Vector-borne Surveillance Report

CDC WEEK 27: June 30 - July 6, 2024

Report Highlights:

- ***Sixteen mosquito pools tested positive for West Nile Virus (WNV) this week in eight counties (additional tests pending). The number of positive pools this week is higher than the 5-year average. There has been a total of 54 WNV positive pools in 2024.***
- ***There have been no human or animal cases of WNV reported in New Jersey in 2024.***
- ***Two mosquito pools have tested positive for Jamestown Canyon Virus (JCV) this year in Cumberland County.***
- ***New Jersey is reporting one case of Powassan virus from week 19 in Sussex County. This is the first Powassan case in NJ since 2022, when 2 cases were reported in Sussex County.***
- ***The number of travel-associated dengue cases is considerably higher in 2024 (47 cases) compared to the same timeframe in 2023 (13 cases), associated with outbreaks in several Latin American countries.***
- ***The number of Lyme disease cases this week decreased and is below the average number reported this week in the past two years.***
- ***In week 27, the number of tick-related ED visits increased but was lower compared to this time last year and to the 5-year average. The highest number of visits was in the central east region.***

Human Vector-borne Disease Cases

N.J.A.C. 8:57 mandates public health reporting of communicable diseases. 2024 data reflect cases that have been approved by NJDOH and do not include cases under investigation. Due to the time needed for public health investigation, the number of tickborne diseases (except for Lyme disease) may be significantly lower than actual counts and should be interpreted with caution. All 2024 numbers are preliminary and subject to change. Some cases considered "presumptive positive" are pending additional testing. Case counts for 2023 reflect the annual total for that year.

Mosquito-borne diseases			Tickborne Diseases/Conditions		
	2024	2023		**2024**	2023
Chikungunya	**1**	13	Alpha-gal syndrome	**75**	360
Dengue	**47**	98	Anaplasmosis	**46**	195
Eastern equine encephalitis	**-**	-	Babesiosis	**41**	407
Jamestown Canyon	**-**	1	*Borrelia miyamotoi*	**2**	18
Malaria	**29**	102	Ehrlichiosis	**18**	109
West Nile	**-**	14	Lyme disease*	**3,259**	7,225
Zika	**-**	-	Powassan	**1**	-
			Spotted fever group rickettsioses	**4**	24
			Tularemia	**1**	2

* Lyme disease surveillance transitioned to laboratory-based surveillance in 2022.

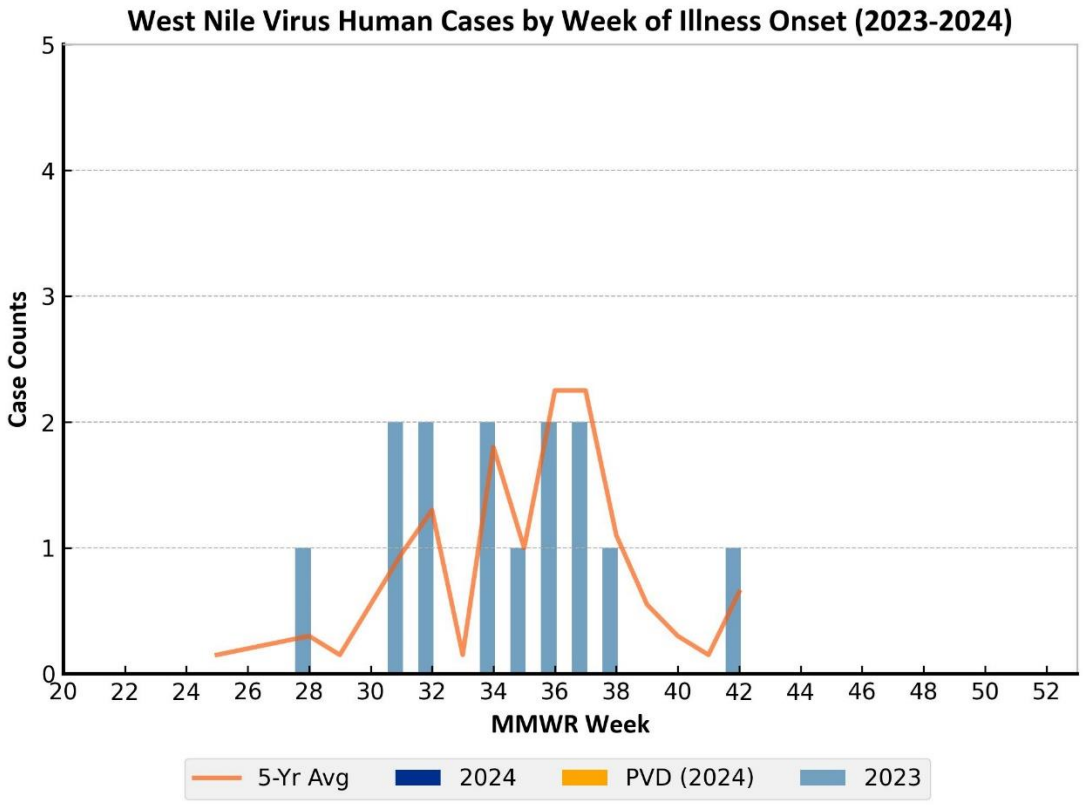
Mosquito-borne Disease Activity

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.*

**Test results may be incomplete as counties submit pools for testing on specific weekdays. Data reflects test results downloaded from JerseySurv on July 10, 2024.*

West Nile Virus

- There have been no human or animal cases of WNV reported in New Jersey in 2024.
- Out of 3,758 mosquito pools submitted for testing, 54 mosquito pools have tested positive for WNV so far this year. 16 pools tested positive in Week 27 in eight counties. WNV has been detected in *Culex pipiens/restuans/salinarius (47), Aedes japonicus (3), Cx. restuans (2), Aedes albopictus (1), and Culiseta melanura (1)* mosquito pools.
- The earliest WNV positive mosquito pools (*Culex pipiens/restuans/salinarius*) were detected in week 18 from Gloucester County (2), considerably earlier than 2023, when WNV was initially detected in Week 27 from Bergen County.

