

May 25, 2019

Manager, Regulations Division
Tobacco Products Regulatory Office, Tobacco Control Directorate
Controlled Substances and Cannabis Branch
Health Canada
Address Locator 0301A
150 Tunney's Pasture Driveway
Ottawa, ON K1A 0K9

To Whom It May Concern,

RE: Reducing Youth Access and Appeal of Vaping Products: Potential Regulatory Measures

As the Medical Officer of Health for the City of Ottawa Health Unit, I welcome the opportunity to provide feedback regarding the potential regulatory measures to reduce youth access and appeal of vaping products.

I am pleased that Health Canada is seeking input on possible measures to reduce youth appeal and access of vaping products under the *Tobacco and Vaping Products Act* (TVPA). In Ottawa, data shows that vaping rates are increasing among youth; they are using vapour products with nicotine, they are attracted to the variety of e-liquid flavours and they believe that regular vaping presents only slight or no health risks. Vaping among Ottawa's youth has surpassed tobacco use. In 2017, 10% of Ottawa students have used an e-cigarette, compared to 6% that smoked cigarettes in the past 12 months¹; 23% of Ottawa high school students in grades 9-12 have used an e-cigarette at least once. Almost half (48%) of Ottawa students in grade 9-12 believe that regular vaping presents only slight or no health risks². Studies have also shown a relationship between vaping product use and the intention to smoke cigarettes among youth³.

By reducing youth access and appeal of vaping products, the negative health impacts associated with vapour products can be mitigated. In order to protect young people and others from the harms of e-cigarette use, including increased smoking of tobacco, Ottawa Public Health (OPH) recommends further regulation and enforcement of the rapidly evolving vaping industry¹. Regulations may be designed to preserve harm reduction while protecting youth and ensuring adults are making informed choices.

¹ Throughout this document the terms vaping or e-cigarettes will be used to refer to vaping products as defined by Health Canada in the Tobacco and Vaping Products Act (TVPA) (Minister of Justice, 2018).

Overall, OPH recommends that nicotine e-liquids, salts and delivery devices should be subject to the same regulation as combustible cigarettes.

As Medical Officer of Health for the City of Ottawa Health Unit, I am pleased to submit my recommendations that would further reduce the appeal and access to vaping products by young people and others.

Recommendation #1: Prohibit the manufacture and sale of all vaping flavours and products that evidence shows are designed to appeal to youth.

The Government of Canada prohibited the sale of all flavoured tobacco products. It is recommended that the prohibition on vaping product flavourings currently listed under the TVPA be aligned with the prohibition on flavoured tobacco products.

The three most common reasons that youth report trying vaping products include curiosity, flavoring/taste and low perceived harm.⁴ Researchers have identified hundreds of unique vaping flavours, including child and youth-friendly options.⁵ Flavours appeal to youth and encourage experimentation. Youth are more likely to initiate vaping with flavoured e-liquids, especially sweet products. Flavours added to nicotine products can mask natural irritation and contribute to user misperception of harms⁶. Marketing strategies for age restricted products are widely known to exploit youth attraction to sweet flavours to increase market share for products otherwise perceived to be unpalatable⁷. Evidence shows that youth are more influenced by flavours in vape products than adults^{8 9} and may be less likely to quit when using flavoured non-cigarette tobacco products¹⁰. Many youth users are unaware of the nicotine content in the products they use¹¹.

Although adults using vape products to reduce or quit smoking report a preference for flavour, most would continue to use e-cigarettes even if tobacco were the only flavour available¹². This suggests that restricting flavours in vaping products would be more beneficial in limiting youth initiation and use than it would be detrimental to harm reduction. Lastly, self-regulation by the industry has already failed and there is immediate need for clear and enforced regulation¹³.

I recommend that restrictions on flavouring agents in vaping products is an evidence-based strategy that will help prevent youth initiation and de-normalize vaping and smoking behaviour among youth and young adults.

Recommendation #2: Apply restrictions to the concentration of nicotine to align with combustible cigarettes.

