TO:	Vermont Health Care Providers
FROM:	Mark Levine, MD, Commissioner of Health

E-cigarette or Vaping-associated Lung Injury (EVALI) Update

Background

The Centers for Disease Control and Prevention (CDC), the U.S. Food and Drug Administration, and the Vermont Department of Health continue to investigate an outbreak of lung injury associated with use of e-cigarette, or vaping, products. As of October 15, 2019, 1,479 lung injury cases have been reported to CDC from 49 states, the District of Columbia, and one U.S. territory. Thirty-three deaths have been confirmed in 24 states. Vermont has reported three cases with no deaths.

Among 1,358 patients with data on age and sex nationally, 70% of patients are male, the median age is 23 years (range 13-75), and 79% are under 35 years of age. Based upon medical chart abstraction data from 339 patients, 95% of cases initially experienced respiratory symptoms, 77% had gastrointestinal symptoms, and 85% had constitutional symptoms such as fever, chills, and weight loss. Gastrointestinal symptoms preceded respiratory symptoms in some patients. Signs included tachycardia, tachypnea, and oxygen saturation <95% on room air. Pulmonary exams have been unremarkable despite respiratory symptoms.

All cases have a history of vaping and most report a history of using products containing tetrahydrocannabinol (THC). The latest data suggest these products, particularly those obtained from informal sources (e.g. friends, family members, illicit dealers), are linked to most of the cases and play a major role in the outbreak. Nicotine-containing products have not been excluded as a possible cause. The specific chemical exposure(s) causing lung injuries remains unknown.

CDC published a Morbidity and Mortality Weekly Report on October 11, 2019 titled "Update: Interim Guidance for Health Care Providers Evaluating and Caring for Patients with Suspected E-cigarette, or Vaping, Product Use Associated Lung Injury — United States, October 2019" and available at www.cdc.gov/mmwr/volumes/68/wr/mm6841e3.htm?s_cid=mm6841e3_w. The information in this report was presented in an October 17 CDC clinician outreach call. Slides from that call are available here:
emergency.cdc.gov/coca/ppt/2019/COCA_Call_Update_Lung_Injury_10.17.19_Final_comp.pdf

Requested Actions and Further Information

Evaluation

- Ask patients with respiratory and gastrointestinal illness about vaping, particularly their use of THC.
- EVALI is a diagnosis of exclusion. Evaluate and treat for other possible causes of illness, including influenza and community acquired pneumonia as clinically indicated.
- A chest x-ray (CXR) should be obtained on all patients with a history of vaping and who have respiratory or gastrointestinal symptoms, particularly when accompanied by decreased oxygen saturation (<95%).
- Chest computed tomography (CT) might be useful when clinically indicated or when CXR results

do not correlate with clinical findings, or to evaluate severe or worsening disease. Radiographic findings consistent with EVALI include pulmonary infiltrates on CXR or opacities on chest CT.

Testing

- Evaluation of admitted patients might include bronchoalveolar lavage (BAL) or lung biopsy as clinically indicated. CDC is interested in testing BAL fluid samples, fixed lung biopsy or autopsy tissues, blood/serum/plasma and urine samples. All samples must be submitted to CDC through the Health Department.

Treatment

- Patients with decreased oxygen saturation (<95%) on room air or who are in respiratory distress should be admitted.
- Outpatient management might be considered on a case-by-case basis for patients with less severe illness; follow-up within 24-48 hours is recommended.
- Consider empiric use of a combination of antibiotics, antivirals, or steroids, based upon clinical context. Clinical improvement has been reported with the use of corticosteroids.
- For assistance with management of patients, call the poison control center at 1-800-222-1222.

Discharge and Follow-up

- Patients discharged from the hospital after inpatient treatment of EVALI should have a follow-up visit no later than 1-2 weeks after hospital discharge.
- Patients who received care for EVALI on an outpatient basis should have close follow-up within 24-48 hours to assess and manage possible worsening lung injury.
- Advise patients to discontinue use of vaping products. Returning to use might cause recurrence of symptoms or lung injury. For information and clinical resources related to EVALI, go to healthvermont.gov/vapinginjury
- Cessation might speed recovery. For cessation resources for your patients, visit healthvermont.gov/wellness/tobacco or 802quits.org/providers/ – or contact the Health Department Tobacco Control Program at tobaccovt@vermont.gov. Young adults and teens can text "VtVapeFree" to 88709. Patients needing support with marijuana use cessation can call 2-1-1 or visit healthvermont.gov/find-treatment to find treatment.

Report cases of lung injury of unclear etiology and a history of vaping within the past 90 days to the Health Department at 802-863-7240.

If you have any questions, contact the HAN Coordinator at 802-859-5900 or vthan@vermont.gov.