

## **Update on Aerosolized Liquid Products (Vapour Products)**

**Date:** November 20, 2019

**To:** Board of Health

**From:** Medical Officer of Health

**Wards:** All

### **SUMMARY**

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This report responds to a request from the Board of Health for a report on the health impacts of vapour products and potential actions for federal and provincial levels of government. Vapour products, which may include nicotine, function through the aerosolization of liquids to produce a vapour that can be inhaled. In this report, vapour products will be referred to as aerosolized products or aerosolized liquid products.

While aerosolized products, also known as e-cigarettes, are considered by some health authorities to be less harmful than combustible tobacco cigarettes, Health Canada and other health authorities have concluded that the long-term health effects from the use of aerosolized products are not yet fully known. Using aerosolized liquid products can expose the user to nicotine, an addictive substance which is associated with negative impacts on adolescent brain development, and to other chemicals that are harmful to health. Use of aerosolized liquid products has also been shown to lead to subsequent tobacco smoking among youth and young adults. This is particularly concerning as aerosolized liquid products have the potential to undermine public health gains achieved through more than a decade of coordinated, comprehensive, evidence-based commercial tobacco control work.

Aerosolized liquid products, including newer brands that contain higher concentrations of nicotine, have become widely available in convenience stores, gas stations, and other retail outlets throughout Toronto. National surveys show there has been an increase in the use of aerosolized liquid products amongst youth. The recent increase and widespread availability of popular new brands in most convenience stores in Toronto, coupled with their pervasive advertising campaigns and unlimited promotion at retail outlets, may have played a role in increasing use of these products amongst youth. Additionally, there are a wide variety of flavours available at retail outlets, including candy and dessert flavours. Flavours were cited in a national survey as one of the main reasons youth initiated aerosolized liquid product use.

In light of current evidence, Toronto Public Health (TPH) recommends the federal government take action to prohibit aerosolized liquid product advertising and promotion where minors have access, prohibit the sale of flavours (except tobacco flavour) in retail stores accessible to minors, and set a limit on available nicotine concentrations in aerosolized liquid products. Toronto Public Health also commends the province for their recent action to prohibit the in-store promotion of aerosolized liquid products and recommends the province take further action to prohibit the sale of all flavours (except tobacco) at retail stores accessible to minors. Finally, TPH recommends a report back to the Board of Health on amendments to the existing City of Toronto By-laws that prohibit smoking to also prohibit the use of aerosolized liquid products.

## **RECOMMENDATIONS**

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The Medical Officer of Health recommends that:

1. The Board of Health request the Government of Ontario to amend the Smoke-Free Ontario Act, 2017, such that provisions on aerosolized liquid products (vapour products) align more closely with those for tobacco products by adding a prohibition on the sale of any flavoured aerosolized liquid products (vapour products), with the exception of tobacco flavour, in stores accessible to minors.
2. The Board of Health request the Government of Canada and the Federal Minister of Health to take prompt action to implement restrictions on the advertising and promotion, flavours, and nicotine content of aerosolized liquid products (vapour products) by enacting regulations in the Tobacco and Vaping Products Act in these policy areas.
3. The Board of Health direct the Medical Officer of Health, in consultation with Legal Services and relevant City divisions including Municipal Licensing and Standards, Parks, Forestry and Recreation, and Corporate Real Estate Management, to report on amendments to the existing City of Toronto By-laws that prohibit smoking to incorporate similar prohibitions on the use of aerosolized liquid products (vapour products).
4. The Board of Health forward this report to the Premier of Ontario, the Ontario Minister of Health, the Federal Minister of Health, Ontario's Chief Medical Officer of Health, the Association of Local Public Health Agencies, the Ontario Campaign for Action on Tobacco, the Council of Chief Medical Officers of Health, the Canadian Medical Association, the Heart and Stroke Foundation of Canada, the Canadian Cancer Society, the Canadian Lung Association, Physicians for a Smoke-Free Canada, and all Toronto school boards.

## **FINANCIAL IMPACT**

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There is no financial impact resulting from the adoption of the recommendations in this report.

## DECISION HISTORY

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On October 29, 2019, City Council adopted amendments to the City of Toronto Municipal Code, Chapter 545 - Licensing, to require vapour product retailers to be licensed. Following implementation, the licensing requirements for vapour product retailers will align with the licensing requirements for tobacco product retailers.

<http://app.toronto.ca/tmmis/viewAgendaItemHistory.do?item=2019.GL8.20>

On September 23, 2019, the Board of Health adopted HL9.10 a letter from Councillor Joe Cressy on Health Concerns Associated with Vapour Products and requested the Medical Officer of Health to report back to the Board at its meeting on December 9, 2019 on recommendations and potential actions for all levels of government related to vapour products.

