

United States Senate
WASHINGTON, DC 20510

January 28, 2020

The Honorable Robert Redfield
Director
Centers for Disease Control and Prevention
200 Independence Avenue S.W.
Washington, DC 20201

Dear Director Redfield:

Last year, Massachusetts dealt with the worst outbreak of the rare mosquito-borne virus, Eastern Equine Encephalitis (EEE), in more than 50 years,¹ and we continue to hear from constituents across Massachusetts concerned about the increased incidence of EEE. We write to the Centers for Disease Control and Prevention (CDC) seeking an update on the actions the agency has taken to study the epidemiology of EEE, assess the risk of another outbreak in 2020, and support ongoing research in Massachusetts and other states.

EEE is a virus that causes swelling in the brain and is spread by a bite from an infected mosquito. The virus is extremely rare: on average, seven human cases of EEE are reported to the CDC annually.² However, it is one of the most deadly mosquito-borne diseases in the United States.³ Nearly one-third of individuals infected with EEE die,⁴ and those who recover often live with severe and devastating neurological complications. There are currently no specific treatments, preventive drugs, or vaccines available for EEE in humans.

In 2019, the CDC received reports of 38 confirmed cases of EEE, including 15 deaths.⁵ Massachusetts was the hardest-hit state, with 12 confirmed cases and 3 deaths. At the height of the 2019 mosquito season, the Massachusetts Department of Public Health had flagged more than half of the commonwealth's 351 cities and towns as being at risk for EEE, and identified more than 10% as being at "critical risk."⁶ Although Massachusetts has historically seen a disproportionately high number of cases, the 12 confirmed Massachusetts cases in 2019 marked

¹ Joey Garrison, "Deadly EEE: Parts of nation see worst outbreak of brain-swelling, mosquito virus in more than a half-century," USA Today (Sept. 30, 2019) <https://www.usatoday.com/story/news/nation/2019/09/30/deadly-mosquito-borne-eee-virus-outbreak-parts-northeast-see-worst-outbreak-brain-swelling-mosquito/2445131001/>.

² Centers for Disease Control and Prevention, Eastern Equine Encephalitis, <https://www.cdc.gov/easternequineencephalitis/index.html>.

³ *Id.*

⁴ *Id.*

⁵ *Id.*

⁶ Press Release, Massachusetts Department of Public Health, State public health officials announce 12th human case of EEE and confirm three deaths in Massachusetts (Sept. 26, 2019) <https://www.mass.gov/news/state-public-health-officials-announce-12th-human-case-of-eee-and-confirm-three-deaths-in>

a disturbing spike of EEE incidences: there were only ten human cases in Massachusetts in the ten years prior to 2019.⁷

Unfortunately, evidence suggests that the risk of EEE could increase during future mosquito seasons, which makes preparing for future EEE outbreaks a more urgent priority. Some experts speculate that warmer temperatures spurred by climate change may be a contributing factor in the rise of EEE and other vector-borne viruses.⁸ Milder winters, longer summers, and increased rainfall and humidity produce climactic conditions where mosquito populations thrive, allowing mosquitoes to transmit and amplify viruses for longer periods of time and across a larger area.⁹ However, current information on the life cycle of the EEE virus is based on decades-old studies,¹⁰ and more research is needed on the effects of climate change on public health.

We urge the CDC to explore every opportunity and tool available to work with state and local governments and other federal agencies on ways to address the threat of EEE and other vector-borne viruses. Your agency has produced significant scientific and epidemiological data on arboviruses like EEE; however, there is still much we do not know. We encourage the CDC to collaborate with the National Institutes of Health, the Environmental Protection Agency, and the Department of Defense to fill the gap in our knowledge about EEE and the role of climate change on public health. To help inform our constituents about ongoing federal efforts to combat the deadly EEE virus, we ask that you respond to the following questions:

1. What is the CDC's understanding of factors contributing to the rise of EEE?
2. What early-season surveillance activities is the CDC undertaking to assess the risk of EEE in 2020?
3. What kind of vector control support is the CDC providing to states impacted by EEE?
4. What information does CDC have on how chemicals used by states in vector control impact human safety and the environment?
5. What best practices does the CDC recommend to communities with regard to:
 - a. Preparing for future mosquito seasons,
 - b. Eradicating the EEE virus, and

⁷ Centers for Disease Control and Prevention, Eastern Equine Encephalitis Statistics and Maps, <https://www.cdc.gov/easternequineencephalitis/tech/epi.html#casesbystate>.

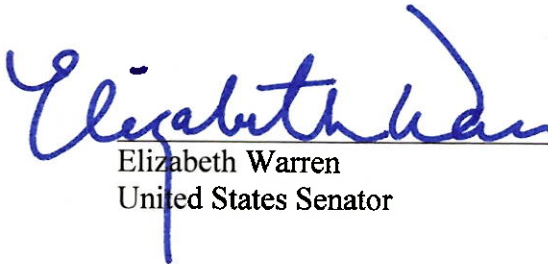
⁸ A Ludwig et al., "Increased Risk of Endemic Mosquito-Borne Diseases in Canada Due to Climate Change," Canada Communicable Disease Report (Apr. 4, 2019) <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC6587694/>.

⁹ Florence Fouque and John C. Reeder, "Impact of Past and On-Going Changes on Climate and Weather on Vector-Borne Diseases Transmission: A Look at the Evidence," Infectious Disease of Poverty (June 13, 2019) <https://idpjournal.biomedcentral.com/articles/10.1186/s40249-019-0565-1>.

¹⁰ Helen Branswell, "What to know about EEE, a mosquito-borne virus on the rise," STAT (Sept. 23, 2019) <https://www.statnews.com/2019/09/23/what-to-know-about-eee/>.

- c. Understanding and responding to climate change's impact on public health?
6. What steps are the CDC taking to understand the role of climate change—including warming temperatures—in the rise of vector-borne diseases, including EEE?
7. What other actions can the federal government undertake to address the rise of EEE and other vector-borne diseases?

Sincerely,


Elizabeth Warren
United States Senator


Edward J. Markey
United States Senator