



Lane County Public Health is asking clinicians to report hospitalized patients with vaping history in last 90 days and pulmonary infiltrates to the Oregon Health Authority at 971-673-1111

Outbreak Background

As of September 27, 2019, over 800 possible cases have been reported from 46 states. Additional reports of pulmonary illness are under investigation. The CDC has reported twelve deaths, two in Oregon. Although the etiology of vaping or e-cigarette-associated pulmonary disease is undetermined, epidemiologic investigations in affected states are ongoing to better characterize the exposures, demographic, clinical, and laboratory features and behaviors of patients. All patients have reported use of vaping or e-cigarette products. The exact number is currently unknown, but many patients have reported using e-cigarettes containing cannabinoid products such as THC or CBD.

Recommendations for Clinicians

1. Report cases of severe pulmonary disease of unclear etiology and a history of e-cigarette product use within the past 90 days to **the Oregon Health Authority**. Reporting of cases may help determine the cause or causes of these pulmonary illnesses.
2. Ask all patients who report vaping or e-cigarette product use within the last 90 days about signs and symptoms of pulmonary illness.
3. If use of these products is suspected as a possible etiology of a patient's severe pulmonary disease, obtain detailed history regarding:
 - Substance(s) used: nicotine, cannabinoids (e.g., marijuana, THC, THC concentrates, CBD, CBD oil, synthetic cannabinoids [e.g., K2 or spice], hash oil, Dank vapes), flavors, or other substances
 - Substance source(s): commercially available liquids (i.e., bottles, cartridges, or pods), homemade liquids, and re-use of old cartridges or pods with homemade or commercially bought liquids
 - Device(s) used: manufacturer; brand name; product name; model; serial number of the product, device, or e-liquid; if the device can be customized by the user; and any product modifications by the user (e.g., exposure of the atomizer or heating coil)
 - Where the product(s) were purchased
 - Method of substance use (e.g., aerosolization, dabbing, or dripping)
 - Other potential cases: sharing these products (devices, liquids, refill pods, or cartridges) with others
4. Determine if any remaining product, including devices and liquids, are available for testing. Testing can be coordinated with Lane County Public Health.
5. Consider all possible causes of illness in patients reporting respiratory and gastrointestinal symptoms and use of these products. Evaluate and treat for other possible causes of illness (e.g., infectious, rheumatologic, neoplastic) as clinically indicated. Consider consultation with specialists (pulmonary, infectious disease, critical care, medical toxicology) as appropriate.
6. Clinical improvement of patients with severe pulmonary disease associated with e-vaping or cigarette use has been reported with the use of corticosteroids. The decision to use

corticosteroids should be made on a case-by-case basis based on risks and benefits and the likelihood of other etiologies.

7. Lipoid pneumonia associated with inhalation of lipids in aerosols generated by vaping or e-cigarette products has been reported based on the detection of lipid-laden alveolar macrophages obtained by bronchoalveolar lavage (BAL) and lipid staining (e.g., oil red O). The decision to perform a BAL should be based on individual clinical circumstances.
8. Lung biopsies have been performed on some patients. If a lung biopsy is obtained, lipid staining may be considered during pathologic examination, and is best performed on fresh tissue. Routine pathology tissue processing (including formalin-fixation and paraffin-embedding) can remove lipids. Conducting routine tissue processing and histopathologic evaluation is still important. Consider consultation with specialists in pulmonary medicine and pathology to help inform any evaluation plan.
9. Patients who have received treatment for severe pulmonary disease related to vaping or e-cigarette product use should undergo follow-up evaluation as clinically indicated to monitor pulmonary function.

Key Points

- All cases have reported vaping or e-cigarette use
- Affected persons are predominantly teenagers and young adults
- Cause remains unknown: Ingredient? Contaminant? Device related?
- **Reporting: Lane County Public Health is asking clinicians to report hospitalized patients with vaping history in last 90 days and pulmonary infiltrates to the Oregon Health Authority at 971-673-1111; also, please ask the patient or family members about recoverable vaping products for testing**

What can our patients do?

- Refrain from using all/any e-cigarette or vaping products (nicotine and cannabis alike)
- Do not buy these products off the street
- Regardless of the investigation results, e-cigarette products should not be used by youth and pregnant women

For More Information

- **For assistance with managing patients suspected of illness related to recreational, illicit, or other drugs, call your local poison control center at: 1-800-222-1222.**
- **Information on electronic cigarettes and similar devices:**
<https://www.cdc.gov/e-cigarettes>
- **CDC Press Statement:**
<https://www.cdc.gov/media/releases/2019/s0821-cdc-fda-states-e-cigarettes.html>
- **CDC Clinical Outreach and Communication Activity announcement:**
<https://emergency.cdc.gov/newsletters/coca/081619.htm>
- **CDC's National Syndromic Surveillance Program's BioSense/ESSENCE:**
<https://www.cdc.gov/nssp/index.html>

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PREVENT. PROMOTE. PROTECT.

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