Pioneer Valley MCD Weekly Report

EPI Week 38 **Week Ending: September 21, 2024**

Surveillance Summary

EPI Week 38 Target Species Surveillance Summary					Cumulative Totals: EPI Weeks 24-38			
Species	# Collected	Pools	WNV+	EEEV+	Cumulative Specimens	Cumulative Pools	Cumulative WNV+	Cumulative EEEV+
Cx. *pipiens/restuans*	10	2	0	0	1345	60	1	0
Cs. *melanura*	3	2	0	0	159	31	0	0
Cq. *perturbans*	6	1	0	0	16320	189	1	0
Oc. *canadensis*	0	0	0	0	577	20	0	0
Oc. *japonicus*	26	3	0	0	910	48	0	0
Cx. *salinarius*	3	1	0	0	1073	41	4	0
Ae. *albopictus*	0	0	0	0	116	8	0	0
Ps. *ferox*	10	1	0	0	391	12	0	0
An. *quadrimaculatus*	4	0	0	0	686	7	0	0
Ae. *vexans*	34	7	0	0	419	17	0	0
Cx. *erraticus*	0	0	0	0	456	9	0	0
An. *punctipennis*	5	0	0	0	1130	39	0	0
Ae. *cinereus*	0	0	0	0	104	3	0	0
Oc. *triseriatus*	22	0	0	0	316	1	0	0
Oc. *trivittatus*	19	0	0	0	877	16	0	0
Totals	142	17	0	0	24879	518	6	0

Positive Mosquito Samples in the Pioneer Valley Region

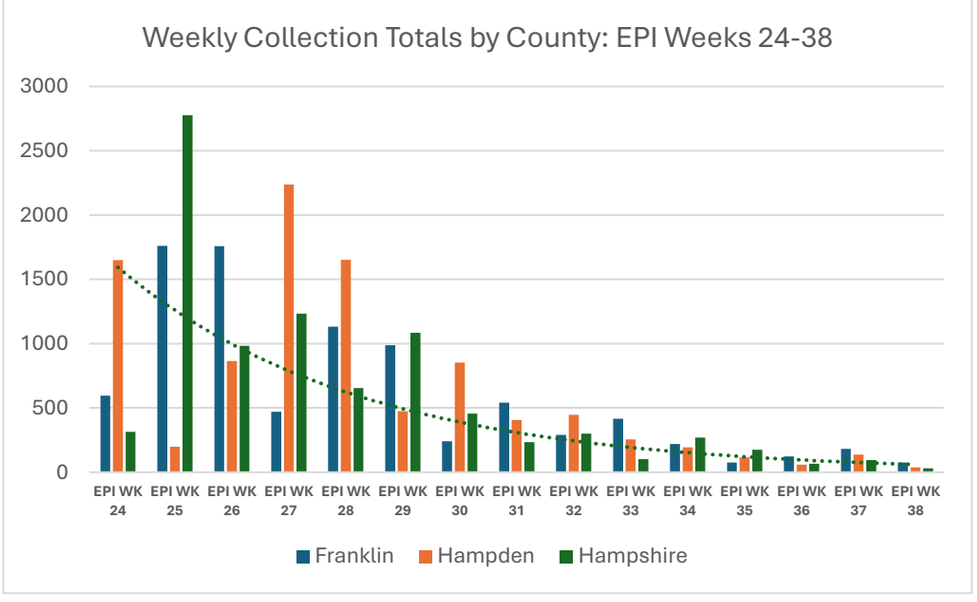
- There were no additional arbovirus detections during EPI week 38.

Most Abundant Species in Pioneer Valley

- The most abundant species collected during EPI week 38 were Ae. *vexans*, with a total of 34 specimens. Ae. *vexans*, are a competent bridge vector for both EEE and WNV. Additionally, Ae. *vexans* are a vector for Diorofilaria *immitis* (dog heartworm).

EPI WK 38 Summary by County

- **Franklin County**
  - EPI WK 38 Pools Tested: 7
  - Positive Samples: 0
  - Most Abundant Species: Oc. *japonicus* (24)
  - Total Mosquitoes Collected: 75
- **Hampden County**
  - EPI WK 38 Pools Tested: 7
  - Positive Samples: 0
  - Most Abundant Species: Ae. *vexans* (12)
  - Total Mosquitoes Collected: 38
- **Hampshire County**
  - EPI WK 38 Pools Tested: 3
  - Positive Samples: 0
  - Most Abundant Species: AE. *vexans* (9)
  - Total Mosquitoes Collected: 31



- Total Mosquitoes Collected (All Counties): 144
- Total Pools Submitted for Testing (All Counties): 17

Weather Summary

- Despite the relatively warmer temperatures experienced during EPI week 38, mosquito collections were down 65% from the previous week, totaling 144.
- Due to the phenology (seasonal abundance) of specific species, and colder nighttime temperatures, it is expected that mosquito collection totals will remain low. Mosquito activity will continue until the first hard frost (28°F for at least 2 hours).

