



Clearing the Air: An Update on Youth Vaping



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Northwest Center
FOR PUBLIC HEALTH PRACTICE


About This Presentation




Dr. Kathy Lofy




I. Health Effects of Vaping




II. Youth Vaping Epidemic




III. Vaping-Associated Lung Injury



Lacy Fehrenbach



IV. Recent Policy Actions: Washington State



V. Proposed Policy Actions: State and Federal

Question for the Viewers

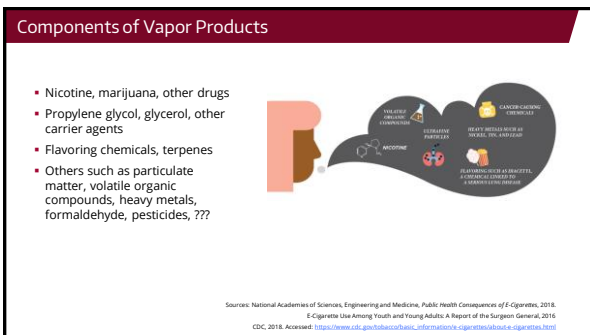
?

Are there currently any regulations in place on the sale or use of e-cigarettes and other vaping products in your state?

- A. Yes
- B. No
- C. Some are being developed
- D. I'm not sure



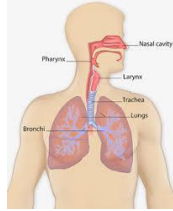




Source: National Academies of Sciences, Engineering and Medicine. Public Health Consequences of E-Cigarettes, 2018. E-Cigarette Use Among Youth and Young Adults: A Report of the Surgeon General, 2016. CDC, 2018. Accessed https://www.cdc.gov/tobacco/basic_information/e-cigarettes/about-e-cigarettes.html

Effects of Vaping on Pulmonary System

- **Nasal epithelia:** downregulation of immune genes; inhibition of ciliary beating
- **Bronchial epithelia:** altered protein expression; cellular toxicity; increased cytokine secretion; altered gene expression
- **Alveoli:** impaired vasoconstriction, impaired gas exchange
- **Sputum:** altered sputum proteins; impaired macrophage function



Source: Jeffrey E Gotts et al. BMJ 2019;366:bmj.k275

Effects of E-Cigarettes on People Who Currently Smoke

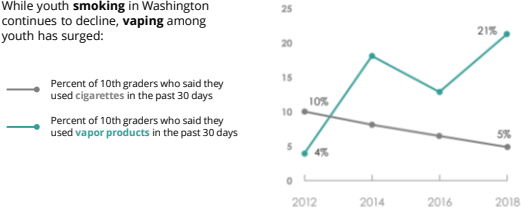
- Completely substituting e-cigarettes for combustible cigarettes reduces exposure to many toxicants and carcinogens present in combustible cigarettes
- E-cigarettes expose users to different chemicals; long term health effects unknown
- Dual use of cigarettes and e-cigarettes does not necessarily reduce exposure to toxic substances; even a few cigarettes a day can be dangerous
- Studies on effectiveness of E-cigarettes as smoking cessation aid remain mixed

Source: National Academies of Sciences, Engineering and Medicine. Public Health Consequences of E-Cigarettes, 2018. Gorniewicz M, et al. JAMA Network Open. 2018. (<https://jamanetwork.com/journals/jamanetworkopen/fullarticle/2718096>)
Tobacco Control 2005;14(5):315-20



Increase in Vaping Among Youth

While youth **smoking** in Washington continues to decline, **vaping** among youth has surged:

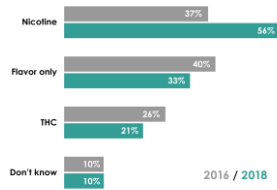


Source: Washington State Healthy Youth Survey

Substance Use in E-Cigarettes

Substances Reported Used in E-cigarettes by 10th graders:

Healthy Youth Survey



Source: Washington State Health Youth Survey Tobacco Control 2019;28:115-116.

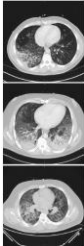
2019 National Youth E-Cigarette Use

- 27% of high school students reported using e-cigarettes
- More than 1/3 of high school students who vape report vaping on 20 or more of the past 30 days
- 64% of high school students who vape report only using e-cigarettes
- 59% of high school students who vape report JUUL as usual brand
- 72% of high school students who only use e-cigarettes report using flavored e-cigarettes.
- Current use of menthol or mint flavored e-cigarettes increased from 16% in 2016 to 57% in 2019 of high school students who only use e-cigarettes

Source: <https://jamanetwork.com/journals/jama/fullarticle/2755245?result=1>



Vaping-Associated Lung Injury (VALI)



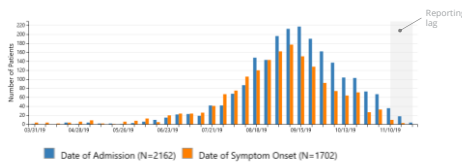
- Common symptoms include cough, shortness of breath, chest pain, nausea, vomiting and/or fever
 - Progress over days or weeks
- Can lead to respiratory failure
- Abnormal findings on chest x-ray or CT scan
- Suspected cause is a chemical exposure

MMWR 2019;68:784-786

Source: Centers for Disease Control (https://www.cdc.gov/tobacco/basic_information/e-cigarettes/severe-lung-disease.html)
 Correspondence Pathology of Vaping-Associated Lung Injury. *N Engl J Med*. October 3, 2019.

