

**Comment to Health Canada
Regarding A Proposed Limit on Nicotine Strengths in Vapor Products
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Mr. Matthew Cook:

Thank you for your time today to discuss the issue of limiting the strength in electronic cigarette and vapor products offered for sale in Canada. My name is Lindsey Stroud, and I am a Policy Analyst with the Taxpayers Protection Alliance (TPA). TPA is a non-profit, non-partisan organization dedicated to educating the public through the research, analysis and dissemination of information on the government's effects on the economy.

Although addressing youth use of age-restricted products is laudable, limiting nicotine strengths in tobacco harm reduction products such as e-cigarettes, could impact the products' effectiveness in aiding adult smokers to switch from combustible cigarettes. Rather than impose nicotine limits, Canadian regulators should engage in, as well as fund, a more robust tobacco control policy to prevent youth use.

Tobacco and Vapor Product Use Among Canadian Adults

The most recent data on tobacco and vapor product use among Canadian adults comes from the 2017 Canadian Tobacco, Alcohol and Drugs Survey (CTADS).¹ According to CTADS, in 2017, 15 percent of Canadian adults smoked cigarettes, amounting to approximately 4.6 million smokers. This was a 15.4 percent increase from 2015, when 13 percent of adults smoked in Canada. Further, 11 percent of Canadian adults (3.3 million) reported daily smoking in 2017. Among young adults aged 20 to 24, current smoking rates decreased from 18 percent in 2015 to 16 percent in 2017.

Regarding e-cigarette and vapor product use, in 2017, an estimated 15 percent "of Canadians aged 15 years and older had ever tried an e-cigarette." This was an increase from 2015, when 13 percent had tried an e-cigarette. Three percent of Canadians aged 15 years and older reported

using an e-cigarette in the past month. Among these users, 65 percent were current smokers, 20 percent were former smokers and only 15 percent were never smokers.

Overwhelmingly, current e-cigarette users report using the products to refrain from smoking. Indeed, among current users, 69 percent reported using vapor products to help them quit smoking cigarettes. Further, among current and former smokers, 32 percent, 1.1 million Canadians, “reported using e-cigarettes as a cessation aid the past two years.”

Tobacco and Vapor Product Use Among Canadian Youth

Combustible cigarette use among Canadian youth is at record lows. In 2017, one percent of Canadians in grades 7 through 9 reported current smoking, and only 0.4 percent reported smoking daily.² Daily smoking had decreased by 76.9 percent from 1991, when 3.9 percent of Canadians in grades 7 through 9 reported daily cigarette use.

Among Canadian youth aged 15 to 17 years old, 5.3 percent reported current smoking in 2017, and 1.7 percent reported daily smoking. Among Canadians aged 18 to 19 years old, 11.2 percent reported current smoking in 2017, and 4.6 percent reported daily smoking. Again, these are at record lows. In 1999, 20 percent Canadian youth aged 15 to 19 years old reported daily smoking.

Regarding vapor product use, in 2016-2017, among Canadian youth in grades 7 through 9, 12.6 percent reported having tried and e-cigarette, and 5.4 percent reported using an e-cigarette in the past 30 days. Among youth aged 15 to 19, in 2017, 22.8 percent reported trying an e-cigarette and six percent of youth and young adults reported using e-cigarettes in the past 30 days.

Effects of Nicotine Caps

As policymakers seek solutions to address youth e-cigarette use, many have turned their attention to nicotine strengths in e-liquids. Approximately 32 countries regulate nicotine concentrations in in vaping products.³ The European Union regulates e-cigarette products under the EU’s Tobacco Products Directive (TPD) and has established a maximum 20 mg/mL nicotine limit, which took effect in 2016.

Prior to the implementation, Public Health England (PHE) “strongly disputed” the proposed limit.⁴ Indeed, in PHE’s 2015 report on e-cigarettes, the authors noted that differing nicotine concentrations may be needed due different puffing patterns.⁵ For example, among “light smokers, 18mg/ml ‘mild’ e-liquid may be sufficient, but they may also prefer a stronger liquid and take shorter and less frequent puffs. A heavy smoker who would be expected to prefer a 28mg/ml ‘strong’ liquid may in fact chose a ‘moderate’ strength if they [favor] long and frequent puffs.”

