

Report Highlight:

- Two mosquito pools collected from Mercer and Monmouth counties (week 27) tested positive for West Nile virus.
- A mosquito pool collected from Atlantic County tested positive for Eastern equine encephalitis (EEE) in week 25
- Two mosquito pools collected from Bergen County tested positive for Jamestown Canyon virus (JCV) in week 23 and 25
- There have been no WNV 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.

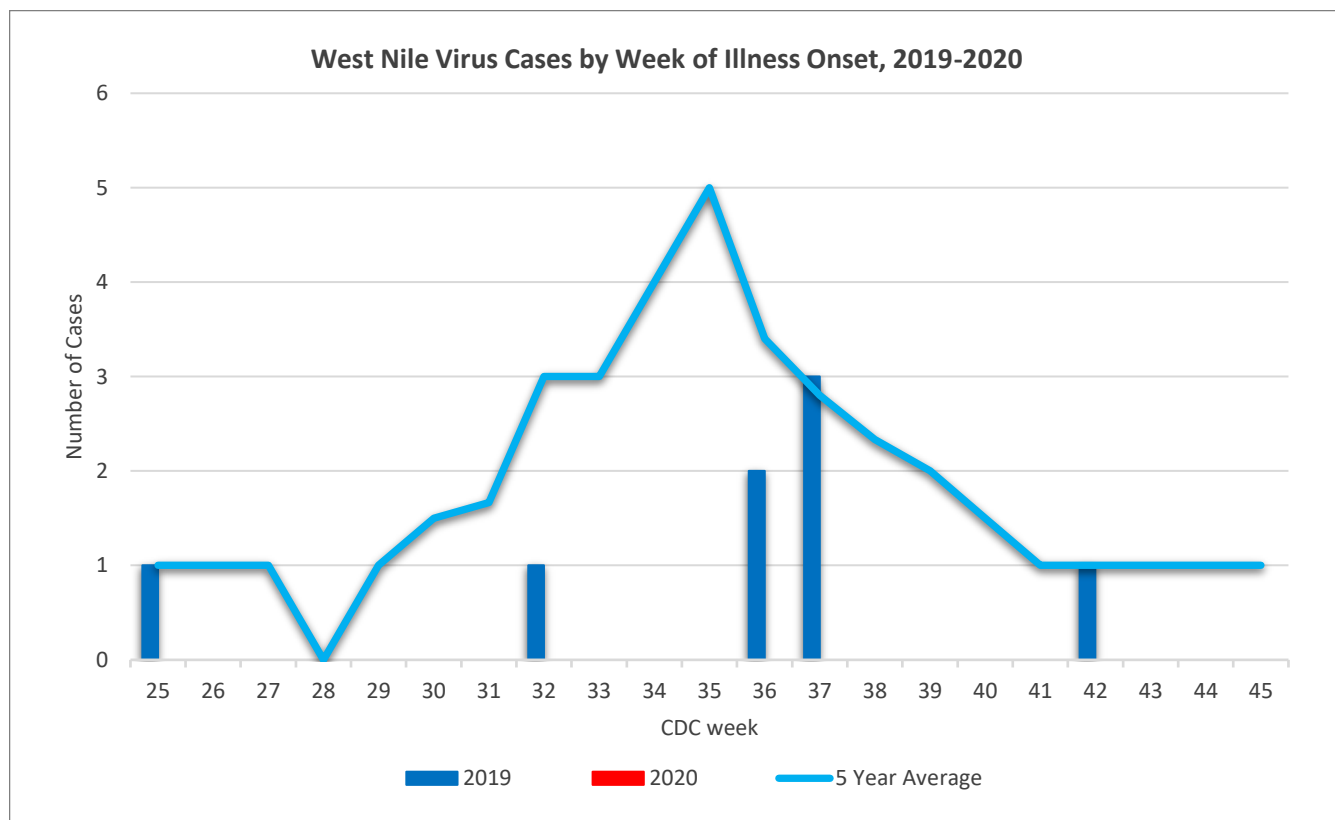
Table 1.1 Human Cases^a

Mosquito-borne diseases			Tickborne Diseases		
	2020 ^b	2019		2020 ^b	2019
Chikungunya	3	15	Anaplasmosis	15	142
Dengue	2	73	Babesiosis	17	236
Eastern equine encephalitis	-	4	<i>Borrelia miyamotoi</i>	2	16
