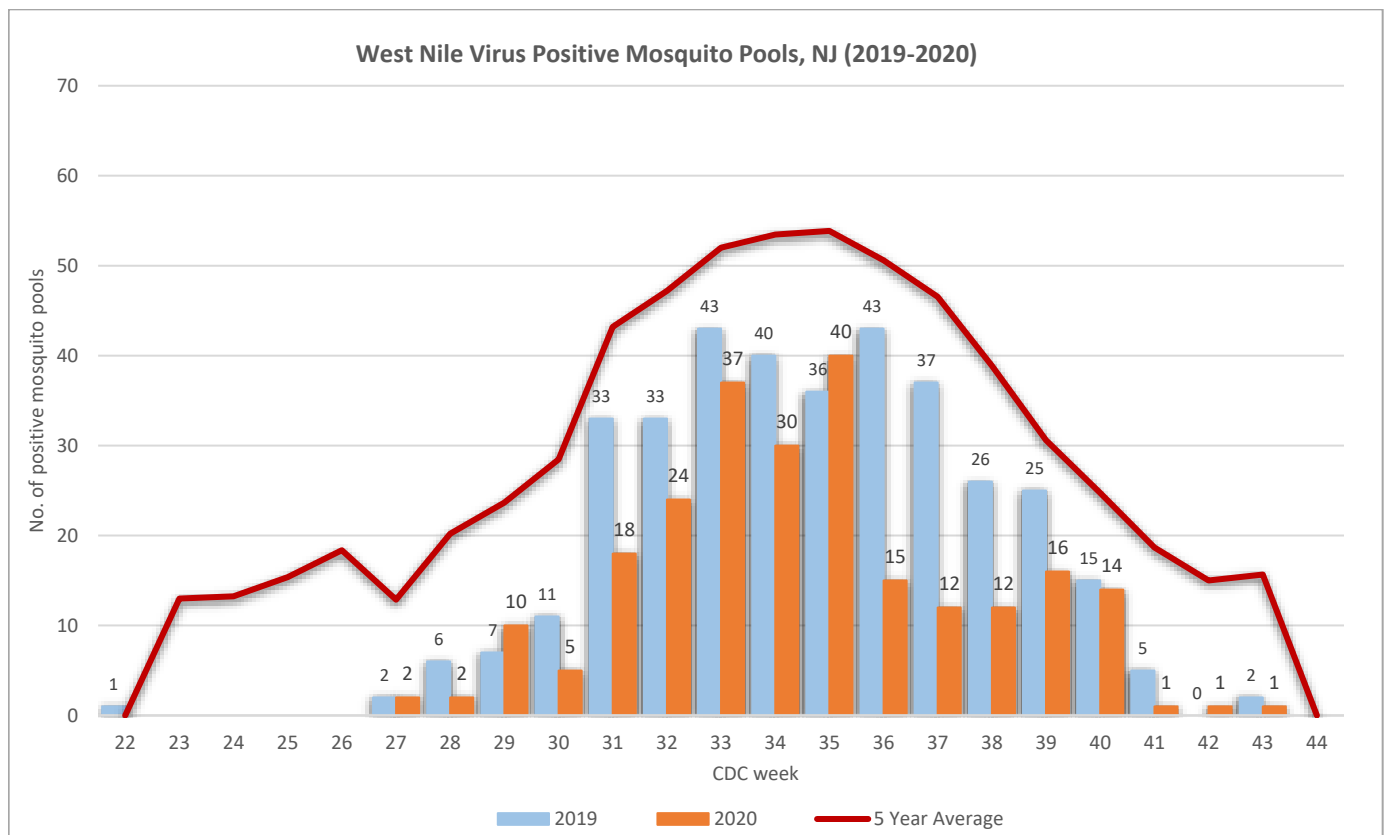
- A total of 8481 mosquito pools have been tested for WNV.
- 240 mosquito pools were positive for WNV.
- The highest number of positive pools are reported in Bergen, Monmouth and Union counties.
- The highest number of positive pools this season was reported in week 35 ($n=40$).
- The first WNV positive 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 .
- 96% ($n=231$) 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 29, 2020