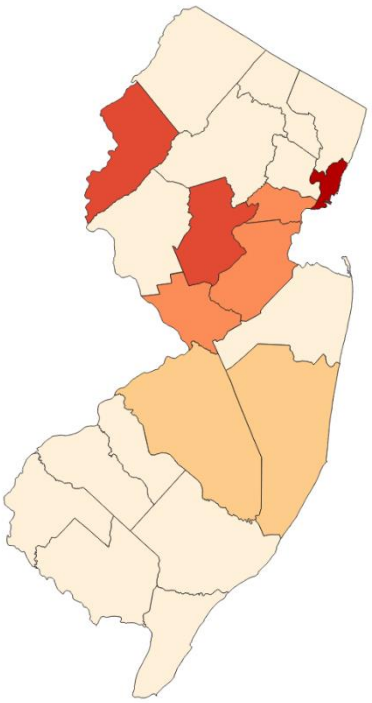


WNV Mosquito Pool Testing

	WEEK 27 Positive Pools		Cumulative Pos. Total* (WEEK 27)		# Pools Tested*	WEEK 27 Vector Index	
County	**2024**	2023	**2024**	2023	**2024**	**2024[t]**	
Union	2		9	1	82	0.20	(↓)
Middlesex	4		8		120	0.33	(↓)
Hudson	4		6		85	0.92	(↑)
Somerset	2		6	1	105	0.77	(↑)
Hunterdon		1	3	1	142	0.00	(↓)
Mercer	1		3		159	0.21	(↑)
Morris			3		158	0.00	(–)
Ocean	1		3		126	0.16	(↑)
Cape May		1	2	1	1283	0.00	(–)
Essex			2		110	0.00	(–)
Gloucester			2		219	0.00	(–)
Warren	1		2		146	0.84	(↑)
Atlantic			1		99	0.00	(–)
Bergen		1	1	2	111	0.00	(↓)
Burlington	1		1		46	0.14	(↑)
Monmouth			1		155	0.00	(–)
Sussex			1		160	0.00	(–)
Camden		1		1	56	0.00	(–)
Cumberland					160	0.00	(–)
Passaic					95	0.00	(–)
Salem					141	0.00	(–)
Total	**16**	**4**	**54**	**7**	**3,758**	**-**	

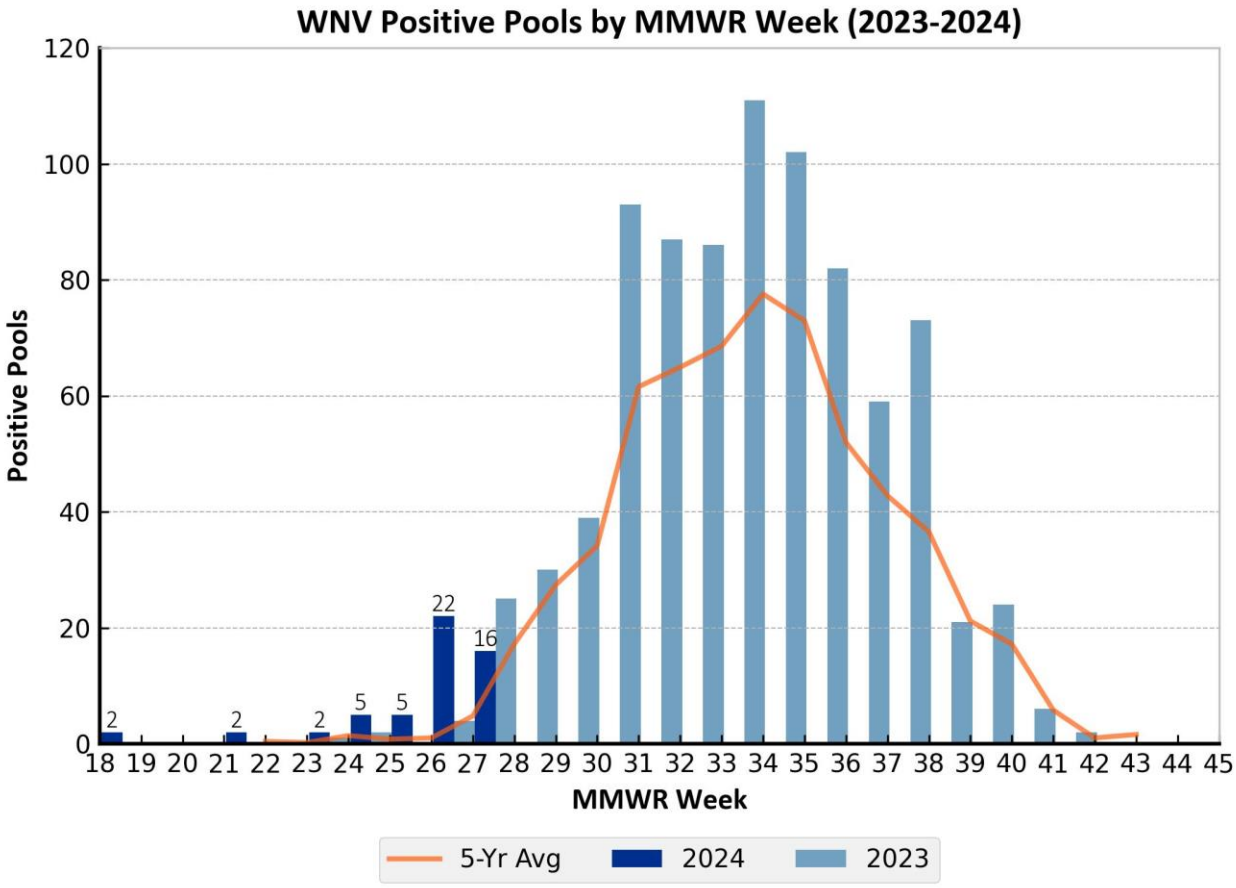
WEEK 27: July 2 - 8, 2023; June 30 - July 6, 2024.
*184 mosquito pools submitted by 8 counties are considered "early season" samples (collected prior to Week 20).