<http://app.toronto.ca/tmmis/viewAgendaItemHistory.do?item=2019HL9.10>

On March 20, 2017, the Board of Health supported, in principle, the Government of Canada's Federal Tobacco Control Strategy consultation document, which introduced federal legislation on vapour products.

<http://app.toronto.ca/tmmis/viewAgendaItemHistory.do?item=2017.HL18.7>

On August 1, 2014 The Board of Health adopted a report from the Medical Officer of Health on E-cigarettes in Toronto and the Toronto Public Health Position Statement on Electronic Cigarettes. On August 25, 2014 City Council passed a City of Toronto policy to prohibit e-cigarette use at City of Toronto properties.

<http://app.toronto.ca/tmmis/viewAgendaItemHistory.do?item=2014.HL33.1>

## COMMENTS

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This report responds to a request from the Board of Health for a report on the health impacts of vapour products and potential actions for federal and provincial levels of government.

Vapour products, such as e-cigarettes, function by heating a liquid that may contain nicotine to produce an aerosol that a user inhales, while use of these products is often referred to as "vaping", this report refers to the act of using vapour products including e-cigarettes as the inhalation of aerosols and vapour products are referred to as aerosolized liquid products.

### **Overview of the Evidence on Aerosolized Liquid Products**

#### *Health Impacts of Aerosolized Liquid Products*

Vapour products or aerosolized liquid products are defined by the Smoke-Free Ontario Act, 2017, (SFOA) as an electronic cigarette, e-substance, or any other component of an electronic cigarette, including the packaging in which these items or components are sold. Toronto Public Health (TPH) reviewed evidence on the utilization and health impacts from vapour products or aerosolized liquid products published since 2014 and concluded that while some health authorities consider aerosolized liquid products to be

less harmful than tobacco smoking, their use can expose the user to chemicals that are harmful to their health<sup>1,2,7</sup>. The short term health effects can include respiratory inflammation and throat irritation<sup>1</sup>. Aerosolized liquid product use has also been shown to increase the risk of cardiovascular disease, particularly if an individual is inhaling aerosols while continuing to smoke tobacco<sup>3,4</sup>. Nicotine, including the nicotine in e-substances used in aerosolized liquid products, is highly addictive and associated with negative impacts on adolescent brain development<sup>2</sup>. There is limited evidence of aerosolized liquid product use increasing the likelihood of smoking cessation<sup>1</sup>. This evidence is consistent with the TPH 2014 position statement that has been updated based on the most current information (See Attachment 1 for more detail).

The long-term health effects from use of aerosolized liquid products are not yet fully known and their use has been deemed unsafe for youth, young adults, pregnant women, or adults who do not currently use tobacco products<sup>1,2,7</sup>. Toronto Public Health recommends if you do not smoke, you should not use aerosolized liquid products.

In addition to the potential health harms from aerosolized liquid products, cases of acute e-cigarette or vaping-associated lung injury (EVALI) continue to be reported in the United States (US) and Canada<sup>6,7,8</sup>. As of November 20, 2019, the US Centers for Disease Control and Prevention (CDC) has reported 2290 lung injury cases and 47 confirmed deaths associated with inhalation of aerosols<sup>7</sup>. The exact causes are not yet clear but the cases are being actively investigated by health authorities<sup>7</sup>. Vitamin E acetate appears to be associated with the cases although the CDC cannot rule out other possible chemical exposures<sup>5,7</sup>. Canadian health officials report four confirmed cases (three in Quebec, one in Ontario) and several probable cases (two in New Brunswick, two in Ontario and three in BC)<sup>6,7,8</sup>.

Provincial and territorial health authorities are responsible for investigating possible cases in Canada using national guidelines and criteria. Local public health units have a limited role in this issue. Toronto Public Health will continue to monitor the situation in the US and locally, and liaise with provincial authorities including Public Health Ontario and the Office of the Chief Medical Officer of Health to keep apprised of the health risks associated with the use of aerosolized liquid products.

### *Youth Use*

In May 2018, the passing of the Federal Tobacco and Vaping Products Act (TVPA) allowed for the legal sale of aerosolized liquid products in Canadian retail stores. Since then, there has been a significant proliferation of popular new aerosolized liquid product brands in most convenience stores in Toronto. There are also numerous flavours of aerosolized product liquids available including candy and dessert flavours that are appealing to youth. Flavours have been identified as one of the main reasons youth initiated aerosolized liquid product use<sup>9</sup>.

