

Hot Topics In Pediatrics

VAPI (now EVALI) Presenting Symptoms CDC and Internet Book of Critical Care: EMCRI.org

Subacute prodrome

Timing: Median duration of symptoms prior to hospitalization: 6 days

Presenting symptoms:

- 98% respiratory (dyspnea, chest pain, cough, hemoptysis)
- 81% gastrointestinal (nausea, vomiting, diarrhea, pain)
- 100% constitutional symptoms (fever, chills, weight loss, fatigue/malaise)
- 40% headache
- Generally no URI symptoms

Patients **may not** present in acute distress

Associated symptoms to be aware of in patients who inhale from vaping devices:

- Decreased exercise tolerance
- Headaches
- Difficulty concentrating
- Anxiety
- Decline in academic performance

1/3 patients diagnosed **initially with mild PNA**, discharged home with oral abx

Physical Exam

- Temp > 38C in 29% of patients
- O2 sat divided into 1/3's:
 - Normal
 - Between 89-94%
 - <88%

Labs

- Elevated WBC > 12,000 in 87% with >80% neutrophils in 94% pts
- ESR of >30 mm/hr in 93% pts, even to >100 mm/hr in some
- CRP elevated between 20-30 mg/dL

Imaging

CXR: bilateral infiltrates (~90% cases)

CT: bilateral ground-glass opacities

- Sub-pleural sparing seen in more "typical" cases
- Pleural effusions, pneumomediastinum, tree-in-bud opacities also seen
- Symptoms in Vaping

CDC Definition (Sept 18, 2019)

- Use of e-cigarette or dabbing in 90 days prior to symptom onset
- Pulmonary infiltrate (e.g. opacities) on plain film chest radiograph or ground-glass opacities on chest CT
- Absence of pulmonary infection on initial work-up (per minimum criteria) OR infection identified via culture or PCR but clinical team believes this is not the sole cause of the underlying lung injury OR minimum criteria to rule out pulmonary infection not met and clinical team believes this infection is not the sole cause of the underlying lung injury minimum criteria to rule out pulmonary infection not met and clinical team believes this infection is not the sole cause of the underlying lung injury
- No evidence in medical record of alternative plausible diagnoses (e.g. cardiac, rheumatologic, or neoplastic process)
- Minimum Criteria (absence of infection)-A negative respiratory viral panel
- A negative influenza PCR or rapid test if local epidemiology supports influenza testing
- All other clinically-indicated respiratory ID testing (e.g. urine antigen for *S pneumoniae* and *Legionella*, sputum culture if productive cough, bronchoalveolar lavage (BAL) culture if done, blood culture, and HIV-related opportunistic infections if appropriate) are negative

Resources

- [E-cigarettes and Youth: Toolkit for Partners pdf icon\[PDF-13 MB\]](#)
- [Surgeon General's Advisory on E-cigarette Use Among Youth](#)
 - [Download pdf icon\[PDF-572 KB\]external icon](#)
- [E-cigarettes Shaped Like Flash Drives: Information for Parents, Educators, and Health Care Providers](#)
- [Teachers and Parents: That USB Stick Might Be an E-cigarette](#)
- [Stanford Medicine Tobacco Prevention Toolkit: Modules for Tobacco and Nicotine Education \(med.stanford.edu/tobaccopreventiontoolkit/E-Cigs.html\)](#)
- [E-cigarettes.surgeongeneral.govexternal icon](#)
 - Information from the Surgeon General on the risks of e-cigarettes for young people, and includes free tools such as a [parent tip sheet for talking to teens about e-cigarettespdf iconexternal icon](#) [PDF - 5.2MB].
- [Teen.smokefree.govexternal icon](#)
 - Information for teens who use tobacco products, including tips on how to quit.
- [Electronic Cigarettes](#)
 - Basic information about e-cigarettes from CDC's Office on Smoking and Health.