



# CT Vector-borne Disease Surveillance

6/26/2024

# Table of contents

1. Tick-borne disease surveillance
2. Tick Educational Materials
3. Mosquito-borne disease surveillance
4. Increased risk of dengue virus infections in the U.S.

# Tick-borne Disease Surveillance in CT

# Tick-borne Disease Surveillance in CT

<b>Blacklegged Tick</b> <i>(Ixodes scapularis)</i> 	<b>Lone Star Tick</b> <i>(Amblyomma americanum)</i> 	<b>American Dog Tick</b> <i>(Dermacentor variabilis)</i> 
Anaplasmosis	Ehrlichiosis	Rocky Mountain Spotted Fever
Babesiosis	Tularemia	Tularemia
<i>Borrelia miyamotoi</i> disease		
Lyme disease		
Powassan virus disease		

# Lyme Disease

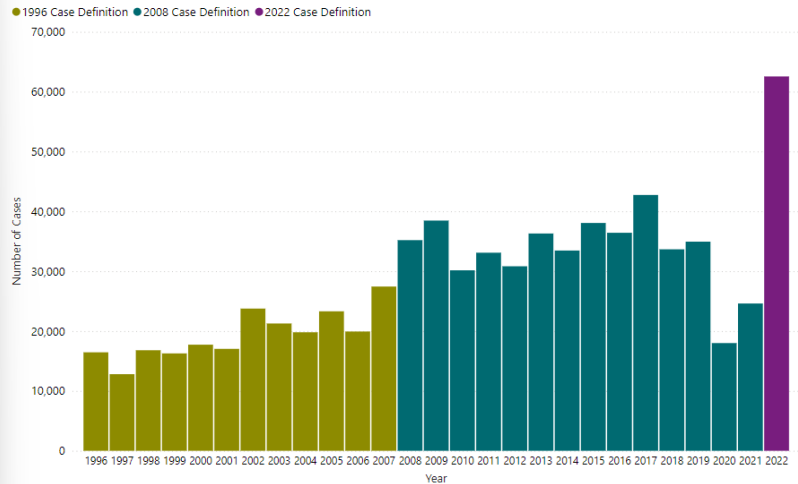
## Agent

*Borrelia burgdorferi*

## National Statistics

Over 63,000 cases of Lyme Disease in 2022

Lyme Disease – Total Reported Cases by Year, United States



\*These data were reported according to different Lyme disease case definitions. Only major case definition changes are denoted.



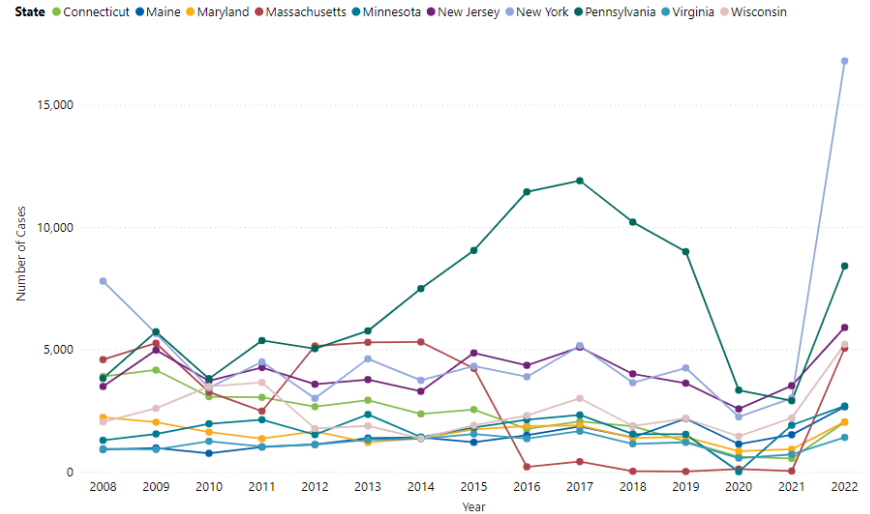
## Tick

Blacklegged tick

## CT Statistics

Over 2,000 cases of Lyme disease in 2022

Lyme Disease – Top 10 States for Number of Reported Cases by Year, United States



\*During the time frame reflected, Massachusetts modified surveillance practice and reported fewer Lyme disease cases to CDC.

