

Report Highlight:

- There are 17 West Nile Virus (WNV) human cases (11 neuroinvasive) in 2022 from Bergen (3), Burlington (1), Camden (3), Middlesex (1), Monmouth (4), Morris (1), Ocean (2), & Union (2) counties. 1 presumptive viremic blood donor was detected in Middlesex County.
- Of 115 mosquito pools from 10 counties that were submitted for testing in Week 41, 2 tested positive for WNV. There have been 602 WNV positive pools this year.
- The number of tick-related ED visits increased this week, which is consistent with historical patterns and the emergence of adult deer ticks.
- A blue jay tested positive for WNV in Week 41 in Passaic County and a red-tailed hawk tested positive for WNV in Week 36 in Bergen County.

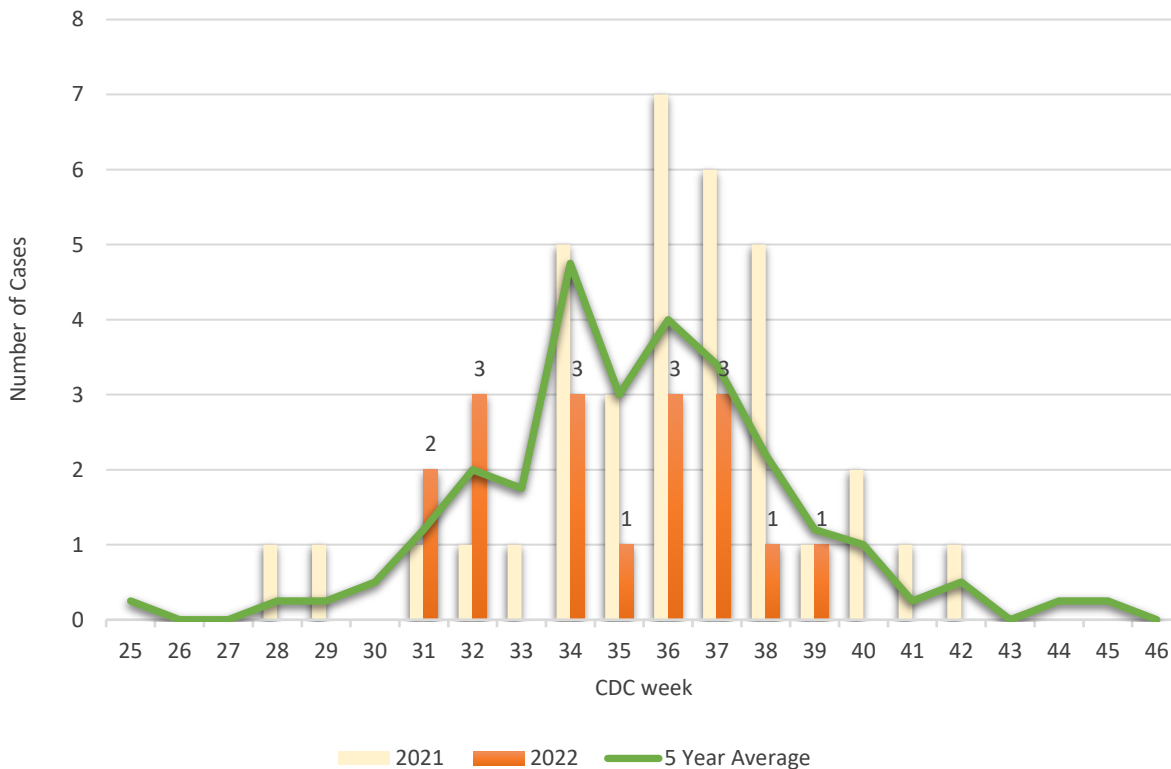
1. Human Cases

N.J.A.C.8:57 mandates public health reporting of communicable diseases. 2022 data reflect cases that have been approved by NJDOH and do not include cases under investigation. All 2022 numbers are preliminary and subject to change.

