Multistate Outbreak of EVALI (E-cigarette, or Vaping, product use Associated Lung Injury):
Local Public Health Response

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National Outbreak – Background (As of Nov. 20, 2019)

- CDC, FDA, state and local health departments have been investigating a multistate outbreak of E-cigarette, or Vaping, product use Associated Lung Injury (EVALI)
  - 2,290 cases from 49 states and two US territories have been reported, with forty-seven deaths (25 states)*
  - Median age is 35 years (range: 13-75)
  - 79% are under the age of 35 years
  - 26% of cases are younger than 21 years
  - 95% of cases required hospitalization
  - Vitamin E acetate has been identified as a chemical of concern among people with EVALI
  - Over 80% of patients report vaping liquids (obtained from informal sources) that contain cannabinoid products, particularly THC

*www.cdc.gov/tobacco/basic_information/e-cigarettes/severe-lung-disease.html
National Investigation Summary to Date

• National and state data suggest that products containing THC, particularly those obtained off the street or from other informal sources (e.g., friends, family members, or illicit dealers), are linked to most of the cases and play a major role in the outbreak.

• All patients have a reported history of e-cigarette product use, or vaping, and no consistent evidence of an infectious cause has been discovered. Therefore, the suspected cause is exposure to a chemical or chemicals.*

• The specific chemical exposure(s) causing lung injuries associated with e-cigarette use, or vaping, remains unknown at this time. Recent CDC laboratory testing of bronchoalveolar lavage (BAL) fluid samples (or samples of fluid collected from the lungs) from 29 patients with EVALI submitted to CDC from 10 states found vitamin E acetate in all of the BAL fluid samples.

*as of November 20, 2019
Summary of EVALI Cases – TX DSHS

- 203 confirmed or probable cases reported in Texas
  - One death has been associated with EVALI
- 22% are under 18 years old, with a median age of 22
- 51% of cases have been reported from the North Texas region (PHR 2/3)
- Many cases have required high-level intensive care and respiratory support
  - Intubation and/or extracorporeal membrane oxygenation in some instances

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### Case Geography (Confirmed and Probable Cases)

**Table 2. Severe Pulmonary Illness among People who Report Vaping: Public Health Region**

<table>
<thead>
<tr>
<th>Public Health Region</th>
<th>N (%) (n=203)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Region 1</td>
<td>3 (1.48%)</td>
</tr>
<tr>
<td>Region 2/3</td>
<td>104 (51.23%)</td>
</tr>
<tr>
<td>Region 4/5 N</td>
<td>5 (2.46%)</td>
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<tr>
<td>Region 6/5 S</td>
<td>38 (18.72%)</td>
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<tr>
<td>Region 7</td>
<td>25 (12.32%)</td>
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<tr>
<td>Region 8</td>
<td>12 (5.91%)</td>
</tr>
<tr>
<td>Region 9/10</td>
<td>3 (1.48%)</td>
</tr>
<tr>
<td>Region 11</td>
<td>13 (6.40%)</td>
</tr>
<tr>
<td>Region Unknown</td>
<td>0 (0.00%)</td>
</tr>
</tbody>
</table>
Dallas County Health and Human Services (DCHHS) has received reports of 46 (confirmed or probable) patients hospitalized in Dallas County facilities, associated with use of e-cigarette products

- Median age of 22 years
- Most (70%) have been male.
- 14 (30%) have been under the age of 18 years (compared to 15% nationwide).
- Almost half (43%) have been under the age of 21 years
- 14 have required intubation and/or mechanical ventilation.
- Average length of hospitalization for Dallas County cases is 7 days
- 37% of hospitalized cases reside outside of Dallas County
Dallas County Public Health Response to EVALI

• DCHHS issued Health Advisories to increase awareness of severe pulmonary disease associated with E-cigarette product use
  – Disseminated to local healthcare providers and hospitals
• DCHHS developed and expanded an EVALI Response Team
  – Involved 5 members of the Acute Infectious Disease Epidemiology division
  – Conducted in-person/phone interviews and medical record abstractions for each case
  – Active identification of cases through syndromic surveillance, poison control and physician reports
  – Educated each patient/family about risks of e-cigarette use
• Intensive collaboration with partner agencies
  – FDA Office of Criminal Investigations
  – Texas Poison Control Network – Toxicologists
  – Texas DSHS; CDC
  – UTHealth School of Public Health – “CATCH My Breath” Prevention Program
• Community Awareness
  – Numerous interviews conducted with large media outlets (English/Spanish)
  – Presentations given to area schools (private/public), municipal staff
Clinical Features of Patients with EVALI

