Delaware General Health District
Dedicated to your health

Delaware General Health District
HEALTH ALERT

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December 26, 2019

UPDATE: Severe Pulmonary Disease Associated with E-Cigarettes or "Vaping"

Summary

The Centers for Disease Control and Prevention (CDC), the Food and Drug Administration (FDA), state and local health departments, and public health and clinical stakeholders continue to investigate a nationwide outbreak of e-cigarette, or vaping, product use–associated lung injury (EVALI). As of December 10, 2019, a total of 2,409 hospitalized EVALI cases have been reported to CDC, including 52 (2%) deaths among EVALI patients. Among 1,139 reported cases with patient hospital discharge by October 31, 2019, 31 (2.7%) patients were re-hospitalized after initial discharge (median time to readmission: 4 days), and seven patients died following discharge after an EVALI hospitalization (median time to death: 3 days).

As of December 19, 2019, Ohio has confirmed 91 cases of vaping-related severe pulmonary illness and are investigating an additional 9 reports of illness. **The Delaware General Health District is investigating one suspect case in Delaware County**. Updates on the Ohio Department of Health (ODH) investigation can be found on the Tobacco Use Prevention and Cessation program webpage under "News & Events".

Background

Clinical guidance from CDC and state partners for EVALI continues to evolve as more information about EVALI becomes available. Among EVALI patients who were re-hospitalized or who died after discharge for an EVALI-related hospitalization, a recent study found a high rate of comorbidities and a median interval from discharge to readmission of 4 days and a median interval from discharge to death of 3 days; at least one quarter of rehospitalizations and deaths occurred within 2 days of discharge.

Characteristics of EVALI patients who were re-hospitalized or died following hospital discharge indicate that some chronic medical conditions, including cardiac disease, chronic pulmonary disease (e.g., chronic obstructive pulmonary disease and obstructive sleep apnea), and diabetes, and increasing age are risk factors leading to higher morbidity and mortality among some EVALI patients. In a recent examination of re-hospitalization and death among previously hospitalized patients with e-cigarette or vaping, product use–associated lung injury (EVALI), at least one quarter of rehospitalizations and deaths occurred within 2 days of discharge; comorbidities were common among patients who were re-hospitalized or who died after discharge. Updated guidance recommends posthospitalization outpatient follow-up, optimally within 48 hours of discharge, and emphasizes the importance of preparation for hospital discharge and post discharge care coordination to reduce risk of rehospitalization and death among hospitalized EVALI patients.

Recommendations

Updates to current clinical guidance include recommendations for discharge planning and optimized follow-up and case management after discharge that might reduce risk of rehospitalization and avert post-discharge mortality among patients hospitalized for EVALI. Assess clinical readiness for discharge.

- **Assure social support and access to mental health and substance use disorder services.** Re-hospitalized EVALI patients often continue to use e-cigarette, or vaping, products after initial hospitalization. Therefore, during an inpatient admission and during outpatient follow-up, patients should be supported in their efforts to discontinue e-cigarette, or vaping, product use and should be educated that resuming use of e-cigarette,

or vaping, products might result in recurrence of lung injury symptoms. EVALI patients might also benefit from evaluation for mental and behavioral health conditions by a social worker, behavioral health professional, psychologist or psychiatrist, or other member of the social care workforce to determine post-discharge support needs. No medications are currently approved by the Food and Drug Administration for cessation of tobacco products, including e-cigarettes, in children and adolescents. Vaping prevention and cessation resources are included at the end of this health alert.