Mosquito-borne diseases			Tickborne Diseases/Conditions		
	2022	2021		2022	2021
Chikungunya	1	4	Alpha-gal syndrome	96	-
Dengue	14	12	Anaplasmosis	63	202
Eastern equine encephalitis	-	-	Babesiosis	190	258
Jamestown Canyon	-	2	<i>Borrelia miyamotoi</i>	4	16
Malaria	34	71	Ehrlichiosis (<i>chaffeensis, ewingii</i>)	79	77
West Nile	17	36	Lyme disease*	196	3,518
Zika	-	-	Powassan	-	-
			Spotted fever group rickettsioses	13	39
			Tularemia	1	4

* Lyme disease surveillance has transitioned to a laboratory-only surveillance approach in 2022; as such, case reporting is delayed.

West Nile Virus Cases by Week of Illness Onset



2. Mosquito Testing

The New Jersey Department of Health Public Health and Environmental Laboratories (PHEL) and the Cape May County Department of Mosquito Control Biosafety Level 3 Laboratory (CMBSL3) perform arboviral testing on mosquito pools collected by county mosquito control agencies throughout New Jersey.

West Nile virus (WNV):

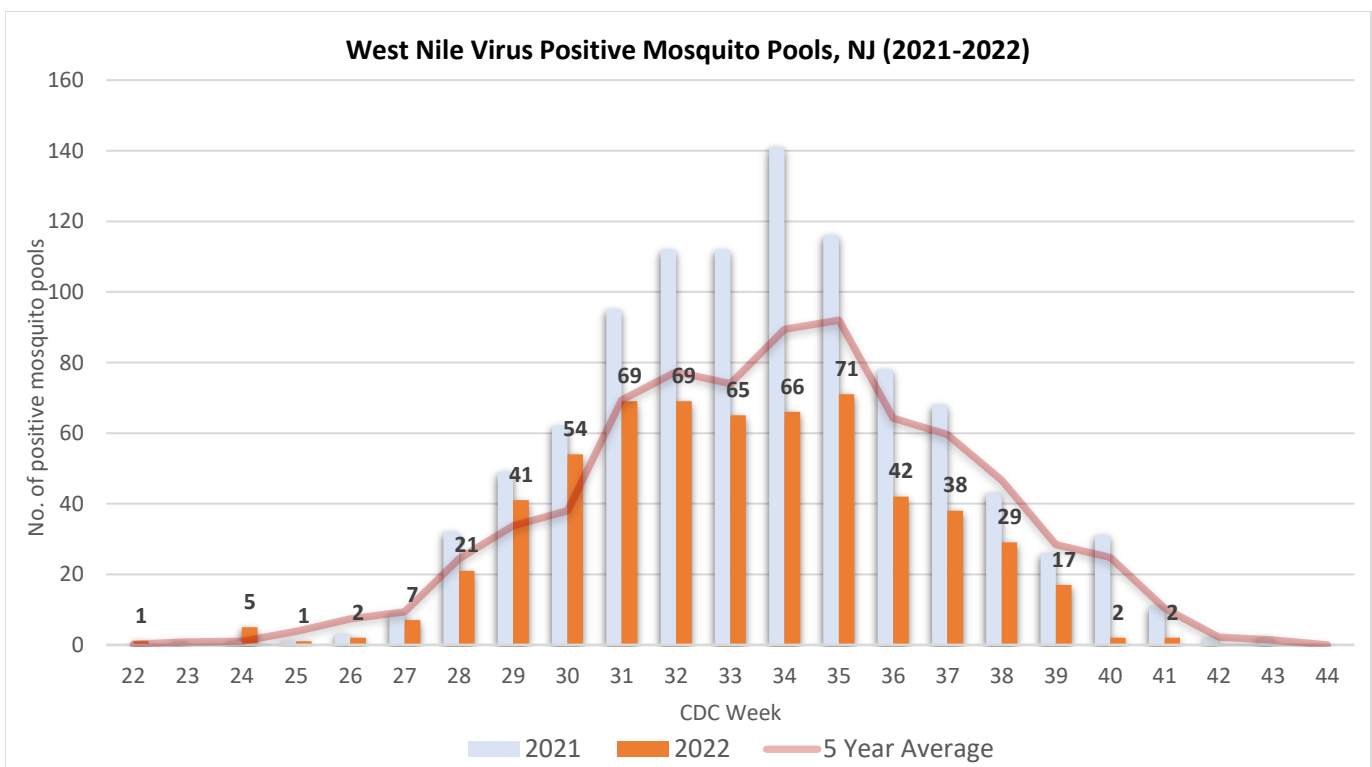
- A total of 7334 mosquito pools from 21 counties have been tested for WNV.
- 2 pools tested positive for WNV in Week 41. There have been 602 positive WNV pools so far this year, detected in all counties.
- The positive pools were detected in *Aedes albopictus* (13), *Ae. canadensis*(1), *Ae. cantator*(1), *Ae. japonicus* (11), *Ae. triseriatus* (2), *Ae. vexans* (1), *Anopheles punctipennis* (1), *An. quadrimaculatus* (1), *Coquillettidia perturbans* (1), *Culex sp.* (76), *Cx. erraticus* (2), *Cx. pipiens* (19), *Cx. pipiens/quinqüefasciatus/restuans species mix* (48), *Cx. pipiens/restuans/salinarius species mix* (422), and *Cx. restuans* (3).
- The first WNV positive mosquito pool (*Ae. cantator*) was detected in week 22 from Burlington County.

