



# E-cigarette and Vaping-Associated Lung Injury (EVALI) in Maryland

*The Comptroller's Task Force on Electronic Smoking Devices*

Clifford S. Mitchell, MS, MD, MPH

Kenneth A Feder, PhD

Prevention and Health Promotion Administration

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*Background*

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# E-Cigarettes and Vaping

# E-cigarettes and vaping

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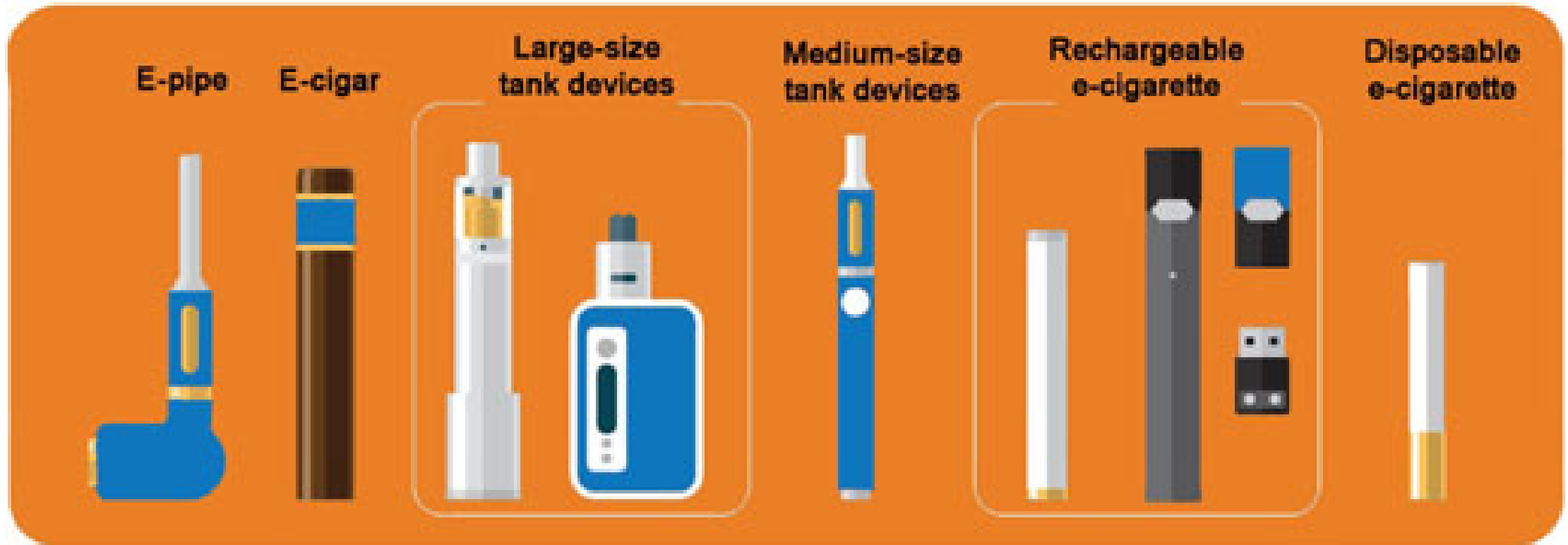
**An e-cigarette or vape is a device that produces an aerosol by heating a liquid containing chemicals to be inhaled.**

# What substances do people vape?

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- Nicotine
- Cannabis derivatives like
  - Tetrahydrocannabinol (THC)
  - Cannabidiol (CBD)
- Flavorings
- **Whatever else is in there...?**