Weekly Changes in Weather

Station	Name	EPI Week	PRCP Total (in.)	TMAX AVG (°F)	TMIN AVG (°F)
USC00190120	AMHERST, MA US	24	0.57	75.43	54.14
USC00190120	AMHERST, MA US	25	1.79 (+214%)	84.71 (+12%)	61.14 (+13%)
USC00190120	AMHERST, MA US	26	1.64 (-8%)	81.86 (-3%)	59.14 (-3%)
USC00190120	AMHERST, MA US	27	2.08 (+28%)	81.71 (no change)	58.29 (+1%)
USC00190120	AMHERST, MA US	28	1.5 (-28%)	89 (+9%)	69.9 (+20%)
USC00190120	AMHERST, MA US	29	1.89 (+26%)	87.14 (-2%)	64.43 (-8%)
USC00190120	AMHERST, MA US	30	0.64 (-66%)	81.71 (-6%)	62 (-4%)
USC00190120	AMHERST, MA US	31	1.22 (+91%)	84.43 (+3%)	64.57 (+4%)
USC00190120	AMHERST, MA US	32	2.8 (+130%)	80.57(-5%)	64.71 (0%)
USC00190120	AMHERST, MA US	33	0.15 (-95%)	80.86 (no change%)	57 (-25%)
USC00190120	AMHERST, MA US	34	1.46 (+873)	74.28 (-8%)	55.28 (-3%)
USC00190120	AMHERST, MA US	35	0.12 (-92%)	80.86 (+9%)	57 (+3%)
USC00190120	AMHERST, MA US	36	0.00	77.43 (-4%)	52.14 (-9%)
USC00190120	AMHERST, MA US	37	0.35	75 (-3%)	46.29 (-11%)
Amherst College	AMHERST, MA US	38	0.01 (-97%)	82 (+9%)	58 (+25%)