Further, studies have found that part of e-cigarettes’ success in helping smokers quit is nicotine exposure and that lower levels may not help smokers quit. In an assessment of JUUL devices in 59 mg/mL, 18mg/mL, and 9 mg/mL, the authors found that “higher nicotine concentrations gave

rise to significantly greater plasma nicotine levels and relief from craving.”⁶ Further, the study respondents rated the 18 mg/mL and 9 mg/mL “significantly lower” than the 59 mg/mL regarding the devices’ potential to reduce cravings.

Reducing nicotine levels may also have unintended consequences. For example, a 2016 study in *Drug and Alcohol Dependence* examined long-term, daily e-cigarette users.⁷ The study found that participants, over time, “decreased the concentration of nicotine in their liquids, but increased their consumption of e-liquid in order to maintain their cotinine levels constant.” Cotinine is product that is formed after nicotine enters the body. A 2020 study in *Tobacco Control* examined the possibility of “regulations that limit liquid nicotine concentration may drive users to adopt the higher wattage devices to obtain a desired nicotine yield.”⁸ The authors found that “reducing the liquid nicotine concentration resulted in greater among of liquid aerosolized and greater [carbonyl compound] emissions.” The study concluded that “regulatory limits on nicotine concentration may have the unintended consequences of increasing exposure to aerosol and respiratory toxicants.”

Further, limiting the nicotine concentration in legal vapor products would create a need for unregulated, illicit products. It is well known that many e-cigarette users in the EU seek out black market products to get around the 20 mg/mL nicotine cap. For example, a 2020 report examining consumers’ perceptions of the TPD found that “participants had bought non-compliant products from the black market via countries where the regulations did not apply.”⁹ Further, there are legal loopholes that allow consumers to bypass the nicotine limit. Indeed, one respondent reported that “there are ways (legal) ways around the legislation which suppliers provide, such as shake and mix type purchasing (purchasing nicotine shots).”

Robust Tobacco Control Policy

Rather than limiting the nicotine in electronic cigarettes and vapor products, public officials in Canada ought to invest in a robust tobacco control plan that includes education and prevention measures.

According to the Canadian Cancer Society, Canada invests \$18 million per year on funding the Federal Tobacco Control Strategy.¹⁰ Of this, \$11 million is directed to Health Canada, \$3 million is allocated to the Public Health Agency of Canada, \$3 million for Public Safety and \$2 million to the Royal Canadian Mounted Police. \$18 million is less than one percent (0.002) of the \$8.3 billion in cigarette taxes that the Canadian federal government and provinces collected in 2018.

\$18 million in tobacco control funding is approximately \$3.91 per adult smoker in 2017 and is about \$0.40 for the nation’s 44.5 million youth aged 19 years or younger. Tobacco control is woefully underfunded. This is troublesome as “comprehensive tobacco control programs lead to an 8% short-term relative reduction [in smoking rates], increasing to a 12% long-term relative reduction in smoking prevalence through the greater impact on youth smoking.”¹¹

Positive tobacco control campaigns to address youth use of vapor products could include media campaigns and education courses, regulatory oversight of retailers of products to ensure no youth access and working in tandem with education and public health agencies to develop programs to address youth vapor use. Nonetheless, such programs need adequate funding.

