

Monday April 20<sup>th</sup>, 2020

Susan Lee, Manager  
Administrative and Association Services  
Association of Local Public Health Agencies  
Email: [susan@alphaweb.org](mailto:susan@alphaweb.org)

Dear Ms. Lee,

On behalf of the Middlesex-London Boards of Health, please accept the attached alPHa resolution submission for consideration at the alPHa Annual General Meeting in June.

The resolution, entitled "*Reducing the Harms, the Availability and Youth Appeal of Electronic Cigarettes and Vaping Products through Regulation*" was endorsed and approved for sponsor by the Middlesex-London Board of Health at its April meeting.

I would be happy to answer any clarification questions you may have.

Sincerely,

Dr. Christopher Mackie  
Medical Officer of Health and CEO  
middlesex-London Health Unit

**TITLE: Reducing the Harms, the Availability and Youth Appeal of Electronic Cigarettes and Vaping Products through Regulation**

**SPONSOR: Middlesex-London Board of Health**

- WHEREAS electronic cigarettes (e-cigarettes), also referred to as electronic nicotine delivery systems, vapour products, vapes or vapourizers, were first introduced into the Canadian market in 2004;
- WHEREAS an ALPHA resolution in 2014 requested that Health Canada and the Ontario Ministry of Health and Long-Term Care provide for the public health, safety and welfare of all Ontario residents by: ensuring manufacturing consistency of e-cigarettes; conducting research on the long-term health effects of e-cigarettes and exposure to secondhand vapour; and, regulating the promotion, sale and use of e-cigarettes in Ontario;
- WHEREAS there are no long-term studies on the health effects of using e-cigarettes that can conclusively show they do not pose a health risk to the user; and
- WHEREAS there is substantial evidence that some chemicals present in e-cigarette aerosols are capable of causing DNA damage and mutagenesis, and that long-term exposure to e-cigarette aerosols could increase the risk of cancer and adverse reproductive outcomes;
- WHEREAS there is inconclusive evidence that e-cigarettes are effective as a cessation tool to help people break their addiction to nicotine;
- WHEREAS in Canada, most people who use e-cigarettes also smoke tobacco cigarettes (dual users), maintaining tobacco use and nicotine addiction over time;
- WHEREAS data shows that the concurrent use of cigarettes and e-cigarettes is even more dangerous than smoking cigarettes alone due to increased exposure to toxicants and nicotine;
- WHEREAS the use of e-cigarettes has grown at an exponential rate, with a 74% increase in youth vaping in Canada from 8.4% in 2017 to 14.6% in 2018;
- WHEREAS e-cigarette prevalence rates among Canadian grade 7 to 12 students have doubled from 10% in 2016-17 to 20% in 2018-19, with prevalence rates of past-30-day use being higher among students in grades 10 to 12 (29%) than those in grades 7 to 9 (11%);
- WHEREAS 56% of Ontario students in grades 7 to 12 who have used an e-cigarette in the past year are vaping nicotine;
- WHEREAS there is substantial evidence that e-cigarette use increases the risk of cigarette smoking initiation among non-smoking youth and young adults;
- WHEREAS simulation models in the United States show e-cigarette use represents more population-level health harms than benefits, with an estimated 80 youth and young adults starting to use an e-cigarette product for every cigarette smoker who quits;

WHEREAS a [January 2020 statement](#) from the Council of Chief Medical Officers of Health (CCMOH) outlines regulatory and policy recommendations for the federal, provincial/territorial and municipal governments to address the rapidly emerging public health threat of increased vaping prevalence;

WHEREAS Ontario Health Minister Christine Elliott announced that effective July 1<sup>st</sup>, 2020, the sale of most flavoured vaping products and all vaping products with nicotine concentrations higher than 20 mg/ml would be restricted to specialty vape stores and provincially licensed cannabis retail outlets because they are age-restricted (19 years plus) retail environments;

WHEREAS Minister Elliot's announcement also indicated that in Ontario, the sale of menthol, mint and tobacco-flavoured e-cigarettes would be permitted at convenience stores, gas stations, and any other retail environment where children and youth have access;

WHEREAS additional regulatory measures will serve to further strengthen the goal of tobacco use prevention, cessation and a reduction in use of all nicotine-containing products by regulating vapour products as equivalent to commercial tobacco products;