Statewide Cumulative Arbovirus Positives as of 9/27/24

Virus	Positive Mosquito Samples	Animal Cases	Human Cases
EEE	96	3	4
WNV	332	0	13

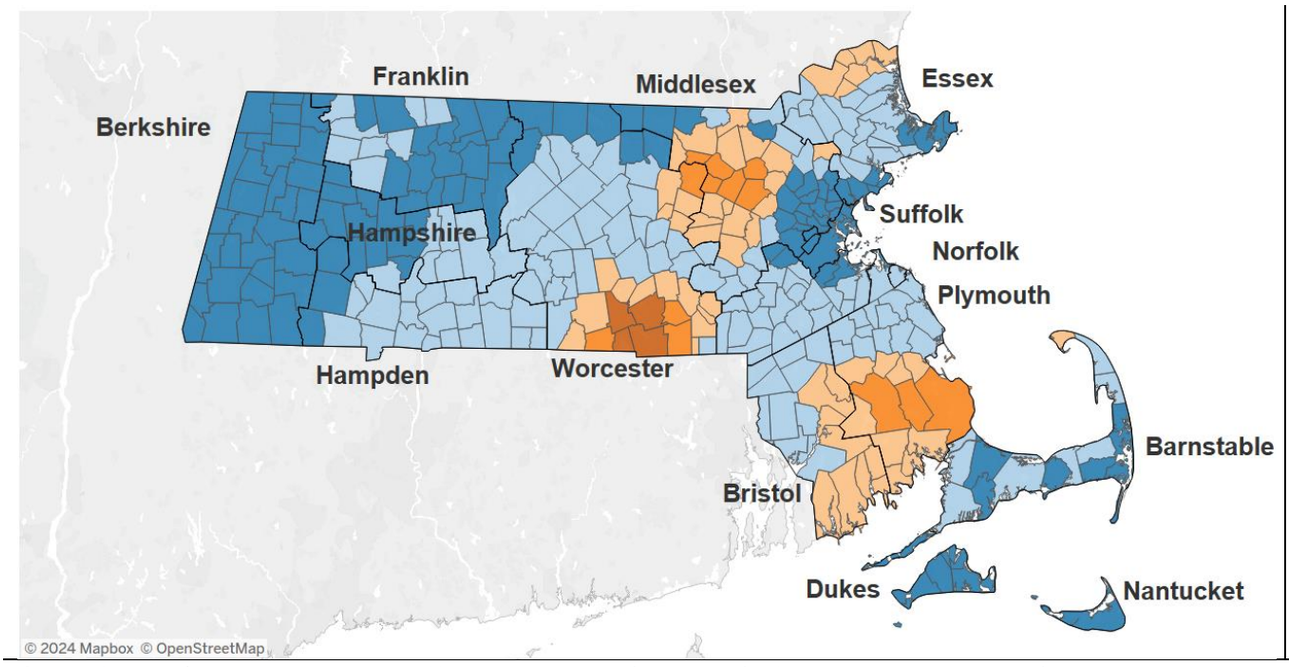
EEE Human Cases

Onset of Symptoms	County	Age Range	Gender	Clinical Presentation
August 6, 2024	Worcester	80-89	Male	Encephalitis
August 12, 2024	Middlesex	50-59	Female	Meningoencephalitis
August 17, 2024	Plymouth	30-39	Female	Meningoencephalitis
August 22, 2024	Middlesex	70-79	Male	Meningoencephalitis

WNV Human Cases

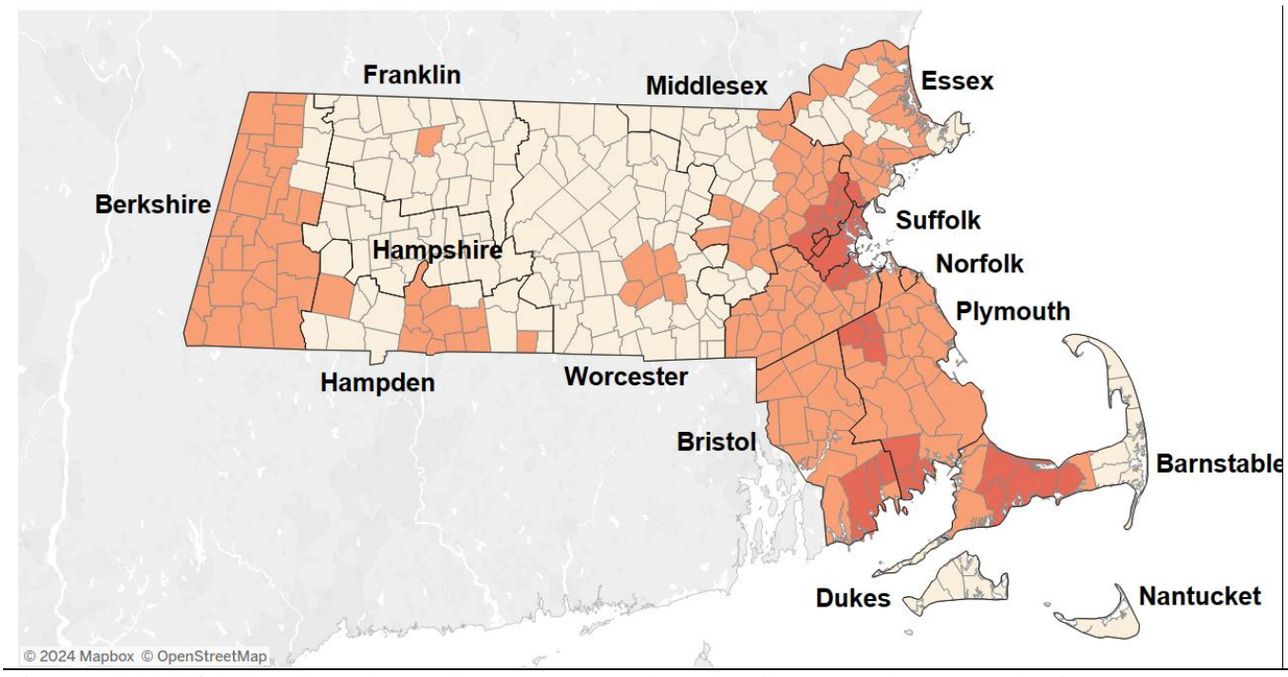
Onset of Symptoms	County	Age Range	Gender	Clinical Presentation
July 22, 2024	Hampden	40-49	Male	Meningitis
July 26, 2024	Middlesex	70-79	Male	Encephalitis
August 7, 2024	Bristol	60-69	Female	Fever
August 13, 2024	Suffolk	60-69	Male	Meningitis
August 16, 2024	Middlesex	70-79	Male	Encephalitis
August 16, 2024	Suffolk	50-59	Male	Meningoencephalitis
August 17, 2024	Norfolk	60-69	Male	Meningitis
August 17, 2024	Suffolk	60-69	Male	Encephalitis
August 18, 2024	Essex	50-59	Male	Neuroinvasive
August 22, 2024	Middlesex	80-89	Male	Meningoencephalitis
August 24, 2024	Barnstable	60-69	Male	Encephalitis
August 26, 2024	Middlesex	60-69	Male	Encephalitis
September 2, 2024	Essex	40-49	Male	Meningitis

EEE Impacted Areas as of 9/27/24



Current EEE Risk Map from: https://www.mass.gov/info-details/massachusetts-arbovirus-update