*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 20, 2022

WNV Mosquito Pool Testing

County	Week 41 Positive Pools		Cumulative Pos. Total (Week 41)		# Pools Tested 2022*
	2022*	2021	2022*	2021	
Bergen			96	109	419
Hudson		1	86	44	301
Middlesex		2	67	93	307
Passaic		1	49	20	237
Union			44	104	226
Mercer	1		34	25	457
Monmouth			34	45	481
Morris	1		29	63	557
Somerset		1	29	88	299
Burlington			28	78	293
Camden		2	24	93	231
Gloucester			19	33	374
Hunterdon			15	59	303
Essex			11	4	154
Ocean			10	23	306
Sussex			8	18	475
Warren			8	25	500
Atlantic		1	6	40	454
Cape May		4	2	24	149
Salem			2		417
Cumberland			1	3	394
Total	2	11	602	991	7334

Week 41: Oct 10-16, 2021; Oct 9-15, 2022



Eastern equine encephalitis virus (EEE)

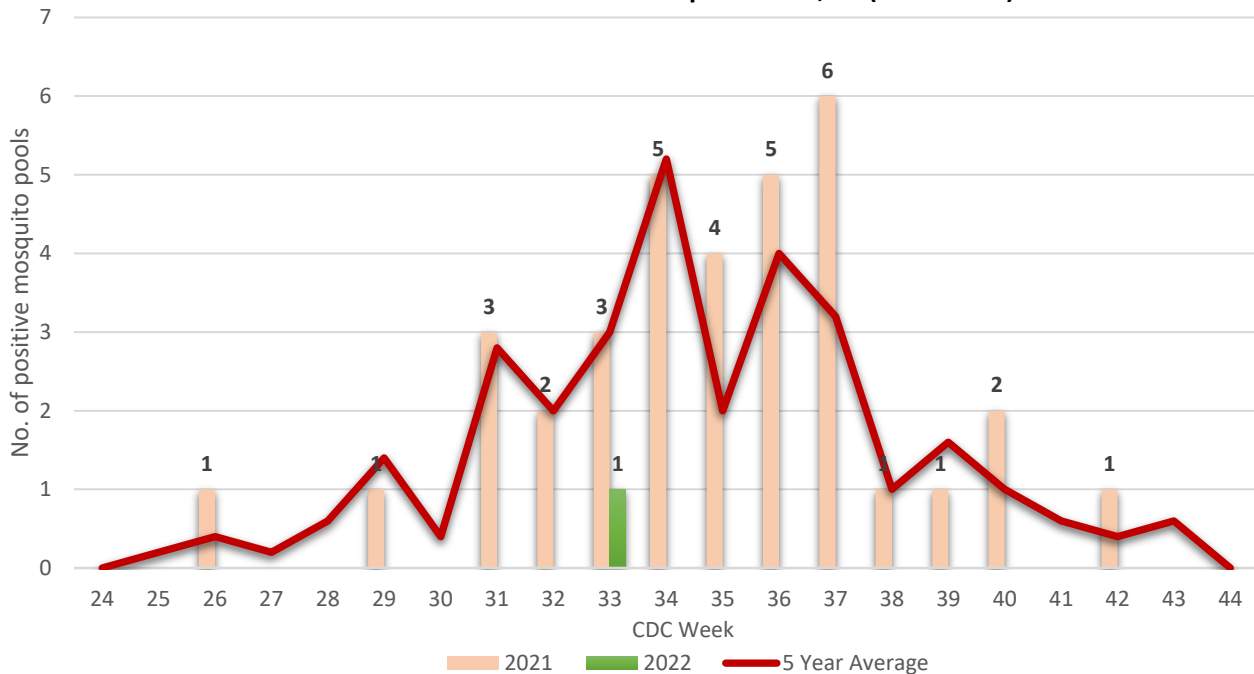
- A total of 7178 mosquito pools from all 21 counties have been tested for EEE.
- One EEE positive mosquito pool was identified in Morris County in Week 33, in a *Culex sp.* pool.
- In 2021, the first positive mosquito pool was detected in Week 26 from Gloucester County.

EEE Mosquito Pool Testing

County	Week 41 Positive Pools		Cumulative Pos. Total (Week 41)		# Pools Tested
	2022*	2021	2022*	2021	
Morris			1		507
Atlantic				9	454
Bergen					380
Burlington				3	291
Camden				12	230
Cape May				2	149
Cumberland				1	394
Essex					154
Gloucester				6	360
Hudson					301
Hunterdon					303
Mercer					442
Middlesex					306
Monmouth					480
Ocean				1	305
Passaic					230
Salem					402
Somerset					299
Sussex					463
Union					214
Warren					464
Total	-	-	1	34	7178

Week 41: Oct 10-16, 2021; Oct 9-15, 2022