From 2017-18, University of Waterloo researchers documented a 74 percent increase in the proportion of Canadian youth reporting they had used aerosolized liquid products in the past month (from 8.4 percent to 14.6 percent)<sup>10</sup>. This significant increase is a concern in light of the evidence that shows aerosolized liquid product use is strongly associated with subsequent tobacco cigarette smoking among youth and young adults<sup>1</sup>. In that same time period, researchers also found a 54 percent increase in youth

cigarette smoking initiation<sup>10</sup>. In their three-country analysis, University of Waterloo researchers note the association between increased youth use of aerosolized liquid products and the appearance on the Canadian market of new major brands of aerosolized liquid products<sup>10</sup>.

## **Aerosolized Liquid Product Legislation**

The display, promotion, sales and use of aerosolized liquid products is regulated by the Federal Tobacco and Vaping Products Act (TVPA) and the Provincial Smoke-Free Ontario Act, 2017 (SFOA). The TVPA sets a minimum age for purchase (18 years) and allows for regulations on manufacturing and safety standards for aerosolized liquid products and their components. These standards are administered and enforced by Health Canada.

The Smoke-Free Ontario Act, 2017, regulates aspects of tobacco, vapour and cannabis product sales, supply and use in Ontario. The SFOA sets the minimum age for vapour product sale and supply at 19 years of age and prohibits their use in enclosed workplaces, enclosed public places and some outdoor spaces. Toronto Public Health's Tobacco, Vapour & Cannabis Enforcement program enforces the SFOA as mandated by the Province.

At the local level, municipalities can pass by-laws as permitted by the Municipal Act, 2001 or City of Toronto Act, 2006. For example, in November 2013, City Council adopted changes to Municipal Code Chapter 709 – Smoking that prohibited tobacco smoking or the carrying of any other lighted material within 9 metres of all entrances and exits to publicly accessible buildings in Toronto. A number of municipalities, including Ottawa, Kingston and recently, municipalities in the Region of Durham, have incorporated aerosolized liquid products into their smoke-free by-laws.

### *Advertising and Promotion of Aerosolized Liquid Products*

Unlike the regulations for tobacco products, the advertising and promotion of aerosolized liquid products is permitted and there are few restrictions on how they can be promoted in many public places.

The Federal TVPA allows for advertising and promotion of aerosolized liquid products, provided advertisements or promotion are not appealing to young people, do not make health claims, and do not include lifestyle or celebrity endorsements. While candy and dessert flavoured aerosolized liquid products may be available, their promotion is also prohibited by the TVPA.

The Federal TVPA has recently begun enacting new measures requiring tobacco products to be sold in plain and standardized packaging (Tobacco Products Regulations (Plain and Standardized Appearance)<sup>11</sup>. The new regulations are part of the federal goal to decrease tobacco use rates to 5 percent by 2035. Studies have shown that plain packaging measures decreases the attractiveness of tobacco products while increasing the impact of the health warnings that are required on packaging. Aligning packaging regulations for aerosolized liquid products with those for tobacco products, particularly for those products sold in retail locations accessible to minors, would be consistent with other regulations in the TVPA. The government of British Columbia has recently

announced provincial regulations requiring plain packaging for aerosolized liquid products<sup>13</sup>.

On October 25, 2019, the Ontario Minister of Health announced that the SFOA would be amended to re-establish a prohibition on the promotion of aerosolized liquid products in retail stores accessible to minors. This change will go into effect on January 1, 2020. Toronto Public Health supports this change which aligns with the Medical Officer of Health's comments submitted to the Minister of Health in October 2018 when the government consulted on the exemption for retailer promotion of aerosolized liquid products. Prohibiting the promotion of aerosolized liquid products at retail will align Ontario with the approach taken by the majority of provinces and territories in Canada with aerosolized liquid product laws<sup>12</sup>. Prohibiting advertising and promotion in stores and public places frequented by youth is also based on internationally recognized best practices in comprehensive tobacco control as per the 2005 World Health Organization Framework Convention on Tobacco Control.

Tobacco products in Ontario have a specific provincial tobacco tax however there is no additional tax applied to aerosolized liquid products beyond standard goods and services taxes. The government of British Columbia has recently announced they will be significantly increasing the Provincial Sales Tax (PST) on aerosolized liquid products from 7 percent to 20 percent beginning in January, 2020<sup>13</sup>. Increasing the price of tobacco through taxation has historically had a corresponding effect of lowering prevalence rates of tobacco use particularly among youth.