- **Follow best practices for medication adherence.** A recent analysis found no significant difference in the percentage of discharged EVALI patients who received corticosteroid treatment while hospitalized among those who were re-hospitalized, who later died, and who neither required rehospitalization nor died after discharge. However, clinicians working closely with CDC have reported that re-hospitalized EVALI patients have at times not adhered to prescribed corticosteroid tapers. Patient adherence to prescribed medications has been determined to be enhanced by inpatient pharmacist counseling before patient discharge and that such counseling decreases rehospitalization. Thus, part of EVALI patient discharge planning should include inpatient pharmacist counseling, particularly for patients on a corticosteroid taper. Before hospital discharge, clinicians should evaluate EVALI patients for risk of secondary adrenal insufficiency and other consequences of corticosteroid use in the context of corticosteroid doses received and patient medical history; for patients who have had a prolonged corticosteroid course, clinicians should consider a corticosteroid taper and follow-up with an endocrinologist. Clinicians should also counsel patients about the signs and symptoms of adrenal insufficiency, such as fatigue, decreased appetite, gastrointestinal distress, myalgia, joint pain, salt craving, dizziness, and postural hypotension and advise them to seek medical attention should these occur.
- **Post-discharge medical follow-up.** Care transition and follow-up best practices include 1) scheduling follow-up appointments before hospital discharge and assigning patient navigators or community health workers to patients with significant barriers to care; 2) directly connecting patients to community services such as those addressing social determinants of health; 3) checking in by telephone or text; and 4) facilitating home visits by community health workers, home nursing services, or equivalent support staff for the most vulnerable patients.
- **Initial outpatient follow-up.** Outpatient follow-up with primary care providers or pulmonology specialists within 48 hours after hospital discharge for EVALI might provide an opportunity to prevent adverse outcomes, including rehospitalization or death. **Previous guidance recommended outpatient follow-up within 1–2 weeks; however, recent data support ensuring earlier follow-up, optimally within 48 hours.** Early outpatient follow-up has been shown to be effective in improving management of other pulmonary conditions, including asthma. Outpatient follow-up with primary care providers or pulmonary specialists should include 1) clinically assessing for stable vital signs, physical exam, resolution or symptoms, and normalized laboratory tests; 2) continuing education about EVALI; 3) ensuring adherence with medication regimens such as tapering of corticosteroids (if prescribed at the time of hospital discharge); 4) reinforcing the importance of abstinence from e-cigarette, or vaping, product use; 5) facilitating connection to outpatient care by all providers or services indicated by patients' medical history or conditions; 6) connecting patients to needed social, mental health, and substance use disorder resources; and 7) establishing connection to necessary services.
- **Pulmonary specialist follow-up.** Longer-term pulmonary follow-up should generally occur within 2–4 weeks after discharge (often at completion of the corticosteroid taper) to assess pulmonary function and resolution of radiographic findings. In addition to this new guidance, CDC continues to recommend follow-up testing 1–2 months after discharge, which might include spirometry, diffusing capacity of the lung for carbon monoxide, and chest x-ray.

- **Other follow-up.** Patients who have experienced prolonged immobilization during hospitalization (particularly those with intensive care unit–related deconditioning and muscle atrophy) might benefit from physical therapy. Ongoing engagement with addiction medicine and mental health services should be considered.

New data have provided insight into characteristics of EVALI patients who have been re-hospitalized or have died after an EVALI-related hospitalization. In consultation with the Lung Injury Response Clinical Working Group, CDC is using these data to update clinical guidance to include recommendations for outpatient follow-up, optimally within 48 hours after hospital discharge and for specific considerations concerning discharge planning and care transitions. Incorporating these updated recommendations into the management of patients with EVALI might reduce their risk for rehospitalization and avert further mortality among patients hospitalized for EVALI.

Report cases of significant respiratory illness of unclear etiology and a history of vaping in the past 90 days to the Delaware General Health District (DGHD) by calling (740) 203-2039 or fax reports to our secure fax line- (740) 203-2044. Report these suspect cases by the close of the next business day following patient presentation.

For more information
On the outbreak in Ohio: https://odh.ohio.gov/wps/portal/gov/odh/know-our-programs/tobacco-use-prevention-and-cessation/news-and-events/

On the national outbreak: https://www.cdc.gov/tobacco/basic_information/e-cigarettes/severe-lung-disease.html

YOUTH ARE THE TARGET

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Free Texting Services

Download the FREE **quitSTART** APP

For more information visit: www.delawarehealth.org/tobacco-free-delaware-county

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tobacco-free delaware county
healthy inside, healthy outside

Ohio Department of Health

EDUCATOR RESOURCES
For Vaping Prevention & Cessation

MY LIFE MY QUIT™

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Visit **mylifemyquit.com**

CDC

Know the RISKS: A Youth Guide to E-cigarettes
Youth & Adult Resources

Botvin LifeSkills® Training

E-cigarettes and Vaping Resource
Elementary - Middle - High School
Training Resources Available

CATCH® MY BREATH
E-CIGARETTE & JUUL PREVENTION PROGRAM

E-cigarette & JUUL Prevention Program
Grades 5-12 Training Resources Available

Stanford MEDICINE
TOBACCO PREVENTION TOOLKIT

Tobacco Prevention Toolkit Educational Curriculum
Middle & High School Training Resources Available
Alternative to School Suspension Program

For more information visit: www.delawarehealth.org/tobacco-free-delaware-county

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Ohio Department of Health