

## Report Highlight:

- To date, there have been 35 WNV human cases (no change from last week) reported in 12 counties, which ties with 2003 as the 3<sup>rd</sup> highest number of annual cases after 2018 (61 cases) and 2012 (48 cases). In a typical year, there are 8 reported WNV cases. Five WNV cases have resulted in fatalities in 4 counties.
- Half of the human WNV cases developed symptoms between the weeks ending on September 11<sup>th</sup> and September 25<sup>th</sup>. The last illness onset date occurred during the week ending October 23<sup>rd</sup>.
- West Nile virus (WNV) has been detected in one mosquito pool this week in Burlington County. 986 pools have tested positive in 2021, with the highest numbers in Bergen and Union counties. This is the 3<sup>rd</sup> highest number of WNV positive pools after 2018 (1,331 pools) and 2012 (992 pools). Activity has been decreasing since week 35. Mosquito testing is available through mid-November.
- No other new arboviral activity was reported in people, mosquitoes, or animals this week.
- Consistent with historical patterns, the number of tick-related visits to emergency departments is increasing, coinciding with when adult deer ticks emerge. A higher than usual number of Anaplasmosis cases has been reported this year, while other tickborne diseases are at either consistent or lower levels than historical averages.

## 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 <sup>a</sup>**

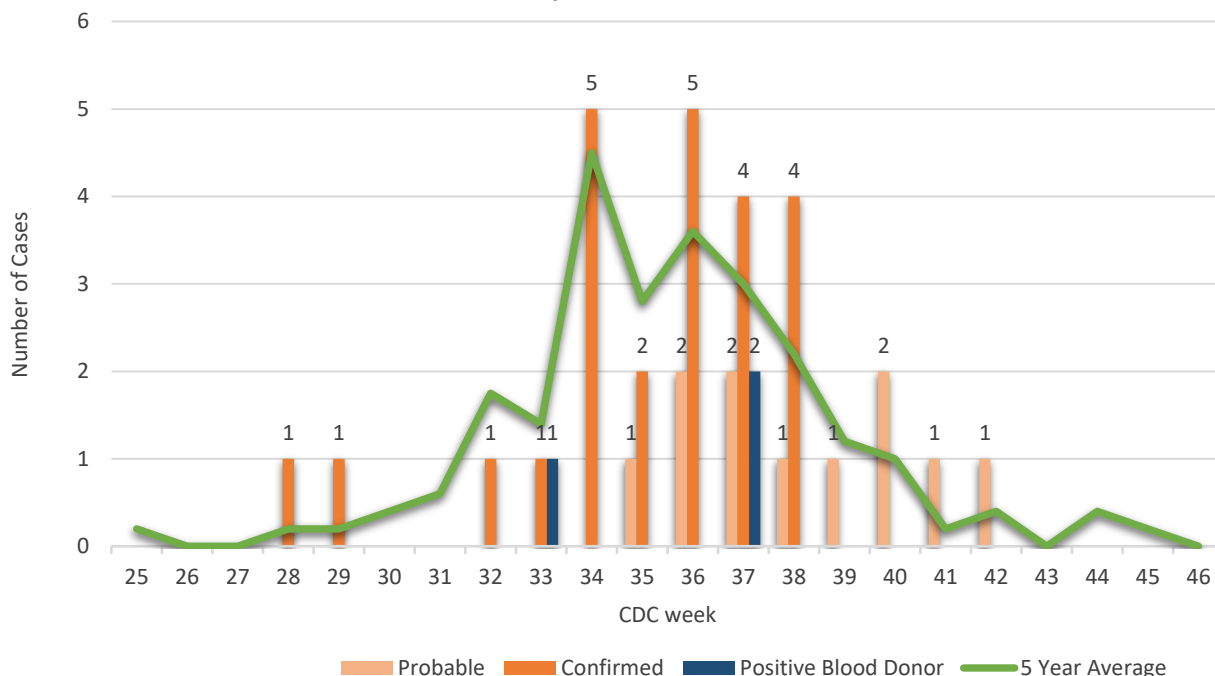
Mosquito-borne diseases			Tickborne Diseases		
	2021 <sup>b</sup>	2020		2021 <sup>b</sup>	2020
Chikungunya	1	3	Anaplasmosis	151	115
Dengue	6	2	Babesiosis	169	238
Eastern equine encephalitis	-	-	<i>Borrelia miyamotoi</i>	13	9
Jamestown Canyon	1	-	Ehrlichiosis	41	78
Malaria	39	24	Lyme disease	2163	2572
West Nile	35	3	Powassan	-	1
Zika	-	3	Spotted fever group rickettsioses	23	35