**NOW THEREFORE BE IT RESOLVED** that the Association of Local Public Health Agencies (alPHa) write to the federal and provincial Ministers of Health acknowledging the steps already taken by the Governments of Canada and of Ontario to address the epidemic of youth vaping, and urge that they enact the following policy measures based on those recommended by the Council of Chief Medical Officers of Health:

- A ban on all vapour product and e-substance flavours except tobacco;
- A cap on the nicotine concentration levels in any vapour product to 20 mg/ml, in alignment with the European Union Tobacco Products Directive;
- The application of the same plain and standardized packaging regime that is applied to commercial tobacco products and accessories to vapour products;
- The enforcement of strict age-verification measures for online sales, including age-verification at time of purchase and proof of legal age at delivery;
- Limit tobacco and vapour product and accessory sales to licensed, age-restricted tobacconists, specialty vape shops and cannabis retail shops respectively;
- The enactment of a tax regime on vapour products and the establishment of product set price minimums to discourage use of all tobacco and vaping products; and,
- An increase to the legal age for the sale and supply of tobacco and vaping products and accessories to 21 years of age.

**AND FURTHER** that alPHa advise all Ontario Boards of Health to advocate for and support local municipalities to develop bylaws to regulate the retail sale and the use of tobacco and vapour products;

**AND FURTHER**, that the Prime Minister of Canada, the Chief Public Health Officer of Canada, the Premier of Ontario and the Chief Medical Officer of Health of Ontario be so advised.

## **Statement of Sponsor Commitment**

The Middlesex-London Board of Health share the concerns of Health Canada and the Ontario Ministry of Health regarding the increase in vapour product use by young people in Canada. The Board is encouraged by the commitment to develop regulatory measures to reduce youth access and appeal of vaping products. The popularity of e-cigarettes has been explosive among our youth. It threatens to addict a whole new generation to nicotine products, reversing what has been a downward trend in smoking rates and nicotine addiction among Canadian youth. We are not alone in our concern. Our public health staff is working closely with our school communities, municipalities and public health partners to counter the use and popularity of e-cigarettes to prevent youth, young adults and non-tobacco users from becoming addicted to vaping products. Using a comprehensive approach that includes education and awareness targeted to youth, parents and adult influencers, and the enforcement of the *Smoke-Free Ontario Act, 2017*, we are committed to helping our youth develop the personal skills that will support their efforts to adopt healthy lifestyle behaviours free of all tobacco industry products. However, despite our concerted efforts to prevent initiation of vapour product use and addiction to nicotine among youth, we are being met with limited success because of the allure and attraction of these products. The availability of flavours, the ease of accessing vaping products at corner stores and through online sales, the unregulated, targeted advertising to young people, the smoother vaping experience provided by the development of nicotine salts, and the availability of high nicotine concentrations, has posed significant challenges in our efforts to halt vapour product uptake.

Under the *Smoke-Free Ontario Act, 2017*, smoking and the use of vaping products is prohibited on school grounds and within 20 metres of school property. The use of vaping products inside and outdoors on school property has become a substantial problem for elementary and secondary school staff. In the 2018-2019 school year, Tobacco Enforcement Officers (TEOs) with the Middlesex-London Health Unit issued 207 warnings and charges in 2018-2019 by Health Unit Inspectors responsible for enforcing the *Smoke-free Ontario Act, 2017*. At the time of writing (February 2020), 151 warnings and charges for the 2019-2020 school year have been issued. Health Unit Inspectors report that students caught vaping on school property often state that because of their addiction to nicotine, they are unable to wait for class breaks to leave school property to vape, and instead they are choosing to vape inside school washrooms, change rooms, classrooms and on school buses. Public Health Nurses working in our secondary schools have reported that students are sharing with them alarming experiences of adverse reactions to high doses of nicotine, including headaches, nausea, elevated heart rate, general malaise, and, in extreme situations, seizures. Recently released data from the 2019 Ontario Student Drug Use and Health Survey shows that in Middlesex-London, 19%\* (11.8-29.1%) of students in grades 7 to 12 reported weekly or daily e-cigarette use (vaping) in the past 12 months (\*interpret with caution).