EEE Virus Positive Mosquito Pools, NJ (2021-2022)



Other viruses:

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

Cumulative 2022 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	454		454				4		4		4	
Bergen	380		380	2	17		2		2		2	
Burlington	291		291		2		2		2		2	
Camden	230		215		1		13		13		13	
Cape May	149											
Cumberland	394		394									
Essex	154		154									
Gloucester	360		348		14							
Hudson	301		301									
Hunterdon	303		303									
Mercer	442		442		15							
Middlesex	306		306		1							
Monmouth	480		480		1							
Morris	557		557				4		4		4	
Ocean	305		305		1							
Passaic	230		230		7							
Salem	402		389		16		1		1		1	
Somerset	299		299									
Sussex	463		463	1	11							
Union	214		214		12							
Warren	464		464		36							
Total	7178	-	6989	3	134	-	26	-	26	-	26	-

^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 2022
 Numbers in green shaded columns represent positive pools in 2022

Jamestown Canyon virus (JCV):

- The first mosquito pool (*Anopheles punctipennis*) in Sussex County tested positive for JCV in Week 33. In 2021, the first positive pool was also detected in Sussex County, 6 weeks earlier in Week 27.
- Two mosquito pools (*Ae. cantator*) from Bergen County tested positive for JCV in Week 22 and Week 24.
- In 2021, eight positive JCV pools were reported in Atlantic, Camden, Essex, Gloucester, and Sussex counties.
- Jamestown Canyon virus has not been detected in humans in 2022.
- NJ reported 2 human JCV cases in 2021 in Sussex County (week 18) and in Essex County (Week 37). The first NJ JCV case was reported in 2015 in Sussex County.