#### *Aerosolized Liquid Product Retail Availability*

Prior to passage of the TVPA in 2018, aerosolized liquid products containing nicotine were not legally permitted to be sold in Canada; however, based on TPH staff experience, there was little or no federal enforcement. Nevertheless, the aerosolized liquid product industry has grown steadily in Toronto over the last ten years. Products have been widely available in many locations including specialty vape stores, flea markets, trade shows, head shops, convenience stores and online. After the TVPA was passed, there was a rapid increase in the availability of popular brands throughout the city complemented by large-scale, multi-media advertising campaigns. There are currently approximately 1643 retail stores selling aerosolized liquid products in Toronto and the vast majority of these stores are accessible to children and youth. There are approximately 84 specialty vape stores in Toronto, which are only accessible to adults aged 19 years and older.

Toronto Public Health enforcement staff are mandated to track and inspect all aerosolized liquid product retailers to ensure they are in compliance with the SFOA. The pace of growth of aerosolized liquid product retailers as well as the diversity in retail types, along with the newly added responsibilities under the SFOA (vapour products and cannabis) with no budget enhancements have made this work particularly challenging. Toronto Public Health worked with Municipal Licensing and Standards to propose amendments to Municipal Code Chapter 545 – Licensing, so that all aerosolized liquid product retailers will be required to have a license. This new policy, adopted by Council in October 2019, will provide some additional oversight and allow for a more effective system to track aerosolized liquid product retail in Toronto.

### *Interventions to Address Aerosolized Liquid Products*

#### *Public Education and Capacity Building*

Toronto Public Health continues to actively monitor aerosolized liquid product visibility and use while raising awareness to educate the public, particularly parents, children, and youth, about the health risks associated with aerosolized liquid products. Activities include working with local youth groups, including the Youth Health Action Network, who for example, held a public forum on aerosolized liquid product use in October 2019, to contribute to the Toronto District School Board's secondary school vaping prevention curriculum.

#### *Enforcement of the SFOA, 2017 and Municipal By-law Amendments*

Toronto Public Health enforcement staff undertake regular compliance inspections and test shopping at retail stores in addition to enforcing the other provisions in the SFOA.

Given the evidence related to the health risks of inhalation of aerosols, this report recommends that TPH be requested to report back on proposed amendments to the existing City of Toronto bylaws that prohibit smoking to also prohibit aerosolized liquid product use, including within 9 metres of entrances and exits to publicly accessible buildings in Toronto (Municipal Code Chapter 709), on public squares (Municipal Code Chapter 636 and former Municipal Code Chapter 237) and at some City of Toronto Parks amenities (Municipal Code Chapter 608). This would be done in consultation with Legal Services and relevant City divisions including: Municipal Licensing and Standards, Parks Forestry and Recreation and Corporate Real Estate Management.

#### *Potential Actions for Federal and Provincial Levels of Government*

Health Canada, the Council of Chief Medical Officers of Health, along with several other health authorities, have expressed increasing concern about the rise of aerosolized liquid products use among Canadian youth and the potential effects of the high concentrations of nicotine contained in aerosolized liquid products, particularly on adolescent brain development<sup>9,12,14</sup>. In addition to the public health concerns outlined in this report, ongoing reports of e-cigarette or vaping-associated lung illness in the US and Canada further illustrate the need for swift regulatory action by all levels of government<sup>7,8</sup>.

To further protect the public from the health risks of inhalation of aerosols, the Medical Officer of Health recommends that the Board of Health request the Federal and Provincial Ministers of Health make amendments to:

- The TVPA to, prohibit advertising and promotion of aerosolized liquid products (vapour products) anywhere children and youth are permitted to have access; apply plain and standardized packaging requirements (like those used for tobacco products) to aerosolized liquid products (vapour products); prohibit the sales of all flavours (except tobacco) for aerosolized liquid products in retail stores where minors have access; and set a limit on the nicotine concentration in e-substances; and
- The SFOA to add language prohibiting the sale of all flavours, except tobacco flavour, in retail stores where minors have access (see Attachment 2).

Finally, the Medical Officer of Health recommends that the Board of Health indicate the need for these evidence-based regulatory changes in order to address the rising rates of aerosolized liquid product use among youth and to mitigate potential health harms by forwarding this report to the Premier of Ontario, the Ontario Minister of Health and the Federal Minister of Health.

## **CONTACT**

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## **SIGNATURE**

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Dr. Eileen de Villa  
Medical Officer of Health

## **ATTACHMENTS**

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Attachment 1 - Toronto Public Health 2019 Position Statement on Vapour Products.

