

Report Highlight:

- To date, there have been 32 WNV human cases reported in 12 counties, which is the 4th highest number of annual cases after 2018 (61 cases), 2012 (48 cases), and 2003 (35 cases). In a typical year, there are 8 reported WNV cases.
- WNV cases have been reported in Atlantic (1), Bergen (4), Burlington (7), Camden (6, including 2 fatalities), Cumberland (1), Essex (3), Gloucester (1), Mercer (1 fatality), Middlesex (1), Monmouth (5), Ocean (1), and Somerset (1) counties. There were 3 asymptomatic viremic blood donors reported in Burlington and Monmouth (2) counties.
- Half of the WNV cases developed symptoms between weeks 36-38, or between the weeks ending on September 11th and September 25th.
- West Nile virus (WNV) has been detected in 7 mosquito pools so far this week and to date, 983 pools have tested positive for WNV, with the highest numbers in Bergen and Union counties. This is the 3rd highest number of WNV positive pools after 2018 (1,331 pools) and 2012 (992 pools). Activity has been decreasing since week 35.
- 27 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. There have been no EEE human cases but 3 EEE positive horse cases reported in 2021.
- To date, eight pools have tested positive for JCV and 1 human case was reported early in the season in Sussex County.

1. Human Testing

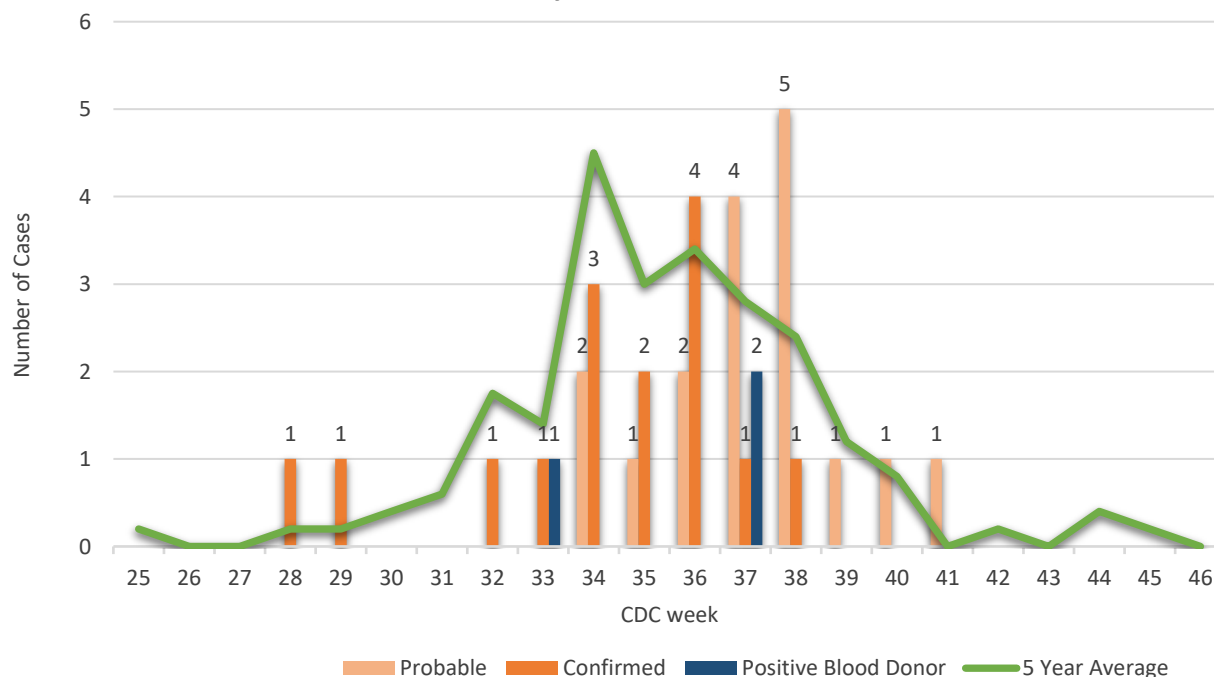
New Jersey Administrative Code (NJAC.) Title 8 Chapter 57 mandates public health reporting of specified vector-borne diseases to prevent further disease spread.