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.

- A blue jay tested positive for WNV in Week 41 in Passaic County.
- A red-tailed hawk tested positive for WNV in Week 36 in Bergen County.
- Four raptors tested positive for WNV in Week 34: a Cooper's hawk in Morris County and red-tailed hawks in Morris, Essex, and Somerset counties.
- A red-tailed hawk tested positive for WNV in Week 31 in Somerset County.
- No animals have tested positive for EEE in 2022.
- Routine avian testing has been discontinued but is available upon request at PHEL.

WNV/EEE Positive Test Results

	Week 41		Cum. Total (Week 41)	
	2022*	2021	2022*	2021
Equine (EEE)				3
Equine (WNV)				
Avian (WNV)	1		7	13
Other				

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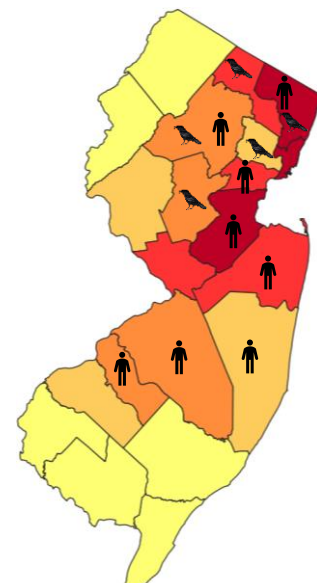
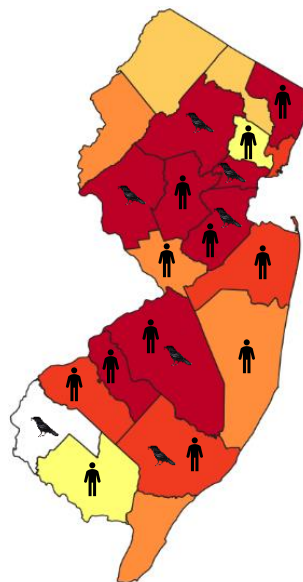
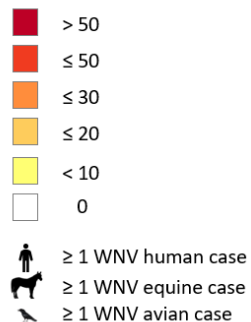
4. Surveillance Maps

West Nile Virus (WNV)

2021 WNV Activity

Cumulative WNV Activity 2022

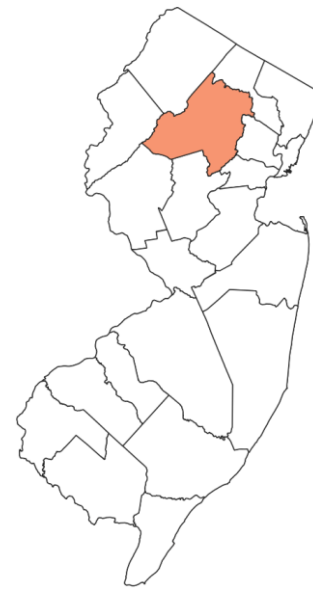
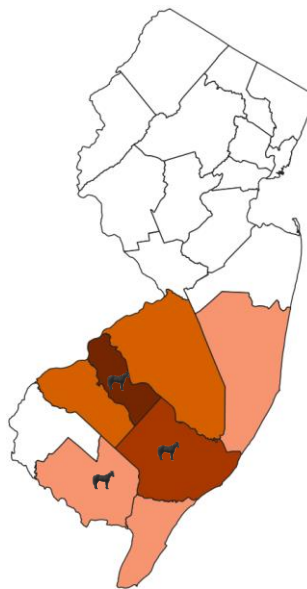
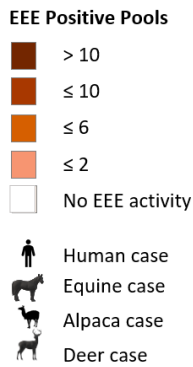
WNV Positive Pools



