

Report Highlight:

- To date, there have been 28 WNV human cases reported in 11 counties. There are 8 confirmed cases (1 fatality) reported in Bergen (2), Burlington (1), Camden (2), Essex (1), Gloucester (1), and Somerset (1); 20 probable cases in Bergen (1), Burlington (5), Camden (3), Cumberland (1), Essex (3), Middlesex (1), Ocean (1), Monmouth (4), and Mercer (1) counties, awaiting confirmatory testing; and 3 asymptomatic viremic blood donors reported in Burlington and Monmouth (2) counties. In a typical year, there are 8 human WNV cases reported. Reports of human cases have increased starting on week 34.
- West Nile virus (WNV) has been detected in 14 mosquito pools so far this week and to date, 932 pools have tested positive for WNV. WNV activity this season has exceeded 5-year averages and has been detected in all counties except Salem but has been decreasing starting in week 35. WNV has also been detected in 6 birds.
- 25 pools have tested positive for EEE in southern N.J., which is higher than the same period in 2020, but is consistent with 5-year averages. The variety of mosquito species that have tested positive, however, is of concern. There have been no EEE human cases but 3 EEE positive horse cases reported in 2021.
- To date, 6 pools have tested positive for JCV and 1 human case was reported earlier this season in Sussex County.

1. Human Testing

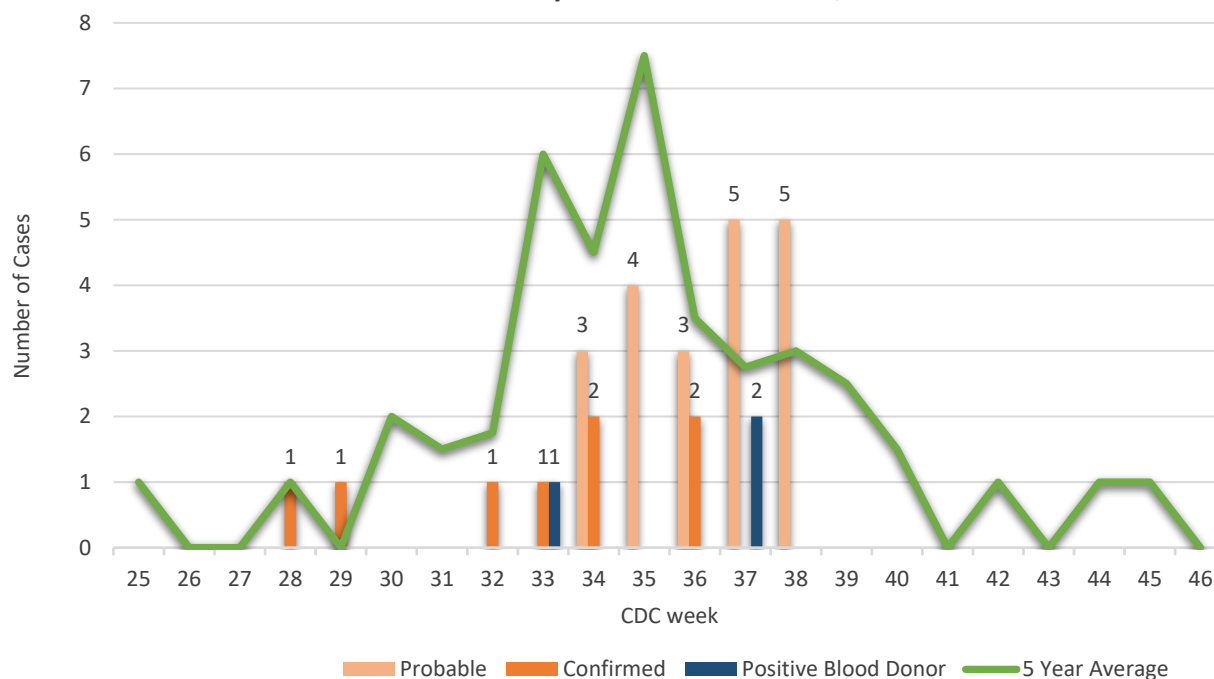
New Jersey Administrative Code (NJAC.) Title 8 Chapter 57 mandates public health reporting of specified vector-borne diseases to prevent further disease spread.