Vaping-Associated Lung Injury (VALI)

2,291 VALI cases reported nationally, including 48 deaths as of December 4, 2019:

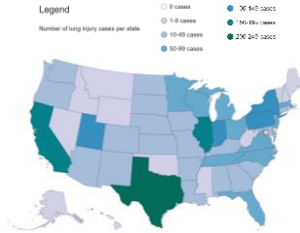


The bar chart displays the number of VALI cases reported nationally from August 1, 2019, to December 4, 2019. The y-axis represents the 'Number of Reports' ranging from 0 to 200. The x-axis shows dates in weekly intervals. Two data series are shown: 'Date of Admission (N=2162)' in blue bars and 'Date of Symptom Onset (N=1702)' in orange bars. Both series show a similar trend, starting to rise in late August, peaking in mid-October at approximately 180 cases per week, and then declining through December. A shaded area at the end of the chart (from late November to December 4, 2019) is labeled 'Reporting lag'.

Source: Centers for Disease Control (https://www.cdc.gov/tobacco/basic_information/e-cigarettes/severe-lung-disease.html)

Vaping-Associated Lung Injury Reported to CDC*

- 68% are male
- 77% of patients are under 35 years old
- ~83% reported using THC-containing products
- ~61% reported using nicotine-containing products
- THC-containing products playing a major role
- ~13% reported only using nicotine-containing products



*Note: Case counts as of Dec. 4, 2019; Characteristics as of Nov. 5, 2019

Source: Centers for Disease Control (https://www.cdc.gov/tobacco/basic_information/e-cigarettes/severe-lung-disease.html)

Vaping-Associated Lung Injury Reported in Washington*

- 19 cases reported
 - 58% male
 - 47% < 30 years old
- Of 18 cases with data:
 - 44% reported using THC-containing products
 - 61% reported using nicotine-containing products
 - 33% reported only using nicotine-containing products
 - 6% used other product
 - 17% unknown



*Note: Data as of December 5, 2019

Source: Department of Health

Vitamin E Acetate

- Form of Vitamin E
- Used in variety of consumer products including skin care and dietary supplements
- Usually does not cause harm when ingested or applied to skin
- When inhaled, previous research shows it may interfere with normal lung functioning
- Has been used as additive in THC-containing e-liquids

α-tocopheryl acetate (C₃₁H₅₂O₃)



Vitamin E Acetate Associated With Lung Injury

According to recent CDC and FDA evidence:

- 49% of THC products sampled show Vitamin E acetate
- Concentration of Vitamin E acetate in subset of THC-containing products was significant: 23% - 88%
- When vapor products with THC were linked to cases, the proportion of THC-containing products with Vitamin E acetate was higher: 77%
- Direct evidence of Vitamin E acetate at the primary site of injury was found in **29 of 29 lung samples** from patients in 10 states

What We Don't Know: Vitamin E Acetate and Lung Injury

- Cause of lung injury not yet proven
 - No confirmed biological mechanism(s) of action of Vitamin E acetate
 - Comparing Vitamin E acetate results from VALI patient samples to controls is underway
 - Animal studies could provide further evidence
- Vitamin E acetate findings do not rule out that other substances may be contributing to these injuries
- The diversity of patients, patterns of product use and products used may indicate multiple causes of these injuries



Recent Policy Actions:
Washington State

Question for the Viewers



How would you rate your state's response to the vaping epidemic?

- A. Exceptional
- B. Sufficient
- C. Insufficient
- D. I'm not sure

Engrossed House Bill 1074: Tobacco and Vapor Products – Legal age for Sales

21 IT'S THE LAW

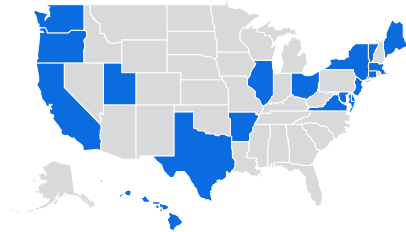


Effective January 1, 2020, it will be illegal to sell tobacco and vapor products to anyone under 21.