WNV Impacted Areas as of 9/27/24



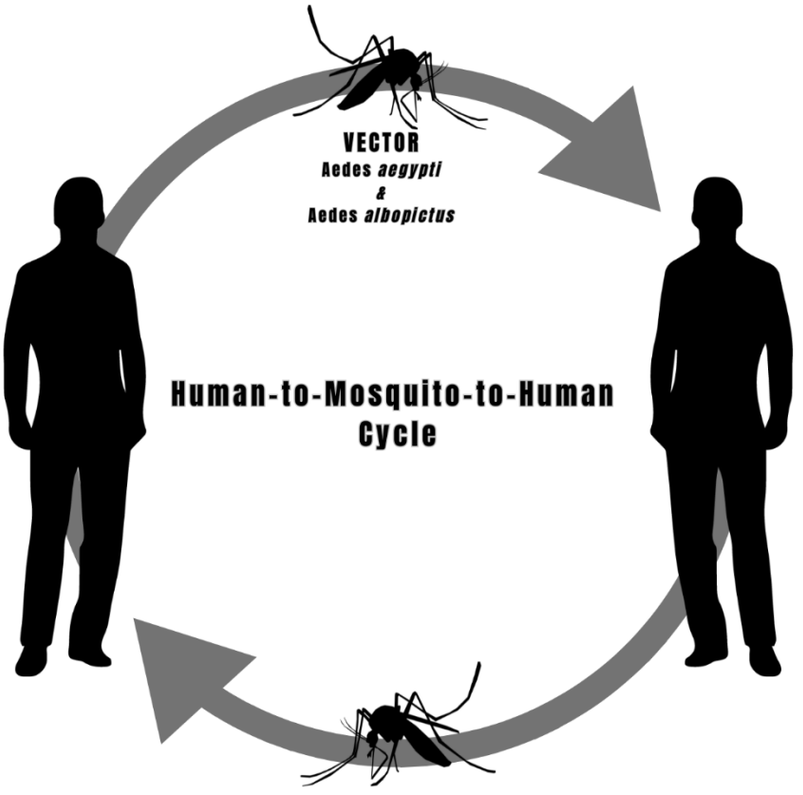
Current WNV Risk Map From: https://www.mass.gov/info-details/massachusetts-arbovirus-update

Dengue Fever in Massachusetts (acquired through travel)

- According to the CDC, there have been a total of 108 human cases of dengue in Massachusetts, as of 9/27/24. There have been no local transmissions of dengue in Massachusetts.
- Dengue transmission typically occurs in the following regions: the Caribbean, Central America, South America, Southeast Asia, and the Pacific Islands.
- Dengue is spread through a human-to-mosquito-to-human cycle.
- Onset is up to two weeks with illness lasting 2-7 days. Transmission to mosquitoes is possible for up to 12 days.
- Symptoms include:
    - Fever
    - Nausea and vomiting
    - Rash
    - Aches and pains
    - Joint and muscle pain
    - Pressure and pain around the eye sockets
    - Headache