WNV Positive Mosquito Pools

County	Week 43		Cumulative Total (week 43)	
	2020*	2019	2020*	2019
Bergen			39	83
Monmouth			37	18
Burlington		2	34	58
Union			29	34
Hudson			26	41
Mercer			19	8
Camden	1		15	8
Somerset			9	17
Hunterdon			7	20
Passaic			7	4
Middlesex			5	9
Morris			5	9
Gloucester			4	14
Warren			2	3
Atlantic			1	15
Salem			1	3
Cape May				5
Cumberland				1
Essex				1
Ocean				11
Sussex				3
Total	1	2	240	365

Week 43: October 20-26, 2019; October 18-24, 2020



Eastern equine encephalitis virus (EEE)

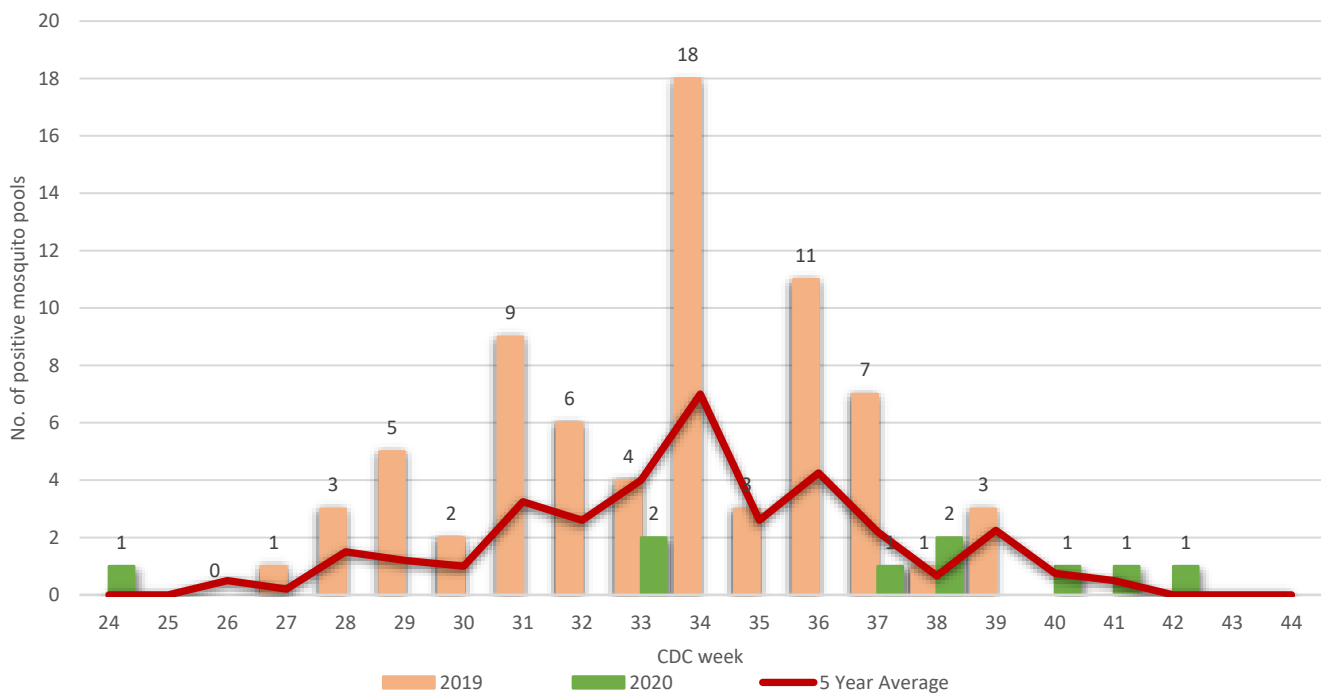
- A total of 8364 mosquito pools have been tested for EEE. Ten pools have tested positive for EEE.
- The first positive pool this season was detected in week 25 (Atlantic County). This is the earliest detection of EEE in mosquito pools in the state in at least 8 years.
- The positive pool detected in Camden County in week 42 is the first positive pool detected this late in the season since 2014.
- All 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 43		Cumulative Total (week 43)	
	2020*	2019	2020*	2019
Atlantic			5	10
Camden			3	8
Burlington			1	9
Salem			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
Total	-	-	10	73