Attachment 2 - Letters to Provincial Minister of Health and Federal Minister of Health.



## REFERENCES

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- <sup>1</sup> National Academies of Sciences, Engineering, and Medicine. (NASEM) 2018. Public Health Consequences of Vapour products. Washington, DC: The National Academies Press. <https://doi.org/10.17226/24952>.
- <sup>2</sup> Health Canada, Risks of Vaping [https://www.canada.ca/en/health-canada/services/smoking-tobacco/vaping/risks.html?utm\\_source=google&utm\\_medium=cpc\\_en&utm\\_content=risks\\_3&utm\\_campaign=vapingprevention2019&utm\\_term=%2Bvape](https://www.canada.ca/en/health-canada/services/smoking-tobacco/vaping/risks.html?utm_source=google&utm_medium=cpc_en&utm_content=risks_3&utm_campaign=vapingprevention2019&utm_term=%2Bvape)
- <sup>3</sup> Czoli CD, Fong GT, Goniewicz ML, Hammond D. (2018). Biomarkers of exposure among “dual users” of tobacco cigarettes and electronic cigarettes in Canada. *Nicotine & Tobacco Research*.
- <sup>4</sup> Heart and Stroke (2018). E-cigarettes in Canada, Position Statement. . <https://www.heartandstroke.ca/-/media/pdf-files/position-statements/ecigarettesincanada.ashx?la=en&hash=8939FF52C37A5E11C551176982F2E4AC5D38D605>
- <sup>5</sup> Blount BC, Karwowski MP, Morel-Espinosa M, et al. Evaluation of Bronchoalveolar Lavage Fluid from Patients in an Outbreak of E-cigarette, or Vaping, Product Use–Associated Lung Injury — 10 States, August–October 2019. *MMWR Morb Mortal Wkly Rep*. ePub: 8 November 2019. DOI: <http://dx.doi.org/10.15585/mmwr.mm6845e2>
- <sup>6</sup> Government of Canada. 2019. Severe Lung Illness Related to Vaping. <https://www.canada.ca/en/public-health/services/diseases/vaping-pulmonary-illness.html>
- <sup>7</sup> Office on Smoking and Health, National Center for Chronic Disease Prevention and Health Promotion, Outbreak of Lung Injury Associated with E-Cigarette Use, or Vaping Update [https://www.cdc.gov/tobacco/basic\\_information/e-cigarettes/severe-lung-disease.html](https://www.cdc.gov/tobacco/basic_information/e-cigarettes/severe-lung-disease.html)
- <sup>8</sup> Health Canada Information Update <https://healthycanadians.gc.ca/recall-alert-rappel-avis/hc-sc/2019/70919a-eng.php>
- <sup>9</sup> Health Canada (2019) Reducing Youth Access and Appeal of vaping Products: Potential Regulatory Measures. <https://www.canada.ca/en/health-canada/programs/consultation-reducing-youth-access-appeal-vaping-products-potential-regulatory-measures/document.html>
- <sup>10</sup> Hammond, D., Reid, J.L., Rynard, V.L., Fong, G.T., Cummings, M.K., McNeill, A., Hitchman, S., Thrasher, J.F., Goniewicz, M.L., Travers, M.B., Richard O'Connor, R., Levy, D, Borland, R. Gray N., White, C.M. (2019). Prevalence of vaping and smoking among adolescents in Canada, England, and the United States: repeat national cross sectional surveys. *BMJ* 365:l2219. <https://www.bmj.com/content/365/bmj.l2219>
- <sup>11</sup> Health Canada (2019). Plain and Standardized Appearance for Tobacco Packaging and Products. Backgrounder. <https://www.canada.ca/en/health-canada/news/2019/05/plain-and-standardized-appearance-for-tobacco-packaging-and-products.html>
- <sup>12</sup> Physicians for a Smoke-Free Canada (2019). Restrictions on retail vaping in Canadian jurisdictions, 2019. Fact sheet: <http://www.smoke-free.ca/factsheets/pdf/Provincial%20regulations%20on%20vaping%20promotions.pdf>
- <sup>13</sup> Government of British Columbia (2019). Press Release Vaping Restrictions to Protect Youth. <https://news.gov.bc.ca/releases/2019HLTH0118-002192>
- <sup>14</sup> Public Health Agency of Canada, Council of Chief Medical Officers of Health (2019). Public Statement on Vaping in Canada. <https://www.canada.ca/en/public-health/news/2019/10/statement-from-the-council-of-chief-medical-officers-of-health-on-vaping-in-canada.html>