Table 1.1 Human Cases^a

Mosquito-borne diseases			Tickborne Diseases		
	2021 ^b	2020		2021 ^b	2020
Chikungunya	-	3	Anaplasmosis	133	115
Dengue	5	2	Babesiosis	162	238
Eastern equine encephalitis	-	-	<i>Borrelia miyamotoi</i>	12	9
Jamestown Canyon	1	-	Ehrlichiosis	43	78
Malaria	37	24	Lyme disease	1948	2572
West Nile	32	3	Powassan	-	1
Zika	-	3	Spotted fever group rickettsioses	21	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 41: October 10-16, 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 8055 mosquito pools have been tested for WNV.
- 983 pools tested positive for WNV this year.
- The positive pools were detected in *Culex pipiens/restuans/salinarius* species mix (917), *Cx. erraticus* (2), *Aedes trivittatus* (1), *Ae. taeniorhynchus* (1), *Ae. triseriatus* (3), *Ae. albopictus* (30), *Ae. japonicus* (5), *Ae. vexans* (3), *Anopheles bradleyi* (1), *An. punctipennis* (3), *An. quadrimaculatus s.l.* (1), *Coquillettidia perturbans* (2), *Culiseta melanura* (12), *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.

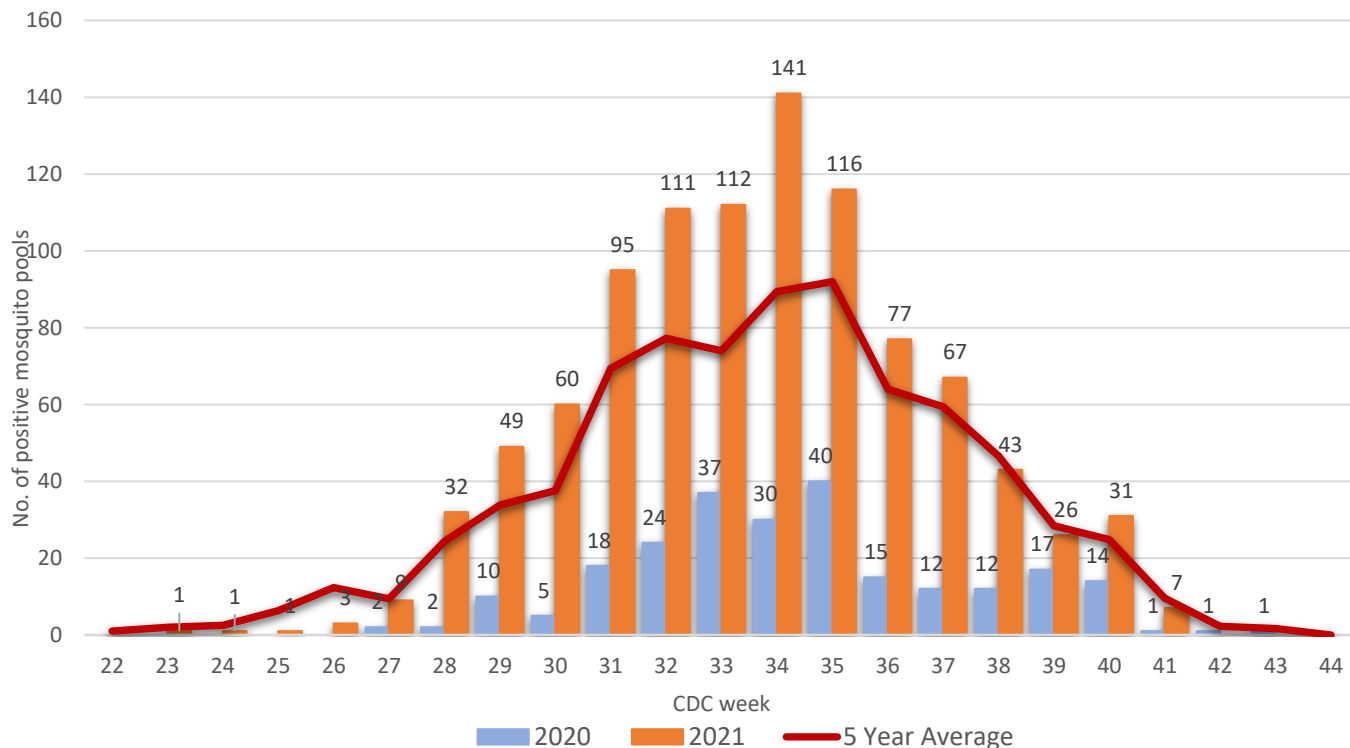
*Test results may be incomplete; counties submit pools for testing on specific weekdays. Mosquito testing data reflects test results received from PHEL as of October 20, 2021