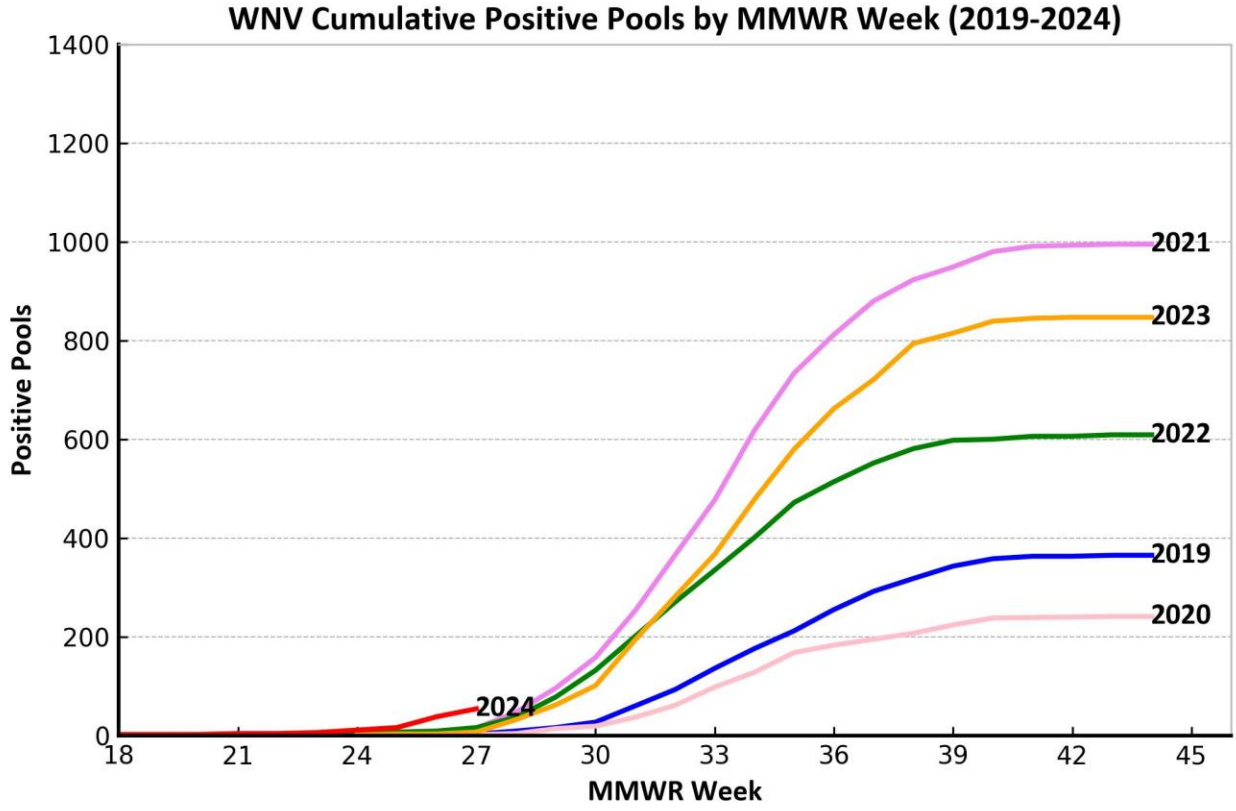
WNV Vector Index, WEEK 27[t]



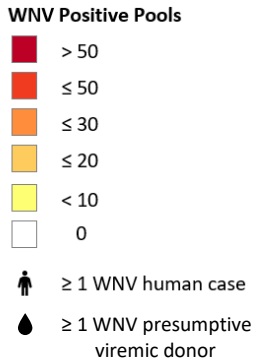
0 — 0.92

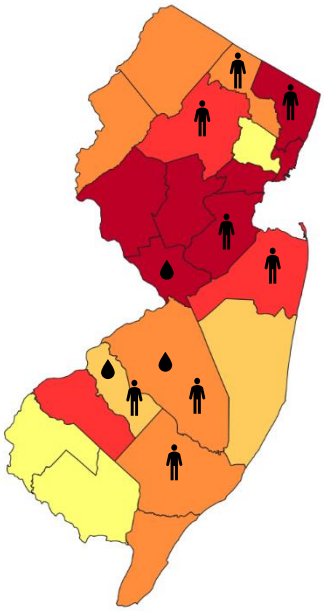
[t] Vector Index is calculated based on *Ae. taeniorhynchus, An. quadrimaculatus,* and all *Culex* species caught in gravid traps only.


WNV Positive Pools by MMWR Week (2023-2024)
Positive Pools
MMWR Week
5-Yr Avg
2024
2023

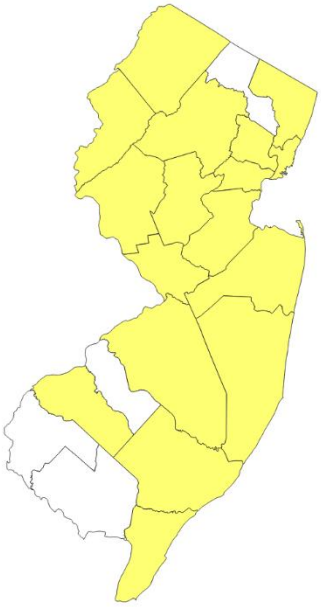

WNV Cumulative Positive Pools by MMWR Week (2019-2024)
Positive Pools
MMWR Week
2021
2023
2022
2019
2020
2024

2023 WNV Activity





Cumulative WNV Activity, 2024



Eastern Equine Encephalitis (EEE)

