Health Advisory

Benton-Franklin Health District

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Clinicians Urged to Report Possible Cases of Unexplained Vaping-Associated Pulmonary Illness to State/Local Health Departments

As of August 20, 2019, more than 100 possible cases of severe pulmonary disease associated with vaping, have been reported from 16 states. Investigations are still in the early stages and there have been no reported cases in Washington State at this time. Patient age range is predominantly adolescent and young adult, with a few older adult cases.

Chest radiographs in initial patients 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.

Association with vaping (use of vapor product devices to aerosolize substances for inhalation) has been reported in almost all cases in the weeks and months prior to hospital admission. Many have acknowledged recent use of marijuana and/or tetrahydrocannabinol (THC)-containing products. However, not all cases have reported THC and/or marijuana use. There appears to be an overlap in use of commercial nicotine products as well. No specific product has been identified by all cases, nor has any product been conclusively linked to this clinical syndrome.

Course of illness is a gradual development of respiratory symptoms in previously healthy individuals. Symptoms include cough, difficulty breathing, shortness of breath, or chest pain prior to hospitalization. Other symptoms reported by some patients included fever, chest pain, weight loss, nausea, and diarrhea. All patients have been hospitalized, with several being admitted to ICU and intubated. Cases have been unresponsive to azithromycin, but have responded to high dose steroids.

Recommendations:

- Inquire about potential substance use (including nicotine and vapor products) as part of a routine patient history.

- When patients present with respiratory or pulmonary illness, ask about use of vapor products. If possible, inquire about the types of substances and products used.

- 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.

- 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 vapor products (devices, liquids, refill pods, and/or cartridges) with other people;
    - reusing 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").

CDC recommends that healthcare providers report cases of significant illness of unclear etiology and a history of vaping to the appropriate state and/or local health department. In Benton and Franklin counties, please report cases to the notifiable conditions reporting line at 509-539-0416 during business hours or via the confidential fax line at 509-460-4377 at any time.

See Appendix A – Case Definition Draft

Appendix A

Case Definition - Draft Version 3 - August 9, 2019

Confirmed	Inhalational drug* use in 90 days prior to symptom onset. **AND** Pulmonary infiltrate, as manifested by opacities on plain film chest radiograph or ground-glass opacities on chest CT **AND** Absence of pulmonary infection: Minimum criteria include negative respiratory viral panel, influenza PCR, and blood culture. All other ID testing (e.g., urine strep pneumo/ legionella/ mycoplasma, sputum culture if productive cough, BAL culture if done, HIV-related opportunistic respiratory infections if appropriate) must be negative **AND** No evidence in medical record that pulmonary disease is due to rheumatologic or neoplastic process.
Probable	Inhalational drug* use in 90 days prior to symptom onset. **AND** Pulmonary infiltrate, as manifested by 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 is not the sole cause of the underlying disease process. **--OR--** Inhalational drug* use in 90 days prior to symptom onset. **AND** Pulmonary infiltrate, as manifested by opacities on plain film chest radiograph or ground-glass opacities on chest CT. **AND** Minimum criteria to rule out pulmonary infection not met (testing not performed) and no mention of infectious process in discharge summary or ICD10 discharge diagnoses.
Suspect	Inhalational drug* use in 90 days prior to symptom onset. **AND** Clinical signs or symptoms** of respiratory dysfunction.
Footnotes	* Includes vaping or smoking of any plant or chemical, including nicotine, marijuana, THC concentrate, CBD, synthetic cannabinoids, or other ** Includes shortness of breath, pleuritic chest pain (i.e., pain with inspiration), cough with or without hemoptysis, hypoxia (pulse oximetry <=95%), with or without fever