Too much remains unknown about the short- and long-term health effects of vaping to ignore this growing public health issue. Across Canada, as of February 18, 2020, there were 18 cases of vaping-associated lung illness reported to the Public Health Agency of Canada, resulting in the hospitalization of 14 people including a 17-year-old high school student from the London area who spent 47 days in the hospital, part of it on life support (Government of Canada, 2020). In the United States, as of February 18, 2020, there have been a total of 2807 hospitalized e-cigarette or vaping product use-associated lung injury (EVALI) cases including 68 deaths (CDC, 2020). At this time, there has yet to be a consistent product, substance, or additive that has been isolated as the cause in these cases. Continued efforts are needed from all levels of government to address the harms, the availability and youth appeal of e-cigarettes and vaping products through regulations like those contained in this resolution.

Dr. Christopher Mackie, Medical Officer of Health and Chief Executive Officer for the Middlesex-London Health Unit will be able to provide clarification on this resolution at the alPHa Annual General Meeting in June.

## Background Summary

Electronic cigarettes (e-cigarettes), also referred to as electronic nicotine delivery systems, vapour products, vapes or vapourizers were first introduced into the Canadian market in 2004 (Heart and Stroke Foundation, 2018). In 2014, [alPHa Resolution A14-2](#), “*Regulating the Manufacture, Sale, Promotion, Display, and Use of E-Cigarettes*” was carried at the Annual General Meeting. The resolution requested that Health Canada and the Ontario Ministry of Health and Long-Term Care provide for the public health, safety and welfare of all Ontario residents by ensuring manufacturing consistency of e-cigarettes; conducting research on the long-term health effects of e-cigarettes and exposure to secondhand vapour; and regulating the promotion, sale and use of e-cigarettes in Ontario (Association of Local Public Health Agencies, 2014). Since 2014, the e-cigarettes available in the market have rapidly evolved and the growing public health concerns associated with product safety and an exponential increase in youth vaping have prompted the need for stricter regulations and immediate public health intervention. A [January 2020 statement](#) was released by the Council of Chief Medical Officers of Health (CCMOH), outlining regulatory and policy recommendations for the federal, provincial/territorial and municipal governments to address the rapidly emerging public health threat of increased prevalence of vaping (Public Health Agency of Canada, 2020).

When vaping products initially entered the market, they closely resembled a traditional cigarette, however, now they have become complex units that come in different shapes and sizes, with features that allow for customization in device configuration. There are newer products on the market, such as JUUL, SMOK, and VYPE, that use nicotine salts in novel, youth-friendly USB designs. These products have a higher nicotine content, and have become immensely popular with youth, due to their small, discrete design and recharging capabilities using computers and phone chargers (American Cancer Society, 2020).

In May 2018, Bill S-5, *An Act to Amend the Tobacco Act and Non-Smokers’ Health Act*, received Royal Assent and e-cigarettes, with or without nicotine, became legal in Canada. According to Health Canada (2018), this new legislative framework applied a harm reduction approach to vaping product regulations, striking a “balance between protecting youth from nicotine addiction and tobacco use, and allowing adults to legally access vaping products as a less harmful alternative to cigarettes” (Health Canada, 2018). The opening of the legal e-cigarette market in Canada led to increased vapour product availability and promotion, contributing to an exponential increase in vaping prevalence rates (Hammond, et al., 2019). The legalization of vaping products containing nicotine occurred despite firm evidence that they were effective as cessation devices and without conclusive evidence regarding their safety.

## Health Effects of Vaping

Emerging data suggests that vapour products may be safer than combustible tobacco products; however, this data is not yet conclusive, and there is consensus among the public health community that vapour products and the aerosol that vaping devices produce are not harmless (U.S. Department of Health and Human Services, 2016).

Vaping devices are still relatively new, and more research is needed to fully understand both the short- and long-term health risks associated with vaping. According to Bhatta and Glantz (2019), the use of e-cigarettes appears to be an independent risk factor for the development of respiratory disease, but more longitudinal studies are needed. In the absence of conclusive longitudinal evidence, there is consensus that vapour products expose users to harmful toxins, including cancer-causing chemicals, diacetyl, volatile organic compounds, heavy metals, and ultrafine particles that can be inhaled deeply into the lungs (Centers for Disease Control and Prevention, 2020; U.S. Department of Health and Human Services, 2016; National Academies and Science, Engineering and Medicine (NASEM), 2018). These substances have been linked to increased cardiovascular and non-cancer lung disease (U.S. Department of Health and

Human Services, 2016). Additionally, there is substantial evidence that some chemicals present in e-cigarette aerosols are capable of causing DNA damage and mutagenesis, and that long-term exposure to e-cigarette aerosols could increase risk of cancer and adverse reproductive outcomes (NASEM, 2018).

