



Smoking & Tobacco Use

Outbreak of Lung Injury Associated with E-Cigarette Use, or Vaping

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CDC, the U.S. Food and Drug Administration (FDA), state and local health departments, and other clinical and public health partners are investigating a multistate outbreak of lung injury associated with use of e-cigarette, or vaping, products.

If you have questions about CDC's investigation into the lung injuries associated with use of electronic cigarette, or vaping, products, contact [CDC-INFO](#) or call 800-232-4636.

What we know

- As of October 1, 2019, 1,080* lung injury cases associated with using e-cigarette, or vaping, products have been reported to CDC from 48 states and 1 U.S. territory.
- Eighteen deaths have been confirmed in 15 states.
- All patients have reported a history of using e-cigarette, or vaping, products.
- Most patients report a history of using THC-containing products. The latest national and regional findings suggest products containing THC play a role in the outbreak.
- Approximately 70% of patients are male.
- Approximately 80% of patients are under 35 years old.
 - 16% of patients are under 18 years old
 - 21% of patients are 18 to 20 years old

For the Public: What You Need to Know



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What we don't know

- The specific chemical exposure(s) causing lung injuries associated with e-cigarette use, or vaping, remains unknown at this time.
- No single product or substance has been linked to all lung injury cases.
 - The outbreak is occurring in the context of a dynamic marketplace for e-cigarette, or vaping, products, which may have a mix of ingredients, complex packaging and supply chains, and include potentially illicit substances.
 - Users may not know what is in their e-cigarette or e-liquid solutions. Many of the products and substances can be modified by suppliers or users. They can be obtained from stores, online retailers, from informal sources (e.g. friends, family members), or “off the street.”
- More information is needed to know whether one or more e-cigarette or vaping products, substances, or brands is responsible for the outbreak.

What CDC recommends

- While this investigation is ongoing, CDC recommends that you consider refraining from using e-cigarette, or vaping, products, particularly those containing THC.
- If you are an adult who used e-cigarettes containing nicotine to quit cigarette smoking, do not return to smoking cigarettes.
- If you have recently used an e-cigarette or vaping product and you have [symptoms](#) like those reported in this outbreak, see a healthcare provider.
- Regardless of the ongoing investigation:
 - Anyone who uses e-cigarette, or vaping, products should not buy these products (e.g., e-cigarette or vaping products with THC or CBD oils) from informal sources (e.g. friends, family members) or “off the street,” and should not modify or add any substances to these products that are not intended by the manufacturer.
 - Youth and young adults should not use e-cigarette, or vaping, products.
 - Women who are pregnant should not use e-cigarette, or vaping, products.
 - Adults who do not currently use tobacco products should not start using e-cigarette, or vaping, products.
 - THC use has been associated with a wide range of health effects, particularly with prolonged heavy use. The best way to avoid potentially harmful effects is to not use THC, including through e-cigarette, or vaping, products. Persons with marijuana use disorder should seek evidence-based treatment by a health care provider.

Key Facts about E-Cigarette Use, or Vaping

- Electronic cigarettes – or e-cigarettes — are also called vapes, e-hookahs, vape pens, tank systems, mods, and electronic nicotine delivery systems (ENDS).
- Using an e-cigarette product is commonly called vaping.
- E-cigarettes work by heating a liquid to produce an aerosol that users inhale into their lungs.
- The liquid can contain: nicotine, tetrahydrocannabinol (THC) and cannabinoid (CBD) oils, and other substances and additives. THC is the psychoactive mind-altering compound of marijuana that produces the “high”.

