

# 2019 LUNG INJURY SURVEILLANCE CASE DEFINITION FOR OUT-OF-HOSPITAL DEATHS (CDC) – OCTOBER 4, 2019



- This case definition is **ONLY** meant to be used to determine case status for individuals who die outside of the hospital or prior to hospital admission (e.g., at home, in route to the hospital, or in the emergency department), for whom chest imaging and clinical evaluation outlined in the primary **2019 Lung Injury Surveillance Case Definition** have not been performed. This case definition is **NOT** intended to be used to classify case status for surviving individuals or for individuals who die in the hospital, for whom chest imaging and clinical evaluation were performed.
- This case definition integrates pathologic findings from the microscopic review of lung tissue specimens. As medicolegal jurisdiction allows, autopsies should be considered for deaths among persons with a history of e-cigarette product use, or vaping, who had antecedent respiratory or gastrointestinal symptoms, or are suspected of having possible lung injury associated with e-cigarette product use, or vaping.
- Fixed tissue specimens from autopsy can be sent to the CDC Infectious Disease Pathology Branch for histopathologic review and other testing. Guidelines for specimen submission are available on the Healthcare Provider page of CDC's Lung Injury response website: [www.cdc.gov/lunginjury](http://www.cdc.gov/lunginjury).
- This case definition is being used for public health surveillance purposes only and should not be used for clinical diagnostics or forensics. Persons meeting this case definition will not be counted separately; they will be included in the total count of confirmed and probable cases in conjunction with confirmed and probable cases that meet the primary **Lung Injury Surveillance Case Definition** (available on the State and Local Health Department page of CDC's Lung Injury response website).

## Confirmed Case:

History of e-cigarette product use, or vaping,\* in the 90 days prior to death

### **AND**

Pathologic evidence of acute lung injury (e.g., diffuse alveolar damage, acute fibrinous pneumonitis or bronchiolitis, or organizing pneumonia often with vacuolated or foamy macrophages and/or pneumocytes)

### **AND**

Absence of pulmonary infection\*\* (e.g. influenza, *S. pneumoniae*, *Legionella*, and other infectious diseases, including HIV-related infections as appropriate, as evidenced by microscopy, immunohistology, microbiology\*\*\*, or molecular testing)

### **AND**

No evidence of alternative plausible diagnoses for the lung injury in medical record or at autopsy



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## **Probable Case:**

History of e-cigarette product use, or vaping,\* in the 90 days prior to death

### **AND**

Pathologic evidence of acute lung injury (i.e., diffuse alveolar damage, acute fibrinous pneumonitis or bronchiolitis, or organizing pneumonia often with vacuolated or foamy macrophages and/or pneumocytes)

### **AND**

A positive result on testing for pulmonary infection\*\* (e.g., influenza, *S. pneumoniae*, *Legionella*, and other infectious diseases, including HIV-related infections as appropriate, as evidenced by microscopy, immunohistology, microbiology\*\*\*, or molecular testing), however medical examiner or other forensic pathologist believes infection is not the sole cause of the underlying lung injury

### **AND**

No evidence of alternative plausible diagnoses for the lung injury in medical record or at autopsy

## **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) to inhale substances (e.g., nicotine, marijuana, THC, THC concentrates, CBD, synthetic cannabinoids, flavorings, or other substances). This definition also includes “dabbing,” which involves superheating substances that contain high concentrations of THC and other plant compounds (e.g., cannabidiol) with the intent of inhaling the aerosol.

\*\* Does not include positive results from postmortem microbiologic testing thought to represent normal viral or bacterial colonization of nasopharynx, or postmortem bacterial overgrowth of lung tissues or blood.

\*\*\*Recommended microbiology: Nasopharyngeal and/or lung swab testing for influenza, lung swab testing for respiratory viruses, postmortem cultures of lung tissue and blood. Interpretation of postmortem cultures may be complicated because of bacterial overgrowth resulting from tissue breakdown. Medical examiners and other forensic pathologists should contact their local or state health department for assistance if such testing is not readily available at their agency. Fixed autopsy tissue specimens can also be sent to the Infectious Diseases Pathology Branch at CDC for histopathologic evaluation, and infectious disease testing, including immunohistochemistry and molecular testing, as indicated ([https://www.cdc.gov/tobacco/basic\\_information/e-cigarettes/severe-lung-disease/healthcare-providers/pdfs/specimen-submission-req.pdf](https://www.cdc.gov/tobacco/basic_information/e-cigarettes/severe-lung-disease/healthcare-providers/pdfs/specimen-submission-req.pdf)).