### **Vaping Products for Cessation Requires Further Review**

E-cigarettes are marketed by the vapour product industry as a tool to help people quit smoking. Available evidence indicates that e-cigarettes deliver lower levels of carcinogens than conventional cigarettes, and according to NASEM (2018), there is conclusive evidence that completely substituting e-cigarettes for combustible tobacco cigarettes reduces users' exposure to numerous toxicants and carcinogens present in combustible tobacco. However, there is no safe level of exposure to commercial tobacco smoke (Inoue-Choi, et al., 2016) and there is inconclusive evidence that e-cigarettes are effective as a cessation tool to help people break their addiction to nicotine (U.S. Department of Health and Human Services, 2020; NASEM, 2018). Vaping products have not been approved by Health Canada as a smoking cessation aid because they are not currently tested, manufactured, and regulated as such in Canada.

Dual use, a term used to describe the concurrent use of e-cigarettes and tobacco cigarettes, is a real concern that can compromise cessation efforts among cigarette smokers (Czoli, et al., 2019). According to a recent Canadian report published by the Propel Centre for Population Health Impact at the University of Waterloo, half (52.7%) of e-cigarette ever users and a majority (64.58%) of past 30-day e-cigarettes users also reported being current smokers, suggesting that the rate of dual use in Canada is high (Reid, et al., 2019). Overall, nearly half (44.6%) of e-cigarette ever users who were also cigarette smokers reported using an e-cigarette when they were unable to smoke, or to smoke fewer cigarettes (Reid, et al., 2019). Dual users often report using e-cigarettes to help them quit or to reduce their smoking (Czoli, et al., 2019; Wang, et al., 2018). However, for cigarette smokers trying to quit smoking using vaping products, the use of e-cigarettes is associated with lower odds of being successful in their quit attempt (Kalkhoran & Glantz, 2016; Glantz & Bareham, 2018). Maintaining tobacco use and nicotine addiction through dual use may also pose additional health risks to the user. Compared to individuals who only use e-cigarettes, there is emerging evidence that dual users have increased risk of breathing difficulties, asthma and chronic obstructive pulmonary disease, which is indicative of adverse health effects on the respiratory system (Wang et al., 2018; Bhatta & Glantz, 2019).

### **Youth Vaping and Nicotine Addiction**

Youth vaping rates are increasing at an alarming rate, with a 74% increase in vaping among Canadian youth observed from 2017 to 2018 (Hammond, et al., 2019). Results from the 2018-19 Canadian Student Tobacco, Alcohol and Drugs Survey (CSTADS) show that e-cigarette prevalence rates among Canadian grade 7 to 12 students have doubled from 10% in 2016-17 to 20% in 2018-19, with prevalence rates of past 30-day use being higher among students in grades 10 to 12 (29%) than those in grades 7 to 9 (11%) (Health Canada, 2019). Of additional concern, the results indicate that students who reported using an e-cigarette (with or without nicotine) in the past 30 days are vaping frequently, with approximately 40% reporting daily or almost daily use. (Health Canada, 2019). The 2019 Ontario Student Drug Use and Health Survey (OSDUHS) reinforces the need for intensive public health intervention. Vaping rates have doubled among Ontario students in grades 7 to 12 in the two-year survey period between 2017 and 2019, with 23% reporting e-cigarette use in the past year (184, 200 students) compared to 11% in 2017 (Boak, et al., 2019). About 13%, or 1 in 8 report using an e-cigarette weekly or daily, which is up from 2% in 2015 (Boak, et al., 2019).

