ALGORITHM FOR MANAGEMENT OF PATIENTS WITH RESPIRATORY, GASTROINTESTINAL, OR CONSTITUTIONAL SYMPTOMS AND E-CIGARETTE, OR VAPING, PRODUCT USE

Patient arrives with signs and symptoms such as fever, cough, sore throat, shortness of breath, muscle aches, headaches, fatigue, nausea, or vomiting

Ask: Does the patient use e-cigarette or vaping products?

No

Evaluate and manage patient as clinically indicated

Yes

Initial clinical assessment
- Obtain pulse-oximetry with vital signs
- Focused history and physical exam
- Evaluate for other possible etiologies as clinically indicated (e.g., influenza virus infection or community-acquired pneumonia)

Is patient a candidate for outpatient management of EVALI?
- Normal O2 saturation (≥95% while breathing room air)
- No respiratory distress
- No comorbidities that may compromise pulmonary reserve
- Reliable access to care/strong social support systems
- Able to follow up within 24–48 hours

No

Inpatient clinical evaluation
- Conduct urine toxicology, influenza testing, plus other laboratory and infectious disease testing guided by clinical findings
- Obtain a chest x-ray and consider CT if chest x-ray is normal
- Consider consultation with pulmonary, critical care, medical toxicology, infectious disease, and others
- Additional testing with bronchoalveolar lavage or lung biopsy as clinically indicated, in consultation with pulmonary specialists

Inpatient clinical management
- Discontinue use of e-cigarette, or vaping, products
- Consider empiric use of antibiotics, antivirals, or both, in accordance with established guidelines
- Consider corticosteroids, with timing depending on severity
- Offer or connect patients to services to stop using e-cigarette, or vaping, products
- Ensure follow-up no later than 1–2 weeks after discharge from hospital
- Emphasize importance of routine influenza vaccination

Yes

Outpatient clinical evaluation
- Consider obtaining chest x-ray particularly if indicated by complaints of chest pain, dyspnea, or clinical exam findings
- Consider influenza testing, in accordance with established guidance

Outpatient clinical management
- Manage for possible EVALI
  - Advise patient to discontinue use of e-cigarette, or vaping, products
  - Use of corticosteroids might worsen respiratory infections and should be considered with caution in the outpatient setting
- Manage other possible infections, if present, in accordance with established guidelines
  - Consider early initiation of antivirals for possible influenza
  - Consider appropriate antibiotics for community acquired pneumonia
- Offer or connect all patients to services to stop using e-cigarette, or vaping, products
- Ensure follow-up within 24–48 hours; additional follow-up might be indicated, based on clinical findings
- Emphasize importance of routine influenza vaccination

Abbreviations: CT = computed tomography; EVALI = e-cigarette, or vaping, product use–associated lung injury.