Jamestown Canyon	-	-	Ehrlichiosis	8	142
Malaria	12	102	Lyme disease	402	3587
West Nile	-	8	Powassan	-	4
Zika	3	12	Spotted fever group rickettsioses	5	208

^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 27: June 28-July 4, 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):

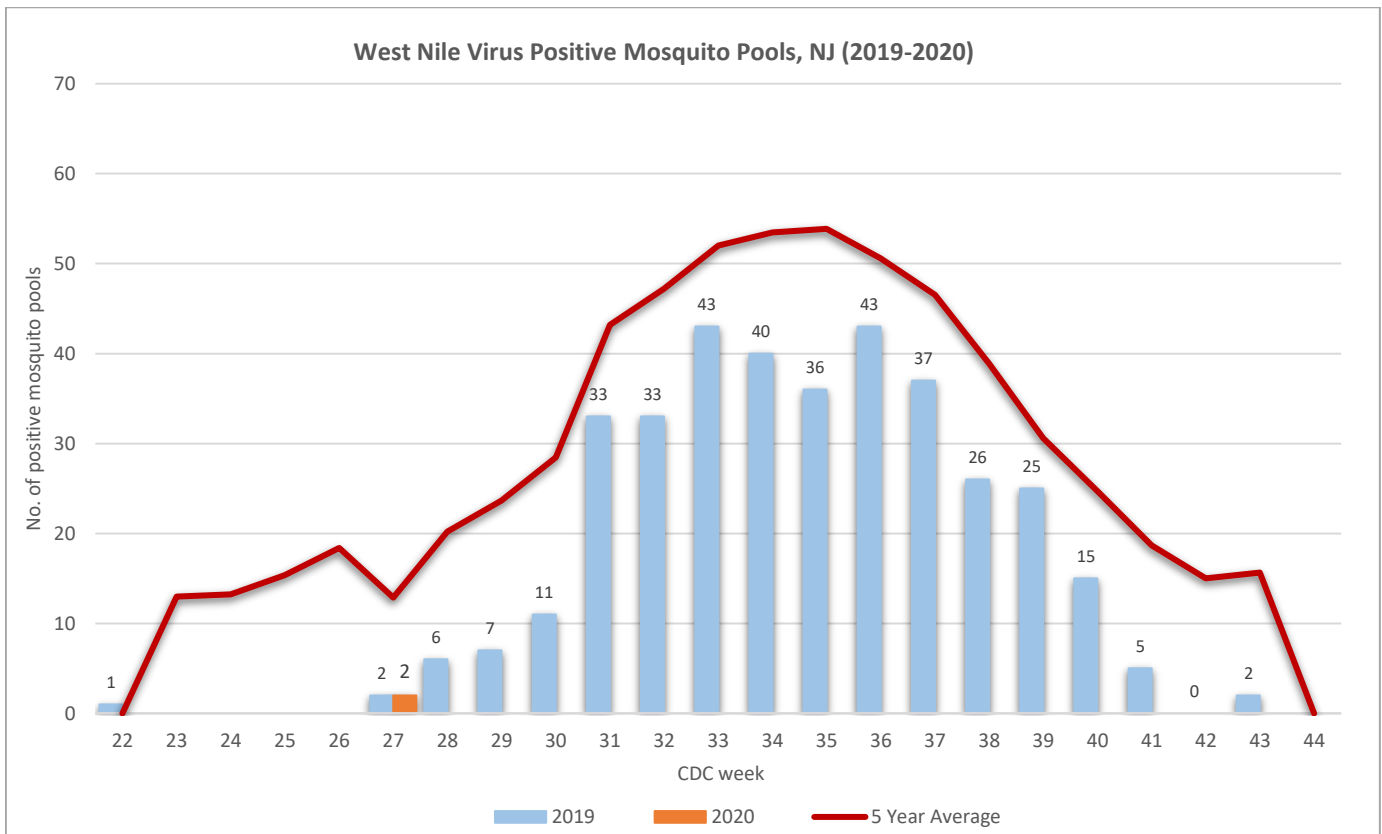
- A total of 1617 mosquito pools from 20 counties (Atlantic, Bergen, Burlington, Camden, Cumberland, Essex, Gloucester, Hudson, Hunterdon, Mercer, Middlesex, Monmouth, Morris, Ocean, Passaic, Salem, Somerset, Sussex, Union and Warren) have been tested for WNV.
- The first WNV positive pools were detected 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 *Culex pipiens/restuans/salinarius* species mix.

