

**Communicable Disease Epidemiology
and Immunization Section**

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Health Advisory: Updated Information and Guidance Regarding the Nationwide Outbreak of Severe Lung Disease Associated With E-cigarette Use or Vaping, September 17, 2019

Actions Requested:

- Be aware of reports from multiple states of severe pulmonary disease associated with vaping or e-cigarette use. As of September 15, 3 cases have been reported in Washington State, including 1 case in King County.
 - Patients present with respiratory symptoms including cough, shortness of breath, and fatigue, which had worsened over days or weeks before admission to the hospital.
 - Some patients also report fever, chest pain, weight loss, nausea, vomiting, abdominal pain, and diarrhea preceding or concomitant with respiratory symptoms.
 - Chest radiographs show bilateral opacities, and CT imaging of the chest demonstrated diffuse ground-glass opacities, often with sub-pleural sparing.
 - Evaluation for infectious etiologies has been negative for nearly all patients.
- **Ask all patients with severe pulmonary disease whether they have used any e-cigarette or vaping products in the last 90 days.**
- **Report patients hospitalized with severe pulmonary disease of unclear etiology and a history of e-cigarette or vaping product use within the past 90 days to Public Health at 206-296-4774.**
- If e-cigarette or vaping product (THC, nicotine, or both) use is suspected as a possible etiology of a patient's severe pulmonary disease, obtain detailed history regarding substance(s) used, substance source(s), device(s) used, product modifications by the user, where the product(s) were purchased, method of substance use, and other potential cases. Please note any additives or flavorings used while vaping.
- Determine if any remaining product, including devices and liquids, are available for testing. Testing can be coordinated by Public Health.
- Consider all possible causes of illness in patients reporting respiratory and gastrointestinal symptoms and e-cigarette/vaping product use. 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.
- Remind patients that their healthiest option is to stop vaping and using tobacco products.
- Regardless of the ongoing investigation, e-cigarettes should not be used by youth, young adults, or pregnant women. Anyone who uses e-cigarette products should not buy these products off the street (i.e. cannabinoids or THC) nor should they modify e-cigarette products or add any substances that are not intended by the manufacturer.

Other clinical considerations:

- Clinical improvement of patients with severe pulmonary disease associated with e-cigarette use has been reported with the use of corticosteroids. The decision to use corticosteroids should be made case-by-case on the basis of risks and benefits and the likelihood of other etiologies.

- Lipoid pneumonia associated with inhalation of lipids in aerosols generated by e-cigarettes 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 about whether to perform a BAL should be based on individual clinical circumstances.
- 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.
- Patients who have received treatment for severe pulmonary disease related to e-cigarette or vaping product use should undergo follow-up evaluation as clinically indicated to monitor pulmonary function.
- CDC is hosting a webinar for clinicians on “Severe Lung Illness Associated with Using E-Cigarette Products” on Thursday, Sept 19, 2019 at 11:00am-12:00pm. Information for this call is available at: https://emergency.cdc.gov/coca/calls/2019/callinfo_091919.asp?deliveryName=DM8936

Background: As of September 11, 2019, 380 cases of lung illness associated with the use of e-cigarette products have been reported to CDC from 36 states and six deaths have been confirmed. All patients have a reported history of e-cigarette product use, and no consistent evidence of an infectious cause has been discovered. Therefore, the suspected cause of the severe lung illness is a chemical exposure. Most patients have reported a history of using e-cigarette products containing THC. Many patients have reported using THC and nicotine. Some have reported the use of e-cigarette products containing only nicotine. No consistent e-cigarette or vaping product, substance, or additive has been identified in all cases, nor has any one product or substance been conclusively linked to lung disease in patients. These investigations are ongoing.

As of September 15, 2019, 3 cases of lung disease associate with vaping have been reported in Washington State, with one case occurring in King County. All three confirmed cases reported vaping prior to illness but to date we have not identified a product, device, or additive that are common to all three cases. Investigations into the specifics of products, devices, or additives is ongoing.

Additional Resources:

CDC: [Outbreak of Lung Disease Associated with E-Cigarette Use, or Vaping](#)

MMWR: [Severe Pulmonary Disease Associated with Electronic-Cigarette–Product Use — Interim Guidance](#)

MMWR: [Notes from the Field: Outbreak of Electronic-Cigarette Associated Acute Lipoid Pneumonia—North Carolina, July–August, 2019](#)

New England Journal of Medicine: [Pulmonary Illness Related to E-Cigarette Use in Illinois and Wisconsin — Preliminary Report](#)

Health Alert Network (HAN): [Severe Pulmonary Disease Associated with Using E-Cigarette Products](#)