Research shows that nicotine is an addictive substance^{3 14}. Vaping nicotine products can result in symptoms of dependence. Newer products, such as salts popular with youth, continue to trend towards higher nicotine concentration¹⁵. Concentration of

nicotine in e-cigarettes correlates with the degree of nicotine dependence²¹; as concentration of nicotine increases the risk for nicotine addiction also increases. Research suggests that e-cigarette use does not support cessation, with most reporting continued use of e-cigarettes or both e-cigarettes and combustible cigarettes¹⁶. Although use of combustible cigarettes has been found to decrease when e-cigarettes are adopted, rates of nicotine consumption and dependence increase¹⁷.

E-cigarette harm reduction is derived from reduced chemical exposure and elimination of combustion, however, the harm of nicotine addiction is not reduced by e-cigarettes. Long-term modelling, or predictions based on current patterns of use, suggest that population level nicotine consumption and combustible cigarette consumption will show little improvement or worsen without further regulation and restriction^{18 21}.

The amount of nicotine in one cigarette can range from 8 to 20 milligrams, with the average amount being 12 milligrams. E-cigarette devices can deliver nicotine at greater concentrations than combustible cigarettes, exceeding 50mg/ml¹⁵. A recent Canadian retail survey found that the vast majority of regular e-liquids (92%) contain up to 18 mg/ml of nicotine, while most nicotine salt formulations (68%) contain 18 to 42 mg/ml¹⁹. It is noteworthy that experimental levels of 'high' nicotine concentration are set around 20mg/ml²¹ and the European Union has set restrictions for nicotine at 20mg/ml²⁰.

Current nicotine thresholds in Canada can reach 66mg/ml before being considered 'toxic' and restricted²¹. Given what is known about nicotine addiction and to prevent further addiction, it is recommended that nicotine concentration be limited by an upper threshold and that products offer a range of concentrations up to that limit.

Past declines in nicotine use from combustible cigarettes corresponded to declining initiation²². In contrast, now e-cigarette use by youth is correlated with increased initiation²¹ including youth who are at low risk for combustible cigarette use²³. Among youth who have never smoked, about a quarter report being open (23.8%) or curious (25.4%) about e-cigarette use²⁴. Indeed the tobacco industry is reporting and forecasting growth based on attracting non-smokers to vaping²⁵. Simultaneously, clinicians and regulators are exploring the use of licenced nicotine replacement therapies to assist youth addicted to nicotine from vaping²⁶.

The concentration of nicotine should be clearly and quantitatively reported on or in the packaging of all vaping liquid, salt, cartridge, closed device or any other product containing nicotine. No label or promotional material should be permitted to use descriptive terms such as "light" or "strong" for nicotine concentration as these are not standardized²¹. Non-standardized terminology may result in unreliable or manipulative information that may appeal disproportionately to naïve or novice consumers including youth.

Opportunity for device modification and consumer behaviour can affect the concentration of nicotine delivered to a greater degree than traditional cigarettes^{27 28}. As a result, exposure may exceed informed consumer expectation even with accurate labelling. Protocols should be developed to provide clear and accurate information about using vaping products for harm reduction.

Additionally, further research is needed to support and inform the use of e-cigarettes in the treatment of nicotine addiction. Use of e-cigarettes may support cessation²⁹ but overall evidence is not conclusive²⁹. Currently, proven nicotine replacement therapies (those exempted under the Prescription Drug List³⁰) are regulated as follows: long acting nicotine replacement therapies are set at an upper limit of 21 mg; short acting nicotine replacement therapies, such as gum, are proven effective at levels of 4mg/ml dose³¹.

To support tapering towards complete cessation, research is needed to define product doses and limits. Capacity building training and resources should be developed for cessation service providers.

Regarding 'nicotine free' products, it is recommended that the threshold for e-liquids and salts align with the standards of the United States of America Food and Drug Administration. Vaping products currently on the market purport to be 'nicotine free' but frequently test positive for nicotine, ranging from 5.7-23.9 mg/ml³². There is no reason to allow even trace amounts of nicotine in products sold as 'nicotine free'; regulations are required to protect youth and consumers who do not wish to consume nicotine³³.