PIONEEER VALLEY MOSQUITO CONTROL DISTRICT

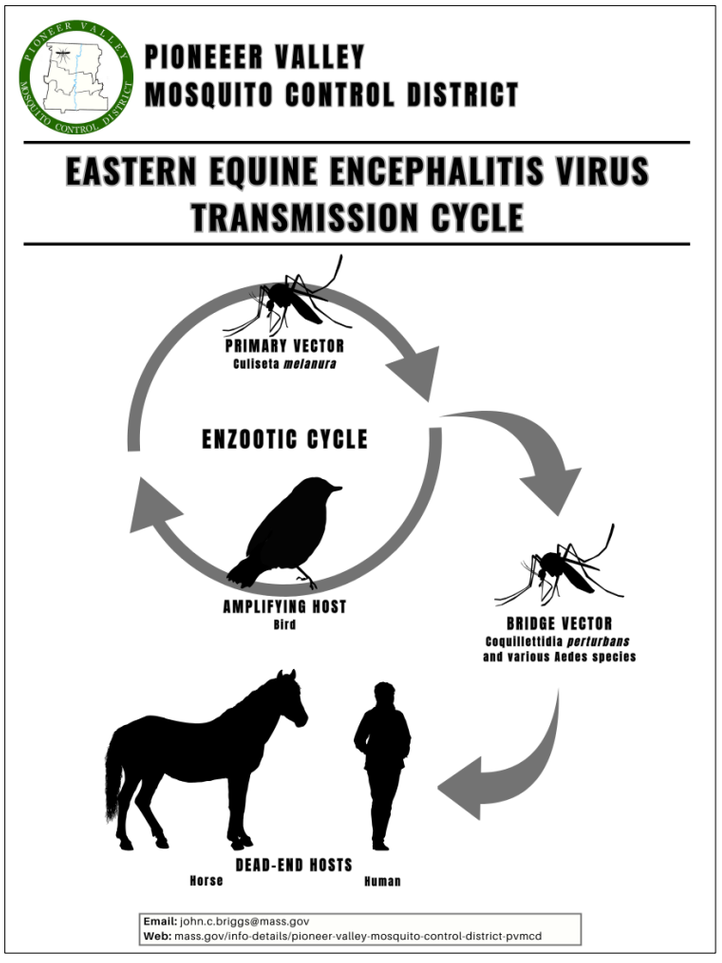
DENGUE VIRUS TRANSMISSION CYCLE

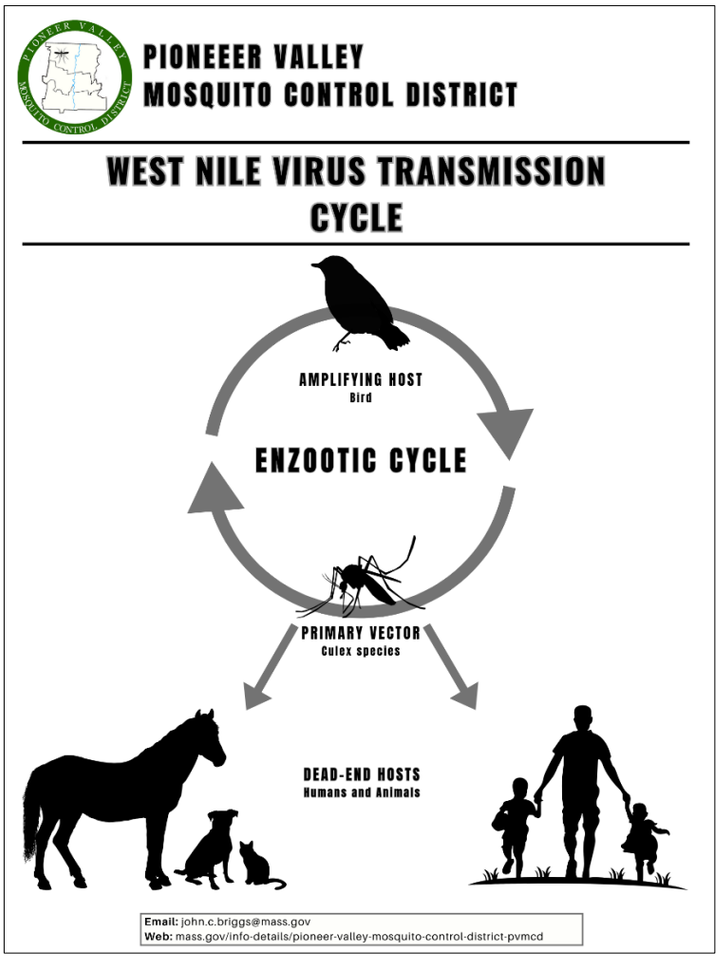


Email: john.c.briggs@mass.gov
Web: mass.gov/info-details/pioneer-valley-mosquito-control-district-pvmcd

WNV and EEE Symptoms Chart

Disease	Onset	Symptoms	
WNV	**2 to 14 Days**	**Febrile Illness** • Fever • Muscle aches • Joint Pain • Fatigue • Rash	**Neuroinvasive Disease** • Stiff neck • Muscle Tremors • Seizures • Changes in vision • Weakness or paralysis
EEE	**4 to 10 Days**	**Febrile Illness** • Fever • Muscle aches • Joint pain • Chills	**Neuroinvasive Disease** • Fever • Headache • Seizures • Behavioral changes • Vomiting • Diarrhea • Coma





PE Poster Printouts and Helpful Links

- Mosquito Bite Prevention Poster
- EEE Transmission Cycle Poster
- WNV Transmission Cycle Poster
- Dengue Virus Transmission Cycle Poster
- CDC Dengue Fever Information
- DPH Mosquito PE Materials: https://www.mass.gov/lists/mosquito-borne-disease-educational-materials
- CDC Press Kit: https://www.cdc.gov/mosquitoes/communication-resources/press-kit-mosquitoes.html
- DPH Tick PE Materials: https://www.mass.gov/info-details/tick-borne-educational-materials

Recommended Public Messaging

- Use EPA approved bug-repellent
- Cover skin/wear long sleeves and pants
- Avoid outdoor activities during peak mosquito times (between dusk and dawn)
- Repair window screens
- Containers in yards with standing water should be emptied to reduce mosquito breeding

DPH Arbovirus Toolkit: https://www.mass.gov/lists/arbovirus-information-for-local-boards-of-health#toolkit-

DPH Arbovirus Phased Response Plan: https://www.mass.gov/doc/2024-arbovirus-surveillance-and-response-plan/download

Questions/Comments: Please email John Briggs, the District Director, at john.c.briggs@mass.gov.

