

Demystifying the U.S. Vaping Crisis

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The past few months have been filled with countless news headlines concerning the vaping epidemic. A multitude of cases of vaping-related lung illnesses and vaping deaths have been reported. According to the Centers for Disease Control and Prevention (CDC), 1,299 lung injury cases associated with the use of electronic cigarette, or vaping, products have been reported to the CDC as of October 8, 2019, from 49 states, the District of Columbia, and one U.S. territory. Twenty-six deaths have been confirmed in 21 states.¹ Various local, state, and federal agencies have established and/or recommended vaping bans. President Trump has suggested a ban on flavored e-cigarettes.

Many people are wondering how these products work and why they are causing injuries. The U.S. Food and Drug Administration (FDA) says, "Vapes, vaporizers, vape pens, hookah pens, electronic cigarettes (e-cigarettes or e-cigs), and e-pipes are some of the many terms used to describe electronic nicotine delivery systems (ENDS)...these products use an 'e-liquid' that may contain nicotine, as well as varying compositions of flavorings, propylene glycol, vegetable glycerin, and other ingredients. The liquid is heated to create an aerosol that the user inhales."² These delivery systems are not only used for nicotine-based products, but for marijuana (e.g. Tetrahydrocannabinol (THC), cannabis) as well.

The FDA does regulate the sale of nicotine-based vaping products, but there are vaping shops that mix their own blends and liquids that are manufactured overseas and sold online, which shops mix into their own blends and seem to be escaping regulation. New recommendations and legislation are in the works regarding regulation, but these changes take time. Clearly, more oversight is needed.

The marijuana vaping industry is the other major concern. Marijuana remains illegal at a federal level but legal in some states for medical and/or recreational uses. This has created a clandestine market for vaping products used for medicinal and recreational uses. NBC News worked with a leading

cannabis testing facility and commissioned a study to sample some of the THC vaping cartridges. They sampled cartridges from legal dispensaries and cartridges obtained from the underground economy (sometimes referred to as the black market). The legally-obtained cartridges were within regulations. An overwhelming majority of the illegally obtained cartridges contained a vitamin E chemical compound, an oil that is being used to dilute cannabis for cartridge usage. They also found pesticides in all of these cartridges. The other thing all of these non-regulated cartridges contains is myclobutanil, a fungicide that can transform into hydrogen cyanide when burned.³ Clearly, finding these chemicals in the illegally obtained cartridges is



cause for concern. NBC also reported that, "A 12-block area of downtown Los Angeles (is) filled with vape shops. The stores sell empty cartridges and packaging, making it easy for anyone with access to THC and a solvent like Vitamin E to produce their own bootleg vape products."⁴ Anyone can easily produce a cannabis or nicotine vaping device without proper knowledge of safety or regard for regulations.

Medically speaking, the people impacted are suffering from life-threatening lung diseases. The New England Journal of Medicine has reviewed lung pathology from 17 people – 71%

have used marijuana/cannabis oils.⁵ They reported, "To date, few reports of vaping-associated lung injury have included histopathological findings. Our cases corroborate many of these descriptions and provide some preliminary insight into the pathogenesis of this injury. Much recent attention has been given to the possibility that vaping-associated lung injury may represent exogenous lipoid pneumonia. However, none of our cases showed histologic evidence of exogenous lipoid pneumonia and no radiologic evidence thereof has been found... the significance of this observation remains unclear, particularly in patients with a known vaping history; until more data accumulate, our observations suggest that this finding should be interpreted with caution, as it may simply be a marker of exposure and not necessarily a marker of toxicity. Although it is difficult to discount the potential role of lipid, we believe that the histologic changes instead suggest that vaping-associated lung injury represents a form of airway-centered chemical pneumonitis from one or more inhaled toxic substances rather than exogenous lipoid pneumonia as such, but the agents responsible remain unknown."⁶



The takeaway from all of this is that the cause of these vaping-related illnesses remains under investigation. It would appear that the unregulated products are a major culprit in this epidemic, but more research is needed to make that determination.

About Emily Bancroft

Emily began her life insurance career at Crump as a Case Manager in 2005 before being promoted to Underwriter. Prior to Crump she worked at a juvenile psychiatric facility administering therapeutic treatment protocols to youth in crisis. Emily holds a bachelor's degree in criminal justice with a minor in psychology from Shippensburg University of Pennsylvania and a master's degree in leadership and business ethics from Duquesne University. She holds MS, ALMI, AIRC and ACS designations.



¹ https://www.cdc.gov/tobacco/basic_information/e-cigarettes/severe-lung-disease.html

² <https://www.fda.gov/tobacco-products/products-ingredients-components/vaporizers-e-cigarettes-and-other-electronic-nicotine-delivery-systems-ends>

³ <https://www.nbcnews.com/health/vaping/tests-show-bootleg-marijuana-vapes-tainted-hydrogen-cyanide-n1059356>

⁴ <https://www.nbcnews.com/health/vaping/tests-show-bootleg-marijuana-vapes-tainted-hydrogen-cyanide-n1059356>

⁵ <https://www.nejm.org/doi/full/10.1056/NEJMc1913069>

⁶ <https://www.nejm.org/doi/full/10.1056/NEJMc1913069>

