

HEALTH ALERT

Severe Pulmonary Disease Associated with “Vaping”

Summary and Action Items

- The Centers for Disease Control and Prevention (CDC) and several states are investigating the occurrence of severe pulmonary disease among people who report “vaping.”
- The Ohio Department of Health (ODH) has received six reports of patients experiencing serious respiratory symptoms following e-cigarette or vaping product use. Those reports are being investigated.
- ODH is requesting that this alert be distributed to all health care providers in your jurisdiction.
- ODH is requesting health care providers who are seeing patients with suspected serious pulmonary illness of unclear etiology and who vape report these suspected cases to their local health department (LHD) by the close of the next business day following patient presentation.

Background

Multiple states across the country have reported clusters of patients experiencing severe respiratory disease after using e-cigarette or vapor products. As of August 21, 2019, 153 possible cases have been reported across 16 states. CDC’s clinician outreach and communication activity (COCA) document is attached.

Potential Exposures

Patients have reported vaping in the weeks to months prior to illness. Many have acknowledged recent use of tetrahydrocannabinol (THC)-containing products; however, no specific product has been identified by all cases, nor has any product been conclusively linked to this clinical syndrome. An investigation has been initiated with interviews of patients to further study the issue.

Symptoms and Imaging

Patients present with respiratory symptoms including cough, shortness of breath and fatigue. Symptoms worsen over a period of days or weeks before admission to the hospital. Other symptoms may include fever, anorexia, pleuritic chest pain, nausea, abdominal pain and diarrhea. Chest radiographs show bilateral opacities, typically in the lower lobes and CT imaging of the chest shows diffuse ground glass opacities, often with subpleural sparing. Evaluation for infectious etiologies were negative in all patients. Some patients had progressive respiratory compromise requiring endotracheal intubation but subsequently improved with systemic steroids.

Management

At this time, it is unknown what is causing or contributing to the symptoms. Infectious etiologies should be ruled out. Aggressive supportive care is warranted, and in severe cases, it is recommended that pulmonary and critical care specialists are consulted. If an e-cigarette or vaping product is suspected as a possible etiology of a patient’s illness, it is important to inquire about the type of product and where the product was obtained and if samples of the product are available for possible analysis.

Prevention

At this time, it is unknown what product(s) or chemicals may be linked to these illnesses.

ODH and LHD Response

LHDs who hear about suspect cases should notify ODH for follow up information. ODH will gather information from LHDs about cases within Ohio to look for common exposures and more information on products and chemicals linked to illnesses.

Contact

Please report all suspected cases to the local health department in the jurisdiction in which the case resides by completing the attached draft form. Please report these suspect cases by the close of the next business day following patient presentation. To locate a local health department, please visit <https://odhgateway.odh.ohio.gov/lhdinformationsystem/Directory/GetMyLHD>

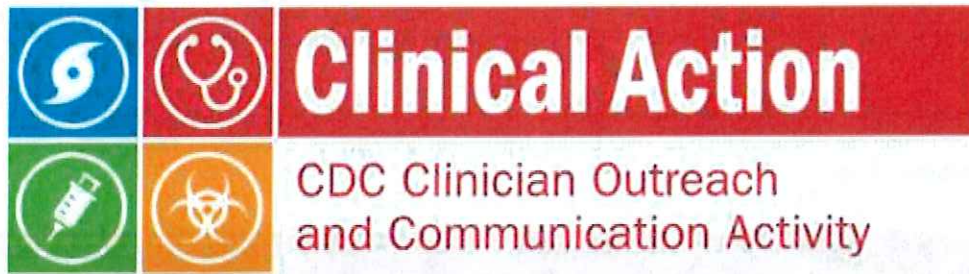
For additional information, clinicians can contact their local health department or the Ohio Department of Health, Tobacco Use Prevention and Cessation Program.

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Attachments

- CDC Clinical Outreach and Communication Activity (released 8/16/2019)
- ODH Draft Clinician Report Form– Severe Respiratory Disease Associated with Vaping



Background

CDC Urges Clinicians to Report Possible Cases of Unexplained Vaping-associated Pulmonary Illness to their State/Local Health Department

As of August 14, 2019, 30 cases of severe pulmonary disease have been reported to the Wisconsin Department of Health Services (DHS). Using a case definition drafted by DHS, 15 cases are confirmed (ages 16-34 years) and 15 cases are still under investigation (ages 16-53 years). Patients presented with respiratory symptoms including cough, shortness of breath, and fatigue. Symptoms worsened over a period of days or weeks before admission to the hospital. Other symptoms reported by some patients included fever, chest pain, weight loss, nausea, and diarrhea. Chest radiographs showed bilateral opacities, and CT imaging of the chest demonstrated diffuse ground-glass opacities, often with sub-pleural sparing. Evaluation for infectious etiologies was negative among nearly all patients.