<sup>a</sup> 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. <sup>b</sup> Cumulative through Week 43: October 24-30, 2021

**Table 1.2 WNV Human Cases <sup>b</sup>**

County	Cases	Deaths	Positive Blood Donor
Burlington	8		1
Camden	6	2	
Monmouth	5	1	2
Bergen	4		
Essex	4		
Mercer	2	1	
Somerset	2		
Atlantic	1		
Cumberland	1		
Gloucester	1	1	
Middlesex	1		
Ocean	1		
<b>Total</b>	<b>35</b>	<b>5</b>	<b>3</b>

**West Nile Virus Cases by Week of Illness Onset, 2021**



\*Positive blood donor based on specimen collection date

## 1. 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 8472 mosquito pools have been tested for WNV.
- 986 pools tested positive for WNV this year.
- The positive pools were detected in *Culex pipiens/restuans/salinarius* species mix (920), *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.

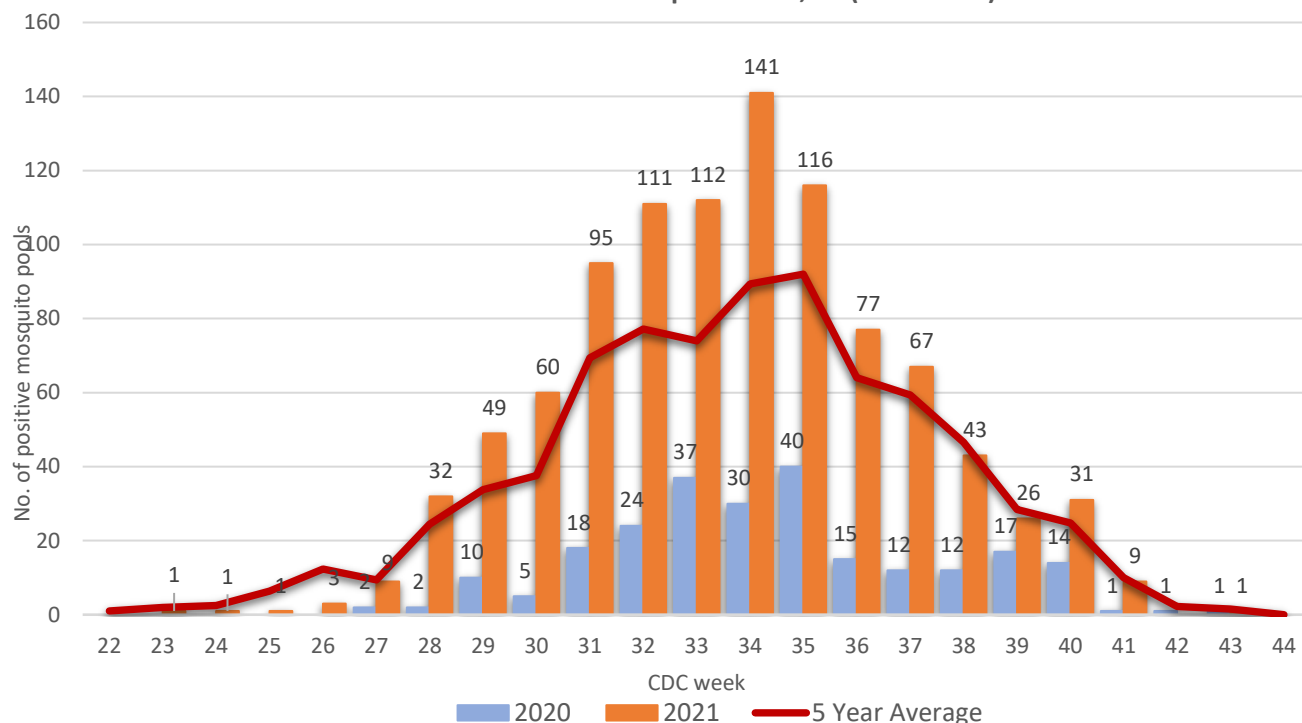
\*Test results may be incomplete; counties submit pools for testing on specific weekdays. Mosquito testing data reflects test results received from PHEL as of November 3, 2021