According to the manufacturer, a single pod that is used in the JUUL e-cigarette device contains as much nicotine as a pack of cigarettes (Willett, et al., 2018). Nicotine is a highly addictive substance that can have adverse effects on the developing brain (Health Canada, 2019; NASEM, 2018, U.S. Department of

Health and Human Services, 2016). Research has shown that exposure to nicotine before the age of 25 can negatively alter the brain and can cause long-lasting negative effects on attention, memory, concentration, and learning, decreased impulse control, increased risk of experiencing mood disorders (such as depression and anxiety), and increased risk of developing nicotine dependence and addiction. (NASEM, 2018; Health Canada, 2019; Goriounova & Mansvelde, 2012). Compared to the adult brain, an adolescent brain finds nicotine more rewarding and will progress faster to nicotine dependence and addiction (Goriounova & Mansvelde, 2012; Health Canada, 2019). Some vapour devices have the capability of delivering higher amounts of nicotine compared to conventional cigarettes, which could put young people at even greater risk of developing nicotine dependence (U.S. Department of Health and Human Services, 2016). The OSDUHS data illustrates that over-exposure to nicotine by young people is a public health concern; 56% of Ontario students in grades 7 to 12 who have used an e-cigarette in the past year (2019) are vaping nicotine, a significant increase from 2015 when only 18.8% of students reported vaping with nicotine (Boak, et al., 2019).

In addition, there is substantial evidence that e-cigarette use increases the risk of ever using combustible tobacco cigarettes among youth and young adults (NASEM, 2018). One study found that young people who use e-cigarettes are four times more likely to smoke tobacco cigarettes; an effect that is especially pronounced in low-risk youth who do not exhibit risky behaviours, sensation-seeking personality traits, or cigarette susceptibility (Berry, et al, 2019). When attempting to weigh the harms against the potential benefits that e-cigarettes may yield through cessation and harm reduction, the current state of evidence is concerning. Simulation models that have been tested in the United States show e-cigarette use represents more population-level health harms than benefits, with an estimated 80 youth and young adults starting to use an e-cigarette product for every cigarette smoker who quits (Soneji, et al., 2018).

### **Current State of Vapour Product Regulations**

On December 21<sup>st</sup>, 2019, Health Canada published the [\*Vaping Products Promotion Regulations \(VPPR\)\*](#), in the Canada Gazette, Part I. The proposed regulations intend to address the rapid increase in youth vaping, to raise awareness about the harms of vapour product use, and to mitigate the impact of vaping product promotion on young persons and non-users of tobacco products. The proposed regulations, if enacted, would: prohibit advertising that can be seen or heard by young people; prohibit the display of vaping products that can be seen by youth at point of sale; and, require that all vaping product advertisements convey a health warning (Health Canada, 2019). Health Canada's proposed advertising restrictions commit to include online advertising and the use of social media influencers; however, it remains unclear how Health Canada would enforce these regulations.

In Ontario on January 1<sup>st</sup>, 2020, the promotion of vapour products at convenience stores, gas stations and other retail outlets where youth under the age of 19 have access was prohibited by regulation under the *Smoke-Free Ontario Act, 2017*. On February 28<sup>th</sup>, 2020, Ontario Minister of Health Christine Elliott announced that Ontario is proposing regulatory changes for Cabinet members' consideration that, if approved, would place restrictions on where flavoured and high nicotine vapour products are sold, while also expanding vaping prevention initiatives and services to quit vaping. (Ministry of Health, 2020 February 28). Details of the proposed actions include: restricting the retail sale of most flavoured vapour products to specialty vape stores and cannabis stores, restricting the retail sale of high nicotine vapour products (more than 20 mg/ml) to specialty vape stores, and requiring specialty vape stores to ensure that vapour product displays and promotions are not visible from outside their stores. Ontario's proposed approach also includes enhanced cessation services through increasing access to services to help people quit vaping through Telehealth, and enhancing mental health and addiction services and resources to include vaping and nicotine addiction. Lastly, Ontario is proposing to work with major online retailers of vapour products to ensure compliance with age restricted sales, as well as establishing a Youth Advisory Committee to provide advice on vaping initiatives in an effort to reduce the prevalence of youth vaping

(Ministry of Health, 2020). The proposed regulatory approach has been approved by Cabinet and became the subject of public consultation that ended on March 29<sup>th</sup>, 2020. Regulations were set to come into force on May 1<sup>st</sup>, 2020; however, due to the COVID-19 pandemic, the government is now proposing changes to the implementation of the proposed regulatory amendments to Ontario Regulation 268/18. If approved, the proposed effective dates for the regulatory amendments (if approved) are as follows:

- Cannabis Retail Stores would be exempt from the prohibition on displaying vapour products, with the amendment coming into force on the day that the regulation is filed with the Registrar of Regulations; and,
- In order to address youth vaping, the following amendments would come into force on July 1, 2020:
  - The retail sale of flavoured vapour products would be restricted to Specialty Vape Stores and Cannabis Retail Stores, except for menthol, mint and tobacco flavours;
  - Specialty Vape Stores would be required to ensure that indoor vapour product displays and promotions are not visible from outside their stores; and,
  - The retail sale of high nicotine vapour products (>20mg/ml) would be limited to Specialty Vape Stores.

