

**Report Highlight:**

- To date there has been one human case of West Nile virus (WNV) in Hunterdon County and two cases of Powassan in Sussex County.
- WNV has been detected in mosquito pools in 3 counties (Burlington, Ocean and Passaic).
- Jamestown Canyon (JCV) has been detected in mosquito pools in 3 Counties (Bergen, Burlington and Sussex).

## 1. Human Testing

New Jersey Administrative Code (N.J.A.C.) 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		
	2019 <sup>b</sup>	2018		2019 <sup>b</sup>	2018
Chikungunya	3	16	Anaplasmosis	34	118
Dengue	10	20	Babesiosis	38	249
Eastern equine encephalitis	-	-	<i>Borrelia miyamotoi</i>	6	8
Jamestown Canyon	-	-	Ehrlichiosis	37	94
Malaria	42	93	Lyme disease	1018	4000
West Nile	1	61	Powassan	2	1
Zika	4	10	Spotted fever group rickettsioses	50	147

<sup>a</sup> Data for 2019 reflect confirmed and probable cases that have been approved by NJDOH. This does not include cases under investigation. All 2019 numbers are preliminary and are subject to change. 2018 numbers represent total number of cases for the year.

<sup>b</sup> Cumulative through week 27 (week ending July 06, 2019).

## 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 2621 mosquito pools have been tested for WNV; 3 mosquito pools were positive for WNV. The first positive pool was detected in week 22 (Passaic county). In 2018 the first WNV positive mosquito pool was identified in week 23.
- The positive pools were detected in *Culex* spp, *Aedes cantator* and *Aedes triseriatus* species.

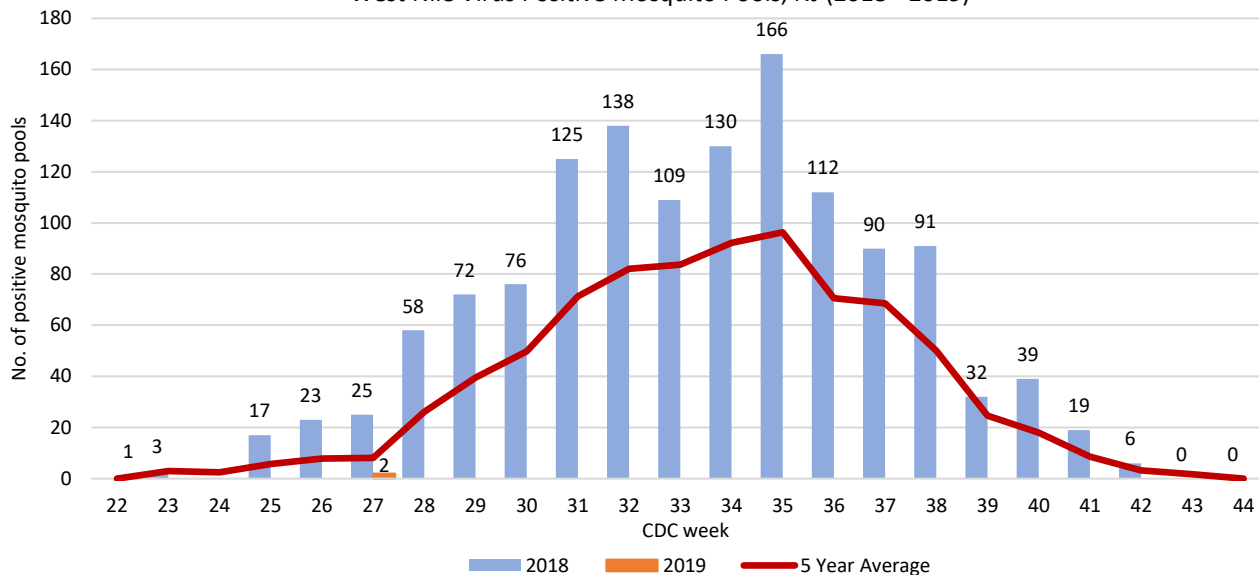
**WNV Positive Mosquito Pools**

County	Week 27		Cumulative Total (week 27)	
	2019*	2018	2019*	2018
Atlantic				2
Bergen		4		8
Burlington	1	1	1	5
Camden		2		6
Cape May				1
Cumberland				4
Essex				
Gloucester		2		6
Hudson		1		1
Hunterdon		2		4
Mercer		1		3
Middlesex		4		7
Monmouth		1		2
Morris				1
Ocean	1		1	4
Passaic			1	
Salem				1
Somerset		2		4
Sussex				
Union				
Warren		5		9
<b>Total</b>	<b>2</b>	<b>25</b>	<b>3</b>	<b>68</b>

