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E-Cigarette Enforcement Measures: Theory, Evidence and Regulatory Policy

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Executive Summary

Literature Review

E-Cigarette Enforcement/Compliance Measures

- Our review found no published literature on the impact of enforcement measures on youth access to e-cigarettes.
- A grey literature Ontario study that found overall retail compliance with not selling e-cigarettes to minors was 90%. Compliance in specialty vape shops was higher than in convenience stores.
 - Interviews with enforcement officers raised several challenges:
 - Risks of exposing underage shoppers to secondhand vapour in vape shops,
 - Test shoppers lack of familiarity with the language related to vaping, and
 - Difficulty knowing where e-cigarettes were sold due to lack of store licensing measures.
 - In exploratory interviews of youth, it was reported that:
 - Youth were able to access e-cigarettes from the stores that were willing to sell to minors (e.g., gas stations and vape shops that don't ask for ID) and from older friends, and
 - Some youth prefer to order online because of the variety of products available.

E-Cigarette Enforcement/Compliance Measures

- There is substantial evidence from conventional tobacco that enforcement of youth access regulations is important to support interventions aimed at reducing illegal sales to youth.
- Lack of enforcement is associated with higher levels of illegal sales to youth.
- A systematic review found that any intervention limiting the sale of tobacco to minors will ultimately reduce youth smoking.
- Enforcement efforts that reduce commercial channels available to youth will also reduce the supply available for social sources of conventional cigarettes.

- A Texas study found that increasing enforcement efforts decreased youth access to both commercial and social supply of conventional tobacco.
- Experts have proposed the following components of an effective enforcement system:
 - An agency with a clear responsibility for the enforcement system.
 - Setting a goal of 95% compliance sustained over time.
 - Requiring all retailers pay a mandatory licensing fee to fund compliance checks.
 - Test shopping by underage decoys at least once per year per retailer.
 - Meaningful penalties for non-compliant retailers.
 - No pre-emption of local ordinances if stronger.
 - An education and awareness campaign for retailers and the public.
- Experts have also proposed a set of practices for improving test shopping protocols.
- Other innovative methods for increasing retailer compliance should be explored further including publishing the names of non-compliant retailers and offering incentives to retailers to comply with tobacco regulations.

Jurisdictional Scan

Canadian Federal Enforcement Regulations

- Health Canada inspectors conduct enforcement of vaping regulations—including inspections of retailers, specialty stores, manufacturers, online retailers, and other places where vaping products are sold, promoted, manufactured, and labelled—and share the results publicly.
- A 2019 report found that 84% of vape shops and 12% of convenience stores were non-compliant with federal vaping regulations.
- A 2016 Ipsos study found that across Canada 67% of retailers refused to sell e-cigarettes to underage youths.

Canadian Provincial/Territorial Enforcement Regulations

- Almost all Canadian jurisdictions have compliance measures in place to enforce tobacco regulations including e-cigarettes. Alberta does not yet have enforcement regulations in place, and no information was found about New Brunswick.

- British Columbia has recently brought in a rigorous system for e-cigarette compliance.
- Quebec is the only province that imposes fines for underage youth who attempt to purchase.
- More work is needed to understand the extent to which tobacco enforcement mechanisms include e-cigarettes, and their alignment with best practices from the literature.

U.S. State Level Enforcement Regulations

- A study of enforcement measures associated with 16 state-level minimum-age laws showed the following weaknesses: some laws omitted purchaser identification requirements, lack of public health justification for inspections, wide ranging penalties for infractions, several laws did not require retail licenses, many laws had purchase and/or possession laws that penalize youth, and several states pre-empted tobacco control at the local level.
- This study proposed that enforcement efforts should include test shopping by underage decoys, increased focus on areas with higher levels of tobacco usage, using fines to fund future enforcement efforts, protocols for suspending and revoking tobacco licenses and lastly, education programs for retailers.

