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

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

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January 9, 2020
Background

E-Cigarettes and Vaping
E-cigarettes and vaping

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

What substances do people vape?

• Nicotine
• Cannabis derivatives like
  • Tetrahydrocannabinol (THC)
  • Cannabidiol (CBD)
• Flavorings
• Whatever else is in there...?
Devices come in many shapes and sizes.
Background

Popular products for nicotine and THC
Smoking is declining.
Vaping is increasing.

Lung injury and deaths associated with vaping
Timeline of Events

- Wisconsin announces first case (8/8/19)
- MDH identifies first case (8/20/19)
- CDC issues clinician outreach (8/30/19)
- NEJM: THC more common than nicotine (9/6/19)
- MDH issues interim guidance to clinicians (10/2/19)
- MDH makes vaping-associated lung injury reportable (10/3/19)
- Vitamine E Acetate found in lung fluid from 29 case patients (11/8/19)
- CDC stops reporting non-hospitalized patient counts (12/3/19)
Vaping-Associated Lung Illness

Maryland investigates

Case definition:
1. Vaping in 90 days before illness
2. Lung disease visible on chest x-ray
3. No other explanation (e.g., infection)
Maryland issues press release.

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.
Outbreak

CDC issues clinician outreach

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.

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 states, according to an Associated Press analysis of health data and interviews with medical experts. The finding has emerged as a potential clue to the cause of a disease that has sickened more than 500 people and killed six in the United States, including four New Yorkers.

The chemical, vitamin E acetate, is often used as a liquidiser to turn cannabis oil into a thinner, more easily smokable form. It’s unclear whether vitamin E acetate is a cause or perpetrator of the illness, but its presence suggests the potential of contaminants in marijuana products.

Vaping has become a popular method of consuming cannabis in recent years, with the FDA recently issuing a public health warning about vaping-related lung illnesses.

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

By Lee N. Sun

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

Safe to eat ≠ Safe to inhale
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.

77% any THC. 57% any nicotine.

36% only THC. 16% only nicotine.


https://doi.org/10.15585/mmwr.mm6839e1
Vitamin E acetate found in lung fluid

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

Where are we now?
As of 12/27/19, CDC reports 2,561 hospitalized cases or deaths related to EVALI. Includes 55 deaths.
As of 12/24/19, Maryland has ID’d 57 cases.

- 70% Male
- 21% Under 18
- 82% Hospitalized
- 89% Used nicotine
- 74% Used THC
- 16% Used CBD
What Do We Know?

• 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

• Dawn Berkowitz
• David Blythe
• Monique Duwell
• Brian Bauchus
• Heather Peters
• Laboratories Administration

• Reporting physicians
• Local health department epis
• Hospital infection preventionists

• Patients who completed interviews