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Distributed by the NH Health Alert Network
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August 27, 2019 1200 EDT (12:00 PM EDT)
NH-HAN 20190827



National Investigation into Unexplained Vaping-Associated Pulmonary Illness

Key Points and Recommendations:

1. As of August 22st, 193 potential cases of severe lung illness associated with vaping have been reported from 22 states, primarily among adolescents and young adults.
2. Clinicians should review the information and guidance put out by the CDC: <https://emergency.cdc.gov/newsletters/coca/081619.htm>.
3. No cases of vaping-associated pulmonary illness have been confirmed in New Hampshire.
4. Patients have presented with respiratory symptoms (cough, shortness of breath, pleuritic chest pain) progressive over days to weeks, sometimes requiring mechanical ventilation. Chest imaging usually shows bilateral opacities on radiograph and diffuse ground-glass opacities on CT. Infectious work-up usually is negative.
5. All cases have reported “vaping” (use of e-cigarette devices to aerosolize substances for inhalation), including tetrahydrocannabinol (THC)-containing products, although no single product or chemical has been identified for all cases.
6. The Centers for Disease Control and Prevention (CDC), and the U.S. Food and Drug Administration (FDA) are supporting states in their investigation, including testing of vaping products and solutions.
7. If an e-cigarette product is suspected as a possible etiology of a patient’s illness, it is important to inquire about type of product as well as if the patient:
 - Uses commercially available devices and/or liquids (i.e. bottles, cartridges or pods)
 - Shares e-cigarette products (devices, liquids, refill pods and/or cartridges) with other people
 - Re-uses old cartridges or pods (with homemade or commercially bought products)
 - Heats the drug to concentrate it and then using a specific type of device to inhale the product (i.e., “dabbing”)
 - Has any retained product (including devices and liquids), for possible testing to be coordinated through the NH Division of Public Health Services (DPHS)
8. There are no tests to diagnose vaping-associated pulmonary illness, which is primarily a diagnosis of exclusion after infectious and other routine work-up fails to identify an etiology.
9. Healthcare providers may wish to consult the Northern New England Poison Center, which is available 24/7 to provide expert advice at 1-800-222-1222.
10. Clinicians should report all suspect cases of vaping-associated pulmonary illness to the Division of Public Health Services at 603-271-4496 (after hours 603-271-5300 and ask for the public health nurse on call).
11. A preliminary case report form has been developed (see attached) and can help guide clinicians in history taking to obtain appropriate information from suspect cases.

Background

E-cigarettes are a diverse group of battery-powered devices that mimic the act of smoking by producing an aerosol by heating a liquid mixture containing nicotine and/or cannabis, flavorings, and other chemicals which are inhaled (called “vaping”). The aerosol that users inhale from devices can contain harmful and potentially harmful substances, including:

- Nicotine
- Ultrafine particles that can be inhaled deep into the lungs
- Flavoring such as diacetyl, a chemical linked to a serious lung disease
- Volatile organic compounds
- Cancer-causing chemicals
- Heavy metals such as nickel, tin, and lead

E-cigarette use and vaping among youth and young adults is a major public health issue with e-cigarette use now the most commonly used tobacco product among youth. Almost a quarter (24%) of all high school aged adolescents in New Hampshire reported recently using electronic vapor products (the U.S. average is ~13%). Usage increases with increasing high-school grade level and by 12th grade, about 30% of high-school seniors in New Hampshire report using electronic vapor devices.

For additional information about e-cigarettes and vaping:

https://www.cdc.gov/tobacco/basic_information/e-cigarettes/about-e-cigarettes.html.

For any questions regarding the contents of this message, please call Bureau of Infectious Disease Control at (603) 271-4496 or 1-800-852-3345, extension 4496 during business hours (8 am to 4:30 pm). For after hours or on weekends call the New Hampshire Hospital switchboard at 1-800-852-3345 extension 5300 and request the Public Health Professional on-call.

To change your contact information in the NH Health Alert Network, contact Adnela Alic at 603-271-7499 or email adnela.alic@dhhs.nh.gov.

Status: Actual
Message Type: Alert
Severity: Moderate
Sensitivity: Not Sensitive
Message Identifier: NH-HAN 20190827 National Investigation into Unexplained Vaping-Associated Pulmonary Illness
Delivery Time: 12 hours
Acknowledgement: No
Distribution Method: Email, Fax
Distributed to: Physicians, Physician Assistants, Practice Managers, Infection Control Practitioners, Infectious Disease Specialists, Community Health Centers, Hospital CEOs, Hospital Emergency Departments, Nurses, NHHA, Pharmacists, Laboratory Response Network, Manchester Health Department, Nashua Health Department, Public Health Networks, DHHS Outbreak Team, DPHS Investigation Team, DPHS Management Team, Northeast State Epidemiologists, Zoonotic Alert Team, Health Officers, Deputy Health Officers, MRC, NH Schools, EWIDS
From: Benjamin P. Chan, MD, MPH, State Epidemiologist
Originating Agency: NH Department of Health and Human Services, Division of Public Health Services

