Riverside University HEALTH SYSTEM Public Health

Disease Control Branch
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PUBLIC HEALTH ADVISORY
INTERIM GUIDANCE FOR HEALTH CARE PROVIDERS EVALUATING AND CARING FOR PATIENTS WITH SUSPECTED E-CIGARETTE, OR VAPING, PRODUCT USE ASSOCIATED LUNG INJURY
OCTOBER 22, 2019

Situation Update

As of October 15, 2019, 1,479 cases of confirmed and probable e-cigarette or vaping product use associated lung injury (EVALI) with 33 deaths have been reported to CDC. The CDC number includes 133 cases of vaping associated lung injury (VAPI) and three deaths that were reported to the California Department of Public Health (CDPH). Locally, eight cases have been reported in Riverside County. Vaping is inhaling aerosol from an e-cigarette or other vaping device that heats a liquid that can contain nicotine, marijuana (THC), cannabidiol (CBD) or other substances. The shapes and sizes of these devices vary and include colorful vape pens, modified tank systems, and new pod-based devices that can look like USB flash drives, cell phones, credit card holders, and highlighters. These devices are frequently referred to as e-cigarettes, e-cigs, vapes, vape pens, electronic vaporizers, pod mods, or pod systems.

At this time, FDA and CDC have not identified the cause or causes of the lung injuries among EVALI cases, and the only commonality among all cases is that patients report the use of e-cigarette, or vaping, products. No single compound or ingredient has emerged as the cause of these injuries to date, and there might be more than one cause. Available data suggest THC-containing products play a role in this outbreak, but the specific chemical or chemicals responsible for lung injury have not yet been identified, and nicotine-containing products have not been excluded as a possible cause.

Current case counts are posted weekly at:

U.S.
https://www.cdc.gov/lunginjury

California
https://www.cdph.ca.gov/Programs/CCDPHP/CDPH%20Document%20Library/VAPI_Weekly_Public_Report_101519.pdf

Current CDPH Case Definition

A case is defined as meeting the following criteria:

- Severe acute pulmonary disease (including but not limited to pneumonitis and ARDS);

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- Requiring admission to a hospital and respiratory support (including but not limited to high-flow oxygen, BIPAP, or intubation with mechanical ventilation);
- No infectious etiology defined;
- Recent history of vaping;
- Symptom onset on or after June 1, 2019.

The Centers for Disease Control and Prevention (CDC) recently issued interim guidance for health care providers (HCP) evaluating and caring for patients with suspected e-cigarette or vaping product use associated lung injury.

Clinical Evaluation

History

- Ask about respiratory, gastrointestinal, and constitutional symptoms (e.g., cough, chest pain, shortness of breath, abdominal pain, nausea, vomiting, diarrhea, and fever) for patients who report a history of use of e-cigarette, or vaping, products.
- Ask all patients about recent use of e-cigarette, or vaping, products.
    - Types of substances used (e.g., tetrahydrocannabinol [THC], cannabis [oil, dabs], nicotine, modified products or the addition of substances not intended by the manufacturer); product source, specific product brand and name; duration and frequency of use, time of last use; product delivery system, and method of use (aerosolization, dabbing, or dripping).

Physical Exam

- Assess vital signs and oxygen saturation via pulse-oximetry

Laboratory Testing

- Infectious disease evaluation might include
    - Respiratory viral panel including influenza testing during flu season, *Streptococcus pneumoniae, Legionella pneumophila, Mycoplasma pneumoniae*, endemic mycoses, and opportunistic infections.
- Initial laboratory evaluation
    - Consider complete blood count with differential, liver transaminases, and inflammatory markers (e.g., erythrocyte sedimentation rate and C-reactive protein).
    - In all patients, consider conducting urine toxicology testing, with informed consent, including testing for THC.

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Imaging

- Chest radiograph.
- Consider chest computed tomography for evaluation of severe or worsening disease, complications, other illnesses, or when chest x-ray result does not correlate with clinical 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 or lung biopsy as clinically indicated, in consultation with pulmonary specialists.
- Healthcare facilities are requested to hold clinical specimens for potential forwarding to the state.

Patient Management

Admission Criteria and outpatient management

- Strongly consider admitting patients with potential lung injury, especially if respiratory distress is present, have comorbidities that compromise pulmonary reserve, or decreased (<95%) O2 saturation (consider modifying factors such as altitude to guide interpretation).
- Outpatient management for patients with suspected lung injury who have less severe injury might be considered on a case-by-case basis.

Medical Treatment

- Consider initiation of corticosteroids.
- Early initiation of antimicrobial coverage for community-acquired pneumonia should be strongly considered in accordance with established guidelines. *
- Consider influenza antivirals in accordance with established guidelines.

Patients not admitted to hospital

- Recommend follow-up within 24–48 hours to assess and manage possible worsening lung injury.
- 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.
- Consider empiric use of antimicrobial and antivirals.

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Post-hospital discharge follow-up

- Schedule follow-up visit no later than 1–2 weeks after discharge that includes pulse-oximetry testing. Consider repeating chest radiograph.
- Consider additional follow-up testing including spirometry and diffusion capacity testing, and consider repeat chest radiograph in 1–2 months.
- Consider endocrinology consultation for patients treated with high-dose corticosteroids.

Cessation services and preventive 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.
- Emphasize importance of routine influenza vaccination.
- Consider pneumococcal vaccine.

CDC Interim Guidance is located at: https://www.cdc.gov/mmwr/volumes/68/wr/pdfs/mm6841e3-H.pdf

Disease Reporting

Report suspect cases to RUHS Public Health Disease Control within one working day of identification. Report via phone by calling 951-358-5107 or by faxing the documents listed below to 951-358-5102.

- History and physical
- Infectious disease and pulmonologist consults
- CXR/CT reports
- Results for infectious disease testing

Submitting e-cigarette, vaping devices to Disease Control

- Notify Disease Control if devices are available.
- Follow hospital policy regarding release of patients' personal property.
- Hold items for pick up by a PH courier for delivery to Riverside County PH Laboratory

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