I recommend that restrictions on nicotine concentration in vaping products would mitigate the risk of nicotine addiction among youth and young adults.

Recommendation #3: Require that device manufacturers label devices to warn against modification or use of a modified device.

Modification of vaping devices increases the risk to consumers for nicotine exposure and physical injury by malfunction. Serious injury from blasts has occurred as a result of post manufacture alteration of vaping devices³⁴. Manufacturers should design products to deter consumer modification. Since modification has become a part of 'vaping culture', a warning against post-manufacture alteration may be of value to inform consumers about risks.

Recommendation #4: Establish regulation to align with online sale of alcohol or cannabis.

At website entry, online retailers should be required to question the age of all site visitors and re-direct visitors who report being under age. At purchase, online retailers should be required to notify customers about age restriction and verify the age of

purchaser by requiring registration for order placement. It is recommended that only Canada Post be permitted to deliver age restricted products. Upon delivery or post office pick up, it is recommended that Canada Post follow the same procedure for age check currently in place for cannabis, including: trackable packages; age verification with a record of name and signature by the accepting party and by photograph identification for anyone who appears to be under the age of 25; and no packages left unattended at delivery.

Recommendation #5: Expand regulations under the TVPA to advertising, endorsement and promotion online, by social media and other electronic platforms (e.g. videogames).

Regulations should be established for online advertising, promotion and endorsements of vaping products directed towards or determined to be easily accessible to youth on websites, social media (e.g. Twitter, Instagram etc.) and other e-venues (e.g. videogames, 'influencers', blog posts and chats etc.). Strategies should be implemented to hold companies, such as social media companies, accountable for sustained violations on their platforms given that posts promoting vaping are increasingly attributable to automated rather than individual activity³⁵. Strategies may be further developed to restrict and control third party advertising, third party promotion or links from youth directed or frequented sites. Youth sites or accounts can be defined by the number of youth visits or subscriptions or, if not available, by youth content.

All online marketing should be required to comply with regulations restricting point of sale promotion and limitations on health claims. E-cigarette sales and promotion sites are violating laws against unproven health or cessation claims³⁶. E-cigarette warnings should be extended to all e-advertising and e-promotion as social media warnings do increase perception of health risks³⁷. It is recommended that regulations be supported by progressively punitive enforcement and prosecution as the vaping industry has not abided by self-regulatory limitations against promotion and sale to minors³⁸.

Recommendation #6: Require that all nicotine containing vaping products be child proof, tamper evident and safety compliant.

All vaping products should be required to be sold in child proof packaging. Canadian clinical reports show that toxic exposure to e-cigarettes and e-liquids is occurring among children and youth by accidental and intentional inhalation or ingestion³⁹. Children are put at risk for toxic exposure to the contents of nicotine e-cigarettes. Efforts to limit risk should include child proof packaging and warnings to keep e-cigarettes, liquids, salts and other paraphernalia away from children⁴⁰. Furthermore, threshold nicotine concentrations would reduce the risk of voluntary and involuntary poisoning by consumption of toxic amounts⁴¹.

Packaging should also be tamper evident to protect consumers from risks posed by post-manufacture modification.

Recommendation #7: Prohibit colour of vaping products and require all product packaging be aligned with tobacco controls.

Vaping product packaging and devices, cartridges and contents (liquids or salts) should not be permitted to be coloured (content, cartridge or device). All vaping product packaging regulation should be aligned with tobacco controls: plain and standardized; no branding; full ingredient list including concentration of nicotine; and, provide all required warnings (i.e. nicotine, flavour/ additive chemicals and emissions). OPH supports the recently imposed requirements from Health Canada for tobacco packaging and recommends that all non-therapeutic nicotine products, including e-cigarettes, e-liquids and salts, adhere to these requirements. Tobacco companies have used colour to circumvent restrictions on false advertising of reduced risk products⁴². The justification for restricting the appeal of all tobacco products to youth applies to e-cigarettes⁴³. Implementation of standardized plain packaging with warnings, has been found to increase consumer awareness of risk, decrease appeal⁴⁴ and decrease the opportunity for companies to use packaging as a promotional tool⁴⁵. Perception of harm is a contributing factor in youth initiation and use of tobacco products⁴⁶ and consumers are susceptible to associations of colour or name with harm⁴⁷.

