

Policy Brief

To: Robert M. Califf, M.D., Commissioner FDA

From: Ian Wert

Date: July 22, 2023

Re: Intervention to Reduce Adolescent Vape and Electronic Cigarette Use

Statement Of Issue: What type of intervention can be made to reduce adolescent vape and electronic cigarette use?

The first electronic cigarettes and vapes were introduced to the U.S market in 2007. They were advertised as healthier cigarette alternatives that helped adults with smoking cessation¹. In more recent years, electronic cigarettes and vapes have increased popularity among adolescents with about 1 in 10 or more than 2.5 million U.S. middle school and high school students currently using them². The continued rise of electronic cigarette and vape use is mainly contributed by direct target marketing to youth by tobacco companies, as well as the false misconceptions that they are harmless. Electronic cigarette use among youth remains a top concern for the FDA with many health concerns attributed to their consumption.

- **In 2019 there was a recognition of a North American epidemic of electronic cigarette, or vaping, product use- associated lung injury.** Clinical features of critically sick patients indicated bronchiolitis obliterans, “popcorn lung”. This is thought to be due to Diacetyl, a flavoring compound found in electronic cigarettes and vapes³.
- **In a laboratory study, Stanford researchers found that endothelial cell exposure to electronic cigarette and vape liquids causes significant damage and dysfunction.** Many of the cells examined after exposure resembled cells seen during the development of cardiovascular disease⁴.
- **Nicotine is known to cause significant damage to the developing brain.** There is more nicotine in electronic cigarettes and vapes than combustible cigarettes. The electronic cigarette brand JUUL contains 5% nicotine which is equivalent to 20 combustible cigarettes¹.
- **Electronic Cigarettes and Vapes have been linked as a gateway to marijuana use.** A study demonstrated that teens who consume electronic cigarettes or vapes are roughly 4 times more likely to use marijuana in the following 2 years. Marijuana use has been linked to paranoia, anxiety, hallucinations, as well as cognitive defects¹.

Landscape:

When considering the topic of intervention to reduce adolescent vape and electronic cigarette use, the U.S. Food & Drug Administration (FDA) and Centers for Disease Control and Prevention (CDC) are two key stakeholders who have significant influence and power to make real impact. The FDA regulates the manufacture, import, packaging, labeling, advertising, promotion, sale, and distribution of cigarettes under the FD&C Act and its implementing

regulations⁸. The CDC collects, studies, and shares information to assess tobacco use and its effects on health, promote evidence-based approaches, and measure progress toward goals⁹. Additional stakeholders relevant to the policies to follow are lawmakers, the public health community, and public-school systems across the nation. Gaining support from school district officials, health administrators, health care professionals, child advocacy groups, parent associations, and city or county officials to implement a vaping prevention program is critical to success.

Policy Options:

- Limiting the quantity and locations of tobacco retailers under zoning laws would be an effective policy to reduce tobacco use among youth. With these laws in place, communities are able to determine how close tobacco or electronic cigarette retailers can be in proximity to vulnerable populations, such as schools or parks where many adolescences spend time¹⁰.
 - *Advantages:* This would help reduce youth access to tobacco products, decrease overall tobacco outlet density, and cut state-level smoking rates. At the same time, it would increase household quitting rates and avoid retailers clustering in predominantly low-income neighborhoods or in areas with a high percentage of minority residents, causing disproportionate harms associated with tobacco use.
 - *Disadvantages:* There are no studies that prove changes in vaping behavior after the introduction of zoning or density laws. As community needs are different, there is no concrete number or proximity that can be used to determine zoning success. Networks of local electronic cigarette companies can fight zoning regulations by opposing such development proposals at public hearings and come together to fight against proposed legislation.
- Implementation of mandatory tobacco course in all schools across North America, sponsored by the FDA and designed to educate adolescence on the addictive quality of tobacco and the harmful effects on the body so they are more likely to resist it. The interactive course would cover an array of topics such as physical effects of tobacco, addiction, and peer pressure. At the end of the course, students will have to pass an exam to show they have met action standards and fully comprehend all material.
 - *Advantages:* This course will deliver effective prevention and intervention education that empowers young students to be active participants towards a healthier future. It would give students the tools they need to make healthy, safe choices and reduce barriers to access health education.
 - *Disadvantages:* Implementing standardized curriculum would require a lot of hurdles to meet national standards and take a lot of time. It also may not be fair to have the same curriculum structure across an array of demographics with different learning/teaching styles in place.
- FDA to launch a new social media campaign featuring professional athletes and other highly influential individuals to educate teens on the health consequences of smoking tobacco products. Each ad would highlight an influencer's career and life successes and then display an alternative version of that person's life if they had started smoking at a young age. The creative execution would shine light on the many negative effects of

tobacco and how easily it could ruin one's entire life path. Imagine a world where all your favorite athletes smoked cigarettes—sports would look very different.

- *Advantages*: This execution speaks to our audience on a medium they use frequently and leverages people they love and respect to send a vital message. Studies show that children often look up to famous athletes and try to copy their behaviors and appearances⁷.
- *Disadvantages*: Hiring celebrities can be extremely costly and potentially limit impact in instances where our audience doesn't recognize the celebrity. There is also a major risk in backfire if these celebrities are ever seen smoking in public, contradicting the basis of the campaign.

Policy Recommendation:

With adolescents more likely to use electronic cigarettes than any other tobacco product, and rates of electronic cigarettes rising sharply in recent years, an intervention is necessary to educate our young adults on the harmful and long-term effects of these products. The average teen spends over three hours a day on social media¹¹ and says that famous athletes rank second (only to parents) as the people they admire most¹². Targeting them through a medium they use organically, through people they look up every day, will be sure to catch their attention in a world of so much white noise and messaging. While it can be very expensive, investment in tobacco prevention can have huge returns. This was proven with the FDA's award-winning and longest-running campaign, "The Real Cost," which first launched in 2014 and educates teens on the health consequences of smoking tobacco products. It had a cost savings of \$180 for every dollar of the nearly \$250 million invested in the first two years of the campaign and ultimately resulted in a 30 percent decrease in youth smoking initiation from 2014 to 2016⁶. To ensure no risk in backfire, all athletes and celebrities involved in the campaign would need to sign a contract stating that they will not smoke tobacco while the campaign is running.

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