\*Test results may be incomplete; Counties submit pools for testing on specific weekdays. Mosquito testing data reflects test results received from PHEL, CMBSL3 and US Army Public Health as of July 9, 2019

Week 27: July 1 -7, 2018; June 30-July 06, 2019

West Nile Virus Positive Mosquito Pools, NJ (2018 - 2019)



**Eastern equine encephalitis virus (EEE)**

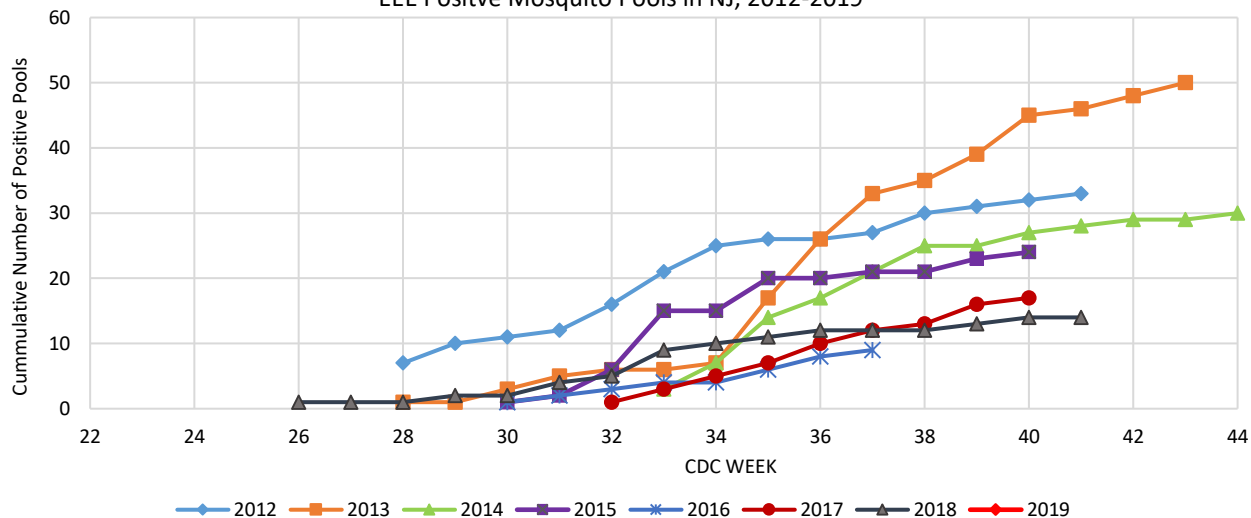
- A total of 2337 mosquito pools have been tested for EEE.
- No EEE positive mosquito pools have been identified in 2019. In 2018, the first EEE mosquito pool was reported in week 26.

EEE Positive Mosquito Pools

County	Week 27		Cumulative Total (week 27)	
	2019*	2018	2019*	2018
Atlantic				
Cape May				
Cumberland				
Hunterdon				
Mercer				
Middlesex				
Morris				
Ocean				
Passaic				
Salem				1
Somerset				
Warren				
<b>Total</b>	-		-	1

Week 27: July 1 -7, 2018; June 30-July 06, 2019

EEE Positive Mosquito Pools in NJ, 2012-2019



**Other viruses:**

Mosquito pools from all counties have been tested for other arboviruses. In 2019, PHEL and Cape May County BLS3 labs brought on new capacity to test for Jamestown Canyon virus (JCV) in mosquitoes.

**Cumulative 2019 Mosquito Pool Testing (Other Viruses<sup>a</sup>)**

County	SLE		JCV		LAC		CHIKV		DENV		ZIKV	
	Pools	Pos	Pools	Pos	Pools	Pos	Pools	Pos	Pools	Pos	Pools	Pos
Atlantic	123		123				16		16		16	
Bergen	77		77	1	4							
Burlington	83		83	1	6							
Camden	5		2									
Cape May	766		21		94		132				132	
Cumberland	42		42									
Essex	42		42		1							
Gloucester	101		99									
Hudson	41		41		8							
Hunterdon	66		66									
Mercer	114		114		9							
Middlesex	55		55		4		1		1		1	
Monmouth	124		124		5							
Morris	110		110									
Ocean	112		112									
Passaic	69		69		7	1						
Salem	114		112		11							
Somerset	67		67									
Sussex	73		73	1	6							
Union	41		41		5							
Warren	112		112									
<b>Total</b>	<b>2337</b>	<b>-</b>	<b>1585</b>	<b>3</b>	<b>160</b>	<b>1</b>	<b>149</b>		<b>17</b>	<b>-</b>	<b>149</b>	<b>-</b>