Health Canada and the Ontario Ministry of Health should be commended for their commitment to work collaboratively with national, provincial and territorial partners to address vaping, but continued pressure and additional regulations are required at the federal, provincial and municipal levels.

#### *Vapour Product and E-Substance Flavours*

Flavour is a perception involving many senses, including taste, aroma, and feelings of cooling and burning within the mouth and throat (Small & Green, 2012). The documented evidence within the food consumer science literature demonstrates that flavour impacts the appeal of consumable goods, and that flavour preferences direct food selection (Piqueras-Fiszman & Spence, 2016; Etiévant, et al., 2016). Youth and young adults are particularly influenced by flavours (Mennella, et al., 2005). Due to pervasive marketing tactics and the addition of attractive candy and fruit flavours to vapour products, sales of e-cigarettes are growing rapidly across Canada and around the world, with over 1,000 e-liquid flavours available in the marketplace under the banner of 460 different brands (Euromonitor International, 2015). Given the known and potential short- and long-term health effects of vaping and the lack of longitudinal health data, Health Canada and the Ministry of Health need to strengthen the current approach to regulating flavoured e-substances by enacting a ban on the manufacturing and sale of flavoured e-cigarettes and e-substances, except for tobacco flavouring. Until e-cigarettes are deemed to be effective smoking cessation aids through rigorous scientific study and they are licensed and strictly regulated as approved cessation aids by Health Canada, the manufacturing and sale of flavoured vaping products should be prohibited.

#### *Restricting the Concentration and/or Delivery of Nicotine*

Nicotine is a highly addictive substance that poses significant risk, especially to young people. To reduce youth appeal and to protect the developing youth brain, acceptable nicotine concentration levels for vapour products should be more closely aligned with the approved nicotine concentrations for nicotine replacement therapeutic products (e.g. patches, gum, mist, inhalers, lozenges) already approved and regulated as cessation aids in Canada. Regardless of the type or power of any e-cigarette device, the nicotine concentration level for e-substances purchased in Canada should not exceed 20 mg/ml. This level



is in alignment with the European Union Tobacco Products Directive (20 mg/ml), which states that this concentration allows for delivery of nicotine that is comparable to a standard cigarette (Health Canada, 2019). More research is needed to determine how consistent and uniform nicotine dosing could be established in e-cigarette devices; this would create a more unified market that could be better regulated and controlled. Additionally, more research and intensive investigation into the effectiveness of e-cigarettes as smoking cessation aids are required prior to setting government policy that promotes vapour products as tools to help people quit.

### *Appearance and Product Packaging Design*

In November 2019, Canada joined the 13 other countries that have already implemented plain and standardized tobacco product packaging regulations. With strict promotion and advertising rules in effect for tobacco products across Canada, the package became an important marketing tool for tobacco manufacturers. Acting as mini billboards, the tobacco industry used colours, images, logos, slogans and distinctive fonts, finishes, and sizing configurations of packages to make their product appealing and attractive to existing and new tobacco users (Smoke-Free Ontario Scientific Advisory Committee (SFO-SAC, 2010). The design of the package can make its contents appear safe to use, undermining the visibility, credibility and effectiveness of health warnings. According to Moodie, Mackintosh, Hastings and Ford, (2011), studies have determined that the colour, shape and size of a package can influence consumer behaviour and contributes to consumer perceptions of the product. There is substantial documented evidence that confirms that plain packaging reduces the attractiveness of tobacco products, particularly among young people and women, making plain and standardized tobacco product packaging one of the most effective tobacco control policy measures to reduce consumption (SFO-SAC, 2010).