Tobacco/Vapor 21 Laws

States with TV21 laws



Source: <https://www.tobaccofreekids.org/what-we-do/sale-age-21> and <https://www.publichealthlawcenter.org/sites/default/files/Sales%20with%20Restrictions%20by%20Age%20as%20of%20September%2015%202019.pdf>

Washington ESSHB 1873: Vapor Product Tax

Tax

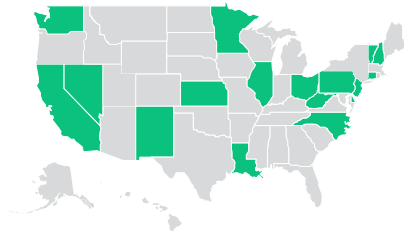
- Accessible containers >5mL = \$0.09/mL
- All other products = \$0.27/mL

Revenue

- Cancer research
- Public Health services

e-Cigarette Taxes

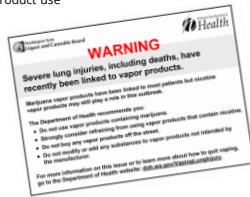
- States that tax e-cigarettes



Source: <https://www.pdxhealthinsurer.org/wp-content/uploads/2019/09/2019-Taxing-E-cigarettes-September-13-2019.pdf> as of September 15, 2019

Public Health Response: Washington State

- Investigating and reporting cases
 - Reviewing medical records & talking with providers
 - Interviewing patients about their vapor product use
- Partnering with FDA and CDC to test vapor products from cases
- Communicating risks to public
 - Sending alerts to healthcare providers asking them to report suspected cases and sharing clinical guidance with them
 - Collaborating with Liquor and Cannabis Board to distribute warning materials and keep cannabis licensees and vapor retailers informed of the outbreak findings



Governor's Executive Order 19-03



Photo: Office of the Governor

Governor's Executive Order 19-03

- State Board of Health
 - Emergency rule to ban flavored products
- Department of Health
 - Ban cause of outbreak (in collaboration with LCB)
 - Consumer warnings
 - Ingredient disclosure
 - Provider reporting
 - Education campaign
- Legislation
 - Two bills; one for nicotine and one for marijuana

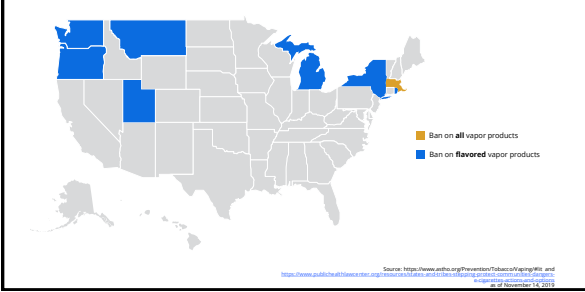
Source: <https://www.governor.nj.gov/sites/default/files/eo/19-03e30-1903e30.pdf>

Board of Health



- Ban on all flavored vapor products, including THC: **October 10, 2019**
- Ban on all products containing vitamin E acetate: **November 20, 2019**

Emergency Actions in Other States



Proposed Policy Actions: State and Federal



Proposed Washington State Legislation

Non-Cannabis Vapor Products

Some items policy makers are considering:

- Flavored vapor product ban
- Nicotine limits for vapor products
- Vapor product container size restrictions
- Ingredient disclosure
- Authority to ban product/require warning
- New DOH authority on vapor product labels
- New limits on marketing vapor products to youth
- Cessation support

Proposed Washington State Legislation

Cannabis Vapor Products

- Some items policy makers are considering:
- Flavored vapor product ban
 - Ingredient disclosure/lab testing of vapor products
 - Authority to ban product/require warning

Federal Considerations



- Tobacco/Vape 21
- Flavor ban
- Preventing Online Sales of E-Cigarettes to Children

Taking Action

What **you** can do:

- Support those who are trying to quit tobacco or vapor products
- Learn what is happening locally to address youth vaping and VALI
- Engage with your local, tribal, state or federal policymakers

Quitting Resources

State Tobacco Quitline

WASHINGTON STATE TOBACCO QUITLINE
1-800-QUIT-NOW
1-800-784-8669 | quitline.com

2Morrow App

doh.wa.gov/quit



Resources

- Lewis N, McCaffrey K, Sage K, et al. E-cigarette Use, or Vaping, Practices and Characteristics Among Persons with Associated Lung Injury — Utah, April–October 2019. MMWR Morb Mortal Wkly Rep 2019; 68:953-956. DOI: <http://dx.doi.org/10.15585/mmwr.mm6842e1>
- CDC Website https://www.cdc.gov/tobacco/basic_information/e-cigarettes/severe-lung-disease.html
- Public Health Law Center <https://www.publichealthlawcenter.org/topics/commercial-tobacco-control>
- National Campaign for Tobacco Free Kids <https://www.tobaccofreekids.org/us-resources>
- Truth Initiative <https://truthinitiative.org/>
- YouthNow <https://www.youthnow.me/>

QUESTIONS?



To ask a question, please click the  icon in the Zoom toolbar to open your Q&A Pod.