WNV Positive Mosquito Pools

County	Week 41		Cumulative Total (Week 41)	
	2021*	2020	2021*	2020
Bergen			109	38
Union			104	28
Middlesex	2		93	5
Camden		1	91	14
Somerset	1		88	10
Burlington			78	34
Morris			63	5
Hunterdon			59	7
Hudson			43	26
Monmouth			43	37
Atlantic	1		39	1
Gloucester			33	4
Mercer			25	19
Warren			25	2
Ocean			23	
Cape May	2		22	1
Passaic	1		20	7
Sussex			18	
Essex			4	
Cumberland			3	
Salem				1
Total	7	1	983	239

Week 41: October 4-10, 2020; October 10-16, 2021

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



Eastern equine encephalitis virus (EEE)

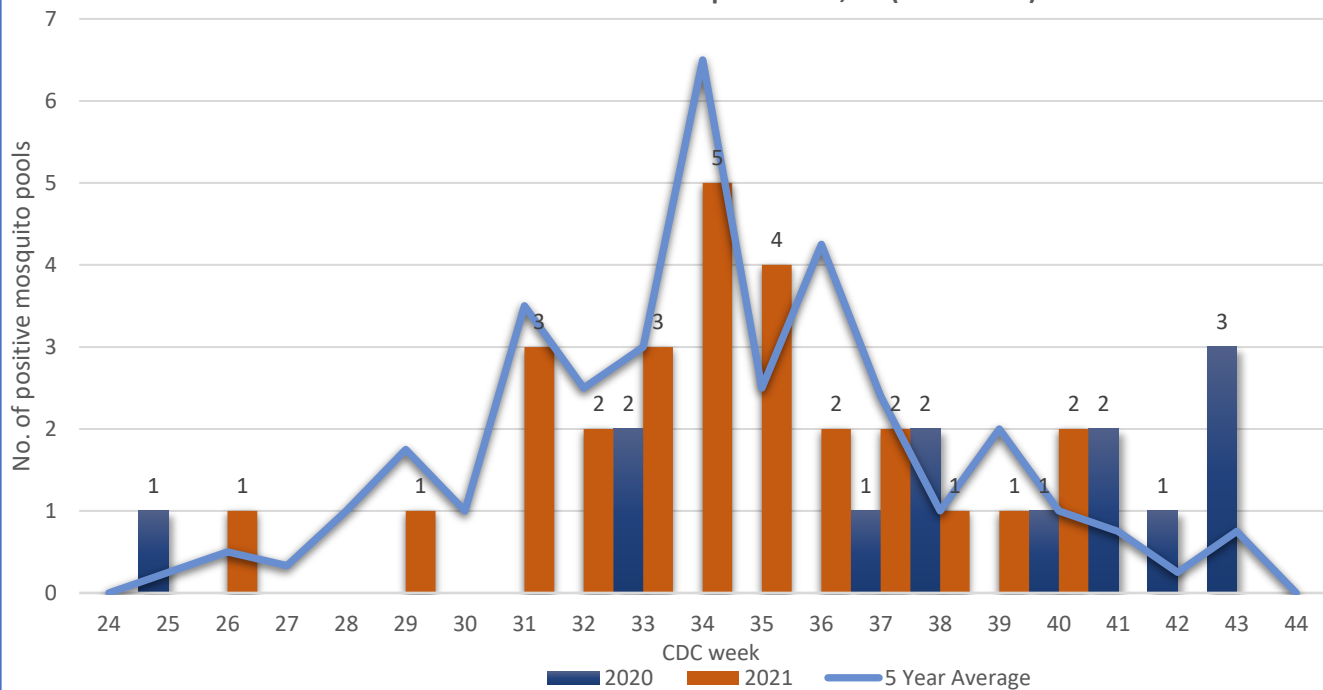
- A total of 7221 mosquito pools have been tested for EEE.
- 27 pools tested positive for EEE this year in *Cs. melanura* (19), *Ae. taeniorhynchus* (1), *Ae. triseriatus* (1), *Cx. pipiens/restuans/salinarius* (4), and *Cx. erraticus* (2).
- All positive pools have been in southern N.J.
- The first 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 41		Cumulative Total (Week 41)	
	2021*	2020	2021*	2020
Atlantic		1	9	5
Gloucester			6	
Camden			5	2
Burlington			3	1
Cape May			2	
Ocean			1	
Cumberland			1	
Bergen				
Essex				
Hudson				
Hunterdon				
Mercer				
Middlesex				
Monmouth				
Morris				
Passaic				
Salem		1		1
Somerset				
Sussex				
Union				
Warren				
Total	-	2	27	9