**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 July 9, 2020*

WNV Positive Mosquito Pools

County	Week 27		Cumulative Total (week 27)	
	2020*	2019	2020*	2019
Atlantic				
Bergen				
Burlington		1		1
Camden				
Cape May				
Cumberland				
Essex				
Gloucester				
Hudson				
Hunterdon				
Mercer	1		1	
Middlesex				
Monmouth	1		1	
Morris				
Ocean		1		1
Passaic				1
Salem				
Somerset				
Sussex				
Union				
Warren				
Total	2	2	2	3

Week 27: June 30-July 6, 2019; June 28-July 4, 2020



Eastern equine encephalitis virus (EEE)

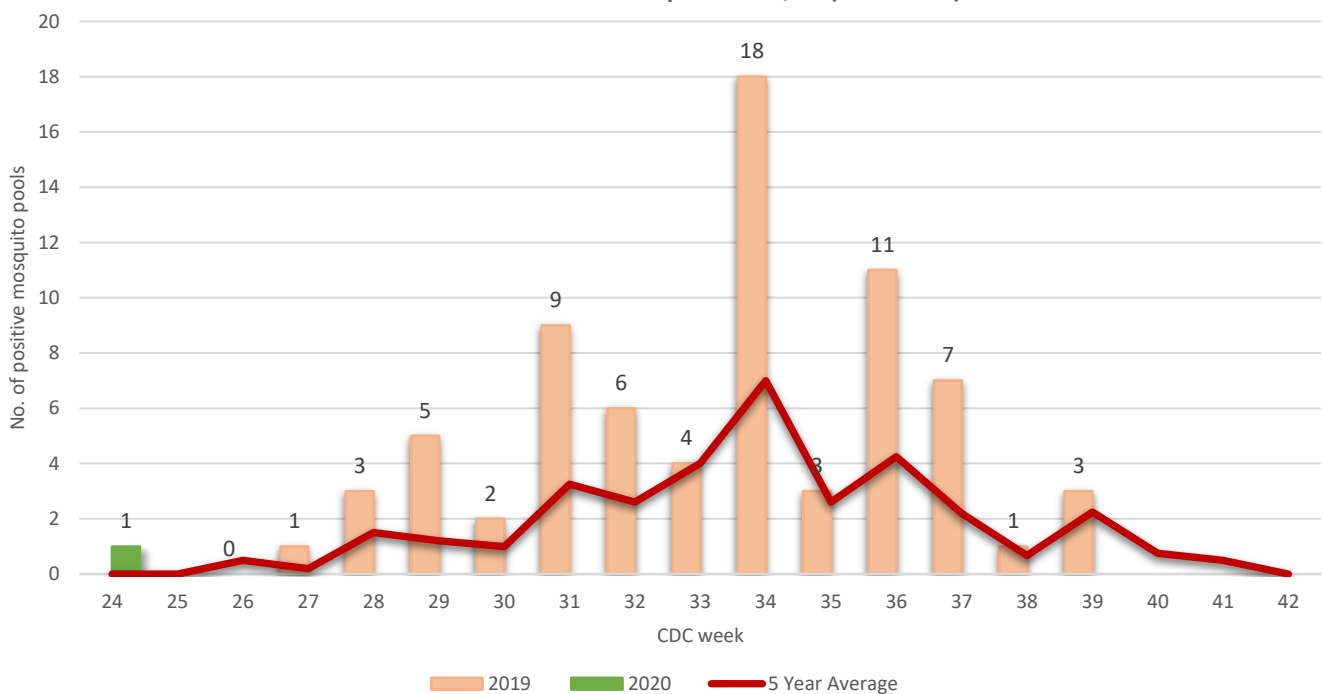
- A total of 1591 mosquito pools from 20 counties (Atlantic, Bergen, Burlington, Camden, Cumberland, Essex, Gloucester, Hudson, Hunterdon, Mercer, Middlesex, Monmouth, Morris, Ocean, Passaic, Salem, Somerset, Sussex, Union and Warren) have been tested for EEE.
- The first positive pool was detected in 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 27		Cumulative Total (week 27)	
	2020*	2019	2020*	2019
Atlantic			1	
Bergen				
Burlington				
Camden				
Cape May				
Cumberland				
Essex				
Gloucester				
Hudson				
Hunterdon				
Mercer				
Middlesex				
Monmouth		1		1
Morris				
Ocean				
Passaic				
Salem				
Somerset				
Sussex				
Union				
Warren				
Total	-	1	1	1