# Babesiosis

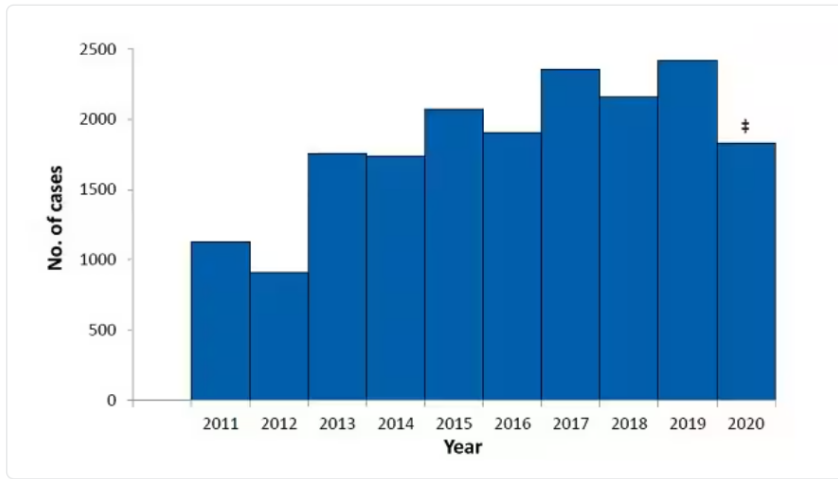
## Agent

*Babesia microti*

## National Statistics

Over 1,800 cases of Babesiosis in 2020

Number\* of reported cases of babesiosis, by year, 2011–2020†

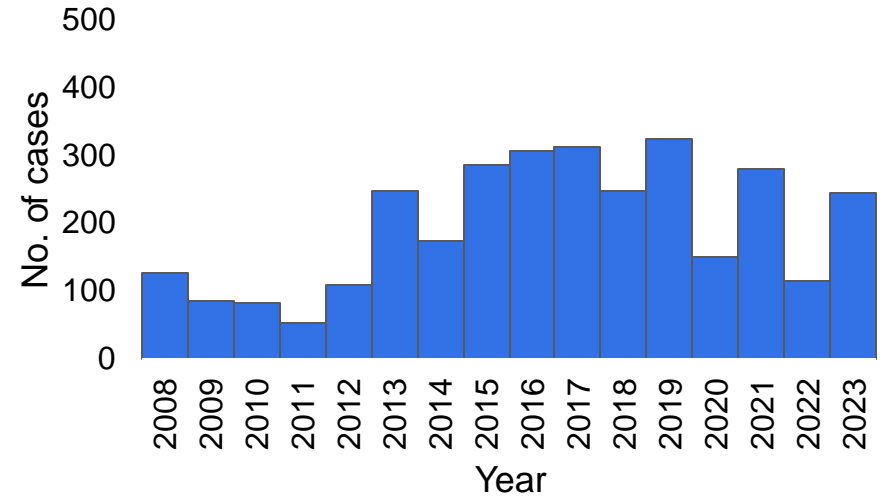


## Tick

Blacklegged tick

## CT Statistics

Over 200 cases of Babesiosis in 2023\*



\*Cases for 2023 are preliminary

# Anaplasmosis

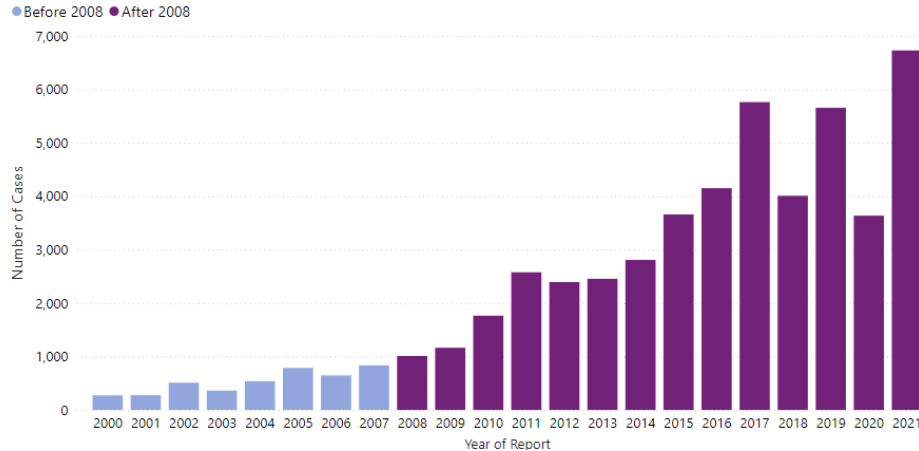