Conclusion and Policy Implications

- Youth combustible cigarette rates are at an all-time low, and while youth use of vapor products is troubling, many youths are not overwhelmingly using e-cigarettes. Indeed, among Canadians in grades 7 through 9, 12.6 percent reported ever-use, and 5.4 percent reported using vapor products in the past 30 days. Among youth aged 15 to 19, in 2017, 22.8 percent reported trying an e-cigarette and six percent of youth and young adults reported using e-cigarettes in the past 30 days.
- Limiting nicotine concentrations may make it more difficult for heavy smokers to make the switch from combustibles to e-cigarettes. As each smoker is unique, it is important for adults to have options to aid in their smoke-free journey.
- Limiting nicotine concentrations may cause current users to vape more frequently and at higher temperatures, which could create unintended health consequences.
- Banning nicotine concentrations of 20 mg/mL or greater could create a black market of unregulated products as users seek out such products.
- Canada woefully underfunds tobacco control programs. Indeed, in 2018, Canada spent only \$18 million on tobacco education and prevention efforts. This amounts to only \$3.91 per adult smoker in 2017 and is about \$0.40 for the nation's 44.5 million youth aged 19 years or younger.

¹ Government of Canada, "Canadian Tobacco, Alcohol and Drugs Survey (CTADS): summary of results for 2017," 2017, <https://www.canada.ca/en/health-canada/services/canadian-tobacco-alcohol-drugs-survey/2017-summary.html#n2/>

² School of Public Health and Health Systems, "Tobacco Use in Canada," University of Waterloo, 2017, <https://uwaterloo.ca/tobacco-use-canada/e-cigarette-use-canada>.

³ Global Center for Good Governance in Tobacco Control, "E-Cigarette Ban & Regulation: Global Status as of February 2020," February 24, 2020, <https://ggtc.world/2020/02/24/e-cigarette-ban-regulation-global-status-as-of-february-2020/>.

⁴ John Boughey, "The rules on nicotine in e-liquids: a useful guide to TRPR now that the UK has left the EU," *Gourmet E-Liquid*, August 11, 2020, <https://www.gourmeteliquid.co.uk/blogs/news/the-rules-on-nicotine-in-e-liquids-a-useful-guide-to-tpd-trpr-and-rule-changes-after-brexite#footnote3>.

⁵ A. McNeill et al., "E-cigarettes: an evidence update," Public Health England, August, 2015, <https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachm>.

⁶ Nicholas I. Goldenson, PhD, et al., "An Open-Label, Randomized, Controlled, Crossover Study to Assess Nicotine Pharmacokinetics and Subjective Effects of the JUUL System with Three Nicotine Concentrations Relative to

Combustible Cigarettes in Adult Smokers,” *Nicotine & Tobacco Research*, January 25, 2021, <https://academic.oup.com/ntr/advance-article/doi/10.1093/ntr/ntab001/6104644>.

⁷ Jean-François Etter, “A longitudinal study of cotinine in long-term daily users of e-cigarettes,” *Drug and Alcohol Dependence*, January 14, 2016, <https://www.sciencedirect.com/science/article/abs/pii/S0376871616000107>.

⁸ Soha Talih, et al., “Might limiting liquid nicotine concentration result in more toxic electronic cigarette aerosols?,” *Tobacco Control*, June 10, 2020, <https://tobaccocontrol.bmj.com/content/early/2020/06/09/tobaccocontrol-2019-055523>.

⁹ Emma Ward et al., “A Qualitative Exploration of Consumers’ Perceived Impacts, Behavioural Reactions, and Future Reflections of the EU Tobacco Products Directive (2017) as Applied to Electronic Cigarettes,” *Tobacco Use Insights*, June 19, 2020, <https://journals.sagepub.com/doi/full/10.1177/1179173X20925458>.

¹⁰ Rob Cunningham, “CCS applauds strengthened Federal Tobacco Control Strategy, higher tobacco taxes in federal budget,” Canadian Cancer Society, February 27, 2018, <https://www.cancer.ca/en/about-us/for-media/media-releases/national/2018/federal-budget/?region=on#:~:text=The%20strengthening%20of%20the%20Federal,by%20the%20Canadian%20Cancer%20Society..>

¹¹ David T. Levy, PhD., et al., “The Impact of Implementing Tobacco Control Policies: The 2017 Tobacco Control Policy Scorecard,” *Journal of Public Health Management and Practice*, January 17, 2018, <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC6050159/>.