A restriction on naming e-cigarette products by flavour would further reduce the risk of product development, marketing and sale with youth appeal. No vaping product should be named in a manner appealing to youth (such as by flavour, popular culture, cartoon, slang, expletive or gender based). Like flavour restrictions, restricting branding or certain types of naming of vaping products is critical to curb youth directed marketing and sale, even if such strategies are 'intended' for adults of age. Vaping devices and cartridges should also be restricted from cross branding ('brand elements' as defined by TVPA⁴⁸), naming products with names already used by age restricted products or products with youth appeal (e.g. candy brand names). Restrictions should also apply to cross branding by promotion, including by display at point of sale. Inconsistency exists in how retailers present vape products, with some stores locating products near candy or other youth directed items⁴⁹. Vaping products should not be promoted by association with any youth product, such as candy or comics, or controlled product, such as tobacco, alcohol, cannabis and energy drinks.

It is recommended that vaping devices and all nicotine containing products be required to include warnings informing consumers about the risk of: (i) nicotine addiction; (ii) nicotine withdrawal symptoms; (iii) known and unknown health risks related to toxic or untested contents; (iv) modelling behaviour to children and youth; (v) risks of second

hand exposure; and (vi) significant risk including death from consumption of liquids, salts or other nicotine containing substances. An ingredient list should be required for nicotine content and other additives. Contents that pose a known or unknown risk by inhalation and emission and should be clearly identified with applicable warnings (e.g. diacetyl linked to bronchiolitis obliterans)⁵⁰.

I recommend that the alignment of vaping products with tobacco controls is consistent with the protection of youth and young adults from nicotine initiation and addiction.

Recommendation #8: Develop a public information campaign regarding the myths and risks associated with vaping.

Misinformation and false claims have contributed to the escalating problem of youth initiation of e-cigarettes. With new regulation, it is important that a communication strategy be developed to inform the public about the need for heightened regulation of e-cigarettes and dispel myths. The strategy must communicate that e-cigarettes are a source of harm for youth, non-smokers and by second hand exposure. Communication should emphasize the addiction risk associated with nicotine.

Concluding Remarks:

OPH is supportive of the regulations implemented by the TVPA and appreciates the opportunity to offer further recommendations. Although e-cigarettes offer harm reduction from combustible cigarettes, it is our overall and concluding recommendation that further regulation be developed to protect youth and non-smokers. All unlicensed nicotine products should be considered non-therapeutic and regulated similar to combustible tobacco cigarettes. This stance considers that the vaping industry: (1) has already become well established prior to robust regulation; (2) has acquired a rapidly growing consumer base among youth; and (3) has yet to put forth a product licensed as a therapeutic nicotine replacement therapy or cessation device. A failure to impose regulations on nicotine content, design, sale and marketing will repeat past failures in tobacco control that allowed for targeting of youth⁵¹ and youth initiation of combustible cigarette smoking. Many of the regulations required to increase protection of youth from initiation of e-cigarettes, such as setting a maximum threshold for nicotine concentration, prohibiting flavors, prohibiting youth directed design and branding, restricting online sales by age and enhancing labeling and warnings on packaging, should have minimal impacts on the harm reduction potential of e-cigarettes but potentially substantial positive impacts for youth and net population health²⁶. Lastly, it is important that all youth protection regulations be implemented as soon as possible. A lag in implementation of any one regulation can undermine the efficacy of those that are imposed⁵².

Thank you again for this opportunity to provide comments and recommendations regarding the potential regulatory measures to reduce youth access and appeal of vaping products. Should you have any questions or wish to discuss the recommendations, please contact me at Vera.Etches@ottawa.ca or by telephone at 613-580-6744 ext. 23675.

Sincerely,

Dr. Vera Etches, MD, MHScm CCFP, FRCPC
Medical Officer of Health
Ottawa Public Health

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