## Agent

*Anaplasma phagocytophilum*

## National Statistics

Over 6,700 cases of Anaplasmosis in 2021

Number of reported cases of anaplasmosis –United States, 2000–2021

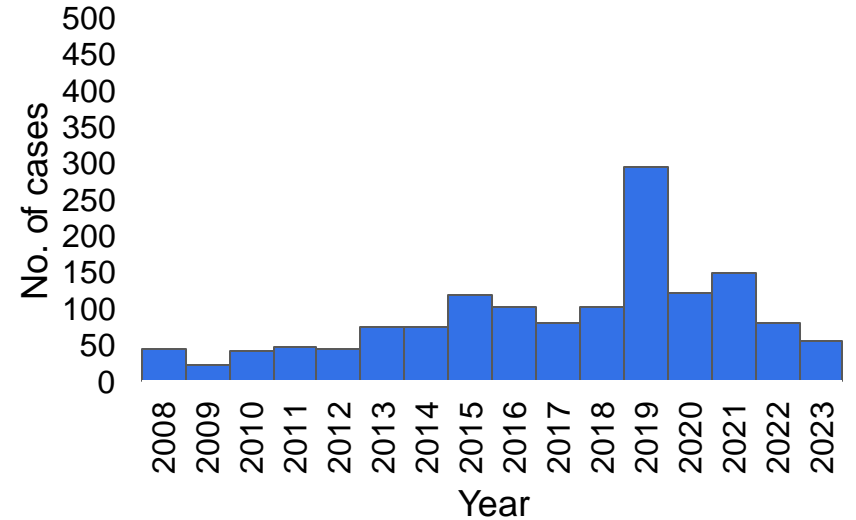


## Tick

Blacklegged tick

## CT Statistics

Over 50 cases of Anaplasmosis in 2023\*



\*Cases for 2023 are preliminary

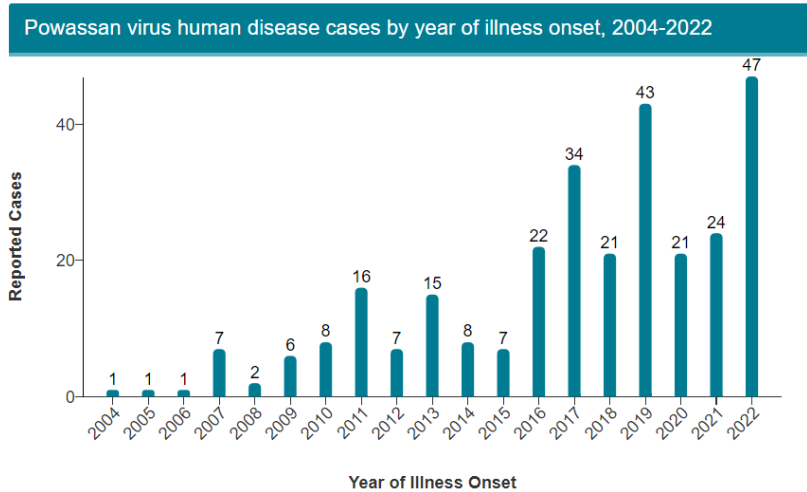
# Powassan virus disease

## Agent

Powassan virus