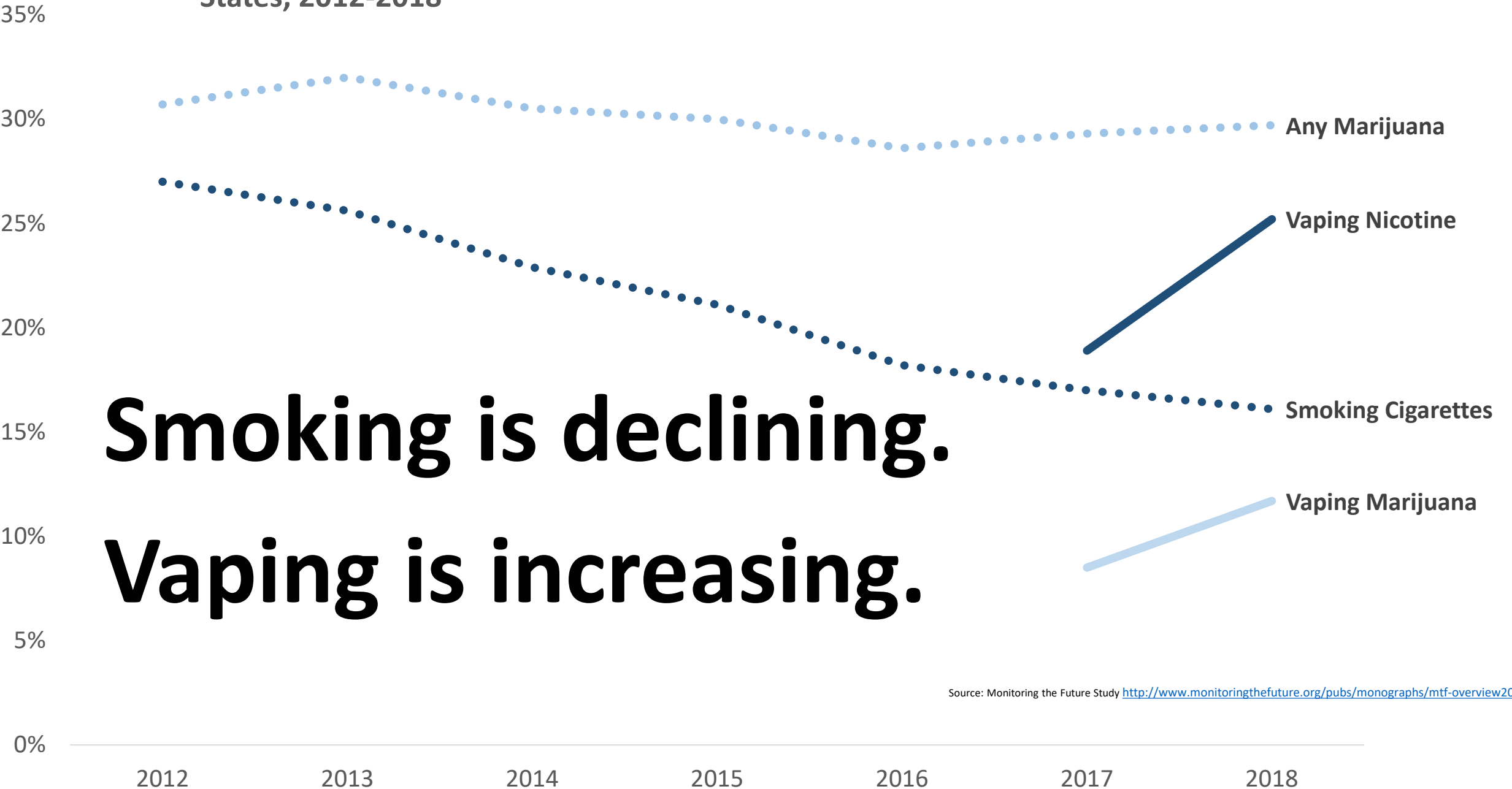
# Devices come in many shapes and sizes.



