MISSISSIPPI STATE DEPARTMENT OF HEALTH

This is an official
MS Health Alert Network (HAN) Advisory

MESSAGE ID:	**MSHAN-20190903-00421-ADV (Health Advisory)**
RECIPIENTS:	**All Physicians, Hospitals, ERs, ICPs, NPs, and Healthcare Providers - Statewide**
DATE:	**Tuesday, September 03, 2019**
SUBJECT:	**Update -Severe Pulmonary Disease Associated with E-Cigarette (Vaping) Product**

Key Messages

- As of August 30, 2019, 215 possible cases of severe pulmonary disease associated with the use of e-cigarette products have been reported from 25 states;
- **No Mississippi cases have yet been reported;**
- All cases reported use of e-cigarette products prior to onset, many reporting use of cannabinoid compounds such as THC or CBD;
- Symptoms have developed gradually over days to weeks and include cough, shortness of breath, and chest pain, with many reporting gastrointestinal (nausea/vomiting, diarrhea) or non-specific constitutional symptoms (fatigue, fever or weight loss);
- Radiologic findings vary, but bilateral pulmonary infiltrates and diffuse ground-glass opacities have been reported. Several patients from one state have been diagnosed with lipoid pneumonia;
- While the exact etiology is so far undetermined, no infectious causes have been identified:
- **Mississippi Clinicians are asked to report cases of severe pulmonary disease of unclear etiology and a history of e-cigarette product use within the past 90 days to the Mississippi State Department of Health (MSDH) at 601-576-7725;**
- **Please review the complete Health Alert Message below for additional Clinician Recommendations;**
- **Please share this important Health Alert Message broadly with your colleagues and within your facility as appropriate.**

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Dear colleagues,

The following Health Alert Network Message issued by the Centers for Disease Control and Prevention (CDC) provides updated information for the ongoing multi-state investigation of severe pulmonary disease that has been associated with the use of e-cigarette products. As of August 30, 2019, 215 possible cases with one death from 25 states have been reported. All patients have reported using e-cigarette products, many reporting use of cannabinoid compounds such as THC or CBD. **No Mississippi cases have yet been reported.**

Mississippi Clinicians Recommendations
- **Ask patients who report e-cigarette product use about signs/symptoms of pulmonary disease;**
- **Report cases of severe pulmonary disease of unclear etiology and a history of e-cigarette product use within the past 90 days to the Mississippi State Department of Health (MSDH) at 601-576-7725;**
- **Please ask about any retained product that may be available for testing;**

Please see the full CDC Health Alert Message below for details of the investigation, clinical information and full recommendations for clinicians.

Regards,

Paul Byers, MD
State Epidemiologist

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<p style="text-align:center">**This is an official**
CDC HEALTH ADVISORY</p>

Distributed via the CDC Health Alert Network
August 30, 2019, 0935 ET (9:35 AM ET)
CDCHAN-00421

Severe Pulmonary Disease Associated with Using E-Cigarette Products

Summary

The Centers for Disease Control and Prevention (CDC) is providing: 1) background information on the forms of e-cigarette products, 2) information on the multistate outbreak of severe pulmonary disease associated with using e-cigarette products (devices, liquids, refill pods, and cartridges), and 3) clinical features of patients with severe pulmonary disease. This health advisory also provides recommendations for clinicians, public health officials, and the public based on currently available information.

General Background

E-cigarettes typically contain nicotine, most also contain flavorings and other chemicals, and some may contain marijuana or other substances. They are known by many different names and come in many shapes, sizes and device types. Devices may be referred to as "e-cigs," "vapes," "e-hookahs," "vape pens," "mods," tanks, or electronic nicotine delivery systems (ENDS). Some e-cigarette devices resemble other tobacco products such as cigarettes; some resemble ordinary household items such as USB flash drives, pens, and flashlights; and others have unique shapes. Use of e-cigarettes is sometimes referred to as "vaping" or "juuling." E-cigarettes used for dabbing are sometimes called "dab" pens.

E-cigarettes can contain harmful or potentially harmful substances, including nicotine, heavy metals (e.g., lead), volatile organic compounds, and cancer-causing chemicals. Additionally, some e-cigarette products are used to deliver illicit substances; may be acquired from unknown or unauthorized (i.e., "street") sources; and may be modified for uses that could increase their potential for harm to the user. For example, some e-cigarette pods or cartridges marketed for single use can be refilled with illicit or unknown substances. In addition, some e-cigarette products are used for "dripping" or "dabbing." Dripping involves dropping e-cigarette liquid directly onto the hot coils of an e-cigarette which can result in high concentrations of compounds (e.g., tetrahydrocannabinol [THC] and cannabinoid compounds). Dabbing involves superheating substances such as "budder", butane hash oil (BHO), and "710" that contain high concentrations of THC and other plant compounds (e.g., cannabidiol [CBD]).

