



**CABINET FOR HEALTH AND FAMILY SERVICES
DEPARTMENT FOR PUBLIC HEALTH**

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Dear Healthcare Provider:

The Kentucky Department for Public Health (KDPH) continues to monitor the outbreak of E-Cigarette or Vaping Associated Lung Illness (EVALI). Clinicians should be alert for patients with progressive, severe pulmonary disease related to the use of e-cigarettes or vaping. As of November 20, at least 2,290 probable or confirmed cases in 49 states have been reported to the U.S. Centers for Disease Control and Prevention (CDC). There have been 47 deaths in 25 states. As of November 22, Kentucky has identified 15 probable and confirmed cases.

Patients with EVALI experience respiratory symptoms including cough, shortness of breath, and fatigue, and symptoms typically worsen over a period of days or weeks before admission to the hospital. Other symptoms reported by some patients include fever, anorexia, pleuritic chest pain, nausea, and diarrhea. Chest radiographs show bilateral opacities, typically in the lower lobes, and CT imaging of the chest shows diffuse ground-glass opacities, often with subpleural sparing. Some patients experience progressive respiratory compromise requiring endotracheal intubation.

All patients reported vaping in the weeks or months prior to hospital admission. While the vast majority of cases have involved THC, EVALI has been associated with nicotine, CBD oil, synthetic cannabinoids, and combinations of all of the above. Most recently, CDC has found evidence that vitamin E acetate, an additive or thickening agent in THC-containing vaping products, may play a role in the vaping-lung-injury situation. In bronchoalveolar lavage (BAL) fluid specimens obtained from the lungs of 29 confirmed vaping-lung injury cases, 29 (100%) contained vitamin E acetate, but no other known contaminants that might lead to lung injury. This suggests a possible causative association, but comparison to controls has not been completed as of this date to confirm that conclusion.

Clinicians should remain alert for potential cases among persons presenting with progressive respiratory symptoms who report a history of inhalation drug use, particularly vaping. Please see updated Clinician Guidance from CDC regarding Clinical Evaluation, Treatment and Follow-up (attached).

Clinicians who become aware of cases similar to those described above are asked to report them to KDPH. All potential cases should be reported on the EPID 200 reportable disease form and submitted via secure fax at: 502-696-3803. If vaping fluid and devices commonly used by the patient are available at the patient visit, please collect and retain these and contact Rachel Zinner or Leigh Ann Bates at the State Division of Laboratory Services (DLS) at 502-782-7703 for possible testing. For specimen collection or packaging materials, you can also contact DLS at DPHlabKits@ky.gov or call 502-782-7703.

For questions relating to surveillance, reporting or associated follow-up, please contact Mel Grissom in the Kentucky Tobacco Prevention and Cessation Program at 502-564-9358 ext. 4466 during business hours or after-hours at 888-9-REPORT (888-973-7678).

Thank you for your assistance in this urgent public health matter!

A handwritten signature in black ink that reads "Angela T. Dearing, MD". The signature is written in a cursive style.

Angela T. Dearing, MD, MPH, FACP, FAAP
Commissioner
Kentucky Department for Public Health

E-Cigarette Associated Lung Injury Clinician Guidance

Copied directly from: https://www.cdc.gov/tobacco/basic_information/e-cigarettes/severe-lung-disease/healthcare-providers/index.html

Clinical Evaluation

EVALI remains a diagnosis of exclusion because, at present, no specific test or marker exists for its diagnosis, and evaluation should be guided by clinical judgment. Rapid recognition of EVALI patients by health care providers is critical to reduce severe outcomes.

Patient Interview

- Ask about the use of e-cigarette, or vaping, products in a confidential and nonjudgmental manner when evaluating patients with respiratory symptoms (e.g., cough, chest pain, and shortness of breath), gastrointestinal symptoms (e.g., abdominal pain, nausea, vomiting, and diarrhea), or constitutional symptoms (e.g., fever, chills, and weight loss).
- Ask patients about recent use of e-cigarette, or vaping, products. If confirmed, the types of substances used (e.g., THC and nicotine) and where they were obtained should be ascertained.

Physical Examination

- Assess vital signs and pulse oximetry.

Laboratory Testing and Imaging

- Laboratory testing should be guided by clinical findings.
 - A chest radiograph (CXR) should be considered on patients with a history of e-cigarette, or vaping, product use, who have respiratory or gastrointestinal symptoms, particularly when chest pain, dyspnea, or decreased oxygen saturation (<95% while breathing room air) are present.
 - Health care providers should evaluate for causes of community-acquired pneumonia according to established guidelines as indicated by imaging findings.

Other Considerations

- Further evaluation of patients meeting inpatient admission criteria might include:

- Consultation with pulmonary, critical care, medical toxicology, infectious disease, psychology, psychiatry, and addiction medicine specialists.
- Additional testing with bronchoalveolar lavage (BAL) or lung biopsy as clinically indicated, in consultation with pulmonary specialists.