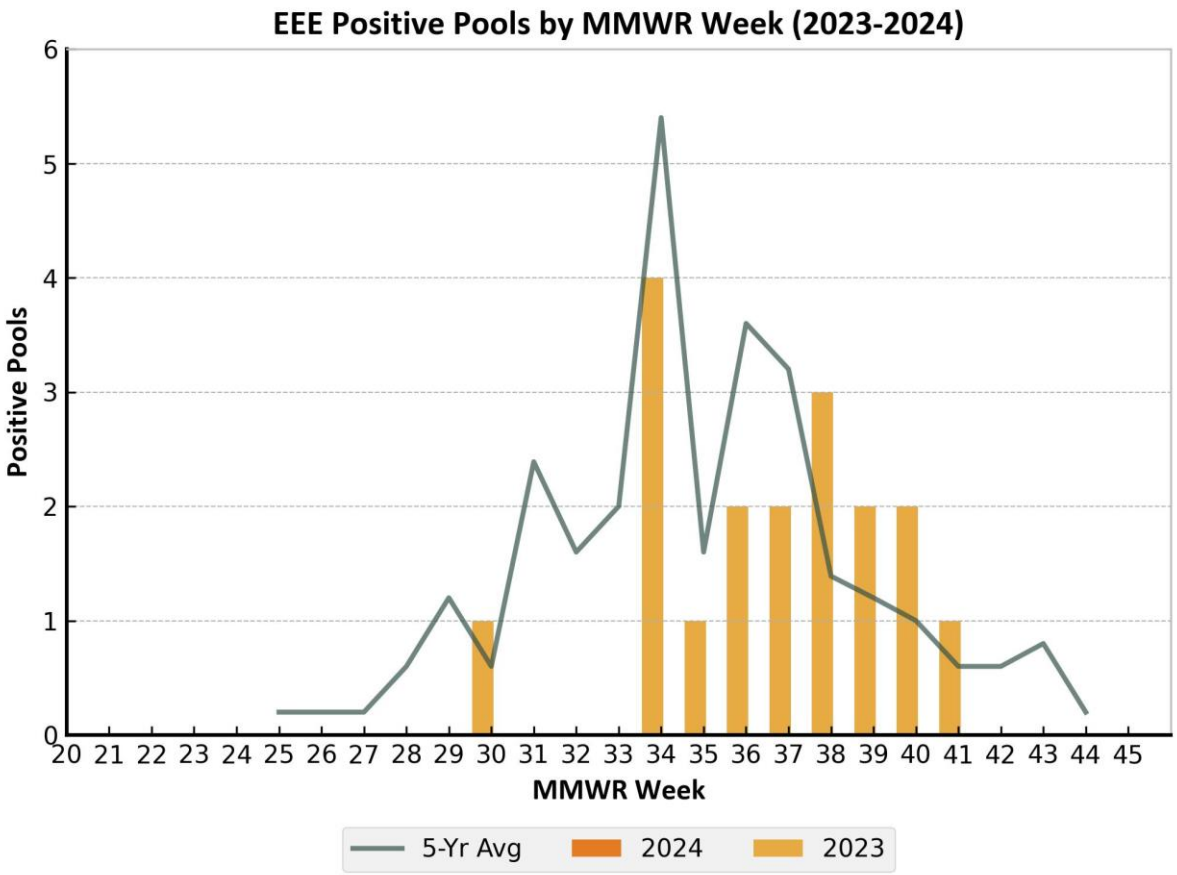
- There have been no human or animal cases of EEE reported in New Jersey in 2024. EEE human cases were last reported in 2019 (4 cases).
- Out of 3,725 mosquito pools tested for EEE, none have tested positive.
- In 2023, the first EEE positive pool was detected in Week 30 from Cumberland County.

EEE Mosquito Pool Testing

	WEEK 27 Positive Pools		Cumulative Pos. Total* (WEEK 27)		# Pools Tested	Cumulative MFIR
County	**2024**	2023	**2024**	2023	**2024**	**2024**
Atlantic					99	
Bergen					111	
Burlington					46	
Camden					53	
Cape May					1283	
Cumberland					160	
Essex					110	
Gloucester					219	
Hudson					85	
Hunterdon					141	
Mercer					157	
Middlesex					114	
Monmouth					155	
Morris					158	
Ocean					124	
Passaic					95	
Salem					141	
Somerset					105	
Sussex					148	
Union					82	
Warren					139	
Total	**0**	**0**	**0**	**0**	**3,725**	**-**

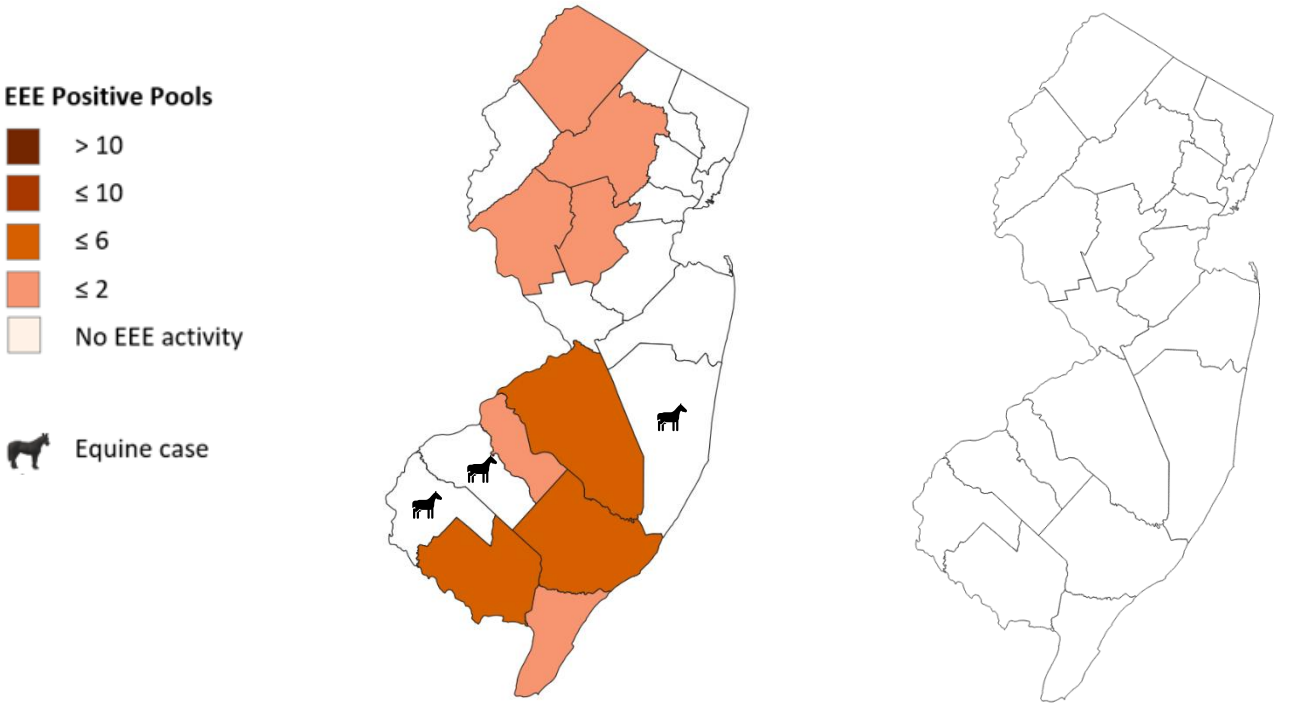
WEEK 27: July 2 - 8, 2023; June 30 - July 6, 2024