• Patients across the country have been experiencing the following symptoms:
  – Cough, shortness of breath, chest pain (95%)
  – Nausea, vomiting, diarrhea (77%)
  – Fatigue, fever, weight loss (85%)

• Symptoms typically have developed over a few days
  – Most patients have not improved after antibiotic treatment
  – Many experience some improvement after steroid treatment
Severity of EVALI Disease

• Nationally, 95% of EVALI cases have required hospitalization
  – Of the first 342 cases reported nationwide, 47% required admission to ICUs

• In a preliminary report from Wisconsin and Illinois (where outbreak began):
  – 94% of reported EVALI cases were admitted to the hospital
  – 32% of patients required intubation or mechanical ventilation
  – 58% of cases required admission to Intensive Care Units

• Summary characteristics from EVALI cases in Utah:
  – Most patients were hospitalized (89%)
    • 44% were admitted to intensive care units
  – Half of these cases required breathing assistance

• One hospital in New York had 12 cases of EVALI
  – 67% of these patients required intensive care
Long Term Effects of E-Cigarette Use

• Unknown, but early data of concern
  – Recent data suggest increased odds of chronic cough, bronchitis, and asthma associated with e-cigarette use
  – Some studies suggest association with impaired immune cell function in lungs – increasing susceptibility to bacterial and viral infections
  – Laboratory research on mice linked e-cigarette use to an increased risk in lung carcinoma and abnormal cell growth

https://truthinitiative.org/research-resources/emerging-tobacco-products/e-cigarettes-facts-stats-and-regulations
CDC Recommendations for Clinicians

• Immediately report cases of severe pulmonary illness of unclear origin and history of use of e-cigarette products within the preceding 90 days to DCHHS at (214) 819-2004.
  – Detailed information should be noted for patients regarding substances used. Determine if any remaining products are available for FDA/CDC testing.
• Clinical questions can be directed to Poison Control at 1-800-222-1222
  – A toxicologist will be available to consult with 24/7
• All possible causes of illness should be considered in patients reporting respiratory symptoms after e-cigarette use, as clinically indicated
  • CDC Interim Guidance for Healthcare Providers Evaluating Patients with Suspected EVALI – October 2019

https://www.cdc.gov/mmwr/volumes/68/wr/mm6841e3.htm?s_cid=mm6841e3_w
Clinical Guidance

• Updated guidance on the evaluation of patients with respiratory or gastrointestinal illness without an easily identified cause recommends questioning about the use of electronic cigarettes.

• Besides physical examination with measurement of the oxygen saturation by pulse oximetry and a search for adventitious lung sounds, a chest radiograph and influenza testing are recommended.

• If there is suspicion of pulmonary pathology but the chest radiograph does not reveal abnormal findings, a computed tomographic examination of the chest is recommended.

• If EVALI is suspected but the patient is clinically stable and without physiological abnormalities suggesting pulmonary insufficiency and has good social supports, it is reasonable to discharge the patient with close outpatient follow-up and instructions to return if symptoms worsen.

https://www.cdc.gov/mmwr/volumes/68/wr/mm6846e1.htm?s_cid=mm6846e1_w
CDC Recommendations for the Public

- Youth and young adults should not use e-cigarette products
  - They are illegal for use in Texas for people under the age of 21
- Women who are pregnant should not use e-cigarette products
- Adults who do not currently use tobacco products should not start using e-cigarette products.
- If you do use e-cigarette products, you should not buy these products from informal sources (for example, friends and family members or street/online vendors).
- Do not modify e-cigarette products or add any substances to these products
- Adult smokers who are attempting to quit should use evidence-based treatments, including counseling and FDA-approved medications. If you need help quitting tobacco products, including e-cigarettes, contact your doctor or other medical provider.

www.cdc.gov/tobacco/basic_information/e-cigarettes/severe-lung-disease.html
Thank you