For questions about the most recent spraying events in response to EEE:

Massachusetts Department of Public Health: Mosquito Control and Spraying: Frequently Asked Questions About Spraying for EEE

2024 Mosquito Spray Map

For questions about aerial spraying, contact MDAR Crop and Pest Services at mosquitoprogram@mass.gov.

PIONEEER VALLEY MOSQUITO CONTROL DISTRICT

FIGHT THE BITE

AND HELP PREVENT THE SPREAD OF MOSQUITO BORNE DISEASES

USE REPELLENT

Be sure to apply EPA approved insect repellents containing plant based eucalyptus or DEET when outdoors.

AVOID DUSK AND DAWN

Most mosquito species are very active at dusk and dawn. Avoid engaging in outdoor activities during these times whenever possible.

WEAR PROPER CLOTHING

Wearing long-sleeves and pants will significantly help reduce mosquito bites.

PREVENT ARTIFICIAL HABITAT

Buckets, plant pots, kiddie pools, tire swings, and anything that holds water should be emptied to prevent mosquito habitat.

FIX DOORS AND WINDOWS

Screens with holes should be repaired and be sure that all doors and windows are working properly to keep the mosquitoes out.

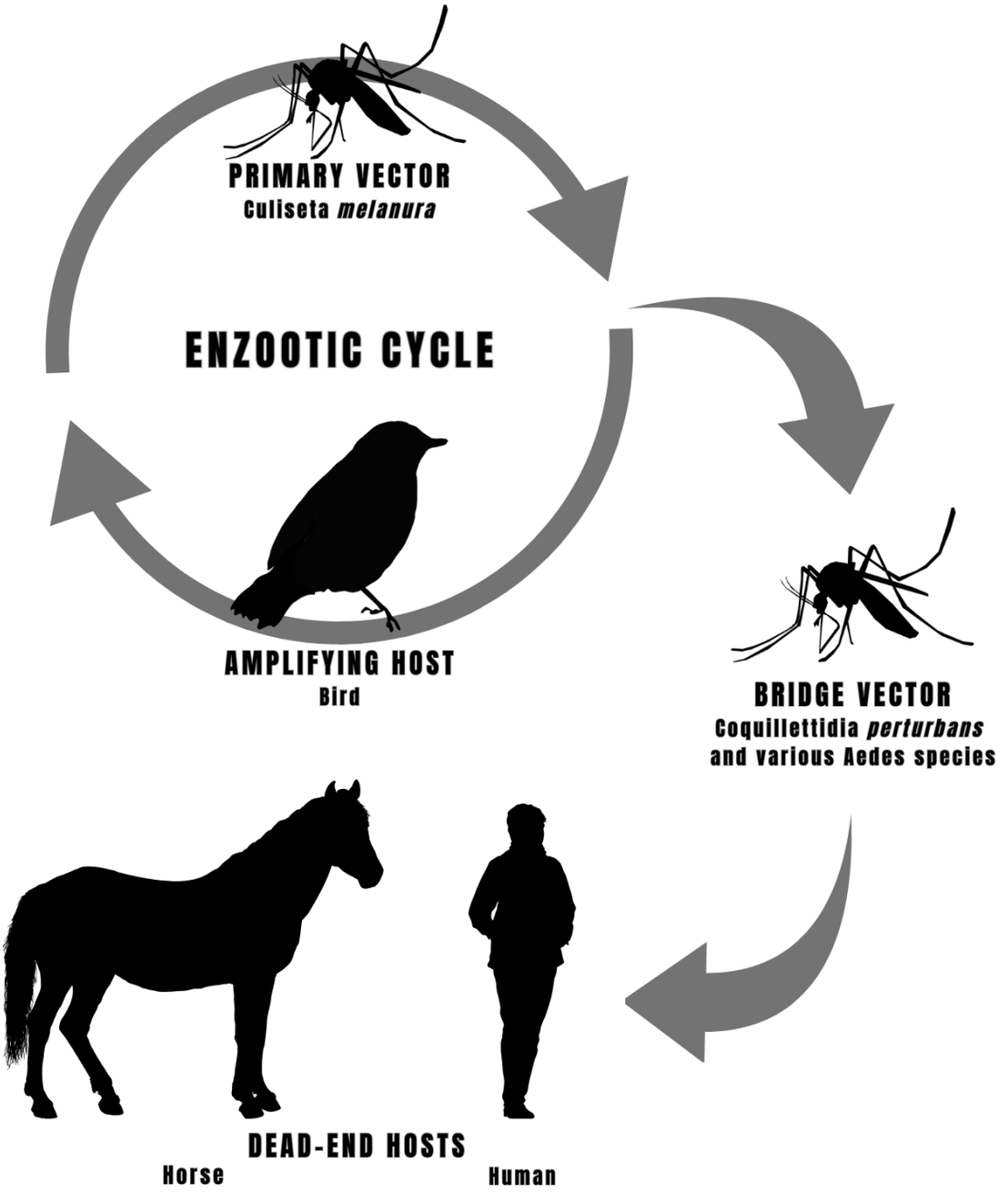
FIRST AID FOR BITES

Wash bite with soap and water and apply anti-itch cream. If necessary, apply a cold cloth to reduce swelling.