### WNV Positive Mosquito Pools

County	Week 43		Cumulative Total (Week 43)	
	2021*	2020	2021*	2020
Bergen			109	39
Union			104	28
Middlesex			93	5
Camden		1	92	15
Somerset			88	10
Burlington	1		79	34
Morris			63	5
Hunterdon			59	7
Hudson			44	26
Monmouth			43	37
Atlantic			39	1
Gloucester			33	4
Mercer			25	19
Warren			25	2
Ocean			23	
Cape May			22	1
Passaic			20	7
Sussex			18	
Essex			4	
Cumberland			3	
Salem				1
<b>Total</b>	<b>1</b>	<b>1</b>	<b>986</b>	<b>241</b>

Week 43: October 18-24, 2020; October 24-30, 2021

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



\*Positive blood donor based on specimen collection date

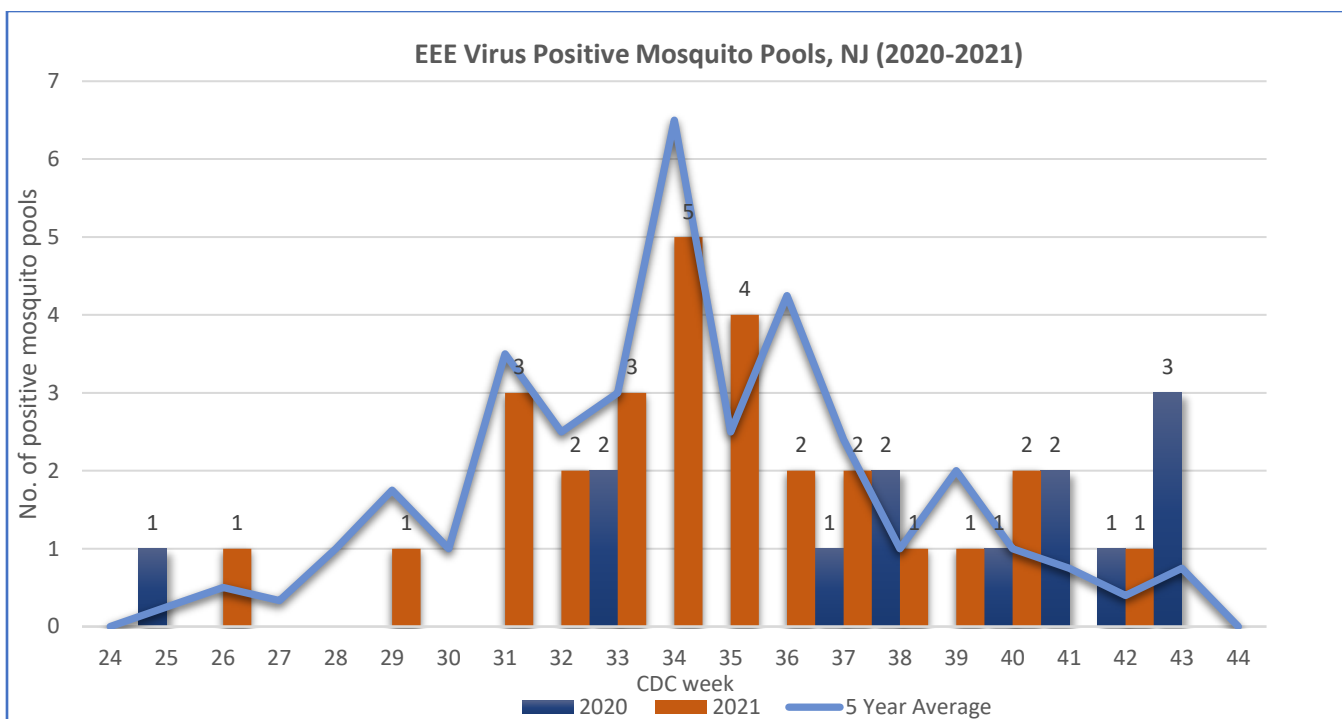
#### Eastern equine encephalitis virus (EEE)