Attachments:

- 1) Case Report Form



**New Hampshire Confidential
Serious Respiratory Illness Associated with
Vaping Reporting Form v 8/26/2019**

Date of Report: ____/____/____

Patient Information

Name _____
 (Last) (First) (M.I.)
 Date of Birth ____/____/____ Age _____ Sex: Male Female Other
 Address _____ City/Town _____ State _____ Zip _____
 Phone: Cell _____ Home _____ Work _____
 Race: White Black Asian Pac Isl Nat Am./Alask Nat Unk Other Ethnicity: Hisp Not Hisp Unk

Clinical Information

- What **symptoms** does the patient report experiencing (check all that apply)?
 Cough Shortness of breath Hemoptysis Fever Chills Chest Pain
 Abdominal pain Nausea Vomiting Diarrhea Other: _____
- What **clinical signs** did the patient experience (check all that apply)?
 Documented fever (temp: _____) Hypoxia Respiratory failure
 Hypotension (low blood pressure) SIRS (systemic inflammatory response syndrome) or Sepsis
- What is the patient's symptom onset date: ____/____/____
- What is the patient's current status: Recovered from their illness Still ill Died Unknown
- Was the patient hospitalized? Yes No Unknown
 If yes, Admission Date: ____/____/____ Discharge Date: ____/____/____
 If yes, Hospital Name: _____ Hospital City/State: _____
 If yes, did the patient require mechanical ventilation? Yes No Unknown
- Was a chest X-ray performed: Yes No Results: Normal Abnormal, specify: _____
- Was a chest CT performed: Yes No Results: Normal Abnormal, specify: _____
- Was any of the following infectious disease testing performed:

Sputum/Respiratory culture (bacterial, fungal, or AFB)	<input type="checkbox"/> Done <input type="checkbox"/> Not Done	Results:
Respiratory virus panel	<input type="checkbox"/> Done <input type="checkbox"/> Not Done	Results:
Influenza PCR	<input type="checkbox"/> Done <input type="checkbox"/> Not Done	Results:
Blood culture	<input type="checkbox"/> Done <input type="checkbox"/> Not Done	Results:
Legionella urinary antigen	<input type="checkbox"/> Done <input type="checkbox"/> Not Done	Results:
Other	<input type="checkbox"/> Done <input type="checkbox"/> Not Done	Results:

- Was a bronchoscopy performed on the patient? Yes No Unknown
- Does the patient have underlying, pre-existing lung conditions? Yes No Unknown
 If yes: Asthma COPD Other: _____

Exposure Information

Electronic vapor products produce an aerosol by heating a liquid and include e-cigarettes, e-cigars, e-pipes, vaping pens, e-hookahs, and hookah pens, etc. Common product names are: JUUL, blu, NJOY, Vuse, MarkTen, Logic, Vapin Plus, eGo, and Halo.

1. Does the patient vape or use an electronic vapor product? Yes No Unknown
 2. Approximately how many weeks prior to the onset of their symptoms did they last vape?
 <1 week 1-2 weeks 2-4 weeks 4-8 weeks 8-12 weeks 12+ weeks Unknown
 3. What type of vaping or electronic vapor product does the patient use?
 - a. Brand name, if applicable: _____ Flavor: _____
 - b. Chemical in vape: Nicotine Cannabis/marijuana THC concentrate CBD
 Synthetic cannabinoids Other: _____
 4. Where does the patient get electronic vapor products/devices or e-liquids?
 Bought from a store such as a convenience store, supermarket, discount store, gas station, or vape store
 Bought on the Internet Some other way: _____
 Patient got them from someone else Unknown
 5. Does the patient make their own electronic vapor product (e-liquid or device)? Yes No Unknown
 6. Does the patient re-use pods or cartridges for their electronic vapor devices? Yes No Unknown
 7. Does the patient heat the drug to concentrate it and then use a device to inhale it (i.e. dabbing)?
 Yes No Unknown
 8. Does the patient smoke regular tobacco products such as cigarettes, cigars, cigarillos, or little cigars?
 Yes No Unknown If yes, provide information: _____
 9. Does the patient smoke cannabis / marijuana not in a vape (i.e. cigarettes / joints)? Yes No Unknown
- Comments: _____
- _____

Health Care Provider Reporting Information

Person Completing Report Form _____
Provider Name _____ Phone _____
Provider Facility/Practice Name _____
City/Town _____ State _____ Zip _____

Fax completed form to: NH DHHS Bureau of Infectious Disease Control at 603-271-0545

Healthcare providers may wish to consult the Northern New England Poison Center at 1-800-222-1222, which is available 24/7 to provide expert advice.