Some patients experienced progressive respiratory compromise requiring mechanical ventilation but subsequently improved with corticosteroids. All patients reported “vaping” (i.e., use of e-cigarette devices to aerosolize substances for inhalation) in the weeks and months prior to hospital admission. Many have acknowledged recent use of tetrahydrocannabinol (THC)-containing products while speaking to healthcare personnel or in follow-up interviews by health department staff; however, no specific product has been identified by all cases, nor has any product been conclusively linked to this clinical syndrome. DHS is working with the Wisconsin State Lab of Hygiene and the U.S. Food and Drug Administration to investigate the possible cause of these illnesses by testing patient specimens and vaping products.

Illinois has identified 24 possible cases. Of these, 10 are considered confirmed, 12 are still under investigation, and 2 have been excluded. Other states such as NY, CA, IN, and UT have also reported possible cases of similar illness and some have issued health alerts to clinicians and healthcare providers in their states. The etiology of this illness is unclear at this time; however, active, state-specific epidemiological investigations are ongoing to better characterize the demographic, clinical, and laboratory features of cases.

What Clinicians Can Do

Clinicians should always inquire about potential drug (legal and illicit) use as part of a general history. When patients present with respiratory or pulmonary illness, especially of unclear etiology, clinicians should ask about the use of e-cigarette products (devices, liquids, refill pods and/or cartridges) for “vaping”. If possible, inquire about the types of drugs (legal or illicit) used and methods of drug use (e.g., smoking, “vaping”).

CDC recommends that clinicians report cases of significant respiratory illness of unclear etiology and a history of vaping to the appropriate state and/or local health department.

It is important to consider all possible causes of illness in patients presenting with these symptoms, even if they report a history of e-cigarette product use. Clinicians should evaluate and treat for other likely causes of illness (e.g., infectious or other) as clinically indicated. Evaluation for common infectious etiologies when also suspected should be pursued and less common infections, and rheumatologic or neoplastic processes considered, as clinically indicated. Aggressive supportive care in these possible or suspected cases is warranted, and in severe cases, pulmonary, infectious disease and critical care specialists should be consulted.

If an e-cigarette product is suspected as a possible etiology of a patient’s illness, it is important to inquire what type of product as well as if the patient is:

- using commercially available devices and/or liquids (i.e. bottles, cartridges or pods);
- sharing e-cigarette products (devices, liquids, refill pods and/or cartridges) with other people;
- re-using old cartridges or pods (with homemade or commercially bought products); or
- heating the drug to concentrate it and then using a specific type of device to inhale the product (i.e., “dabbing”).

Healthcare providers should also ask patients about any retained product, including devices and liquids, in order to ascertain availability for possible testing to be coordinated by the local/state health department.

State health department officials seeking technical assistance with an epidemiological investigation or laboratory testing can discuss with their state health department laboratories, or contact CDC by email at: duinquiries@cdc.gov.

What is CDC Doing?

CDC is actively assisting state health departments with their epidemiological and laboratory investigations by facilitating information sharing between state health departments, providing assistance in the development of data collection tools and health communication materials, and identifying options to facilitate laboratory testing of vaping products and solutions. Public health officials wanting to discuss possible cases can contact CDC by emailing: duinquiries@cdc.gov.

For More Information

- Wisconsin Department of Health: <https://www.dhs.wisconsin.gov/outbreaks/index.htm>
- Illinois Department of Health: <http://dph.illinois.gov/news/illinois-department-public-health-warns-hospitalizations-potentially-tied-vaping>
- Information on electronic cigarettes and similar devices: https://www.cdc.gov/tobacco/basic_information/e-cigarettes/index.htm
- For assistance with management of patients suspected of illness related to recreational, illicit, or other drugs: Call your local poison control center at: 1-800-222-1222.

The Emergency Risk Communication Branch in the Division of Emergency Operations, Center for Preparedness and Response is responsible for the management of all COCA products.

For information about this update or other clinical issues, or to send your feedback, please contact us at coca@cdc.gov

[CDC Clinician Outreach and Communication Activity Facebook page](#)—connect with COCA on Facebook

[Clinician Outreach and Communication Activity](#)—resources for healthcare providers

[COCA RSS Feed](#)—subscribe to be notified of conference calls, updates, and CDC guidance for health providers

[Crisis & Emergency Risk Communication Training](#)—training program that draws from lessons learned during public health emergencies, and incorporates best practices from the fields of risk and crisis communication

[Health Alert Network](#)—CDC's primary method of sharing cleared information about urgent public health incidents with public information officers; federal, state, territorial, and local public health practitioners; clinicians; and public health laboratories

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Centers for Disease Control and Prevention

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Clinician Report Form Severe Pulmonary Disease Associated with Vaping

Report Date: _____

Reporter Information:

Name and Title: _____ Phone Number: _____

Facility/Hospital Name: _____

Can medical records be sent to the local health department? Yes No

Patient Information:

First Name: _____ Middle Initial: _____ Last Name: _____

Date of Birth (month/day/year): ____/____/____ Sex: Male Female Unknown

Patient Address: _____

Telephone Number: (Home) _____

Telephone Number: (Cell) _____

Telephone Number: (Other) _____

Race: White
 Black/African American
 Asian
 Native Hawaiian/Pacific Islander
 American Indian/Alaskan Native
 Other: _____