Week 41: October 4-10, 2020; October 10-16, 2021

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



Other viruses:

Mosquito pools from 21 counties have been tested for other arboviruses. Eight 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		486	1			486		12	
Bergen	1		1		371				373		1	
Burlington	1		1		431		12		465		1	
Camden					304	3			304			
Cape May	1		1		463				480		1	
Cumberland					371				426			
Essex					94	1			105			
Gloucester					454	2			504			
Hudson					275				281			
Hunterdon					313				353			
Mercer	2		2		382		15		437		2	
Middlesex	2		2		302				339		2	
Monmouth					454				507			
Morris	2		2		384				428		2	
Ocean					328				341			
Passaic					245		3		268			
Salem					451		15		487			
Somerset					275				275			
Sussex					533	1	13		533			
Union					231				231			
Warren					387		4		387			
Total	21		21		7534	8	62		8010		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.
- Eight positive Jamestown Canyon virus pools were reported in Atlantic County (week 38), Sussex County (week 27), Camden County (week 33, week 35, and week 41), Essex County (week 34) and Gloucester County (week 35 and week 39).
- In 2020, six mosquito pools from 4 counties tested positive for Jamestown Canyon virus. The positive pools were identified in 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 41		Cum. Total (Year)	
	2021*	2020	2021*	2020
Equine (EEE)			3	1
Equine (WNV)				
Avian (WNV)			6	
Other				

Week 41: October 4-10, 2020; October 10-16, 2021

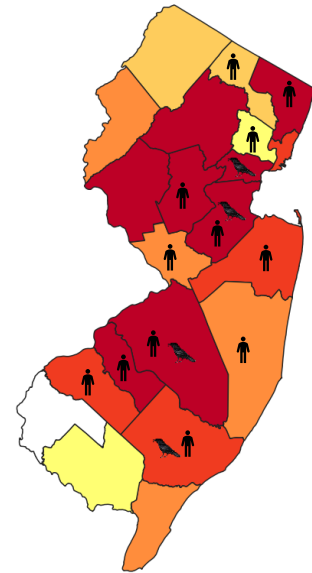
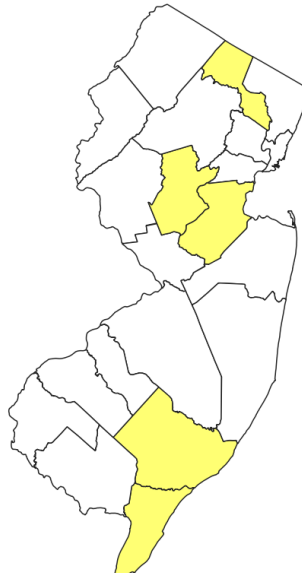
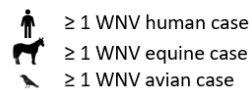
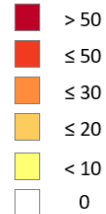
4. Surveillance Maps