Table 1.1 Human Cases^a

Mosquito-borne diseases			Tickborne Diseases		
	2021 ^b	2020		2021 ^b	2020
Chikungunya	-	3	Anaplasmosis	133	115
Dengue	4	2	Babesiosis	155	238
Eastern equine encephalitis	-	-	<i>Borrelia miyamotoi</i>	12	9
Jamestown Canyon	1	-	Ehrlichiosis	41	78
Malaria	37	24	Lyme disease	1823	2572
West Nile	28	3	Powassan	-	1
Zika	-	3	Spotted fever group rickettsioses	19	35

^a Data for 2021 reflect confirmed and probable cases that have been reviewed/approved by the NJDOH. This does not include cases under investigation. All 2021 numbers are preliminary and are subject to change. ^b Cumulative through Week 39: September 26-October 2, 2021

West Nile Virus Cases by Week of Illness Onset, 2021



*Positive blood donor based on specimen collection date

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 7517 mosquito pools have been tested for WNV.
- 932 pools tested positive for WNV this year.
- The positive pools were detected in *Culex pipiens/restuans/salinarius* species mix (870), *Cx. erraticus* (1), *Aedes trivittatus* (1), *Ae. taeniorhynchus* (1), *Ae. triseriatus* (3), *Ae. albopictus* (29), *Ae. japonicus* (5), *Ae. vexans* (3), *Anopheles bradleyi* (1), *An. punctipennis* (3), *An. quadrimaculatus s.l.* (1), *Coquillettidia perturbans* (2), *Culiseta melanura* (10), *Psorophora ciliata* (1), and *Ps. ferox* (1).
- The first WNV positive pool was detected in Week 23 from Somerset County. In 2020, the first WNV positive mosquito pool was identified in Week 27 from Mercer and Monmouth counties.

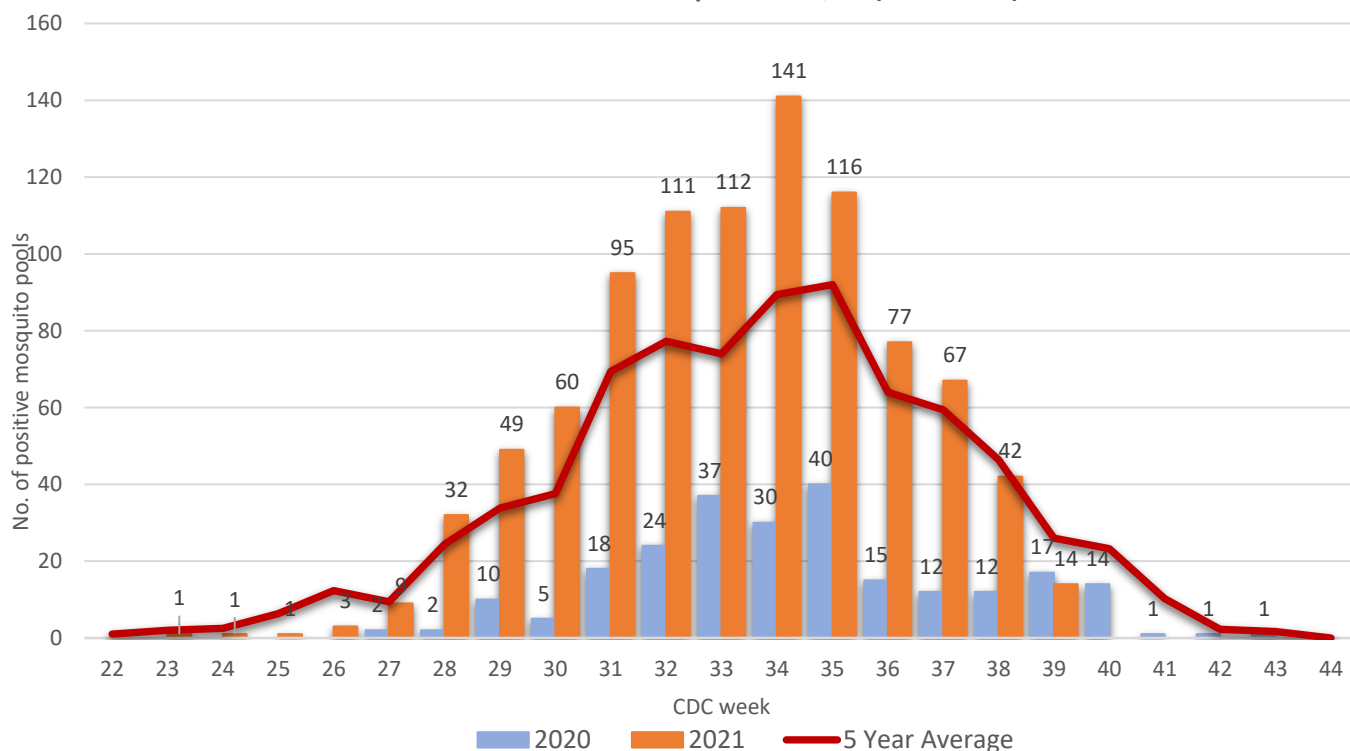
*Test results may be incomplete; counties submit pools for testing on specific weekdays. Mosquito testing data reflects test results received from PHEL as of