# Popular products for nicotine and THC



Lifetime prevalence of nicotine and cannabis product use, grades 8, 10, and 12, United States, 2012-2018



**Smoking is declining.**

**Vaping is increasing.**

Source: Monitoring the Future Study <http://www.monitoringthefuture.org/pubs/monographs/mtf-overview2018.pdf>

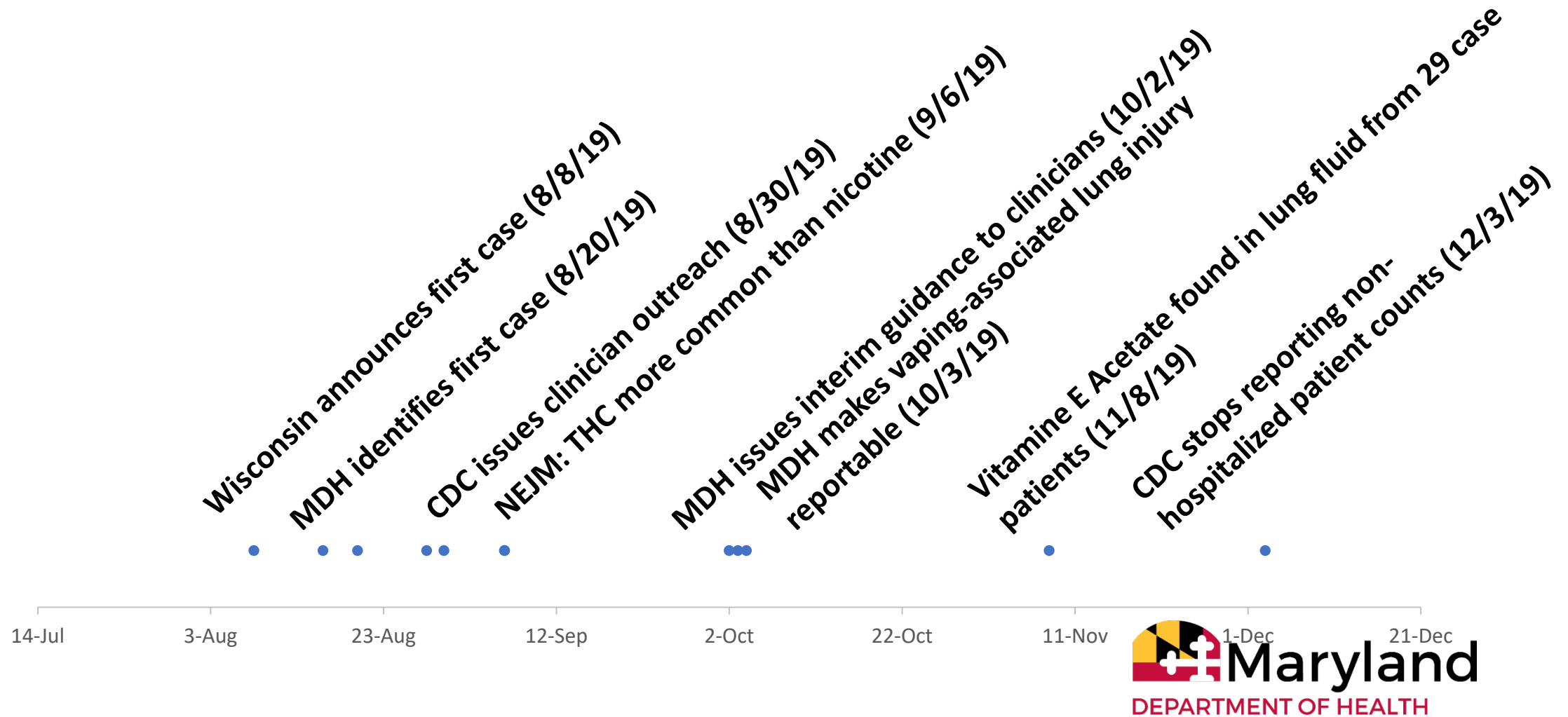
*Outbreak*

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# Lung injury and deaths associated with vaping



# Timeline of Events





# Maryland investigates

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## Case definition:

1. Vaping in 90 days before illness
2. Lung disease visible on chest x-ray
3. No other explanation (e.g., infection)

Outbreak

# Maryland issues press release.



**MARYLAND**  
Department of Health

*Larry Hogan, Governor · Boyd K. Rutherford, Lt. Governor · Robert R. Neale*

Aug. 28, 2019

**Media Contact**

Deidre McCabe, Director, Office of Communications, 410-767-3536 or  
Maureen Regan, Deputy Director, Office of Communications, 410-767-8649

**Maryland Department of Health investigating cases of severe lung illness in people using e-cigarettes**

Baltimore, MD – The Maryland Department of Health (MDH) and the Maryland Poison Center at the University of Maryland School of Pharmacy have identified five individuals who in the last two months developed severe lung illness after using e-cigarettes, often referred to as “vaping.”