Cumulative EEE MFIR, 2024



2023 EEE Activity

Cumulative EEE Activity, 2024



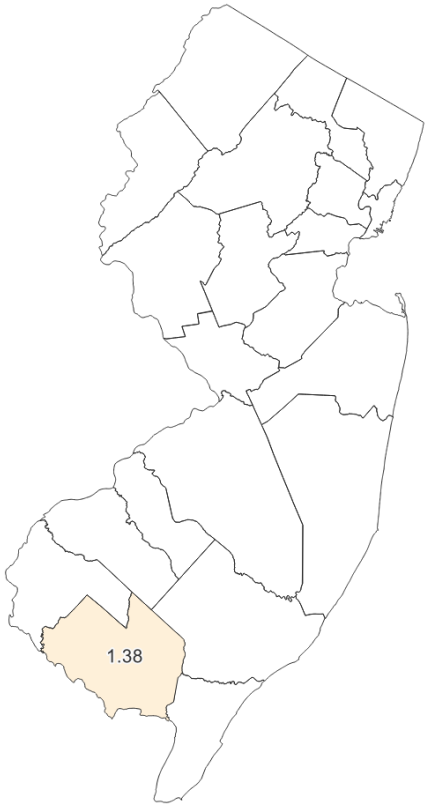
Jamestown Canyon Virus (JCV)

- There have been no human cases of JCV reported in New Jersey in 2024. In 2023, there was one human case of JCV in week 42 from Sussex County.
- Out of 3,725 mosquito pools tested for JCV, two pools tested positive in week 23 from Cumberland County. The positive pools were found in *Aedes cantator (1) and Cx. salinarius (1)* mosquitos.
- In 2023, the first JCV positive pool was detected in week 27 from Cumberland County.

JCV Mosquito Pool Testing

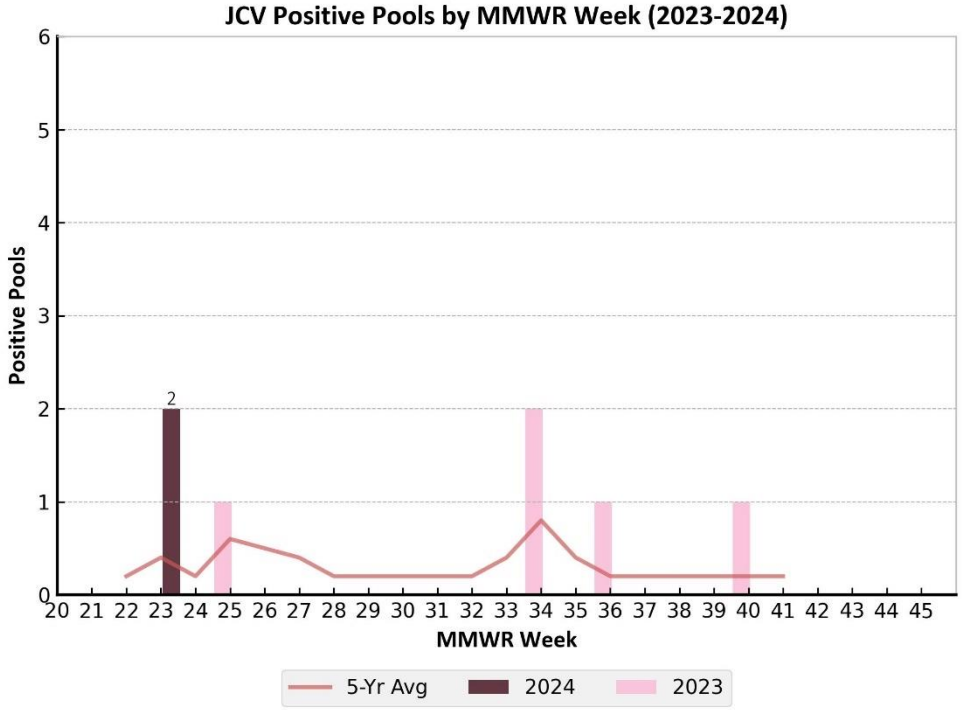
	WEEK 27 Positive Pools		Cumulative Pos. Total* (WEEK 27)		# Pools Tested	Cumulative MFIR
County	**2024**	2023	**2024**	2023	**2024**	**2024**
Cumberland			2	1	160	1.38
Atlantic					99	
Bergen					111	
Burlington					46	
Camden					53	
Cape May					1283	
Essex					110	
Gloucester					219	
Hudson					85	
Hunterdon					141	
Mercer					157	
Middlesex					114	
Monmouth					155	
Morris					158	
Ocean					124	
Passaic					95	
Salem					141	
Somerset					105	
Sussex					148	
Union					82	
Warren					139	
Total	**0**	**0**	**2**	**1**	**3,725**	**-**

Cumulative JCV MFIR, 2024

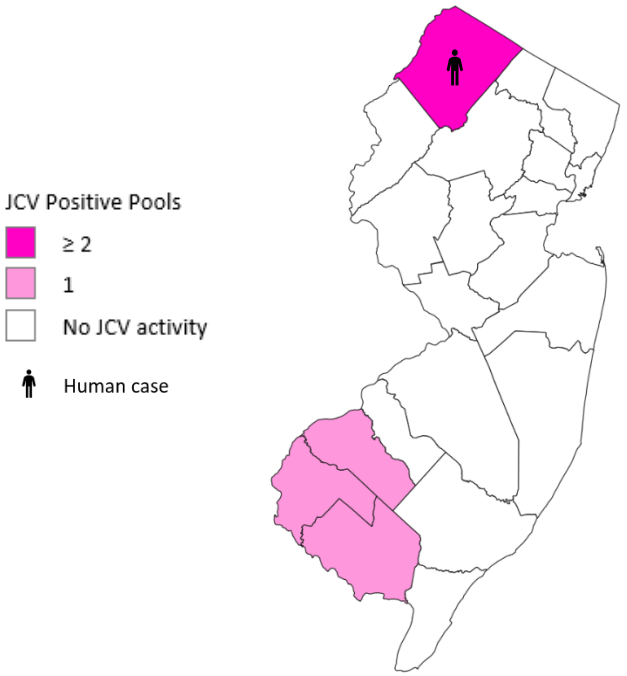


WEEK 27: July 2 - 8, 2023; June 30 - July 6, 2024

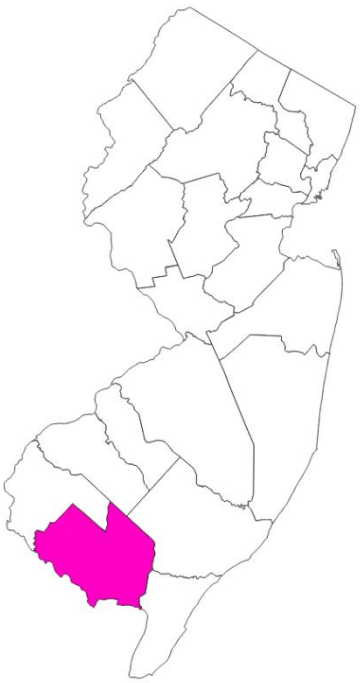
JCV Positive Pools by MMWR Week (2023-2024)



2023 JCV Activity



Cumulative JCV Activity, 2024



Other Mosquito-borne Viruses

- Mosquito pools in all 21 counties have been tested for other arboviruses with no positive results.