WNV Positive Mosquito Pools

County	Week 39		Cumulative Total (Week 39)	
	2021*	2020	2021*	2020
Bergen		1	106	36
Union	2		102	28
Middlesex			89	5
Camden	2	5	85	12
Somerset			83	10
Burlington	1	6	74	30
Hunterdon	1		57	7
Morris		1	57	5
Hudson		1	43	26
Monmouth	3	1	43	35
Atlantic	2		37	1
Gloucester			32	3
Warren			25	2
Ocean			23	-
Mercer	1	1	24	16
Passaic			18	7
Cape May	2	1	18	1
Sussex			10	-
Essex			4	-
Cumberland			2	-
Salem			-	-
Total	14	17	932	224

Week 39: September 20-26, 2020; September 26-October 2, 2021

West Nile Virus Positive Mosquito Pools, NJ (2020-2021)



Eastern equine encephalitis virus (EEE)

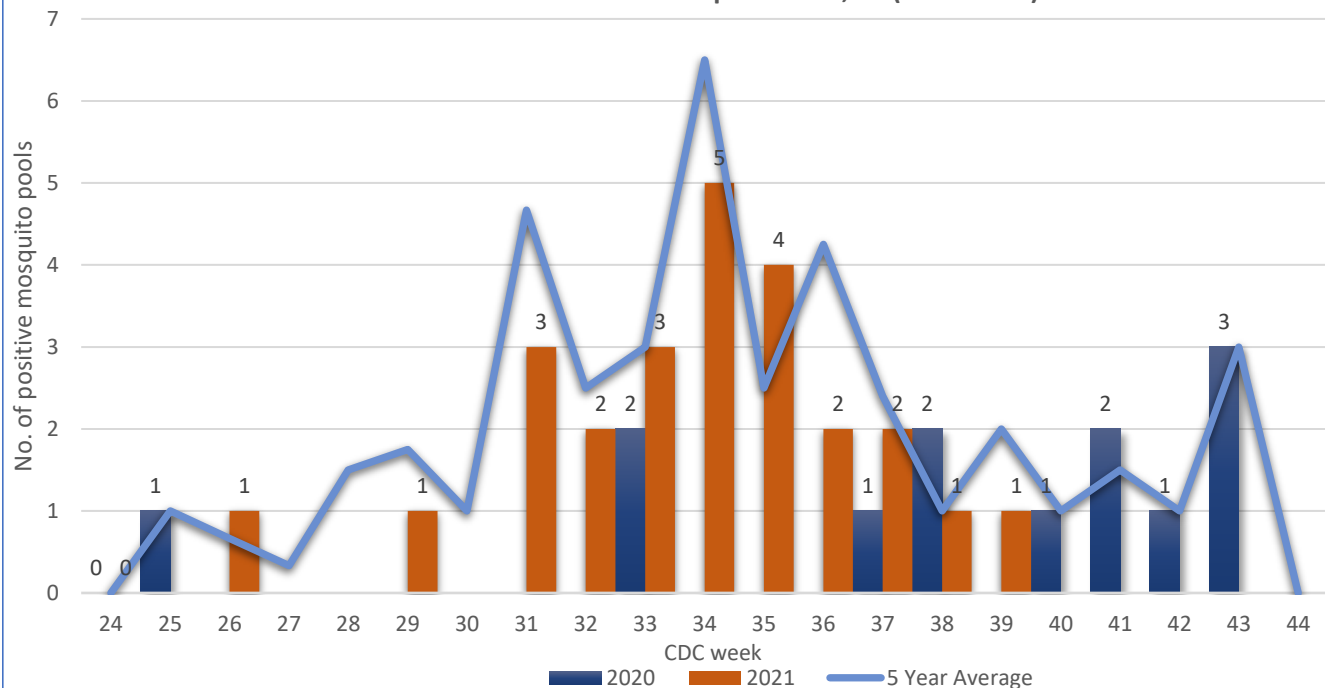
- A total of 6685 mosquito pools have been tested for EEE.
- 25 pools tested positive for EEE this year in *Cs. melanura* (17), *Ae. taeniorhynchus* (1), *Ae. triseriatus* (1), *Cx. pipiens/restuans/salinarius* (4), and *Cx. erraticus* (2).
- All positive pools have been in southern N.J.
- The first positive mosquito pool was detected in Week 26 from Gloucester County. In 2020, the first EEE mosquito pool was reported from Atlantic County in Week 25.