Regulatory Policy Options and Assessment Criteria

- It is possible that ramping up federal and provincial enforcement efforts to attain a compliance rate of 95% could significantly reduce youth access to e-cigarettes. Innovative enforcement mechanisms, including incentives for retailers (e.g., rebating annual retail license fees), should be further studied.

Effects

- There is strong evidence from tobacco that any intervention limiting the sale of tobacco to minors will reduce youth smoking.
- There is also strong evidence that youth who supply tobacco to peers generally purchase from retailers. By cutting off commercial distribution channels, this reduces the overall supply available to youth, drives up the prices, and discourages sharing among peers.

Technical Feasibility

- While it is technically feasible to increase enforcement efforts in line with best practices, there are likely to be some technical challenges in terms of the expense required to employ enforcement officers, and implementing complex systems including test-shop protocols. It is suggested that a retail licensing system could help to keep track of retailers. Using funds raised from retail licensing fees and/or fines to fund enforcement systems could help to sustain strong systems over time.

Political Viability

- Recent polling by Angus Reid has shown high support for restrictions targeting youth access to vaping products; however, specific questions about increasing enforcement measures were not asked.

Alignment with the Canadian Regulatory Landscape

- The *Framework Convention on Tobacco Control* states that tobacco sales to minors should be prevented (World Health Organization, 2010). Signatories to the *Framework* should include plans for enforcement through routine inspections involving test purchases to endure potential legal challenges (DiFranza, 2012).

Introduction

Youth are accessing e-cigarettes in a variety of ways—including social sources, brick and mortar stores and online retail establishments—so a multi-pronged regulatory approach to reduce youth access is required (Baker et al., 2019; Braak et al., 2020). It is unlikely that a single intervention can eliminate most youth vaping (Braak et al., 2020); however, this report explores the extent to which increasing enforcement efforts for legal vaping products is likely to be an important variable.

This report explores the evidence for enforcement and e-cigarettes, as well as other related substances including tobacco, alcohol, and cannabis. The paper also includes a jurisdictional scan of Canadian and American age-enforcement regulations, as well as other notable enforcement regulations outside of North America. Finally, the paper summarizes the potential effects, technical feasibility, political viability, and alignment with the Canadian policy landscape.

Literature Review

E-Cigarette Enforcement/Compliance Measures

- Our review found no published literature on the impact of enforcement measures on youth access to e-cigarettes.
- There is one grey literature Ontario study that found the overall retail compliance with not selling e-cigarettes to minors was 90%. Compliance in specialty vape shops was higher than convenience stores.
 - Interviews with enforcement officers raised several challenges:
 - Risks of exposing underage shoppers to secondhand vapour in vape shops,
 - Test shoppers lack of familiarity with the language related to vaping, and
 - Difficulty knowing where e-cigarettes were sold due to lack of store licensing measures.
 - In exploratory interviews with youth:
 - They reported that they were able to access e-cigarettes from stores that were willing to sell to minors (e.g., gas stations and vape shops that don't ask for ID), and from older friends, and
 - Some youth preferred to order online because of the variety of products available.

There is no published evidence on the impact of enforcement measures on youth access to e-cigarettes. A 2017 grey literature study by the Ontario Tobacco Research Unit assessed retailer compliance with e-cigarette sales regulations in Ontario. The study included an online survey of tobacco enforcement officers and public health managers, and key informant interviews with stakeholders including Tobacco Enforcement Officers, public health managers, vape shop owners, and NGO representatives. Exploratory interviews with youth were also conducted. Lastly, data from the Ontario Government's Tobacco Inspection System were analyzed (Borland et al., 2017).

The Tobacco Inspection System data showed that retailers in Ontario had a 90% compliance with not selling e-cigarettes to minors (Borland et al., 2017). Overall, compliance in specialty vape shops was higher than in convenience stores (Borland et al., 2017). Enforcement officers raised several challenges that were encountered including the risks posed to underage shoppers by secondhand vapour in vape shops (some checks were not completed to avoid potential harms) and test shoppers' lack of familiarity with the language related to vaping (Borland et al., 2017). Enforcement officers also raised the challenge of knowing where e-cigarettes were sold due to lack of store licensing measures (Borland et al., 2017). Education of vendors by enforcement staff was considered an important intervention (Borland et al., 2017).