Cumulative 2024 Mosquito Pool Testing (Other Viruses[a])

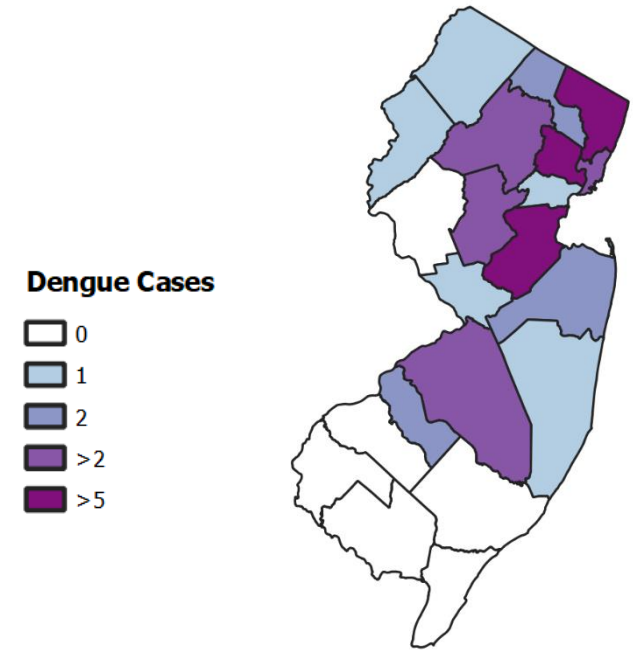
	SLE		LAC		CHIKV		DENV		ZIKV	
County	Pools	Pos	Pools	Pos	Pools	Pos	Pools	Pos	Pools	Pos
Atlantic	99									
Bergen	111				1		1		1	
Burlington	46									
Camden	53		3		1		1		1	
Cape May	1283		53		24		24		24	
Cumberland	160									
Essex	110				1		1		1	
Gloucester	219									
Hudson	85									
Hunterdon	141		1							
Mercer	157		2							
Middlesex	114		6							
Monmouth	155									
Morris	158				2		2		2	
Ocean	124		2							
Passaic	95		2							
Salem	141		4							
Somerset	105									
Sussex	148		12							
Union	82									
Warren	139		7							
Total	**3,725**	**-**	**92**	**-**	**29**	**-**	**29**	**-**	**29**	**-**

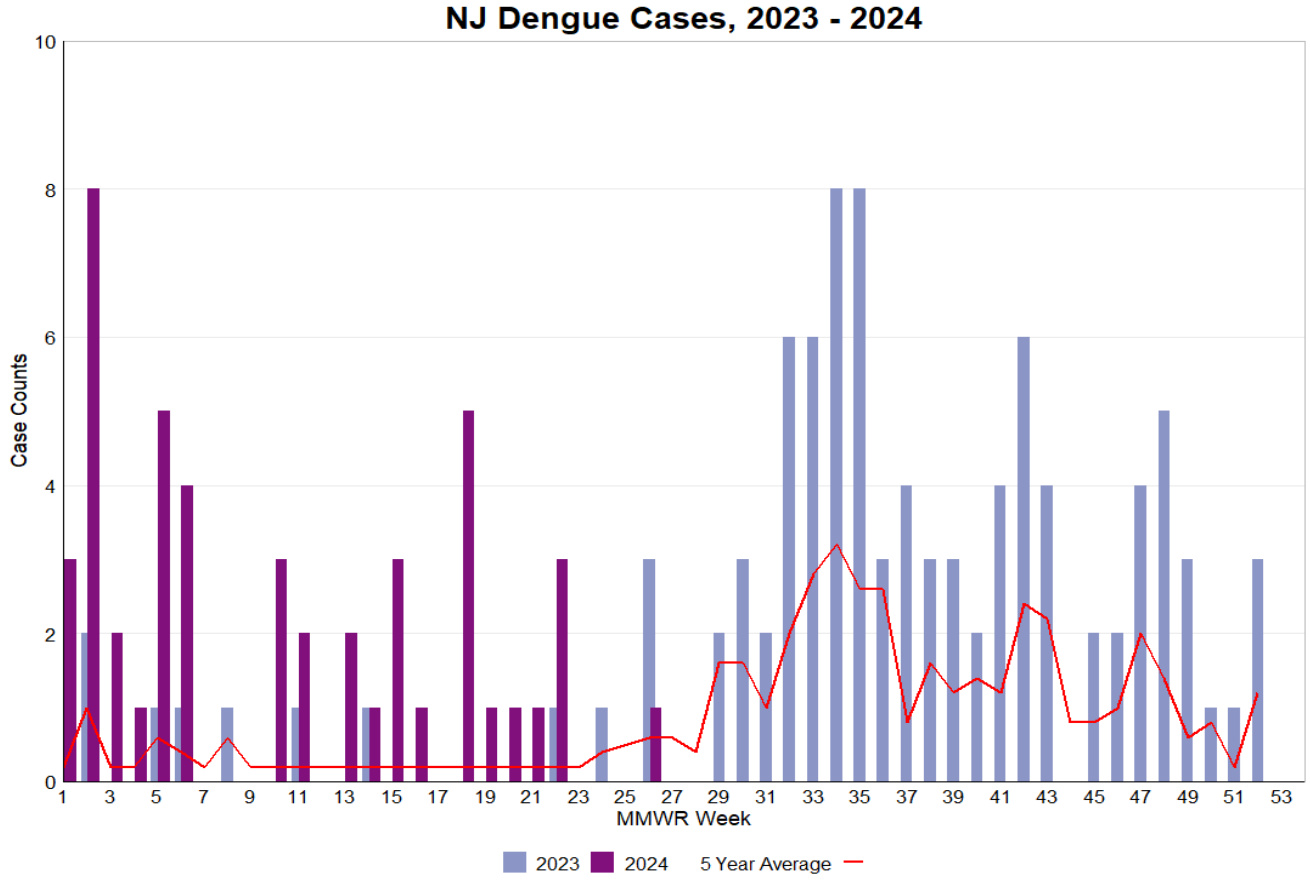
[a] St. Louis virus (SLE), La Crosse encephalitis (LAC), Chikungunya virus (CHIKV), Dengue virus (DENV), Zika Virus (ZIKV)
Numbers in white columns represent number of pools tested to date in 2024
Number in green shaded columns represent positive pools in 2024