EEE Positive Mosquito Pools

County	Week 39		Cumulative Total (Week 39)	
	2021*	2020	2021*	2020
Atlantic			9	3
Gloucester			6	-
Camden	1		5	2
Cape May			2	-
Ocean			1	-
Burlington			1	1
Cumberland			1	-
Bergen				-
Essex				-
Hudson				-
Hunterdon				-
Mercer				-
Middlesex				-
Monmouth				-
Morris				-
Passaic				-
Salem				-
Somerset				-
Sussex				-
Union				-
Warren				-
Total		-	25	6

Week 39: September 20-26, 2020; September 26-October 2, 2021

EEE Virus Positive Mosquito Pools, NJ (2020-2021)



Other viruses:

Mosquito pools from 21 counties have been tested for other arboviruses. Six pools have tested positive for JCV.

Cumulative 2021 Mosquito Pool Testing (Other Viruses ^a)

County	CHIKV		DENV		JCV		LACV		SLEV		ZIKV	
	Pools	Pos	Pools	Pos	Pools	Pos	Pools	Pos	Pools	Pos	Pools	Pos
Atlantic	12		12		455	1			455		12	
Bergen	1		1		343				345		1	
Burlington	1		1		377		12		411		1	
Camden					281	2			281			
Cape May	1		1		442				459		1	
Cumberland					353				408			
Essex					94	1			105			
Gloucester					430	1			480			
Hudson					239				245			
Hunterdon					293				333			
Mercer	2		2		345		15		400		2	
Middlesex	2		2		287				324		2	
Monmouth					430				483			
Morris	2		2		361				405		2	
Ocean					298				311			
Passaic					216		3		239			
Salem					434		14		470			
Somerset					252				252			
Sussex					487	1	12		487			
Union					218				218			
Warren					363		4		363			
Total	21		21		6998	6	60		7474		21	

^a Chikungunya virus (CHIKV), Dengue virus (DENV), Jamestown Canyon Virus (JCV), La Crosse encephalitis virus (LAC), St. Louis encephalitis virus (SLE), Zika Virus (ZIKV)

Numbers in white columns represent the number of pools tested to date in 2021

Numbers in blue shaded columns represent positive pools in 2021

Jamestown Canyon virus (JCV):

- NJ reported its 2nd ever human case of Jamestown Canyon virus this year in Week 18 in a Sussex County resident. The first case was reported in 2015 in a Sussex County resident.
- Six positive Jamestown Canyon virus pools were reported in Sussex County (week 27), Camden County (week 33 and week 35), Essex County (week 34) and Gloucester County (week 35).
- In 2020, six mosquito pools from 4 counties tested positive for Jamestown Canyon virus. The positive pools were identified in Atlantic (week 38), Bergen (week 23 and week 25), Cumberland (week 28 and week 33), Middlesex (week 31) and Monmouth (week 29).

La Crosse encephalitis virus (LAC):

- No positive La Crosse virus pools have been identified in 2021.
- Prior to the current year, a mosquito pool collected in Passaic County tested positive for La Crosse virus at PHEL in 2019.
- There has 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.

- In Week 34, two unvaccinated horses tested positive for EEE from Atlantic County (8-year-old mare; onset Aug 28; euthanized Aug 29) and Camden County (onset Aug 26; euthanized Aug 27). One unvaccinated horse (7-year-old mare) from Cumberland County tested positive for EEE in Week 33 (onset Aug 18; euthanized Aug 19).
- One Peregrine falcon from Atlantic County tested positive for WNV in Week 35.
- Three Cooper's hawks from Union County and one from Middlesex County tested positive for WNV in Week 30.
- One American crow from Burlington County tested positive for WNV on Week 27.
- In 2020, one horse from Atlantic County tested positive for EEE in Week 37 (4-year-old mare; euthanized 09/08)
- Routine avian testing has been discontinued but is available upon request at PHEL.