- A total of 7637 mosquito pools have been tested for EEE.
- 28 pools tested positive for EEE this year in *Cs. melanura* (20), *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 43		Cumulative Total (Week 43)	
	2021*	2020	2021*	2020
Atlantic		2	9	7
Gloucester		1	6	1
Camden			6	3
Burlington			3	1
Cape May			2	
Ocean			1	
Cumberland			1	
Bergen				
Essex				
Hudson				
Hunterdon				
Mercer				
Middlesex				
Monmouth				
Morris				
Passaic				
Salem				1
Somerset				
Sussex				
Union				
Warren				
<b>Total</b>	-	3	28	13

Week 43: October 18-24, 2020; October 24-30, 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 <sup>a</sup>)

County	CHIKV		DENV		JCV		LACV		SLEV		ZIKV	
	Pools	Pos	Pools	Pos	Pools	Pos	Pools	Pos	Pools	Pos	Pools	Pos
Atlantic	12		12		504	1			504		12	
Bergen	1		1		385				387		1	
Burlington	1		1		511		12		545		1	
Camden					347	3			347			
Cape May	1		1		483				500		1	
Cumberland					371				426			
Essex					94	1			105			
Gloucester					500	2			550			
Hudson					295				301			
Hunterdon					315				355			
Mercer	2		2		423		16		478		2	
Middlesex	2		2		302				339		2	
Monmouth					475				528			
Morris	2		2		390				434		2	
Ocean					344				357			
Passaic					270		3		293			
Salem					478		16		514			
Somerset					282				282			
Sussex					556	1	13		556			
Union					231				231			
Warren					394		4		394			
<b>Total</b>	<b>21</b>		<b>21</b>		<b>7950</b>	<b>8</b>	<b>64</b>		<b>8426</b>		<b>21</b>	

<sup>a</sup> 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 2<sup>nd</sup> 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.

## **2. 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 43		Cum. Total (Year)	
	2021*	2020	2021*	2020
Equine (EEE)			3	1
Equine (WNV)				
Avian (WNV)			6	
Other				

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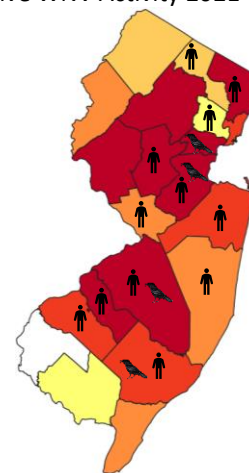
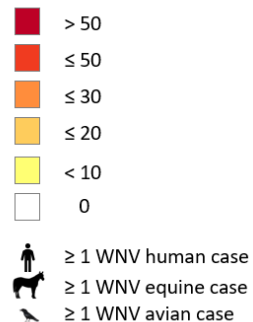
### 3. Surveillance Maps

#### West Nile Virus (WNV)

Week 43 WNV Activity (2021)\*

Cumulative WNV Activity 2021

##### WNV Positive Pools

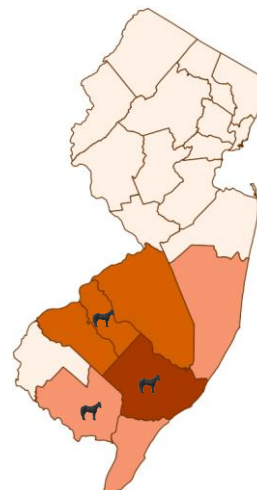
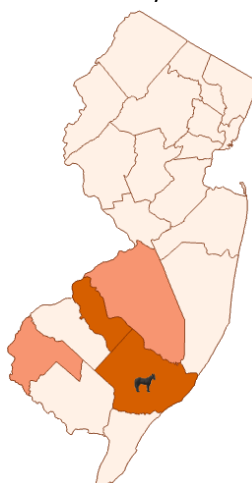
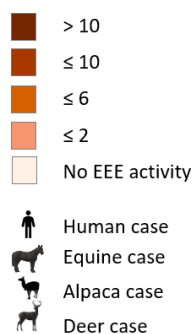