Latest Outbreak Information

Updated every Thursday

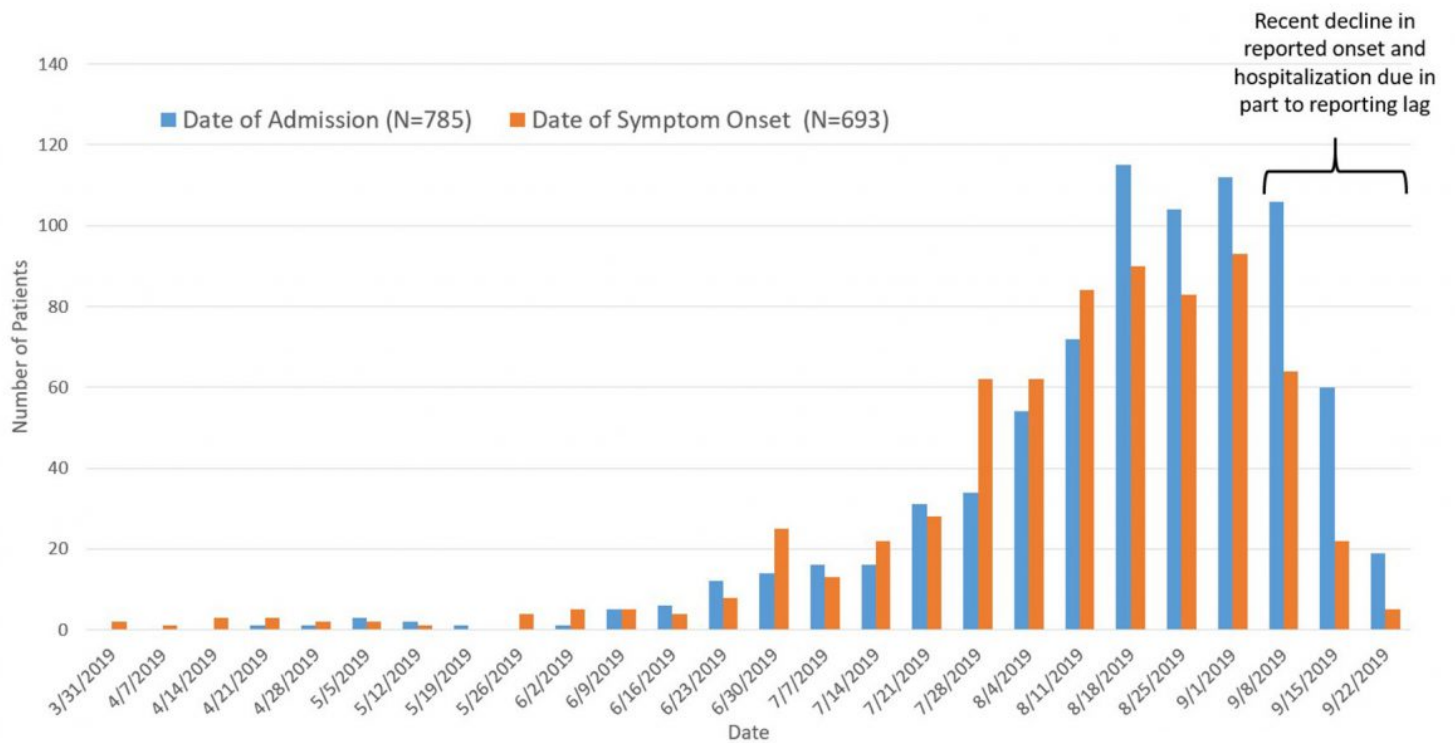
- As of October 1, 2019, 1,080* lung injury cases associated with the use of e-cigarette, or vaping, products have been reported to CDC from the following states and 1 U.S. territory: AL, AR, AZ, CA, CO, CT, DE, FL, GA, HI, IA, ID, IL, IN, KS, KY, LA, MA, ME, MD, MI, MN, MO, MT, MS, NC, ND, NE, NJ, NM, NV, NY, OH, OK, OR, PA, RI, SC, SD, TN, TX, UT, VA, VT, WA, WI, WV, WY, and USVI.
- Eighteen deaths have been confirmed in 15 states: Alabama, California (2), Delaware, Florida, Georgia, Illinois, Indiana, Kansas (2), Minnesota, Mississippi, Missouri, Nebraska, New Jersey, Oregon (2), and Virginia. More deaths are under investigation.
 - The median age of deceased patients was 49.5 years and ranged from 27-71 years.
- Among 889 patients with data on age and sex:
 - 70% of patients are male.
 - The median age of patients is 23 years and ranges from 13-75 years.
 - 81% of patients are under 35 years old.
 - By age group category:
 - 16% of patients are under 18 years old;
 - 21% of patients are 18 to 20 years old;
 - 18% of patients are 21 to 24 years old;
 - 26% of patients are 25 to 34 years old; and
 - 19% of patients are 35 years or older.
- The latest findings from the investigation into lung injuries associated with e-cigarette use, or vaping, suggest products containing THC play a role in the outbreak.
- All patients have a reported history of e-cigarette product use, or vaping, and no consistent evidence of an infectious cause has been discovered. Therefore, the suspected cause is a chemical exposure.
- The specific chemical exposure(s) causing lung injuries associated with e-cigarette product use, or vaping, remains unknown at this time.
- No single product or substance has been linked to all lung injury cases. More information is needed to know whether a single product, substance, brand, or method of use is responsible for the outbreak.
- Among 578 patients with information on substances used in e-cigarette, or vaping, products in the 3 months prior to symptom onset:
 - About 78% reported using THC-containing products; 37% reported exclusive use of THC-containing products.
 - About 58% reported using nicotine-containing products; 17% reported exclusive use of nicotine-containing products.
- This complex investigation spans many states, involves hundreds of patients, and involves a wide variety of substances and e-cigarette, or vaping, products.

What CDC is Doing

- CDC is working 24/7 to identify the cause or causes of this outbreak through partnerships with states and other federal agencies.
- CDC has activated the Emergency Operations Center (EOC) to coordinate activities and provide assistance to states, public health partners and clinicians around the nation.
- CDC's Lung Injury response efforts are committed to:
 - Identify and define the risk factors and the source for lung disease associated with e-cigarette product use, or vaping.
 - Detect and track confirmed and probable cases in the US.
 - Communicate actionable recommendations to state, local, and clinical audiences.
 - Establish lab procedures that can assist with the public health investigation and patient care.
- CDC continues to work closely with FDA, states, public health partners, and clinicians on this investigation by providing consultation and technical assistance to states on communication, health alerts, public outreach, and surveillance.
- CDC is maintaining an outbreak webpage with key messages and weekly updates on case counts, deaths, and resources.
- CDC is holding congressional briefings, media telebriefings, and regular calls with health departments, clinicians to provide timely updates.
- CDC worked with states to create a [case definition](#) to classify confirmed and probable cases in a consistent way. States are in the process of classifying patients. We expect that states and clinicians may look back for past lung injury cases based on CDC's case definition CDC will report numbers of confirmed and probable lung injury cases once states have finalized their classification of cases.
- By invitation, CDC has deployed Epidemic Intelligence Service (EIS) officers to states to conduct Epi-Aids.
- CDC has started collecting and testing clinical lab specimens to learn more about this lung injury.
- CDC developed guidance documents for were created to assist public health laboratories, healthcare providers, and pathologists, and others, with specimen collection, storage, and submission.
- For more information and resources visit [For the Public](#), [For Healthcare Providers](#) and [For State and Local Health Departments](#).

*The increase in lung injury cases from last week represents both new patients and recent reporting of previously-identified patients to CDC.

Dates of symptom onset and hospital admission for patients with lung injury associated with e-cigarette use, or vaping — United States, March 31–September 28, 2019



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