WNV/EEE Positive Test Results

	Week 39		Cum. Total (Year)	
	2021*	2020	2021*	2020
Equine (EEE)			3	1
Equine (WNV)				
Avian (WNV)			6	
Other				1

Week 39: September 20-26, 2020; September 26-October 2, 2021

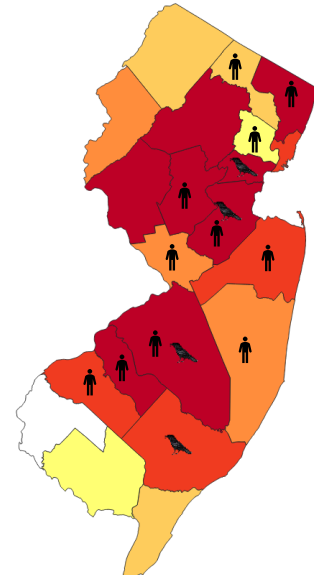
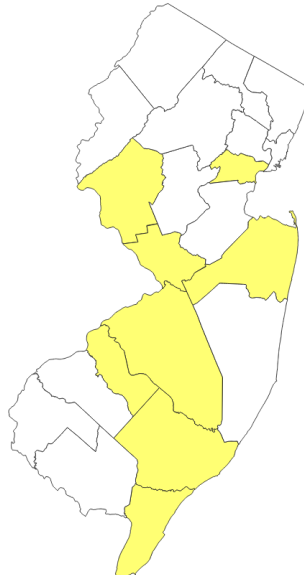
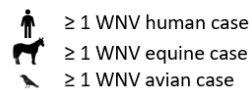
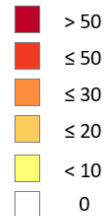
4. Surveillance Maps

West Nile Virus (WNV)

Week 39 WNV Activity (2021)*

Cumulative WNV Activity 2021

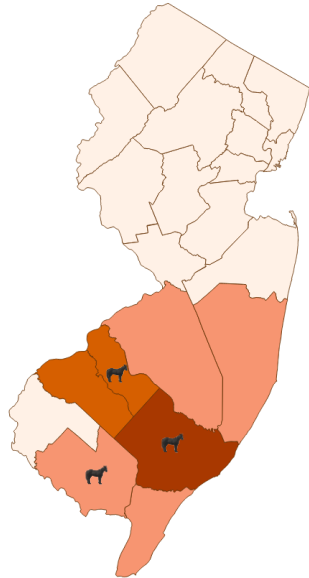
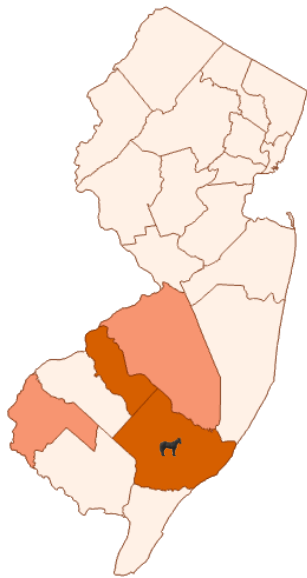
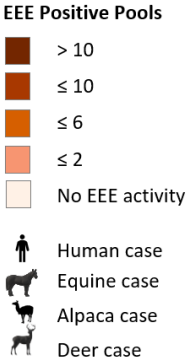
WNV Positive Pools



Eastern equine encephalitis (EEE)

2020 EEE Activity

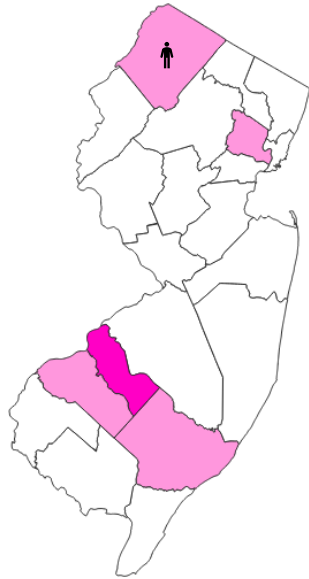
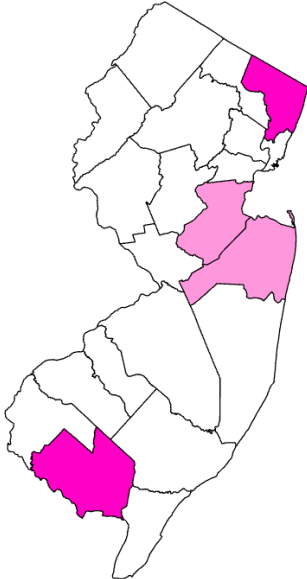
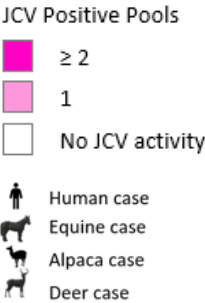
Cumulative EEE Activity 2021