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Youth, young adults, pregnant women, as well as adults who do not currently use tobacco products should not use e-cigarettes. E-cigarettes containing nicotine have the potential to help some individual adult smokers reduce their use of and transition away from cigarettes. However, e-cigarettes are not currently approved by the Food and Drug Administration (FDA) as a quit smoking aid, and the available science is inconclusive on whether e-cigarettes are effective for quitting smoking.

Outbreak Background

As of August 27, 2019, 215 possible cases have been reported from 25 states and additional reports of pulmonary illness are under investigation. One patient (in Illinois) with a history of recent e-cigarette use was hospitalized on July 29, 2019 with severe pulmonary disease and died on August 20, 2019. Although the etiology of e-cigarette-associated pulmonary disease is undetermined, epidemiologic investigations in affected states are ongoing to better characterize the exposures, demographic, clinical, and laboratory features and behaviors of patients. All patients have reported using e-cigarette products. The exact number is currently unknown, but many patients have reported using e-cigarettes containing cannabinoid products such as THC or CBD.

Based on reports from several states, patients have experienced respiratory symptoms (cough, shortness of breath, or chest pain), and some have also experienced gastrointestinal symptoms (nausea, vomiting, or diarrhea) or non-specific constitutional symptoms (fatigue, fever, or weight loss). Symptoms typically develop over a period of days but sometimes can manifest over several weeks. Gastrointestinal symptoms sometimes preceded respiratory symptoms. Fever, tachycardia, and elevated white blood cell count have been reported in the absence of an identifiable infectious disease. Many patients have sought initial care in ambulatory settings, some with several visits, before hospital admission.

Radiologic findings have varied and are not present in all patients upon initial presentation. Bilateral pulmonary infiltrates and diffuse ground-glass opacities have been reported. Many patients required supplemental oxygen, some required assisted ventilation and oxygenation, and some were intubated. Some patients have been treated with corticosteroids with demonstrated improvement. Antimicrobial therapy alone has not consistently been associated with clinical improvement. Assessment for infectious etiologies has been completed in many patients without an identified infectious cause. Several patients from one state have been diagnosed with lipoid pneumonia based on clinical presentation and detection of lipids within bronchoalveolar lavage samples stained specifically to detect oil.

All patients have reported using e-cigarette products and the symptom onset has ranged from a few days to several weeks after e-cigarette use. Within two states, recent inhalation of cannabinoid products, THC or cannabidiol, have been reported in many of the patients. To date, no single substance or e-cigarette product has been consistently associated with illness. CDC is working closely with state health departments to facilitate collecting product specimens for testing at the U.S. FDA Forensic Chemistry Center.

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Recommendations for Clinicians

1. **Report cases of severe pulmonary disease of unclear etiology and a history of e-cigarette product use within the past 90 days MSDH at 601-576-7725.** Reporting of cases may help CDC and state health departments determine the cause or causes of these pulmonary illnesses.
2. Ask all patients who report e-cigarette product use within the last 90 days about signs and symptoms of pulmonary illness.
3. If e-cigarette product use is suspected as a possible etiology of a patient's severe pulmonary disease, obtain detailed history regarding:
    - Substance(s) used: nicotine, cannabinoids (e.g., marijuana, THC, THC concentrates, CBD, CBD oil, synthetic cannabinoids [e.g., K2 or spice], hash oil, Dank vapes), flavors, or other substances
    - Substance source(s): commercially available liquids (i.e., bottles, cartridges, or pods), homemade liquids, and re-use of old cartridges or pods with homemade or commercially bought liquids
    - Device(s) used: manufacturer; brand name; product name; model; serial number of the product, device, or e-liquid; if the device can be customized by the user; and any product modifications by the user (e.g., exposure of the atomizer or heating coil)
    - Where the product(s) were purchased
    - Method of substance use: aerosolization, dabbing, or dripping
    - Other potential cases: sharing e-cigarette products (devices, liquids, refill pods, or cartridges) with others
4. Determine if any remaining product, including devices and liquids, are available for testing. Testing can be coordinated with the local or state health departments.
5. Consider all possible causes of illness in patients reporting respiratory and gastrointestinal symptoms and of e-cigarette product use. Evaluate and treat for other possible causes of illness (e.g., infectious, rheumatologic, neoplastic) as clinically indicated. Consider consultation with specialists (pulmonary, infectious disease, critical care, medical toxicology) as appropriate.
6. Clinical improvement of patients with severe pulmonary disease associated with e-cigarette use has been reported with the use of corticosteroids. The decision to use corticosteroids should be made on a case-by-case basis based on risks and benefits and the likelihood of other etiologies.
7. Lipoid pneumonia associated with inhalation of lipids in aerosols generated by e-cigarettes has been reported based on the detection of lipid-laden alveolar macrophages obtained by bronchoalveolar lavage (BAL) and lipid staining (e.g., oil red O). The decision about whether to perform a BAL should be based on individual clinical circumstances.
8. Lung biopsies have been performed on some patients. If a lung biopsy is obtained, lipid staining may be considered during pathologic examination, and is best performed on fresh tissue. Routine pathology tissue processing (including formalin-fixation and paraffin-embedding) can remove lipids. Conducting routine tissue processing and histopathologic evaluation is still important. Consider consultation with specialists in pulmonary medicine and pathology to help inform any evaluation plan.

