TEXAS
Health and Human
Services

Department of State Health Services
Update on Investigation of Severe Pulmonary
Illness among People who have Reported Vaping

As of July 1, 2021

Background

Vaping is the use of an electronic device (electronic cigarette, e-cigarette, vaporizer, vape[s], vape pen, dab pen, or other device) to inhale substances (nicotine, marijuana, THC, THC concentrations, CBD, synthetic cannabinoids, flavorings, or other substances). E-cigarettes have been for sale in the United States since 2007.

More than 928,000 Texas adults, 4.7% of the adult population, reported current e-cigarette use in 2017. Younger adults, 18-29 years of age, were more likely to use e-cigarettes compared with adults 45 years of age and older.

In 2018:

- Over 330,000 middle and high school students reported current e-cigarette use. This represents 13% of all Texas students.
- E-cigarette use was three times as prevalent among high school students (18.9%) as middle school students (6%).
- Overall, youth use of e-cigarettes has more than quadrupled from 3% in 2012 to 13% in 2018.

More information can be found on the DSHS Vaping website.

Public Health Concern – Case Investigations

As of the date of this report, 354 possible EVALI cases have been reported in Texas:
- 150 are classified as confirmed cases.
- 130 are classified as probable cases.
- 4 deaths have been reported.
- 72 determined not to be cases.

Possible EVALI cases indicate the total number of possible EVALI-related reports received from health care providers, laboratories, medical examiners, other health departments or any other reporter. DSHS investigates these reports and uses CDC's 2019 Lung Injury Surveillance Case Definition for classifying a case as confirmed or probable EVALI. Detailed criteria for case classification can be found in Appendix A at the end of this report. Additionally, the data in this report are subject to change as new information is received.

Cases of EVALI have occurred in multiple states, many resulting in hospitalization and death. As of February 18, 2020, CDC reports that 2,807 confirmed and probable cases of hospitalized lung illness associated with the use of e-cigarette products have been reported from 50 states, the District of Columbia, and 2 U.S. territories. Sixty-eight deaths have been confirmed in 29 states and the District of Columbia. No infectious disease has been identified among cases and lung illness is likely associated with a chemical exposure.

CDC has identified vitamin E acetate as a chemical of concern among people with e-cigarette, or vaping, product use associated lung injury (EVALI). Recent CDC laboratory testing of bronchoalveolar lavage (BAL) fluid samples (fluid samples collected from the lungs) from 51 patients with EVALI submitted to CDC from 16 states found vitamin E acetate in 94% of the case samples. In comparison, no vitamin E acetate was found in 99 BAL samples submitted from nicotine e-cigarettes users, tobacco smokers, and nonusers enrolled in a tobacco study with Ohio University. Vitamin E acetate might be used as an additive, most notably as a thickening agent in THC-containing e-cigarette, or vaping, products.

CDC has discontinued EVALI data collection. The process for deactivation began on November 26, 2019, when CDC asked states to only report hospitalized EVALI cases to CDC. Further collection of data on nonhospitalized cases was left to the discretion of the individual states, tribal, local and territorial health departments. Starting February 3, 2020, CDC no longer accepted clinical or product samples related to EVALI cases. As of February 18, 2020, CDC completely discontinued data collection due to considerable decline in EVALI cases since September 2019 and the identification of vitamin E acetate as the primary cause of EVALI.

Currently, DSHS Environmental Surveillance and Toxicology Branch (ESTB) conducts passive EVALI surveillance which includes receiving case reports, requesting and reviewing medical records for case ascertainment and

maintaining an in-house database for EVALI cases. DSHS ESTB has the statutory authority to collect and continue EVALI surveillance activities as public health investigation under the Texas Health and Safety Code, Chapter 161 and Chapter 81.

Case Characteristics

Of the 280 confirmed or probable cases in Texas:
- 28% are under 18 years of age.
- Cases range in age from 13 through 75 years old, with a median age of 21 years.
- 70% are male.
- 88% cases with available substance information* reported vaping products containing tetrahydrocannabinol (THC), the primary psychoactive ingredient in marijuana.
- 20% cases reported using only THC and not nicotine products.
- Hospital length of stay ranges from -362 through 87 days, with a mean length of stay of 6 days.