Respiratory symptoms reported by patients included shortness of breath, pain associated with breathing and cough. Other symptoms reported included fever, nausea, vomiting and diarrhea. The cases displayed no clear infectious cause and all required hospitalization.

To date, none of the cases in Maryland have been fatal. These cases are part of the nearly 200 reported incidents of vaping-related illness in 22 states, resulting in at least one death.

The cause of these illnesses is not yet known and has not been linked to any particular device, substance or brand.

People who became ill reported using a variety of vaping products, including those containing marijuana, THC, and nicotine.

# CDC issues clinician outreach

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**CDC Urges Clinicians to Report Possible Cases of Unexplained Vaping-associated Pulmonary Illness to their State/Local Health Department**

# New York: Vitamin E acetate implicated.

Health

Contaminant found in marijuana vaping products linked to deadly lung illnesses, tests show



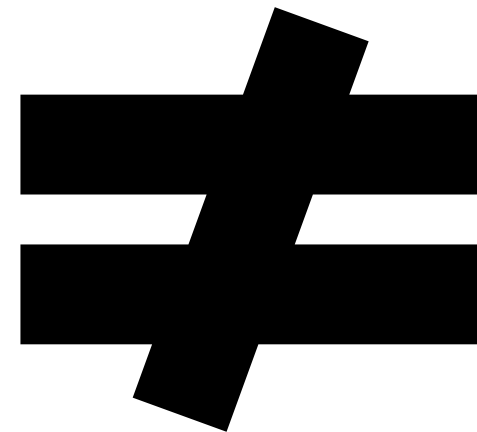
Some of the products that New York health authorities found to contain vitamin E acetate. (New York State Department of Health)

By **Lena H. Sun**

September 6, 2019 at 9:10 p.m. EDT

State and federal health officials investigating mysterious lung illnesses linked to vaping have found the same chemical in samples of marijuana products used by people [sickened in different](#)

Safe to eat



Safe to inhale

# Maryland designates reportable disease

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Patients with the following presentation **must** be reported:

- Use of any e-cigarette (“vaping”) or dabbing in 90 days prior to symptom onset AND
- Pulmonary infiltrate, including opacities on plain film chest radiograph or ground-glass opacities on chest CT AND
- No alternative plausible diagnoses (e.g., infectious, cardiac, rheumatologic, or neoplastic process).

## CDC: THC > nicotine.

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**77%**

any THC.

**36%**

only THC.

**VS**

**57%**

any nicotine.

**16%**

only nicotine.

# Vitamin E acetate found in lung fluid

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**10** states submitted lung fluid  
from **29** patients who became  
sick after vaping. **100%** test  
**positive** for vitamin E acetate.