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9. Patients who have received treatment for severe pulmonary disease related to e-cigarette product use should undergo follow-up evaluation as clinically indicated to monitor pulmonary function.

For More Information

- For assistance with managing patients suspected of illness related to recreational, illicit, or other drugs, call your local poison control center at: 1-800-222-1222.
- Information on electronic cigarettes and similar devices: https://www.cdc.gov/e-cigarettes
- CDC Press Statement: https://www.cdc.gov/media/releases/2019/s0821-cdc-fda-states-e- cigarettes.html
- CDC Clinical Outreach and Communication Activity announcement: https://emergency.cdc.gov/newsletters/coca/081619.htm
- CDC's National Syndromic Surveillance Program's BioSense/ESSENCE: https://www.cdc.gov/nssp/index.html
- For more information, visit CDC Info: https://www.cdc.gov/cdc-info/index.html

The Centers for Disease Control and Prevention (CDC) protects people's health and safety by preventing and controlling diseases and injuries; enhances health decisions by providing credible information on critical health issues; and promotes healthy living through strong partnerships with local, national, and international organizations

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Alerting Message Specification Settings

Originating Agency:	Mississippi State Department of Health
Alerting Program:	MS Health Alert Network (MS HAN)
Message Identifier:	MSHAN-20190903-00421-ADV
Program (HAN) Type:	Health Advisory
Status (Type):	Actual ()
Message Type:	Alert
Reference:	MSHAN-00421
Severity:	Unknown
Acknowledgement:	No
Sensitive:	Not Sensitive
Message Expiration:	Undetermined
Urgency:	Undetermined
Delivery Time:	600 minutes

Definition of Alerting Vocabulary and Message Specification Settings

Originating Agency: A unique identifier for the agency originating the alert.

Alerting Program: The program sending the alert or engaging in alerts and communications using PHIN Communication and Alerting (PCA) as a vehicle for their delivery.

Message Identifier: A unique alert identifier that is generated upon alert activation (MSHAN-yyymmdd-hhmm-TTT (**ALT=Health Alert**, **ADV=Health Advisory**, **UPD=Health Update**, **MSG/INFO=Message/Info Service**).

Program (HAN) Type: Categories of Health Alert Messages.

Health Alert: Conveys the highest level of importance; warrants immediate action or attention.

Health Advisory: Provides important information for a specific incident or situation; may not require immediate action.

Health Update: Provides updated information regarding an incident or situation; unlikely to require immediate action.

Health Info Service: Provides Message / Notification of general public health information; unlikely to require immediate action.

Status (Type):

	Actual:	Communication or alert refers to a live event
	Exercise:	Designated recipients must respond to the communication or alert
	Test:	Communication or alert is related to a technical, system test and should be disregarded

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Message Type:

Alert:	Indicates an original Alert
Update:	Indicates prior alert has been Updated and/or superseded
Cancel:	Indicates prior alert has been cancelled
Error:	Indicates prior alert has been retracted

Reference: For a communication or alert with a Message Type of "Update" or "Cancel", this attribute contains the unique Message Identifier of the original communication or alert being updated or cancelled. "n/a" = Not Applicable.

Severity:

Extreme:	Extraordinary threat to life or property
Severe:	Significant threat to life or property
Moderate:	Possible threat to life or property
Minor:	Minimal threat to life or property
Unknown:	Unknown threat to life or property

Acknowledgement: Indicates whether an acknowledgement on the part of the recipient is required to confirm that the alert was received, and the timeframe in which a response is required (Yes or No).

Sensitive:

Sensitive:	Indicates the alert contains sensitive content
Not Sensitive:	Indicates non-sensitive content

Message Expiration: Undetermined.

Urgency: Undetermined. Responsive action should be taken immediately.

Delivery Time: Indicates the timeframe for delivery of the alert (15, 60, 1440, 4320 minutes (.25, 1, 24, 72 hours)).

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