Week 27: June 30-July 6, 2019; June 28-July 4, 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^a)

County	SLE		JCV		LAC		CHIKV		DENV		ZIKV	
	Pools	Pos	Pools	Pos	Pools	Pos	Pools	Pos	Pools	Pos	Pools	Pos
Atlantic	92		92				13		13		13	
Bergen	59		59	2								
Burlington	42		42									
Camden	1		1									
Cape May												
Cumberland	100		100									
Essex	29		29									
Gloucester	106		106									
Hudson	39		39									
Hunterdon	100		100									
Mercer	116		116		5							
Middlesex	84		84		19		1		1		1	
Monmouth	154		154		1							
Morris	138		138									
Ocean	88		88									
Passaic	23		23		1							
Salem	150		150		2							
Somerset	65		65									
Sussex	101		101									
Union	24		24									
Warren	80		80									
Total	1591	-	1591	2	28	-	14	-	14	-	14	-

^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):

- Two mosquito pools from Bergen County have tested positive for Jamestown Canyon virus at PHEL. The first pool was collected June 4th (week 23) and the second June 19 (week 25). Both positive pools were *Aedes cantator* 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 27		Cum. Total (Year)	
	2020*	2019	2020*	2019
Equine (EEE)				
Equine (WNV)				
Avian (WNV)				
Other				

Week 27: June 30-July 6, 2019; June 28-July 4, 2020

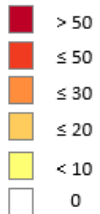
4. Surveillance Maps

West Nile Virus (WNV)

Week 27 WNV Activity (2020)*

Cumulative WNV Activity 2020

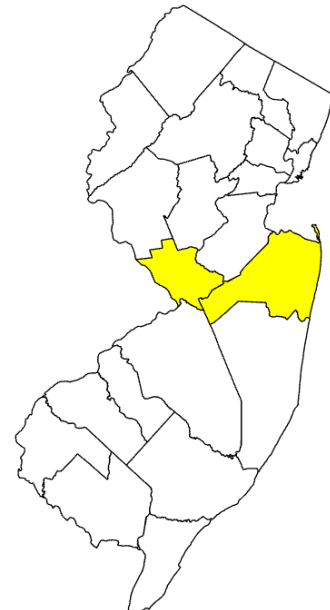
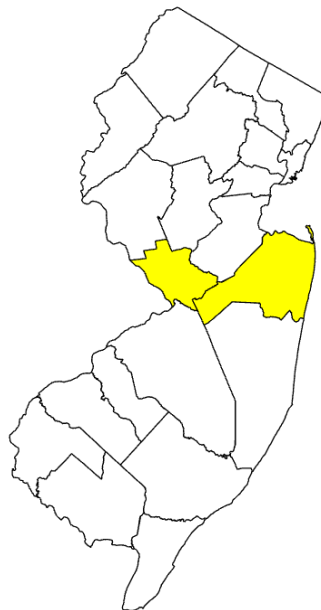
WNV Positive Pools