Week 43: October 20-26, 2019; October 18-24, 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^a)

County	SLE		JCV		LAC		CHIKV		DENV		ZIKV	
	Pools	Pos	Pools	Pos	Pools	Pos	Pools	Pos	Pools	Pos	Pools	Pos
Atlantic	439		439				92		92		92	
Bergen	334		334	2			2		2		2	
Burlington	356		356		23							
Camden	220		208									
Cape May	1536											
Cumberland	457		457	2	1							
Essex	100		100									
Gloucester	399		389		5							
Hudson	185		185									
Hunterdon	375		375									
Mercer	394		394		20							
Middlesex	309		309	1	19		1		1		1	
Monmouth	546		546	1	1							
Morris	448		448									
Ocean	314		314									
Passaic	197		197		6							
Salem	619		607		24							
Somerset	273		273									
Sussex	405		405		18							
Union	186		186									
Warren	272		272		2							
Total	8364	-	6794	6	119	-	95	-	95	-	95	-

^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 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.

- One EEE equine case was reported from Atlantic County in a 4-year-old unvaccinated mare in week 37 (onset September 7th, euthanized September 8th).
- One WNV avian case was reported from Cumberland County in a red-tailed hawk in week 41. The bird was rescued on October 6th and died October 7th.
- Routine avian testing has been discontinued but is available upon request at PHEL.

WNV/EEE Positive Test Results

	Week 43		Cum. Total (Year)	
	2020*	2019	2020*	2019
Equine (EEE)	-	-	1	11
Equine (WNV)				
Avian (WNV)	-	-	1	
Other				

Week 43: October 20-26, 2019; October 18-24, 2020

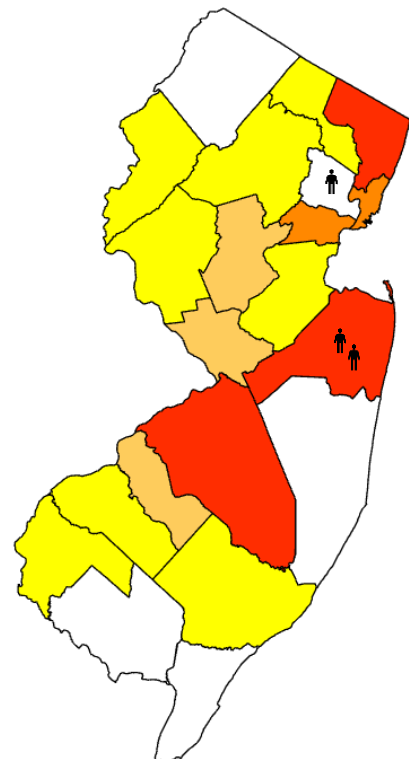
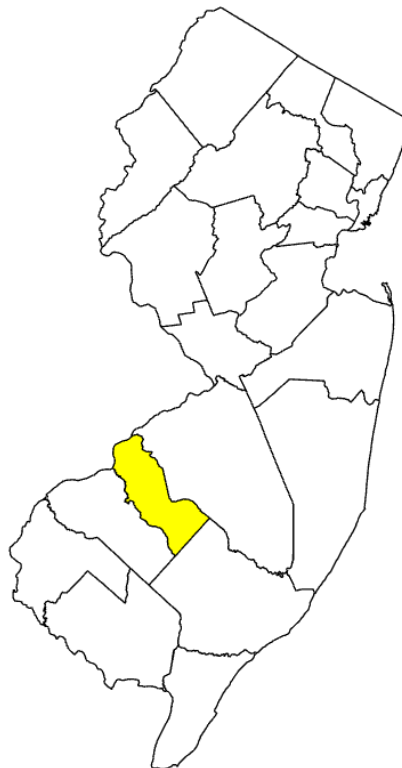
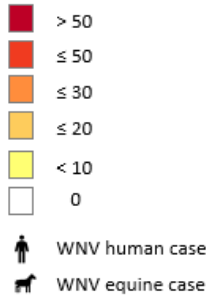
4. Surveillance Maps