Email: john.c.briggs@mass.gov
Web: mass.gov/info-details/pioneer-valley-mosquito-control-district-pvmcd

PIONEEER VALLEY MOSQUITO CONTROL DISTRICT

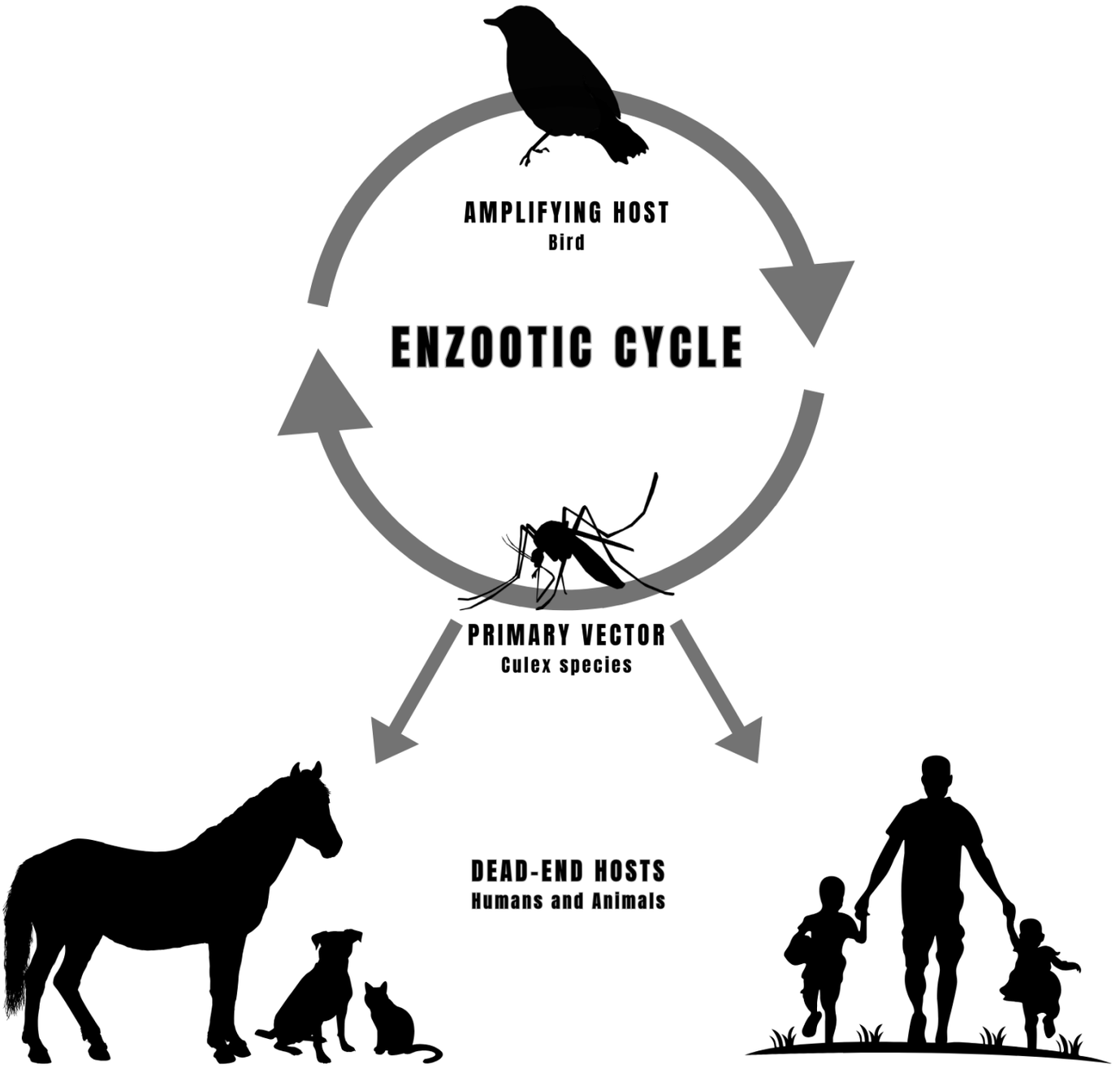
EASTERN EQUINE ENCEPHALITIS VIRUS TRANSMISSION CYCLE



Email: john.c.briggs@mass.gov
Web: mass.gov/info-details/pioneer-valley-mosquito-control-district-pvmcd

