

# Curbing Youth E-cigarette Use Must Remain a Priority

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In this month's issue of *Pediatrics*, Rao et al<sup>1</sup> report a retrospective study of 13 adolescents in Dallas, Texas, who were hospitalized and treated for electronic cigarette, or vaping, product use-associated lung injury (EVALI). The first EVALI cases were reported to the Centers for Disease Control and Prevention on August 1, 2019, although subsequent retrospective analysis of emergency department data has revealed that visits for EVALI had started by June 2019<sup>2</sup> and peaked in September 2019.<sup>3</sup> The group of patients described by Rao et al<sup>1</sup> are younger than the national average (15.9 vs 24 years nationally), with a higher percentage of girls (54% vs 34%) and more people of Hispanic ethnicity (46% vs 15%).<sup>3</sup> Similar to national reports, the majority of patients (92%) reported vaping tetrahydrocannabinol-containing products, and more than half (62%) reported vaping nicotine-containing products.

Consistent with previous reports of EVALI, clinical severity varied greatly between cases, including one patient experiencing a near-fatal clinical course involving extracorporeal membrane oxygenation and long-term mechanical ventilation. Interestingly, 85% of patients had gastrointestinal symptoms (commonly nausea and vomiting), and 4 presented with predominantly gastrointestinal symptoms. The authors report rapid clinical improvement attributed to the use of steroids in 11 of 12 patients who received them, and steroid doses and regimens varied. The 5 patients who had pulmonary function

tests before and after steroids showed substantial improvement in all parameters tested. The improvement in clinical and pulmonary function test outcomes related to steroid administration adds to our understanding of the clinical course of EVALI.

The authors highlight 2 additional vital aspects of care for adolescents with EVALI: (1) assessing and addressing psychosocial risk factors and (2) facilitating cessation. Approximately half of patients reported stressors in at least 3 of 5 psychosocial risk domains (home environment, academic difficulty, behavior problems, mental health, and substance use). Although there is a lack of evidence to inform best practices for adolescent nicotine or tetrahydrocannabinol cessation and even less is understood about cessation for users who consume these substances through vaping, cessation remains a vital aspect of EVALI treatment. Providers caring for adolescents who use electronic cigarettes (e-cigarettes) or vaping devices (whether or not they have experienced EVALI) should encourage and support efforts toward cessation. Because many of those affected by EVALI were using black market or bootleg products, providers should counsel and strongly discourage consumption. Assessing psychosocial risk factors and referring to psychology or psychiatry experts, including addiction specialists, when needed, are good practices. In addition, research on adolescent nicotine cessation should be a priority for drug makers and research



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fundamentals. This research could not only help prevent future cases of EVALI but also reduce other negative health outcomes, including pulmonary damage and lifelong nicotine addiction.

Although EVALI incidence has decreased nationally, cases continue to occur,<sup>3</sup> and teenage vaping continues at epidemic and rising levels nationwide.<sup>4</sup> The Centers for Disease Control and Prevention annual National Youth Tobacco Survey revealed that 27.5% of high school students reported use of an e-cigarette in the past 30 days in 2019, compared with 20.8% in 2018, and 10.5% of middle school students reported use of e-cigarettes in the past 30 days, compared with 0.6% in 2011.<sup>4</sup> The survey also revealed that there are several gaps in e-cigarette policy and regulation.

Although progress has been made, e-cigarette use among adolescents remains an urgent pediatric advocacy priority. Increasing the tobacco purchasing age, banning or limiting flavored tobacco products, extending existing tobacco marketing restrictions to e-cigarettes, and increasing US Food and Drug Administration (FDA) oversight of e-cigarette products are strategies that will benefit adolescents.<sup>5</sup> In December 2019, a bill was signed into law that raises the national tobacco purchasing age to 21. In 2019, amid increasing recognition of the epidemic of adolescent vaping and growing national concerns about EVALI, the Trump Administration issued rules to prohibit several types of flavorings (but not tobacco or menthol flavors) from refillable

pod-based e-cigarettes. Unfortunately, this policy does not go far enough because it exempts both tank-based systems and disposable e-cigarettes, the latter of which are becoming increasingly popular among youth. Broader regulation is needed, and in February 2020, the US House of Representatives voted to ban the sale of all flavored cigarettes and e-cigarette liquids without exceptions and to prohibit online sales of e-cigarettes. In response to a lack of FDA regulation of e-cigarettes, a group of 6 health organizations, led by the American Academy of Pediatrics, filed suit against the FDA in a US district court in 2018. In July 2019, a judge ruled in the group's favor, stating that the FDA had exceeded its authority in allowing e-cigarettes to stay on the market until 2022 before companies applied for regulatory approval. On the basis of this decision, e-cigarette makers must submit a formal application and undergo review by the FDA by May 2020 to continue selling their products. Because of the COVID-19 pandemic, the court has stated that it will modify this deadline to September 9, 2020. The case is currently on appeal.

One upside of the EVALI crisis of 2019 is that it drew national attention to the high rates of youth e-cigarette use and furthered the conversation about the youth vaping epidemic. More work remains for policy makers and advocates. Through prevention, cessation, and advocacy efforts, curbing the epidemic of youth e-cigarette use must remain a priority.

## ABBREVIATIONS

e-cigarette: electronic cigarette  
EVALI: electronic cigarette, or vaping, product use-associated lung injury  
FDA: US Food and Drug Administration

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