## National Statistics

47 cases of Powassan virus in 2022

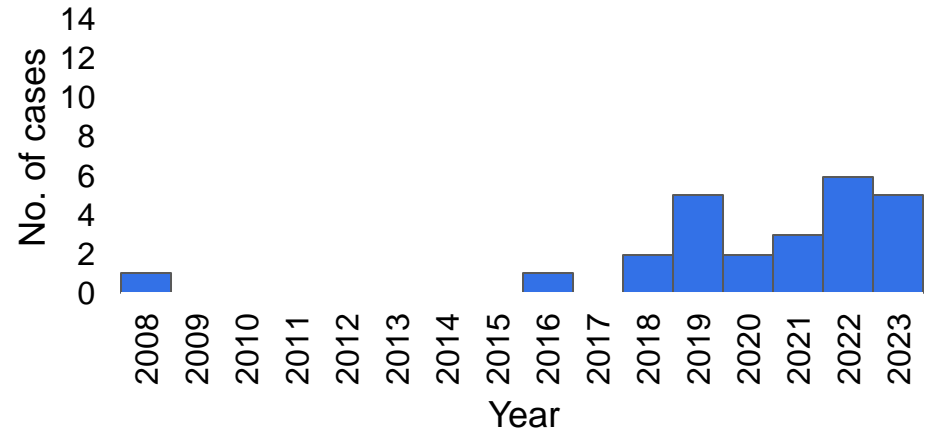


## Tick

Blacklegged tick

## CT Statistics

5 cases of Powassan virus in 2023\*



\*Cases for 2023 are preliminary



# Ehrlichiosis

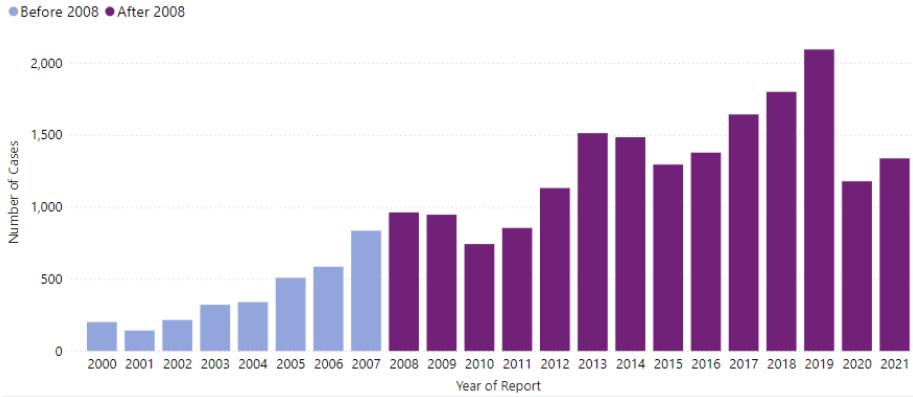
## Agent

*Ehrlichia chaffeensis*

## National Statistics

Over 1,300 cases of Ehrlichiosis in 2021

Number of reported cases of *Ehrlichia chaffeensis* ehrlichiosis –United States, 2000–2021