Human Dengue Virus Cases

- There have been 47 cases of dengue virus reported so far in 2024, which is considerably higher than the number reported this time last year (13).
- All dengue cases are travel-associated, and the high case count is driven by outbreaks in several Latin American countries. Almost all (46) cases have reported travel to a country or U.S. territory in Latin America or the Caribbean.
- Many of the NJ cases are concentrated in the northeast region, with most cases residing in Bergen (9), Essex (7), and Middlesex (6) counties.

Travel Destination(s) of Dengue Cases	
Country/U.S. Territory of Travel	**Count**
Dominican Republic	9
Puerto Rico	7
Brazil	4
Colombia	4
Guatemala	4
Ecuador	3
Aruba	2
Costa Rica	2
Guyana	2
Martinique	2
Mexico	2
Antigua and Barbuda	1
Cuba	1
El Salvador	1
India	1
Paraguay	1
Peru	1

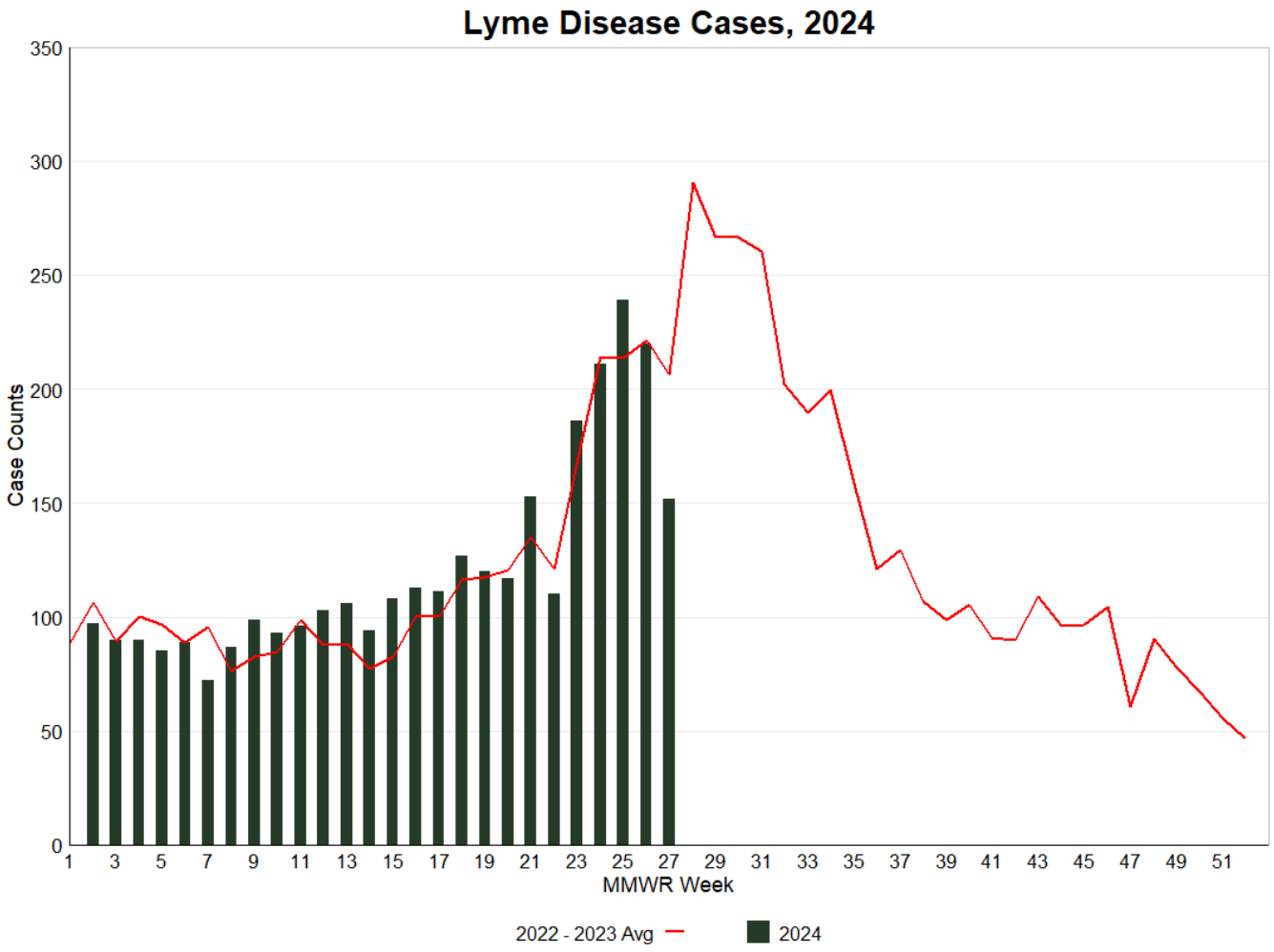




Tickborne Disease Activity

Lyme Disease

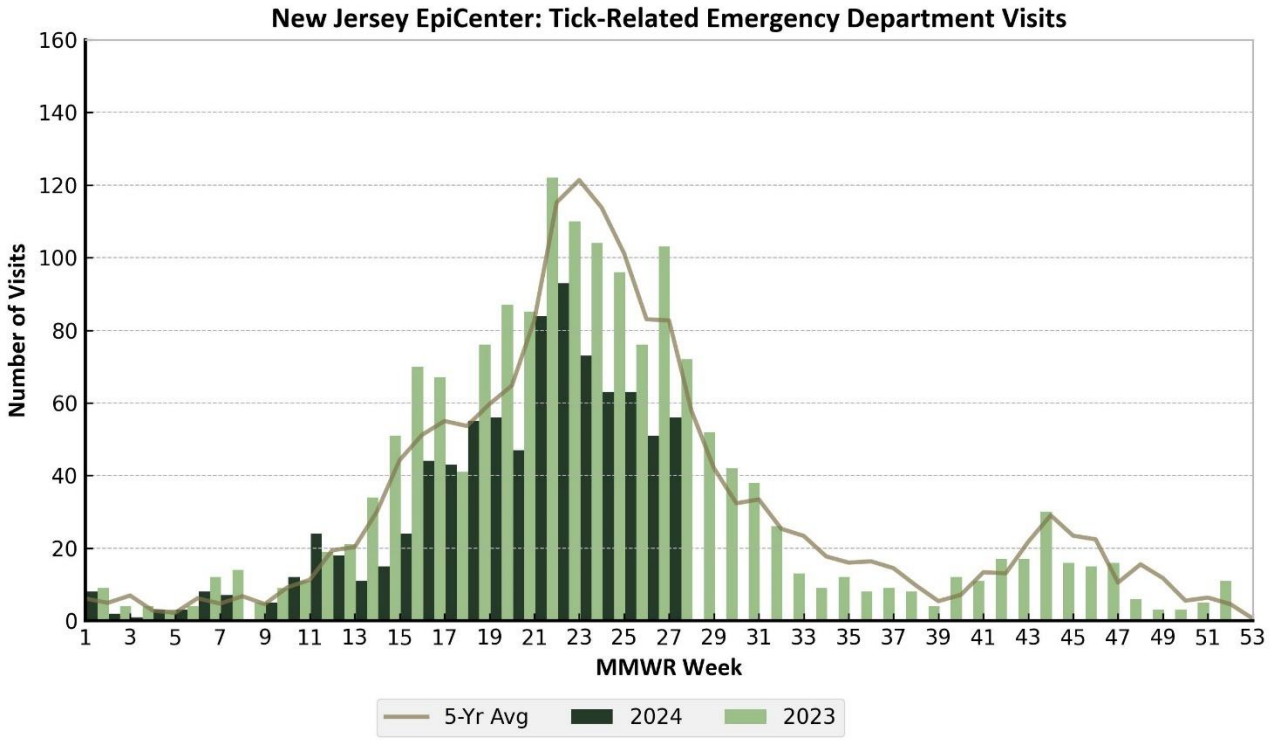