West Nile Virus (WNV)

Week 43 WNV Activity (2020)*

Cumulative WNV Activity 2020

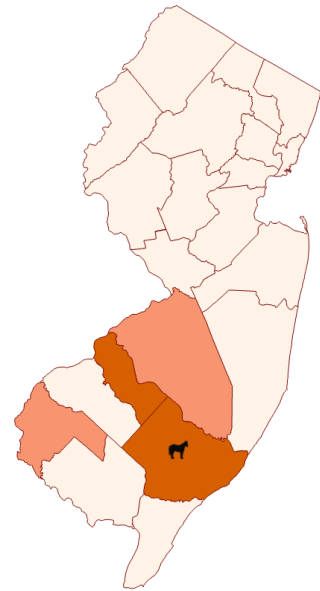
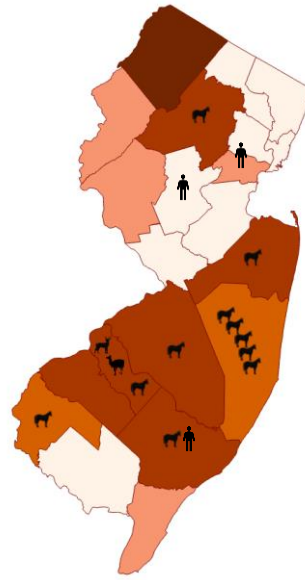
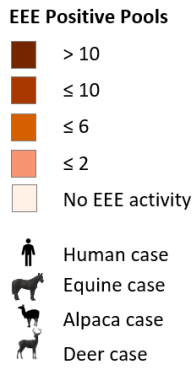
WNV Positive Pools



Eastern equine encephalitis (EEE)

2019 EEE Activity

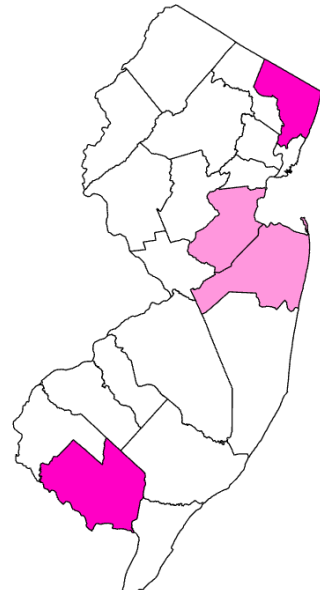
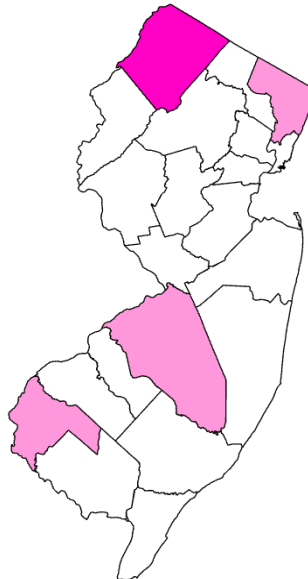
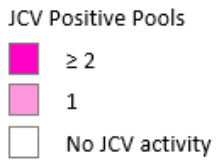
Cumulative EEE Activity 2020