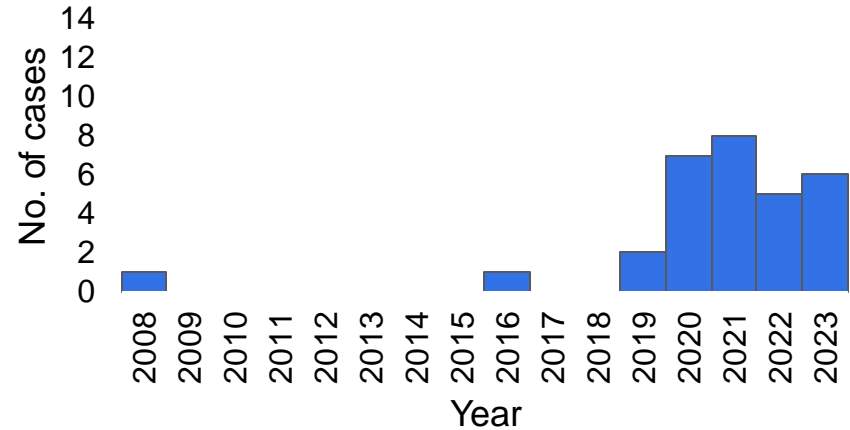
## Tick

Lone star tick



## CT Statistics

6 cases of Ehrlichiosis in 2023\*



\*Cases for 2023 are preliminary

# Rocky Mountain Spotted Fever

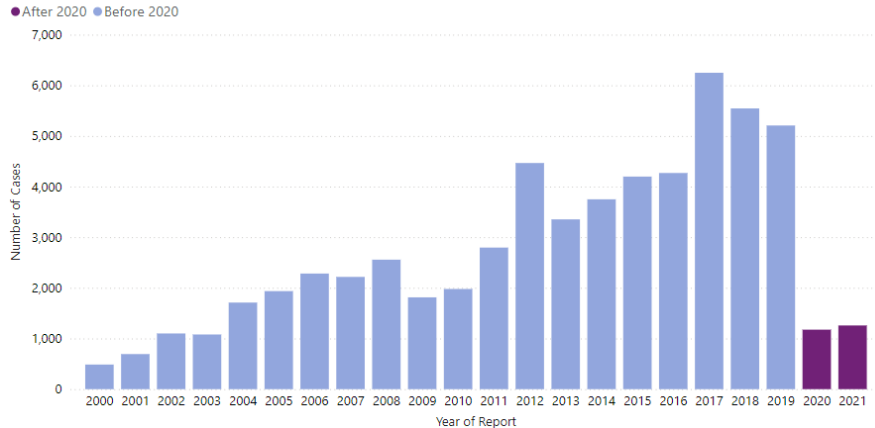
## Agent

*Rickettsia rickettsii*

## National Statistics

47 cases of Rocky Mountain Spotted Fever in 2021

Number of reported cases of spotted fever rickettsiosis –United States, 2000–2021



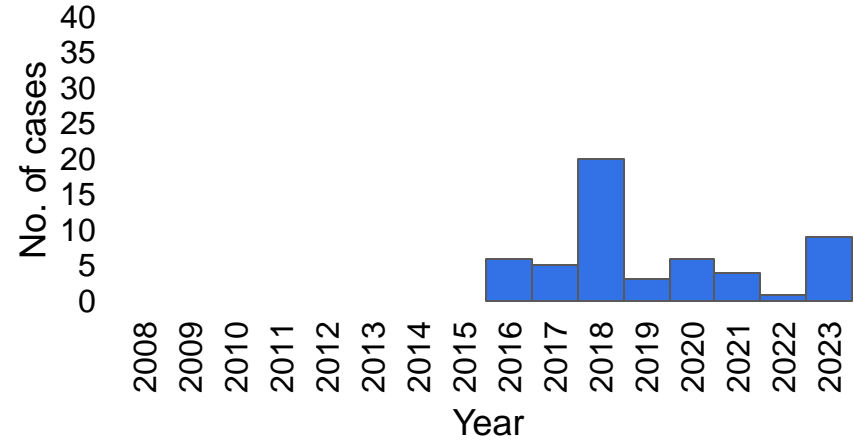
## Tick

American Dog tick



## CT Statistics

9 cases of Rocky Mountain Spotted Fever in 2023\*



\*Cases for 2023 are preliminary

# Tick Educational Materials

**Lyme disease rashes can be difficult to see**

Faint colors and borders    Crusted centers    More than one rash

Different shapes and colors    Appearing anywhere on the body    Bull's-eye appearance

Call your health clinic if you have a similar rash. Other symptoms can include:

Fever    Headache    Body aches    Fatigue

**PREVENT TICK BITES!**

- WEAR REPELLENT**
- CHECK FOR TICKS DAILY**
- SHOWER SOON AFTER BEING OUTDOORS**
- VISIT YOUR HEALTH CLINIC IF YOU GET A FEVER OR RASH**

Check these areas of your body and your child's body for ticks after being outdoors in grassy, brushy, or wooded areas.

- In and around the hair
- In and around the ears
- Under the arms
- Around the waist
- Back of the knees
- Between the legs
- Inside belly button

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- In and around the hair
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- Between the legs
- Inside belly button

- 1
- 2
- 3
- 4

Remove ticks using tweezers and then wash the area with soap and water. Do not use chemicals or matches.