WNV human case



WNV equine case



Eastern equine encephalitis (EEE)

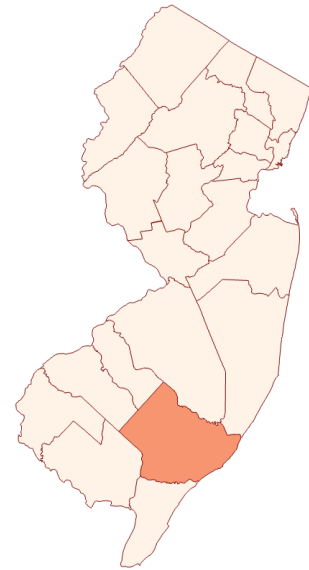
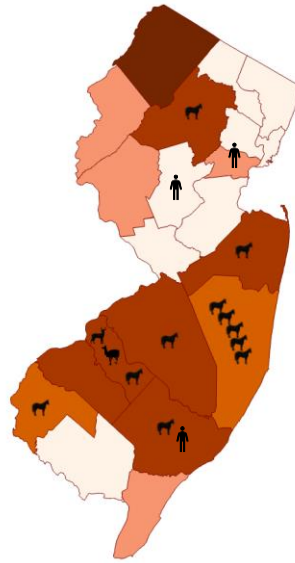
2019 EEE Activity

Cumulative EEE Activity 2020

EEE Positive Pools

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

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



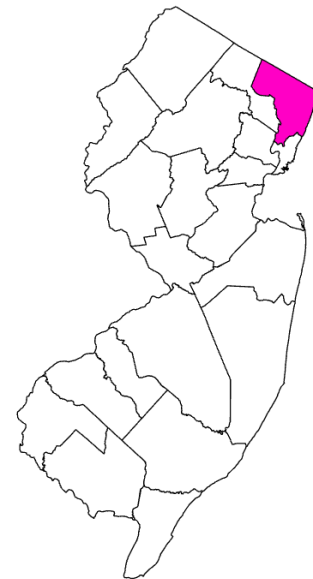
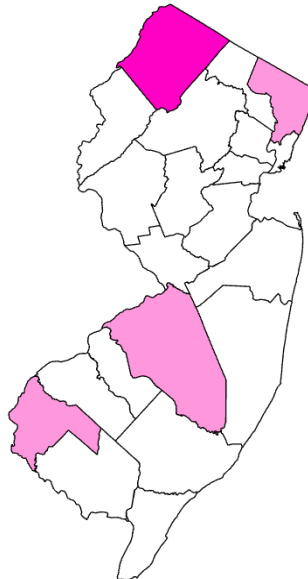
Jamestown Canyon Virus