- There have been 3,259 cases of Lyme disease reported in New Jersey in 2024.
- The number of cases in week 27 decreased and is below the average number of cases reported this week.

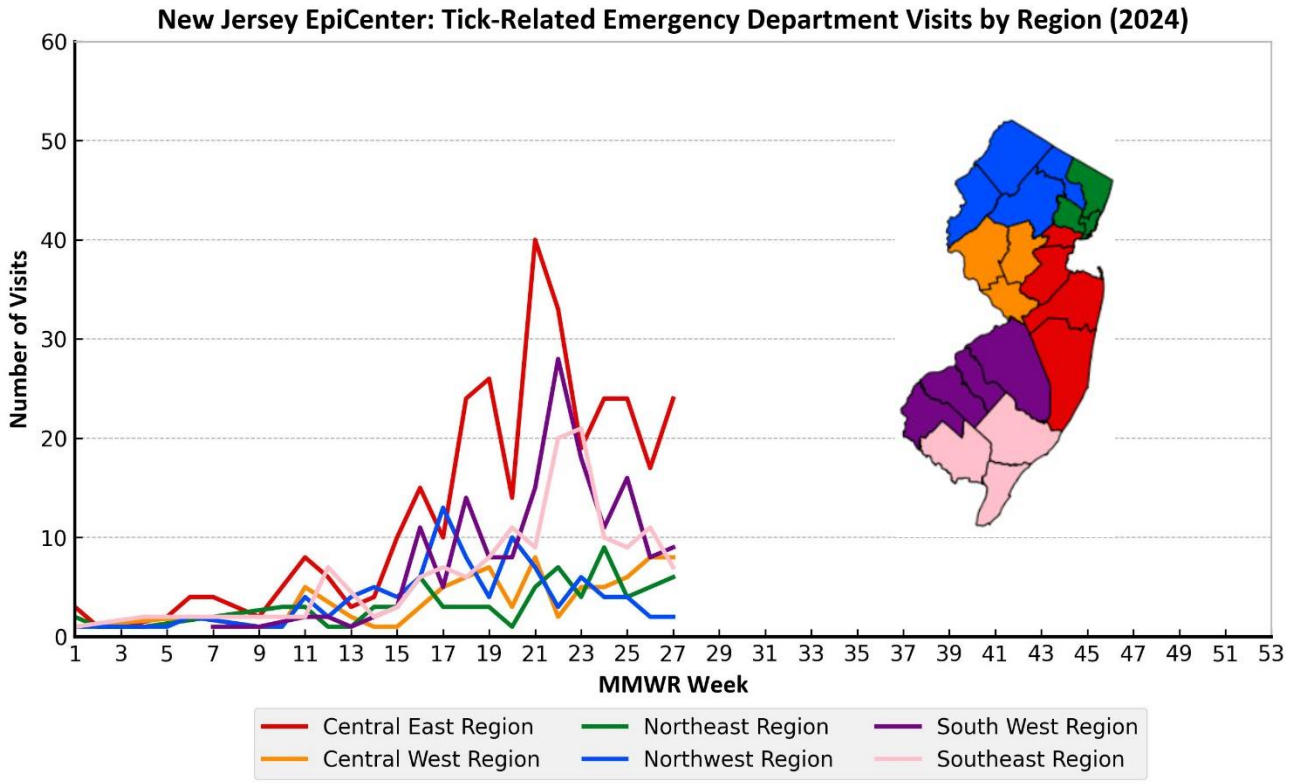


Tick-related Emergency Department Visits

New Jersey's syndromic surveillance system, known as 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 N.J. 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 tick-related ED visits increased but is still below the number of visits from this time last year and the 5-year average.





For more information

- NJDOH Communicable Disease Service: https://www.nj.gov/health/cd/topics/vectorborne.shtml
- New Jersey Vector-borne Disease Dashboard: https://dashboards.doh.nj.gov/views/public_dashboard/Intro
- New Jersey Arboviral Activity Maps: http://bit.ly/JerseySurv
- NJDEP Office of Mosquito Control Coordination: https://www.nj.gov/dep/mosquito/
- NJDA Division of Animal Health: https://www.nj.gov/agriculture/divisions/ah/