**Ticks are tiny!**  
Check your body, clothes, and gear after returning indoors.

**Ticks are tiny!**  
Check your body, clothes, and gear after returning indoors.

# Mosquito- borne disease surveillance in CT

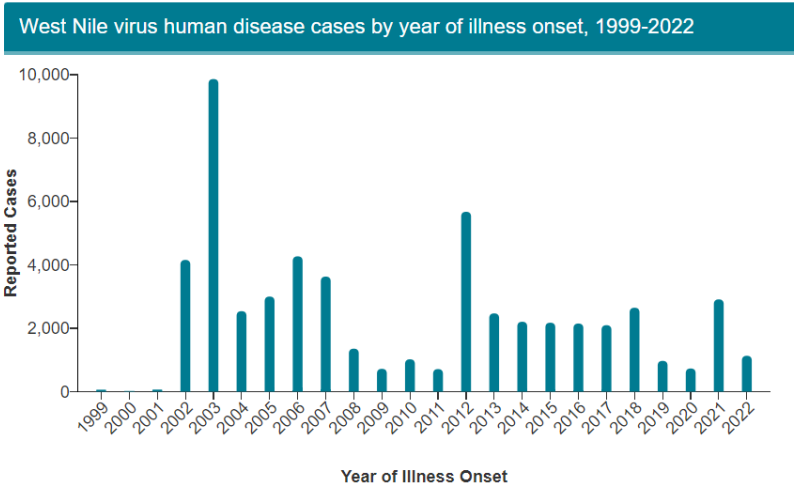
# West Nile virus disease

## Agent

West Nile virus

## National Statistics

Over 1,100 cases of West Nile virus disease in 2022

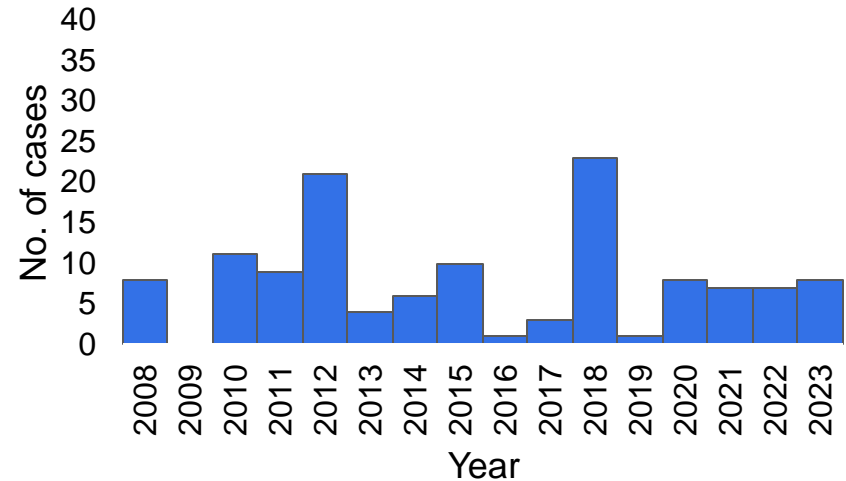


## Mosquito

*Culex* species

## CT Statistics

8 cases of West Nile virus disease in 2023\*



\*Cases for 2023 are preliminary

# Eastern Equine Encephalitis (EEE) virus

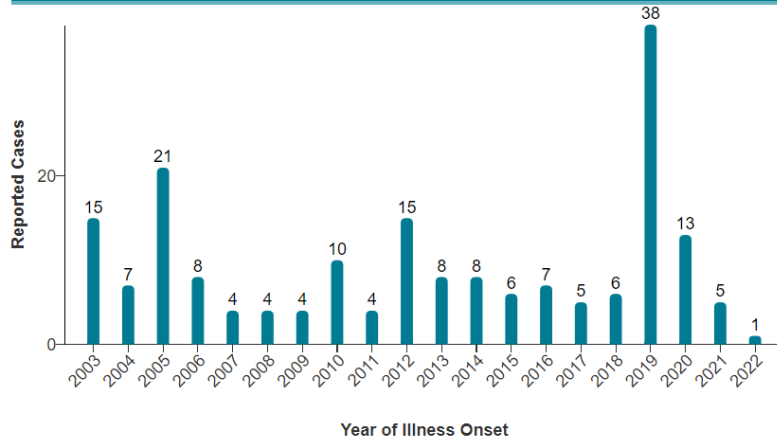
## Agent

Eastern equine encephalitis virus

## National Statistics

1 case of EEE virus disease in 2022

Eastern equine encephalitis virus human disease cases by year of illness onset, 2003-2022