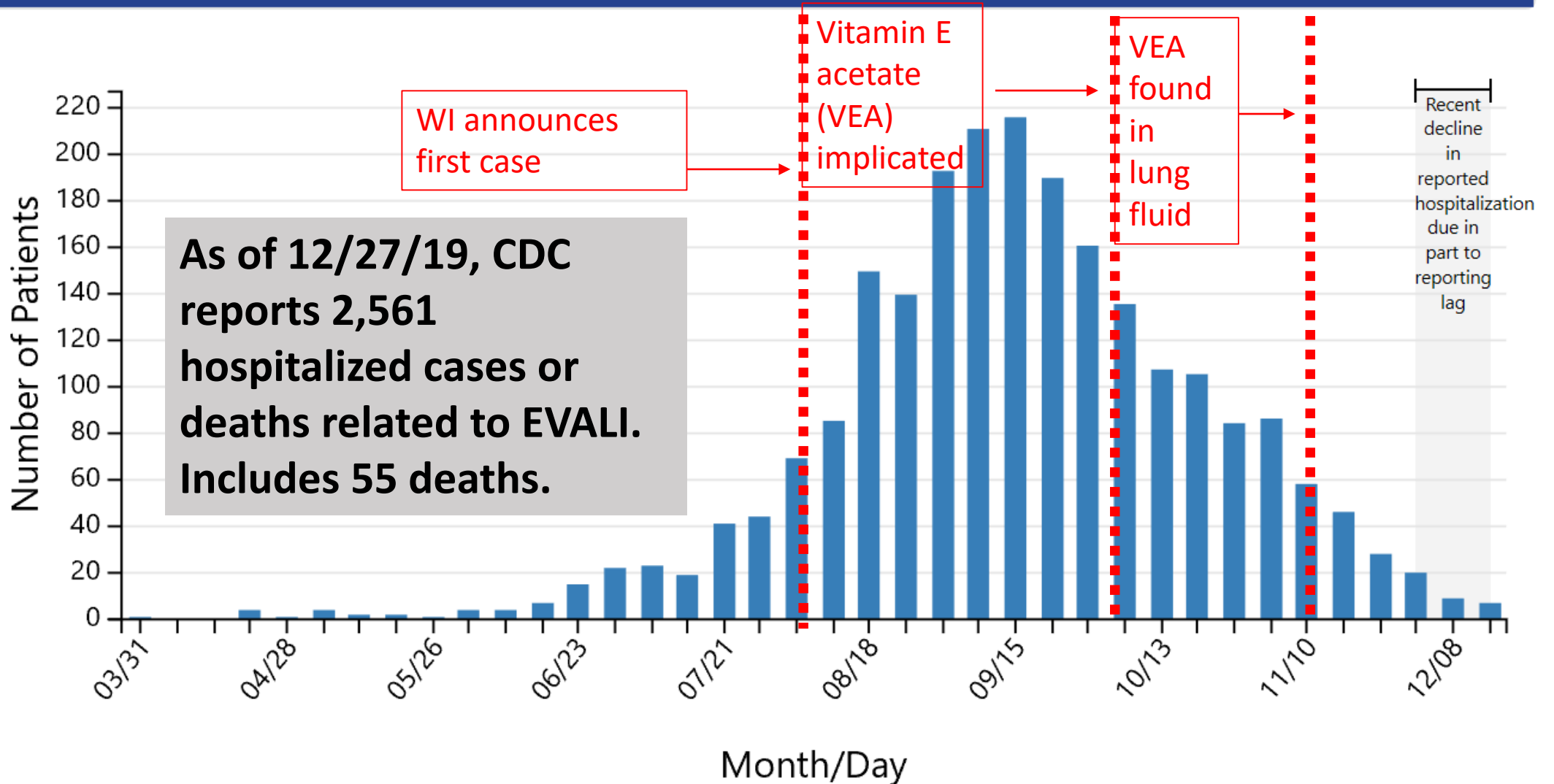


*Current Science*

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**Where are we now?**

# Number of hospitalized EVALI patients by date of admission — United States, March 31–December 21, 2019



**As of 12/24/19, Maryland has ID'd 57 cases.**

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**70%**

Male

**21%**

Under 18

**82%**

Hospitalized

**89%**

Used nicotine

**74%**

Used THC

**16%**

Used CBD

# What Do We Know?

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- Confident that Vitamin E Acetate is a significant contributing factor in the recent surge in events
- Likely that there are some other conditions and/or contributing factors involved in at least some of the cases reported (13% of cases reported vaping ONLY nicotine products)
- Not clear about long-term health implications, either of post-EVALI complications, or of chronic vaping without EVALI

# Acknowledgments

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