Ethnicity: Hispanic Non-Hispanic Unknown

Patient evaluated at (please circle): ED visit Treated inpatient Treated outpatient
Other: _____

Patient current disposition: Treated and discharged Date of Discharge: ____/____/____
(please circle) Admitted for inpatient care
 Died Date of Death: ____/____/____
Other: _____

Health and Medical Information:

Date of Illness Onset: ____/____/____ Time: ____ : ____

Signs/symptoms (circle all that apply):

- | | | | |
|-------------------------------|--------------|-------------|-------------|
| Shortness of breath | Hypoxia | Diarrhea | Weight Loss |
| Cough (with or without blood) | Nausea | Fever | Weakness |
| Wheezing | Vomiting | Chills | Dizziness |
| Chest Pain (pleuritic) | Stomach Pain | Palpitation | Fatigue |

Other: _____

Does that patient have any pre-existing conditions (specifically pulmonary disease due to rheumatologic or neoplastic processes)?

Yes what condition: _____
 No

Was the patient treated for symptoms related to this current pulmonary illness? Yes No Unknown

Was the patient treated with antibiotics? Yes No Unknown Not applicable

Did the patient's illness respond to antibiotics? Yes No Unknown Not applicable

Was the patient treated with steroids? Yes No Unknown Not applicable

Did the patient's illness respond to steroids? Yes No Unknown Not applicable

Did the patient require intubation? Yes No Unknown Not applicable

Testing Information:

Was laboratory testing performed? Yes No Unknown

Did any tests indicate that symptoms were indicative of a pulmonary infection? Yes No

Test	Collection Date	Result (pos/neg/pending)	Result Date
Blood cultures			
Respiratory viral panel			
Rapid influenza test/PCR			
Sputum gram stain			
Respiratory Sync Virus			
Urine <i>S. pneumoniae</i> / <i>Legionella</i> / <i>Mycoplasma</i>			
BAL culture			
Other:			

Patient's lowest WBC count: _____

Patient's lowest Platelet count: _____

Patient's highest CRP: _____

Patient's lowest absolute lymphocyte count: _____

Patient's highest AST: _____

Patient's highest ALT: _____

Did the patient receive a chest x-ray or CT? Yes No Unknown

If yes, which test? _____

Imaging results: _____

Imaging contained any pulmonary infiltrates Yes No Unknown
(opacities or ground glass opacities)?

Risk Factor Information:

Did the patient use any vaping, e-cigarette, or marijuana products prior to symptom onset?
Yes No Unknown

Which products were used? Marijuana (any kind)
(circle all that apply) Vaped THC cartridges (e.g. dank vapes)
 Vaped commercial nicotine (e.g. JUUL)
 Other: _____

Product brand and description: _____

How soon after using vaping products did the patient begin experiencing symptoms? (minutes, hours, days)

Were the products laced with any other substances prior to use? Yes No Unknown

If yes, with what? _____

Was a nicotine product altered in any way prior to use? Yes No Unknown

If yes, altered how? _____

How often does the patient use these vaping products? (circle one)

- Every day
- Some days
- Occasionally
- This was the first time these products were used

When did the patient start regularly using vaping products (use every day or some days)? (circle one)

- Less than 6 months ago
- Between 6 months and 1 year ago
- More than 1 year ago

Where were the products obtained? (circle all that apply) From friend or family member
From another person that is not a friend or family member
From store (e.g. gas station, convenience store, vape shop)
Other: _____

If store, store name: _____

Store address: _____

Store city: _____

Store state: _____

Store ZIP: _____

When were the products obtained?

Date: ____/____/____

Time: ____ : ____

Is product available for testing? Yes No Unknown

Notes:

If you are a provider filling out this form, please contact the local health department in the jurisdiction in which the patient resides to report the suspected case. If patient residence is unknown, report to the local health department in which the provider is located. To locate a local health department please visit:

<https://odhgateway.odh.ohio.gov/lhdinformationsystem/Directory/GetMyLHD>

If you have additional questions, please contact your local health department or Kirtana Ramadugu, ODH epidemiologist, at 614-644-0743 or Courtney Dewart, CDC EIS Officer assigned to ODH, at 614-644-8784.

For Local Health Department Use Only

Health department jurisdiction: _____

Date reported to the local health department (MM/DD/YYYY): _____

Status of investigation:

- Waiting on medical records
- Medical records review
- Waiting for patient response to interview request
- Patient/proxy refused interview
- Patient lost to follow up
- Not a case
- Complete

Case status (see OPHCS for case definitions):

- Confirmed
- Probable
- Suspect
- Not yet determined
- Not a case

Case investigator contact information:

Name: _____

Title: _____

Phone number: _____

Email address: _____

Local health departments, please return completed forms to the Ohio Department of Health via secure fax at: 614-564-2456, attention: Kirtana Ramadugu or Courtney Dewart.