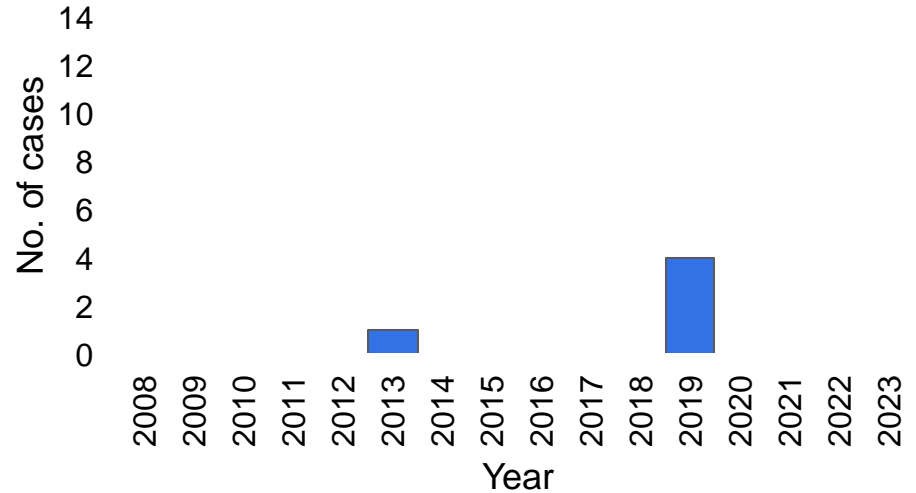


## Mosquito

*Culiseta melanura*

## CT Statistics

No cases of EEE virus disease in 2023\*



\*Cases for 2023 are preliminary

# Local Health Department (LHD) Engagement



Notify LHD about receipt of positive laboratory result



CT DPH performs case investigation and follow-up



Regional calls with LHD(s) and other state agencies for a coordinated response due to an increase in positive reports of WNV and/or EEE in animal or vector populations



CT DPH may issue a press release



LHD may issue local press release or address local media inquiries



Continue to recommend personal protective measures

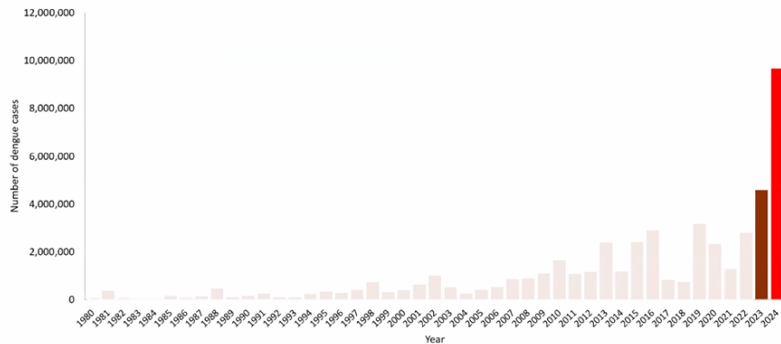
# Dengue



- Dengue is a mosquito-borne viral disease that is caused by any of the four related viruses: dengue virus 1, 2, 3, and 4
- 1 in 4 people infected with dengue will get sick and 1 in 20 people will develop severe dengue
- Dengue viruses are spread to people through the bite of infected *Aedes* mosquitoes
- In 2023, there were >6 million cases of dengue reported worldwide – 92 countries/territories and 23 countries reporting outbreaks
- A large increase of dengue cases are occurring in the Americas