<sup>a</sup> 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 2019  
 Numbers in blue shaded columns represent positive pools in 2019

**La Crosse encephalitis virus (LAC):**

- A mosquito pool collected on May 31<sup>st</sup> (week 22) in Passaic County tested positive for La Crosse virus at PHEL. The positive pool was detected in *Aedes triseriatus* species.  
 In 2014, 2 mosquito pools collected from the Joint Base MDL (Burlington County) by the Department of the Airforce tested positive for LACV. The virus was detected in both *Ochlerotatus triseriatus* and *Aedes albopictus*.
- There have not been any human La Crosse virus cases reported in at least the past 20 years.

**Jamestown Canyon virus (JCV):**

- Three mosquito pools have tested positive for Jamestown Canyon virus at PHEL. The first pool was from Sussex County (week 23), second from Bergen County (week 25) and the third from Burlington County (week 27).
- The positive pools were detected in *Aedes abserratus*, *Aedes cantator* and *Anopheles crucians* species.
- NJ reported its first and only human case of Jamestown Canyon virus in 2015 in a Sussex County resident.

**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.

- No animals have tested positive for WNV or EEE in 2019.
- Routine avian testing has been discontinued but is available upon request at PHEL.

**WNV/EEE Positive Test Results**

	Week 27		Cum. Total (Year)	
	2019	2018	2019	2018
Equine (EEE)				
Equine (WNV)				
Avian (WNV)				
Other				

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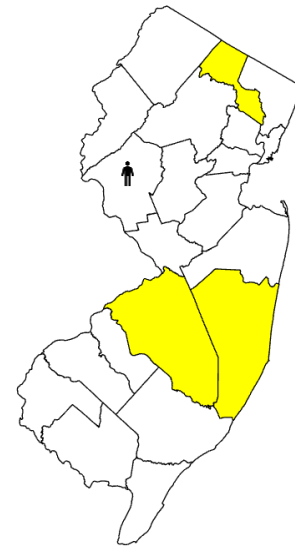
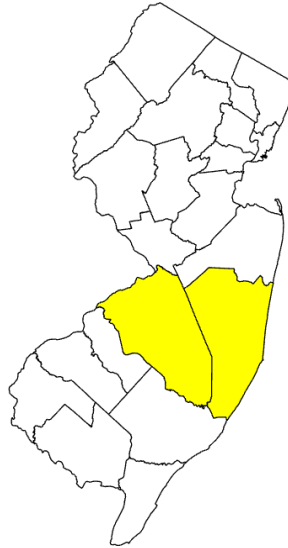
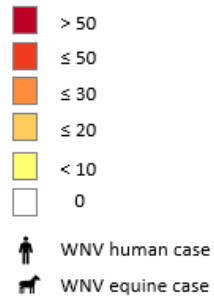
## 4. Surveillance Maps

### West Nile Virus (WNV)

Week 27 WNV Activity (2019)\*

Cumulative WNV Activity 2019

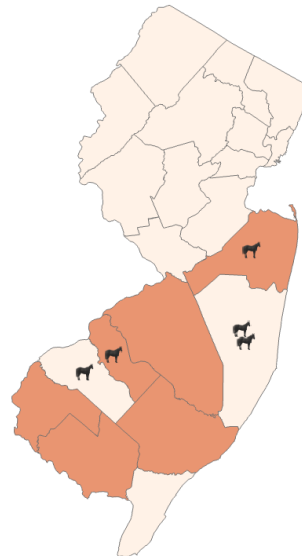
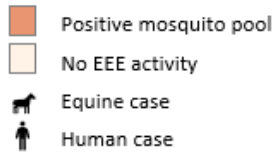
#### WNV Positive Pools