#### Eastern equine encephalitis (EEE)

2020 EEE Activity

Cumulative EEE Activity 2021

##### EEE Positive Pools

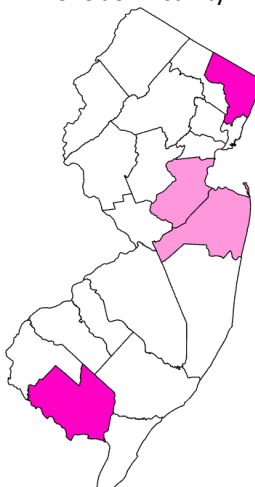


#### Jamestown Canyon Virus (JCV)

2020 JCV Activity

Cumulative JCV Activity 2021

##### JCV Positive Pools

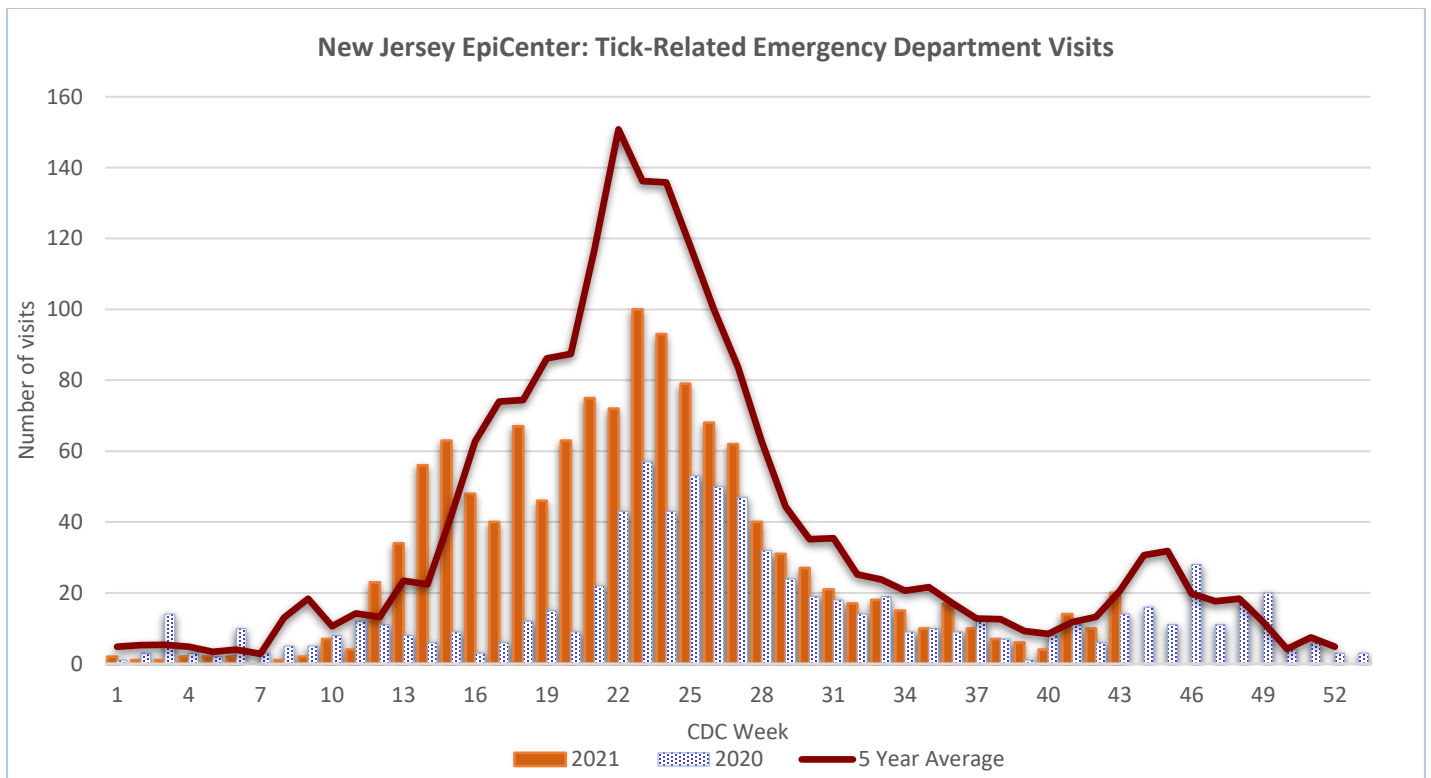


#### 4. Syndromic Surveillance for Tick-related Emergency Department Visits

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 overall number of ED visits is consistent with the 5-year average. Typically, there is an increase in visits starting in week 42, which coincides with the emergence of adult deer ticks.



*Data reflects ED visits downloaded from EpiCenter as of November 3, 2021*