Eastern equine encephalitis (EEE)

2021 EEE Activity

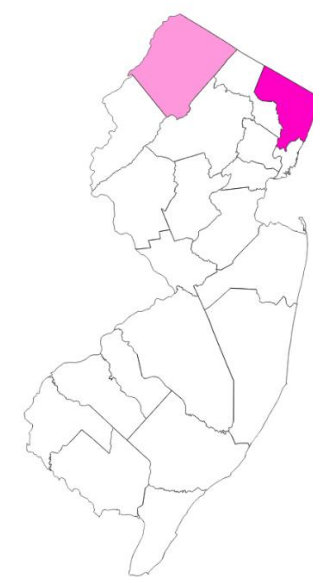
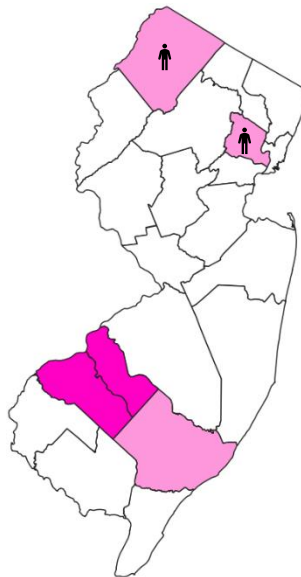
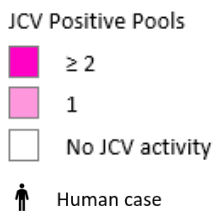
Cumulative EEE Activity 2022



Jamestown Canyon Virus

2021 JCV Activity

Cummulative JCV Activity 2022



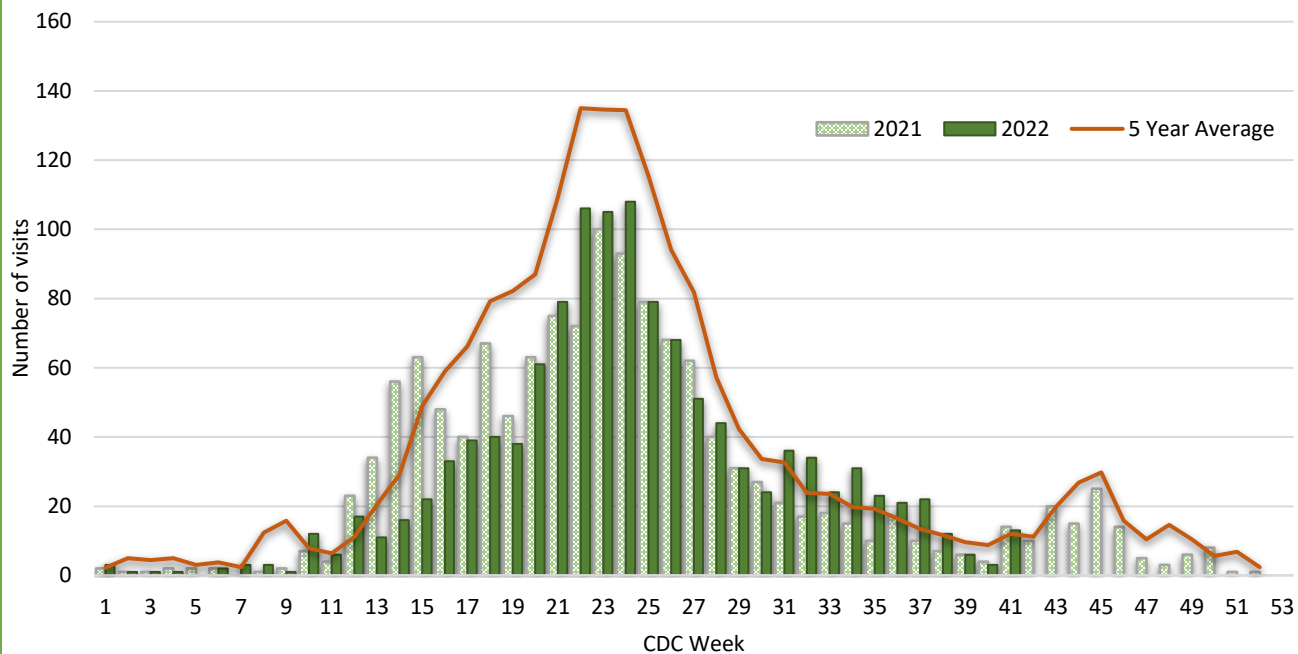
5. Syndromic Surveillance for Tick-related Emergency Department Visits