## Dengue cases in the Americas, 1980–2024\*

More than **9.6 million** cases reported as of June 20 in 2024



\*Data from PAHO PLISA Health Information Platform for the Americas

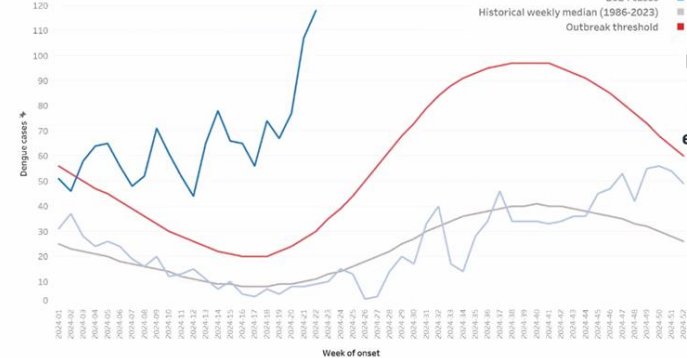
## In Puerto Rico, there are concerning signs of a potential large outbreak with many weeks above the threshold.

Dengue cases (PCR or IgM positive) compared to the historical weekly median, and outbreak threshold, *Puerto Rico*, 2024.

Last updated: June 19, 2024. Data are preliminary and subject to change.

Case counts from the most recent week (Week 22) are still preliminary.

N=1,408 since January 1



DENV infections in Puerto Rico have been above the epidemic threshold for 20 weeks.



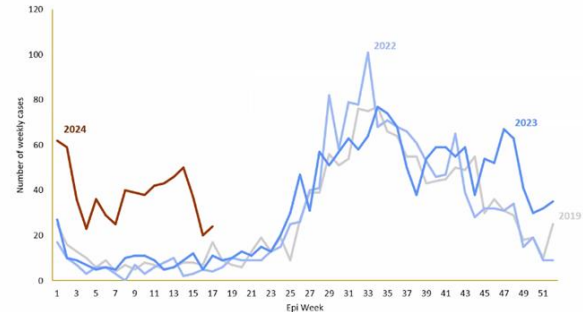
## Dengue in the U.S.

- Dengue vectors (*Ae. Aegypti* and *Ae. Albopictus*) are present across much of the U.S.
- Most dengue cases reported in the U.S occur in travelers infected in areas with risk of dengue
- Locally acquired dengue cases are sporadic and historically limited to outbreaks in Florida, Hawaii, and Texas. Recently, Arizona and California have reported confirmed local DENV transmission.
- Most local transmission of dengue occurs in U.S. territories in areas where dengue is common: American Samoa, Puerto Rico, and the U.S. Virgin Islands, and the freely associated states, including the Federated States of Micronesia, the Republic of Marshall Islands, and the Republic of Palau.

### What may we expect in 2024?

- Large outbreak in Puerto Rico
- Possible outbreaks in other U.S. territories and affiliated states
- Increased risk for dengue among travelers in the U.S.
- Increased risk for locally acquired cases in areas with competent mosquito vectors

**Travel associated dengue case reports are higher in 2024 compared to the same period during other years.**



\*Data from: <https://www.cdc.gov/dengue/data-research/facts-stats/>. Accessed 6/20/2024. Cases for 2023 and 2024 are preliminary.

# Mosquito Bite Prevention

**Prevent mosquito bites** during travel to an area with risk of dengue and for 3 weeks upon return to the U.S.

## Areas with Risk of Dengue:

<https://www.cdc.gov/dengue/areas-with-risk/index.html>

## How can we prepare for increasing dengue cases?

- **Encourage** the public to prevent mosquito bites
  - Use EPA-registered insect repellents:
    - DEET, picaridin, IR3535, oil of lemon eucalyptus, para-menthane-diol, 2-undecanone
  - Wear long-sleeved shirts and long pants
  - Take steps to control mosquitoes indoors and outdoors.
    - Screens
    - Air conditioning, if available
    - Empty and clean water-holding items



More information available at:  
[cdc.gov/dengue/prevention](https://www.cdc.gov/dengue/prevention)

Source: [https://www.cdc.gov/mosquitoes/pdfs/MosquitoBitePreventionUS\\_508.pdf](https://www.cdc.gov/mosquitoes/pdfs/MosquitoBitePreventionUS_508.pdf)

# DPH Vector-Borne Disease Program

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