### Eastern equine encephalitis (EEE)

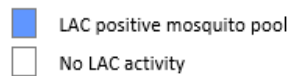
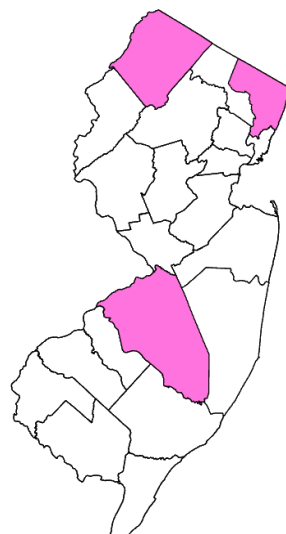
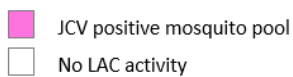
2018 EEE Activity

Cumulative EEE Activity 2019



Jamestown Canyon Virus Activity 2019

La Crosse Virus Activity 2019

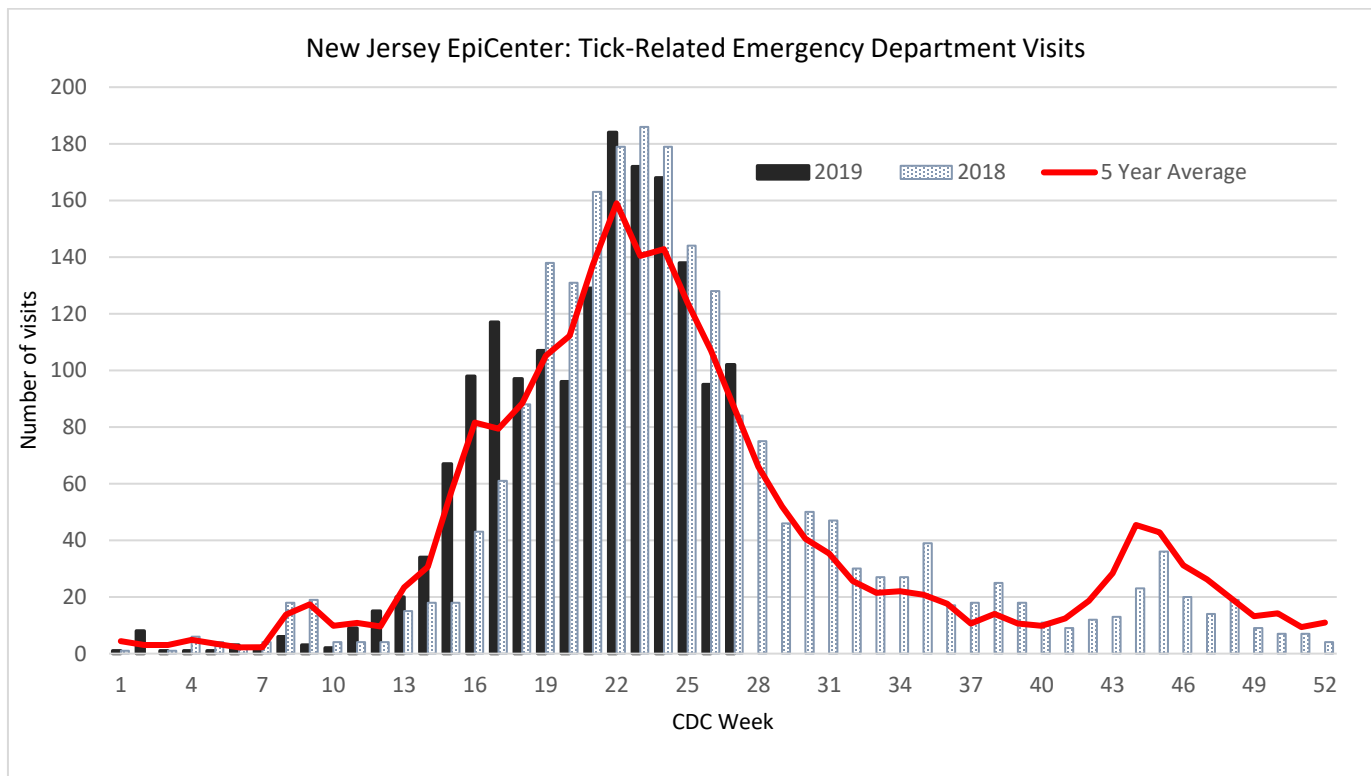


## 5. Syndromic Surveillance for Tick-related Emergency Department Visits

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 state wide 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.

As of week 27, the number of tick related ED visits was slightly above trends observed in past 5 years.



Data reflects ED visits downloaded from EpiCenter as of July 9, 2019

### For More Information

- NJDOH Communicable Disease Service: <http://nj.gov/health/cd/topics/vectorborne.shtml>
- 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/>