In the same study, youth reported that they were able to access e-cigarettes from stores willing to sell to minors (e.g., gas stations), from vape shops that don't ask for ID, and from older friends (Borland et al., 2017). Youth perceived that even if commercial sources were cut off, they would still be able to access from an older friend or sibling or purchase a used device (Borland et al., 2017). Some youth reported that they prefer ordering online because of the greater variety of products available (Borland et al., 2017).

Tobacco Enforcement/Compliance Measures

- There is substantial evidence from conventional tobacco that enforcement of youth access regulations is important to support interventions aimed at reducing illegal sales to youth.
- Lack of enforcement is associated with higher levels of illegal sales to youth.
- A systematic review found that any intervention that limits the sale of tobacco to minors will ultimately reduce youth smoking. (DiFranza, 2012).
- Enforcement efforts that reduce commercial channels available to youth will also reduce the supply available for social sources of conventional cigarettes (DiFranza, 2001; Levinson et al., 2007).
- A Texas study found that increasing enforcement efforts decreased youth access to both commercial and social supply of conventional tobacco (Huang et al., 2002, DiFranza, 2002).

- Experts have proposed the following components of an effective enforcement system:
 - An agency with a clear responsibility for the enforcement system.
 - Setting a goal of 95% compliance sustained over time.
 - Requiring all retailers to pay a mandatory licensing fee to fund compliance checks.
 - Test shopping by underage decoys at least once per year per retailer.
 - Meaningful penalties for non-compliant retailers.
 - No pre-emption of local ordinances if stronger.
 - An education and awareness campaign for retailers and the public.
- Experts have also proposed a set of practices for improving test shopping protocols.
- Other innovative methods for increasing retailer compliance should be explored further including publishing the names of non-compliant retailers and offering incentives to retailers to comply with tobacco control regulations.

There is evidence that interventions aimed at reducing youth access to conventional tobacco are most effective when supported by strong enforcement measures (NICE, 2012). Lack of enforcement of tobacco sales-to-minors laws is associated with higher levels of illegal sales to youth (American Lung Association, 2007; Rigotti et al., 1997).

A systematic review by DiFranza (2012) demonstrated that any intervention that limits the sale of tobacco to minors will reduce youth smoking. The systematic review showed that among the 424 papers reviewed, all studies that demonstrated a significant reduction in reducing youth access had a favourable impact on youth smoking (DiFranza, 2012). The results were ambiguous on the impact on youth smoking only when studies that failed to reduce youth supply were included (DiFranza, 2012). Low rates of tobacco compliance checks (American Lung Association of California, 2018) and inadequate penalties in many jurisdictions have obscured the evidence for reducing youth smoking rates (DiFranza, 2012). For example, strategies that involved enacting laws without enforcing them or relying solely on retailer education programs, did not have an impact on youth smoking behaviours (DiFranza, 2012). In order to be effective, enforcement

programs need to include routine test purchase inspections by minors (DiFranza, 2005; DiFranza, 2012). All enforcement programs that disrupt the distribution of tobacco to minors can be expected to improve public health by reducing the number of youths who use tobacco (DiFranza, 2012).

While compliance checks on vendors have been shown to reduce sales to minors, their effectiveness has been questioned in the past because youth may obtain cigarettes from other means including social sources (Astor et al., 2019; Fichtenberg & Glanz, 2002; DiFranza, 2012; Etter, 2006; Castrucci et al., 2002; Jones et al., 2002; Glanz, 2002; Ling et al., 2002). However, studies show that adolescents who supply social sources to youth primarily purchase cigarettes from retailers (Wolfson, 1997; Forster, 2003; Pokorny et al., 2006). By cutting off commercial distribution channels, this reduces the overall supply available to youth via social sources, drives up the price, and discourages sharing among peers (DiFranza & Coleman, 2001; Levinson et al., 2007). An effort to increase enforcement in Texas resulted in a decrease in both commercial and social sources of tobacco and ultimately a decrease in smoking among middle-school students (Huang et al., 2002; DiFranza, 2002).