PIONEEER VALLEY MOSQUITO CONTROL DISTRICT

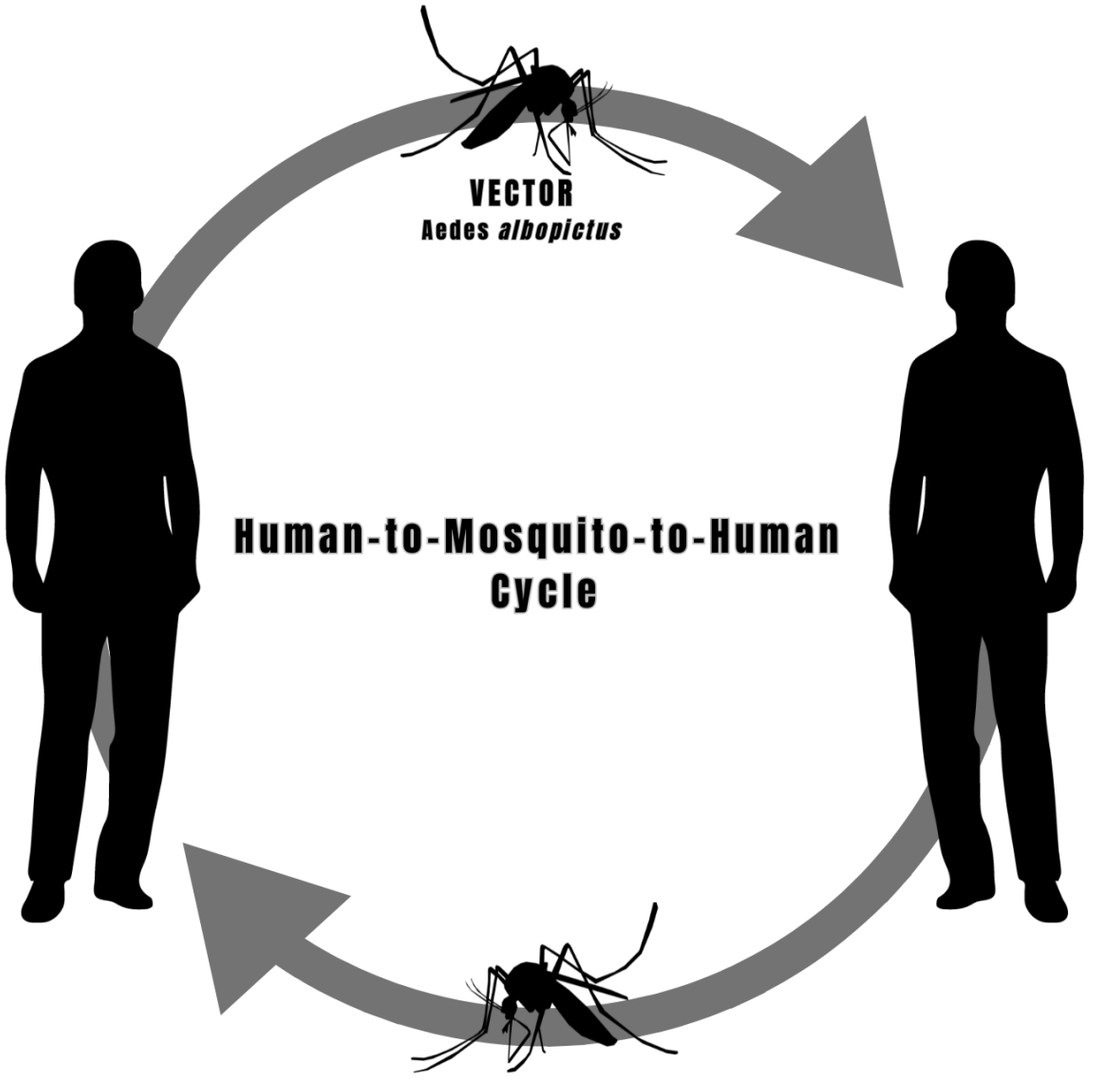
WEST NILE VIRUS TRANSMISSION CYCLE



Email: john.c.briggs@mass.gov
Web: mass.gov/info-details/pioneer-valley-mosquito-control-district-pvmcd

PIONEEER VALLEY MOSQUITO CONTROL DISTRICT

DENGUE VIRUS TRANSMISSION CYCLE



Email: john.c.briggs@mass.gov
Web: mass.gov/info-details/pioneer-valley-mosquito-control-district-pvmcd