The same principles and body of evidence can be applied to the regulation of vapour products and their packaging. Devices are being manufactured to look like small, discrete everyday objects, so that youth can hide vaping behaviour from teachers and parents. In Ontario, the ability to “stealth vape” in school washrooms and classrooms is undermining efforts that school staff and Public Health Unit staff are taking to promote and enforce the *Smoke-Free Ontario Act, 2017* on school property. E-cigarette use on school property is normalizing e-cigarette use among youth; the ability to skirt the law increases the appeal of these products. The devices can be customized and personalized, which complements the lifestyle messaging that youth are receiving from the internet and on social media. The lifestyle messaging often depicts cheerful and stylish smokers taking back “their right to smoke” in public by using e-cigarettes (Heart and Stroke, 2018). The messaging promotes e-cigarettes as a safe alternative to tobacco products, without communicating the potential health concerns related to the inhalation of toxic chemicals, heavy metals, and nicotine found in the vapour (Tozzi & Bachman, 2014). To reduce youth appeal, the same plain and standardized packaging regime that has been applied to commercial tobacco and cannabis products should also be applied to vapour products.

### *Restricting and Enforcing Online Retail Access and the Role of Age-Restricted Retail Outlets*

Besides the availability of e-cigarette devices at retail outlets such as convenience stores, gas stations, grocery stores, tobacconist shops, and specialty vape stores, e-cigarette devices and e-substances are widely available for sale through websites and social media (Hammond, et al., 2015). While many online e-cigarette vendors use age-verification measures during online purchase, people under the age of 18 years are still able to purchase e-cigarettes and e-substances online. Research conducted by Williams, Derrick, and Ribisl (2015) in North Carolina showed that the overall success rate for youth purchases of e-cigarettes online was 93.7%. False birth dates were entered into the website and no delivery company attempted to verify recipients’ ages at point of delivery, with 95% of e-cigarette deliveries being left at the door (Williams, Derrick & Ribisl, 2015). Anecdotally, many youth and young adults who vape report that they obtain these

products online. Online vendors may be both less able and less inclined to take effective measures to limit sales to minors; some online vendors accept a simple declaration of a client's age. Strict age-verification measures are required for online sales, including age-verification at time of purchase and proof of legal age at delivery. Active enforcement of online sales to assess compliance is also required. Additionally, at the time of delivery, confirmation of age by government-issued identification should be required. The enforcement of age restriction legislation for online retailers can be challenging; however, creative solutions may exist, including the requirement for internet service providers to ban online retailers from continuing to sell products online if they routinely ignore legislated sales to minors restrictions.

Best practice evidence from tobacco control literature provides insight regarding product accessibility and its impact on tobacco use initiation. Greater availability and density of retail outlets increases consumption, normalizes product use, decreases the ability to succeed in quit attempts and undermines health warnings (SFO-SAC, 2010). Similarly, we see alcohol availability as a contributor to alcohol normalization, alcohol use, and resulting alcohol harm (Centre for Addiction and Mental Health, 2019). The accessibility of both tobacco and vapour products is inconsistent with the extensively documented burden of illness from commercial tobacco product use and the emerging evidence regarding the short- and long-term health effects from vaping. The Ontario Ministry of Health's proposal to limit the sale of flavoured vapour products that contain highly concentrated levels of nicotine to age-restricted specialty vape shops is a positive step forward; however, the need to reform the retail environment for both tobacco and vaping products is a public health imperative. Limiting the sale of tobacco products to licensed, age-restricted tobacco retail outlets (i.e. tobacconists) and limiting the sale of vapour products to licensed, age-restricted specialty vape shops and cannabis retail outlets would reduce the availability and accessibility of these products to youth.

#### *Enactment of a Tax and Vapour Product Pricing Regime*

There is unequivocal evidence documented in the tobacco control literature that price increases result in decreased demand and use of cigarettes, and increased intentions to quit smoking (SFO-SAC, 2010). As of January 23, 2020, the provinces of British Columbia, Alberta and Prince Edward Island have proposed or passed legislation to tax vapour products (Jeffords, 2020 January 23). There exists the opportunity to enact a tax regime on vapour products to reduce the consumption of vapour products by youth and young adults, both whom tend to be more price sensitive than adults (U.S. Department of Health and Human Services, 2000). The revenue from tobacco taxes along with the revenue from the taxation regime applied to vaping products could be used to fund comprehensive tobacco and vapour product control programming, including prevention and cessation efforts, enforcement, and research.