Jamestown Canyon Virus

2019 JCV Activity

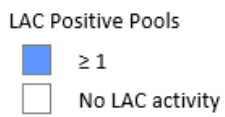
Cummulative JCV Activity 2020



La Crosse Virus Activity 2020

2019 LAC Activity

Cummulative LAC Activity 2020

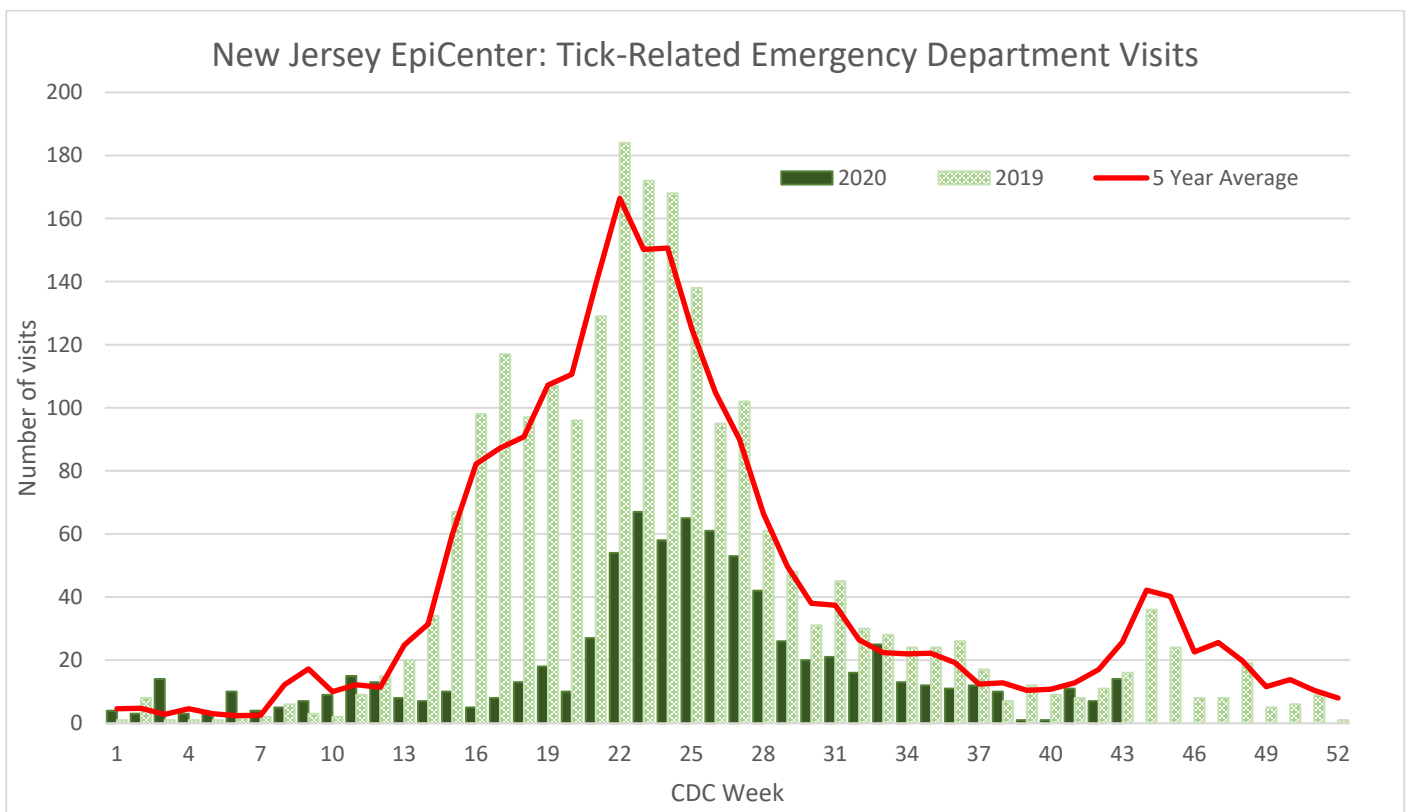


5. Syndromic Surveillance for Tick-related Emergency Department Visits

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 43, the number of ED visits is below 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 28, 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/>