2019 JCV Activity

Cummulative JCV Activity 2020

JCV Positive Pools

- ≥ 2
- 1
- No JCV activity



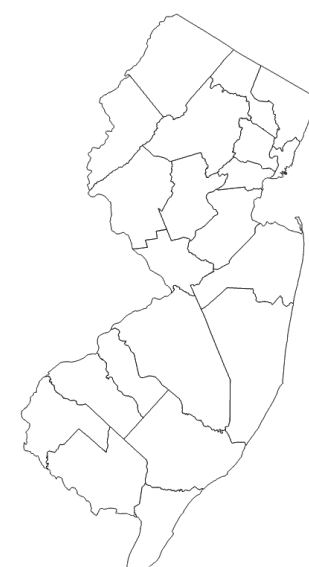
La Crosse Virus Activity 2020

2019 LAC Activity

Cummulative LAC Activity 2020

LAC Positive Pools

- ≥ 1
- No LAC activity

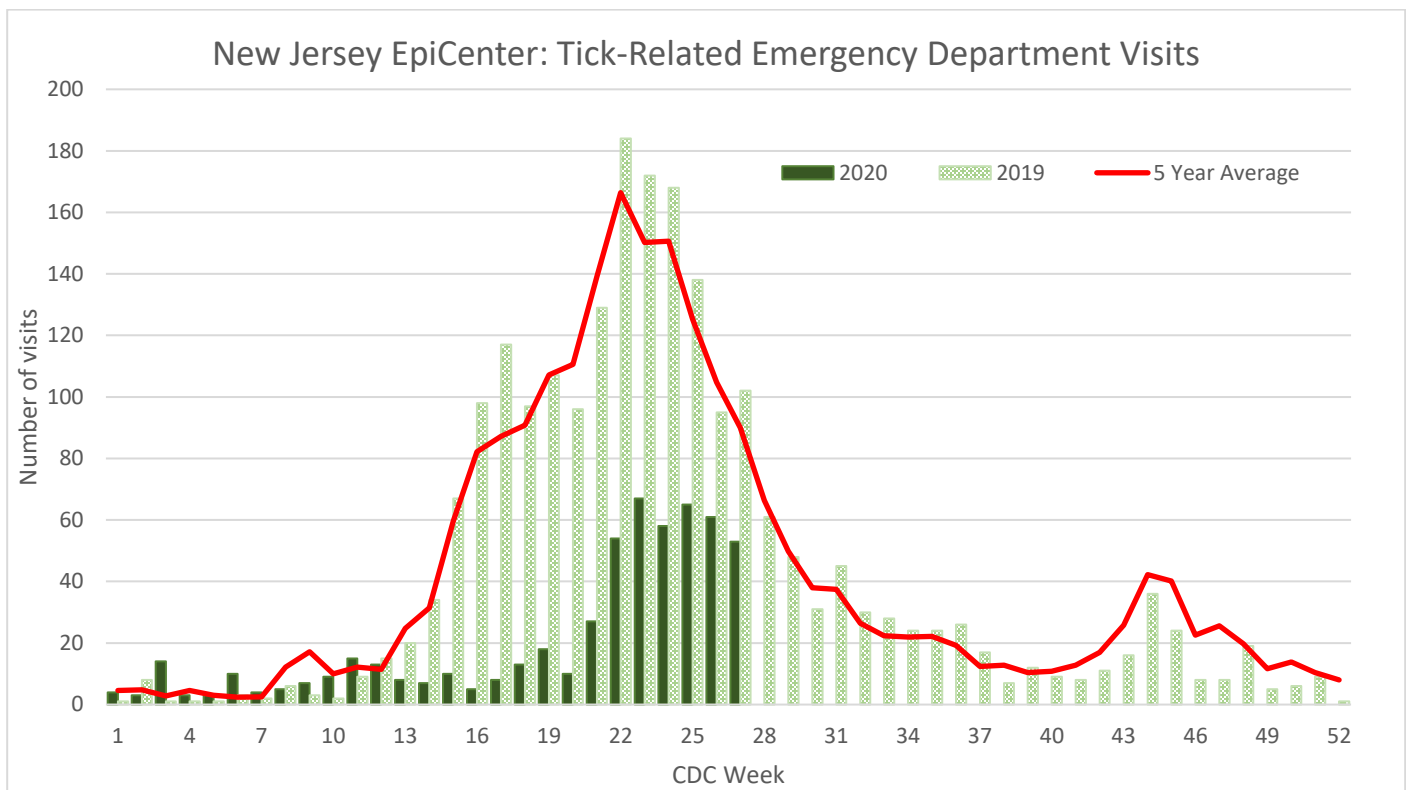


5. Syndromic Surveillance for Tick-related Emergency Department Visits

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 27, 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 July 8, 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/>