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.

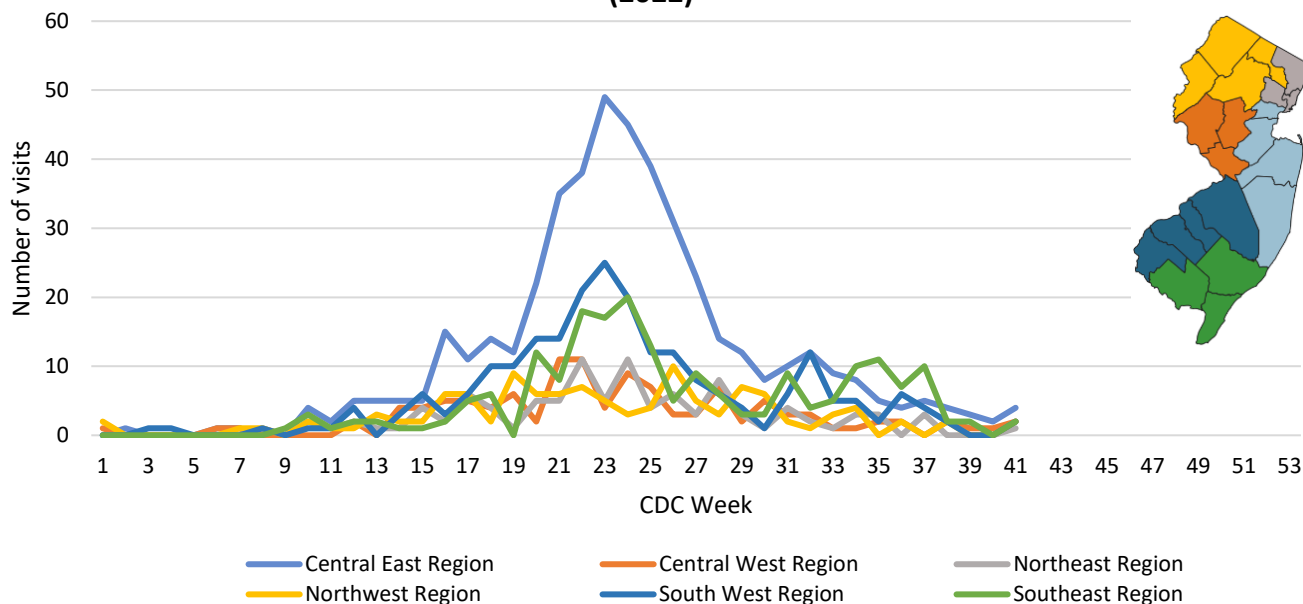
The chart below represents NJ residents seen at emergency departments statewide with a tick-bite complaint or signs/symptoms associated with a reported tick-bite. Tick-related ED visits occur throughout the year with peak number of visits in the summer months and a smaller peak in the fall weeks when adult *Ixodes scapularis* (blacklegged ticks) are active.

In Week 41, the number of tick-related ED visits increased and is slightly above the 5-year average, but below the number from 2021.

New Jersey EpiCenter: Tick-Related Emergency Department Visits



New Jersey EpiCenter: Tick-Related Emergency Department Visits by Region (2022)



Data reflects ED visits downloaded from EpiCenter as of October 20, 2022

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/>