West Nile Virus (WNV)

Week 41 WNV Activity (2021)*

Cumulative WNV Activity 2021

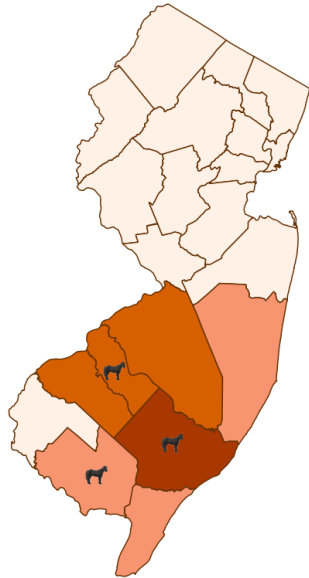
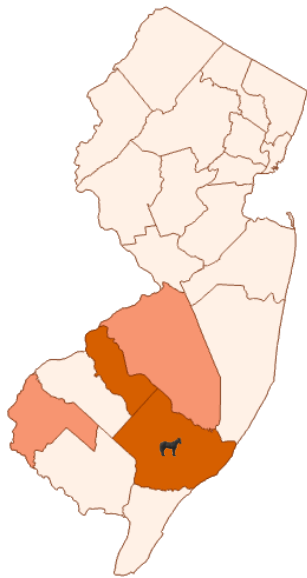
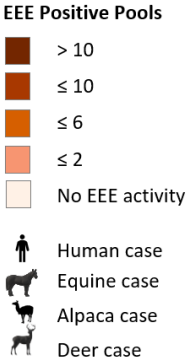
WNV Positive Pools



Eastern equine encephalitis (EEE)

2020 EEE Activity

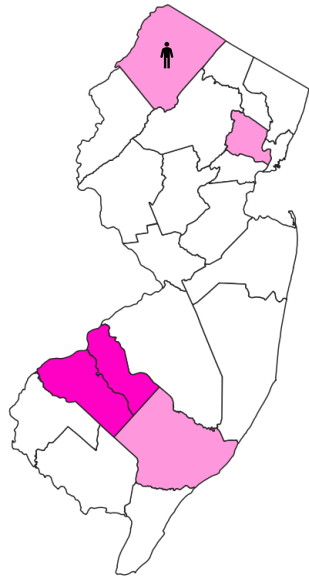
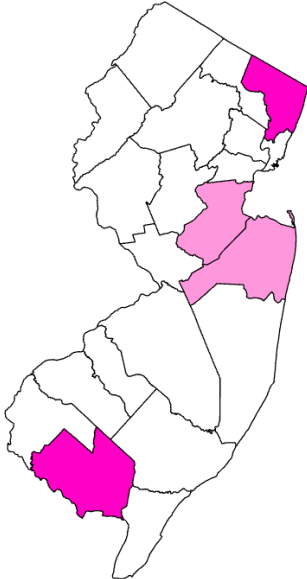
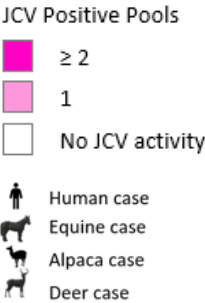
Cumulative EEE Activity 2021



Jamestown Canyon Virus (JCV)