Case Status

Table 1. Severe Pulmonary Illness among People who Report Vaping: Case Status

Case Status	N (%) (n=354)
Confirmed	150 (42.37%)
Probable	130 (36.72%)
Not Case	72 (20.34%)
Under Investigation	2 (0.56%)

Case Geography

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

Public Health Region	N (%) (n=280)
Region 1	6 (2.14%)
Region 2/3	152 (54.29%)
Region 4/5 N	6 (2.14%)
Region 6/5 S	43 (15.36%)
Region 7	38 (13.57%)
Region 8	14 (5.00%)
Region 9/10	3 (1.07%)
Region 11	14 (5.00%)
Region Unknown	4 (1.43%)

This table contains data on confirmed and probable cases

*County and region may not be available for all cases as we await information from parent, guardian, or health care providers

Case Characteristics

Table 3. Severe Pulmonary Illness among People who Report Vaping: Sex

Sex	N (%) (n=280)
Female	84 (30.00%)
Male	196 (70.00%)

This table contains data on confirmed and probable cases

Table 4. Severe Pulmonary Illness among People who Report Vaping: Race

Race	N (%) (n=280)
American Indian or Alaskan Native	2 (0.71%)
Asian	3 (1.07%)
Black or African American	5 (1.79%)
Native Hawaiian or Other Pacific Islander	0 (0.00%)
White	195 (69.64%)
Other	6 (2.14%)
Unknown	69 (24.64%)

This table contains data on confirmed and probable cases

Table 5. Severe Pulmonary Illness among People who Report Vaping: Hispanic Ethnicity

Hispanic Ethnicity	N (%) (n=280)
Yes	63 (22.50%)
No	106 (37.86%)
Unknown	111 (39.64%)

This table contains data on confirmed and probable cases

Table 6. Severe Pulmonary Illness among People who Report Vaping: Age Group

Age Group	N (%) (n=280)
<=12	0 (0.00%)
13-17	79 (28.21%)
18-23	89 (31.79%)
24-44	99 (35.36%)
>=45	13 (4.64%)
Age Category Unknown	0 (0.00%)

This table contains data on confirmed and probable cases

Appendix A

2019 Lung Injury Surveillance Case Definition (CDC) – September 18, 2019

Confirmed   Using an e-cigarette ("vaping") or dabbing* in 90 days prior to symptom onset
AND
Pulmonary infiltrate, such as opacities, on plain film chest radiograph or ground-glass opacities on chest CT
AND
Absence of pulmonary infection on initial work-up. <u>Minimum criteria</u> are:

1) A negative respiratory viral panel
   AND

2) A negative influenza PCR or rapid test, if local epidemiology supports influenza testing
   AND

3) All other clinically-indicated respiratory infectious disease testing (e.g., urine Antigen for *Streptococcus pneumoniae* and *Legionella*, sputum culture if productive cough, bronchoalveolar lavage (BAL) culture if done, blood culture, HIV-related opportunistic respiratory infections if appropriate) are negative
   AND

No evidence in medical record of alternative plausible diagnoses (e.g., cardiac, rheumatologic, or neoplastic process).

Probable   Using an e-cigarette ("vaping") or dabbing* in 90 days prior to symptom onset
AND
Pulmonary infiltrate, such as opacities, on plain film chest radiograph or ground-glass opacities on chest CT
AND
Infection identified via culture or PCR, but clinical team** believes this infection is not the sole cause of the underlying lung injury   OR   <u>Minimum criteria</u> to rule out pulmonary infection not met (testing not performed) and clinical team** believes infection is not the sole cause of the underlying lung injury
AND
No evidence in medical record of alternative plausible diagnoses (e.g., cardiac, rheumatologic, or neoplastic process).

Footnotes   * Using an electronic device (e.g., electronic nicotine delivery system (ENDS), electronic cigarette, e-cigarette, vaporizer, vape(s), vape pen, dab pen, or other device) or dabbing to inhale substances (e.g., nicotine, marijuana, THC, THC concentrates, CBD, synthetic cannabinoids, flavorings, or other substances).

**Clinical team caring for the patient.

Notes: these case definitions are meant for surveillance and not clinical diagnosis. These case definitions are subject to change and will be updated as additional information becomes available if needed.