Jamestown Canyon Virus (JCV)

2020 JCV Activity

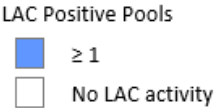
Cumulative JCV Activity 2021



La Crosse Virus (LAC)

2020 LAC Activity

Cumulative LAC Activity 2021

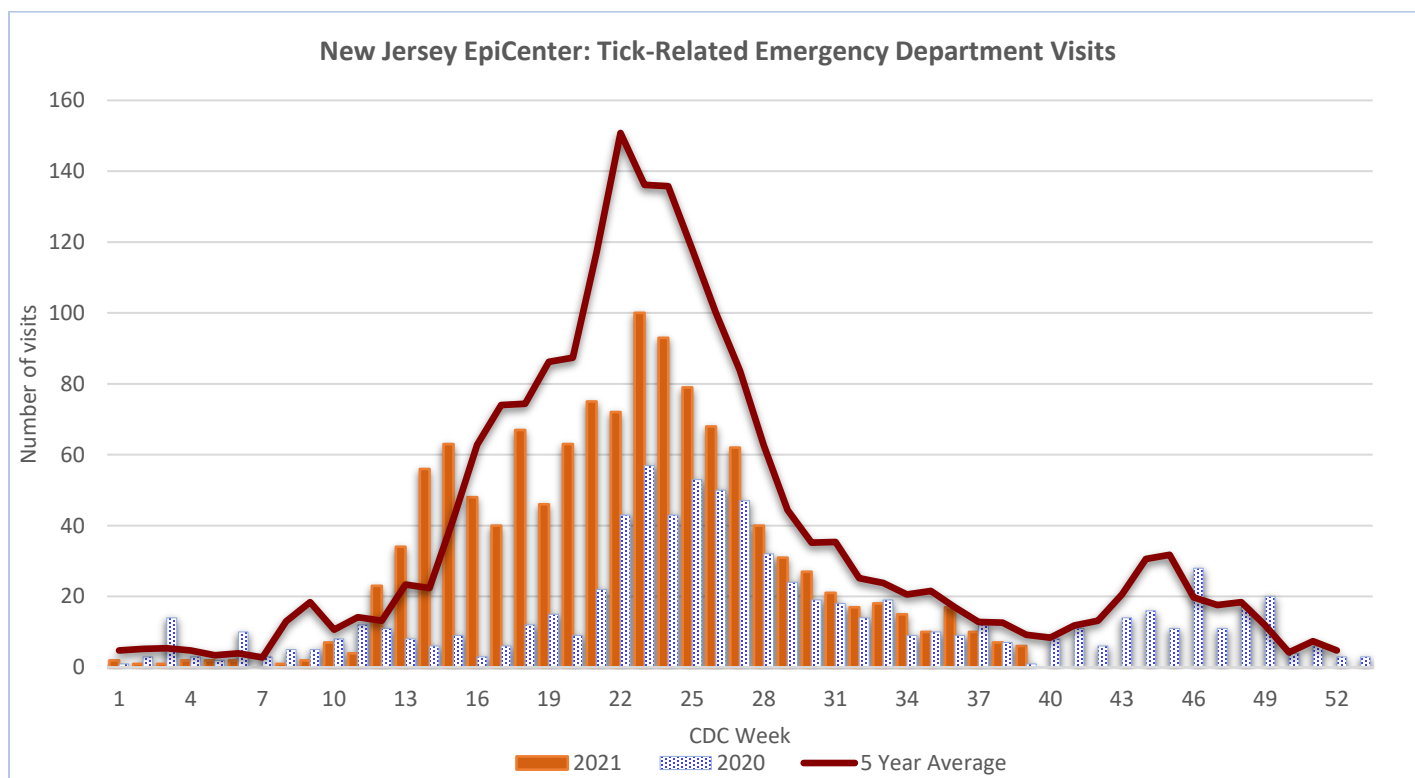


5. Syndromic Surveillance for Tick-related Emergency Department Visits

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 39, the overall number of ED visits is below the 5-year average. There is a significant increase in activity compared with last year starting in week 12, but visits have approached last year's levels starting in week 28.



Data reflects ED visits downloaded from EpiCenter as of October 6, 2021

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/>