2020 JCV Activity

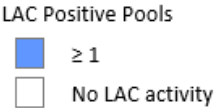
Cumulative JCV Activity 2021



La Crosse Virus (LAC)

2020 LAC Activity

Cumulative LAC Activity 2021

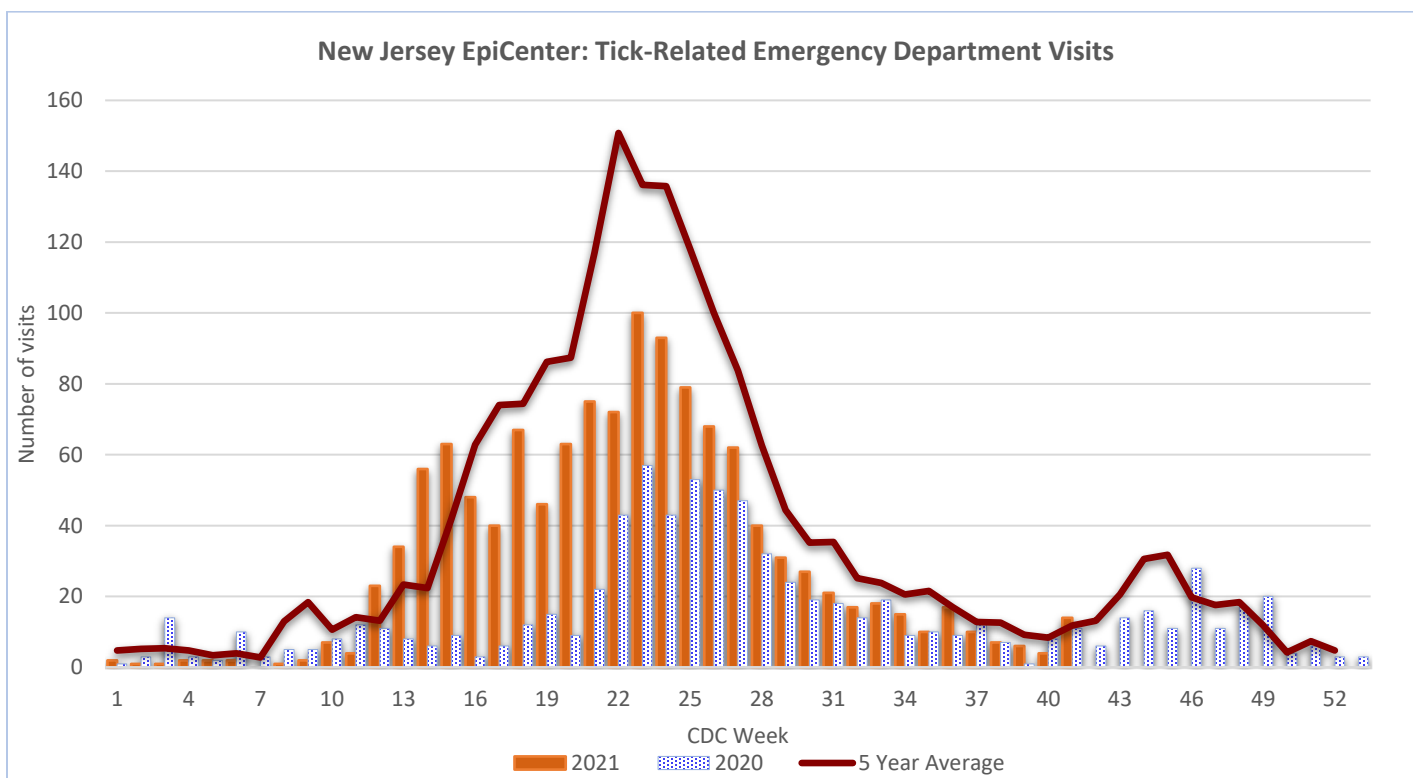


5. Syndromic Surveillance for Tick-related Emergency Department Visits

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 41, the overall number of ED visits is consistent with 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 20, 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/>