Consideration of Outpatient Management

- Some patients with history of e-cigarette, or vaping, product use who are evaluated for respiratory, gastrointestinal, or constitutional symptoms might be candidates for outpatient management.
- Candidates for outpatient management should have normal oxygen saturation ($\geq 95\%$), no respiratory distress, no comorbidities that might compromise pulmonary reserve, reliable access to care, strong social support systems, and should be able to ensure follow up within 24–48 hours of initial evaluation and to seek medical care promptly if respiratory symptoms worsen; in some cases, patients who initially had mild symptoms experienced a rapid worsening of symptoms within 48 hours.
- Hospital admission should be strongly considered for patients with concurrent illness such as influenza and potential EVALI, especially if respiratory distress, comorbidities that compromise pulmonary reserve, or decreased oxygen saturation ($< 95\%$ while breathing room air) are present.

Flu Season Considerations

- Influenza testing should be strongly considered, particularly during influenza season. It might be difficult to differentiate EVALI, a diagnosis of exclusion, from influenza or community-acquired pneumonia on initial assessment, and EVALI might co-occur with respiratory infections.
- Treatment with empiric antimicrobials, including antivirals, should be considered in accordance with established guidelines and local microbiology and resistance patterns for community-acquired pneumonia.
- Antiviral treatment also can be considered for any previously healthy, symptomatic outpatient not at high risk for influenza complications, who is diagnosed with confirmed or suspected influenza, on the basis of clinical judgment, if treatment can be initiated within 48 hours of illness onset. Influenza vaccination
- Health care providers should emphasize the importance of [annual influenza vaccination](#) for all persons aged ≥ 6 months, including patients who use e-cigarette, or vaping products.

- It is not known whether patients with EVALI are at higher risk for severe complications of influenza or other respiratory infections. In addition, administration of pneumococcal vaccine should be considered for patients with a history of EVALI according to [current guidelines](#).
- Check out [Key Facts About Seasonal Flu Vaccine](#) for more information.

Treatment and Follow-up

Admission Criteria and Outpatient Management

- Strongly consider admitting patients with potential lung injury, especially if patients have respiratory distress, comorbidities that compromise pulmonary reserve, or decreased (<95%) O₂
- Outpatient management for patients with suspected lung injury might be considered on a case-by-case basis, in particular for patients with less severe injury, lack of comorbidities, and for whom follow-up within 24–48 hours of initial evaluation can be assured.
- Outpatients should have normal oxygen saturation, reliable access to care and social support systems, and be instructed to promptly seek medical care if respiratory symptoms worsen.

Corticosteroid Treatment

- Corticosteroids [might be helpful](#) in treating EVALI.
- Use of corticosteroids for the treatment of EVALI in the outpatient setting has not been well studied and should be considered with caution. Corticosteroids might worsen respiratory infections commonly seen in the outpatient setting.
- In published reports primarily including hospitalized patients, most patients with EVALI who received corticosteroids had rapid improvement; dosages have been previously described.
- Some patients who have not received corticosteroids have also had clinical improvement with cessation of e-cigarette, or vaping, products, and comparative studies have not been conducted.

Patients Not Admitted to Hospital

- Follow-up within 24–48 hours to re-assess and manage possible worsening lung injury.
- Consider empiric use of antimicrobials including antivirals.

Post- Discharge Follow-Up

- Patients discharged from the hospital after inpatient treatment for EVALI should have a follow-up visit within 1–2 weeks.

- The follow-up evaluation should include pulse-oximetry and consideration of a repeat CXR.
- Additional follow-up testing 1–2 months after discharge might include spirometry, diffusion capacity for carbon monoxide, and CXR.
- Health care providers should also advise patients with a history of EVALI to return as soon as possible if they develop new or worsening respiratory symptoms, with or without fever, for early evaluation with influenza testing and early initiation of antiviral or antibiotic treatment, as indicated.

Cessation Services and Preventative Care

- Strongly advise patients to discontinue use of e-cigarette, or vaping, products.
- Provide education and cessation assistance for patients to aid nicotine addiction and treatment or referral for patients with marijuana use disorder.
- Advise adult patients using e-cigarettes, or vaping, products, to quit smoking, and to not to return to smoking cigarettes.
- Adult patients addicted to nicotine should be provided with evidence-based interventions, including behavioral counseling and FDA-approved medications.
- Emphasize the importance of routine influenza vaccination and consider pneumococcal vaccination in accordance with established guidelines.

Considerations at Point of Care

- Consider posting reminders or signage (poster for clinical settings available in [English pdf icon\[print-only PDF – 388 KB\]](#) or [Spanish pdf icon\[print-only PDF – 340 KB\]](#)) to encourage conversation between patients and providers about use of e-cigarette, or vaping, products.

Report cases of EVALI within the past 90 days to state or local health department.