A complementary measure to increase the retail price of tobacco and vapour products is to mandate a minimum pre-tax set price minimum (Feighery, et al., 2005). Setting minimum price limits can inhibit the manufacturers' ability to employ discount pricing and the retail sale of low-cost brands to absorb and offset the price increases from taxation (SFO-SAC, 2010). Minimum price policies are effective and widely used to reduce the consumption and associated harms from alcohol (Anderson, Chisholm & Fuhr, 2009). The taxation level and the set price minimums for vapour products should be set independently from tobacco products, with careful consideration being given to ensure that e-cigarettes do not become more expensive than cigarettes.

#### *Increasing the Legal Age to 21 Years of Age*

In Canada, under the *Tobacco and Vaping Products Act*, the sale or supply of tobacco and vaping products is illegal to anyone under the age of 18 years. In Ontario, the sale and supply of tobacco and

vaping products is governed by the *Smoke-free Ontario Act, 2017*; the legal age of sale or supply is 19 years of age.

The importance of delaying the initiation of tobacco product use by young people has been well established in the evidence, including nicotine addiction and the corresponding negative impacts on youth brain development, respiratory symptoms, negative impacts on the growth and development of lung tissue, and the development of atherosclerosis and increased risk of heart disease (U.S. Department of Health and Human Services, 2012). According to simulation modelling conducted by the Institute of Medicine of the National Academy of Sciences (IOM) (2015) in the United States, raising the legal age of sale or purchase of tobacco products to 21 or 25 years of age would have a substantial impact on preventing or delaying the initiation of tobacco use; the simulation predicted a 12% reduction in smoking rates if the legal age was changed to 21 years (IOM, 2015). Increasing the legal age of tobacco product access to 21 years of age has the potential to delay youth initiation, while also reducing the burden of illness from over exposure to nicotine, carcinogens and smoke during adolescence (Pope, Chaiton, & Schwartz, 2015). There exists the opportunity to apply findings from the tobacco control literature to curb youth access to vaping products.

In the United States, tobacco and vaping products are regulated by the U.S. Food and Drug Administration (FDA). On December 20<sup>th</sup>, 2019, it became illegal to sell any tobacco product, including cigarettes, cigars and e-cigarettes to anyone under the age of 21 years across the United States (FDA, 2019). There appears to be public support in Canada for raising the legal age to 21 years for vaping products; according to an Ipsos poll of 1002 Canadians conducted for Global News between December 3 and December 5, 2019, approximately 8 out of 10 respondents support raising the minimum age for use of these products to 21 years (Yourex-West, 2019 December 23).

### **The Role of Ontario Boards of Health and Municipal Regulations**

Municipalities and local public health agencies have taken a leadership role in advocating for and implementing laws about smoke-free indoor and outdoor spaces to reduce physical exposure to second-hand smoke and tobacco product use. In addition to the extensively documented health harms from exposure to second-hand smoke, Social Cognitive Theory and Social Ecological Theory suggest that the more children and youth are exposed to tobacco product use, the more likely they are to become tobacco product users themselves (SFO-SAC, 2010). Role modelling a tobacco-free culture plays an important role in preventing tobacco use initiation. Smoke-free spaces legislation also plays an important role in promoting and supporting quit attempts by those already addicted to nicotine trying to break their addiction (SFO-SAC, 2010). The same approach to controlling exposure to aerosol and exposure to vapour product use has already been taken by many municipalities across Ontario; however, there exists the opportunity to further strengthen municipal regulations to exceed protections currently provided for under the *Smoke-Free Ontario Act, 2017* and allows for specificity in prescribed prohibited spaces to meet community need.

Another opportunity for municipalities to address vaping is to explore issues that pertain to the retail sale of vaping products. Research shows that increased retail availability to substances, such as alcohol and tobacco, results in increased consumption, contributing to significant health care costs and social harms (SFO-SAC, 2016). Vapour product retail outlet density and the proximity of retail outlets to youth-serving facilities are neighbourhood planning and zoning controls that municipalities could explore. Municipalities should also explore the implementation of licensing bylaws, and a move toward a system of designated sales outlets or caps on the number of licenses issued as a way to enact and strengthen retail controls at the local level.

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