According to experts, strong retailer compliance systems should include the following elements:

- Designating an agency with a clear responsibility for enforcement (Campaign for Tobacco Free Kids, 2010; Stead & Lancaster, 2000);
- Setting a goal of 95% compliance sustained over time (Campaign for Tobacco Free Kids, 2010; Stead & Lancaster, 2000);
- A mandatory retailer licensing fee to fund compliance checks (Astor et al., 2019) or another source of guaranteed annual funding (Campaign for Tobacco Free Kids, 2010);
- Test shopping by undercover “decoys” to make at least one annual visit to each retailer (DiFranza, 2012; Centre for Tobacco Policy and Organizing, 2013);
- Meaningful penalties for non-compliant retailers including graduated fines and ultimately prohibiting the sale of tobacco products (DiFranza, 2012; Center for Tobacco Policy and Organizing, 2013; Campaign for Tobacco Free Kids, 2010);
- No preemption of local ordinances if stronger (Campaign for Tobacco Free Kids, 2010; Stead & Lancaster, 2000); and

- Education and awareness for retailers and the public (Campaign for Tobacco Free Kids, 2010; Stead & Lancaster, 2000).

Experts suggest that youth test shopping protocols can be improved by striving to mimic real-life factors including appearance, behaviour and demographics (Kaptein et al., 2017; NICE, 2014; Lee et al., 2016). Test shopping protocols that most likely mimic real-life successful youth purchases are more likely to result in tobacco sales to minors and are more likely to demonstrate the true compliance rates of vendors (Kaptein et al., 2017). Studies have shown the following factors have increased the likelihood that youth test shoppers are successful in purchasing cigarettes and should be considered in the design of test shop protocols:

- Test shoppers who are smokers or older (youth) (Kaptein et al., 2017).
- Test shoppers who are female (Females are more likely to be sold cigarettes than male youth but are more likely to be asked for ID, which may impact their access to tobacco in some studies (Kaptein et al., 2017).
- Flashing or showing ID (Kaptein et al., 2017).
- Visiting a store more than once, being familiar with the store clerk, and continuing to make attempts (Kaptein et al., 2017).
- Purchasing from younger male store clerks (Kaptein et al., 2017).
- Test shopping lower income neighbourhoods (Kaptein et al., 2017).
- Hiring Black or Hispanic male youth as test shoppers (Kaptein et al., 2017).

Negative factors to reduce the success of purchasing cigarettes are using adult chaperones and/or unmarked police cars because these might undermine compliance tests by alerting the retailer (Kaptein et al., 2017). Other compliance strategies that may prevent violations but merit more research include reminders and warnings to retailers or using the media to publicize names of violators. Studies from the United States and Australia have shown success with these strategies; however, warnings without fines have not been associated with increased compliance (Diemert et al., 2013). Another option requiring further exploration is the use of rewards including social and/or material reinforcement for retailers not to sell tobacco (Smoke Free Ontario Scientific Advisory Committee Report, 2017). Offering incentives for retailers may provide an alternative to entering contracts with the tobacco industry and reduce demands on stores to push the sales of tobacco. Other options for reducing tobacco companies' exploitation of the retail environment

include reducing retail density, banning tobacco sales near schools and incentives for retailers to stop selling tobacco products (Stead et al., 2018). Measures to reduce tobacco manufacturers' and/or distributors' ability to exploit the retail environment may include a ban on incentives including payments to retailers (Stead et al., 2018). Quebec has a law banning promotional communication between manufacturers and distributors and retailers (Stead et al., 2018).

Jurisdictional Scan

Canadian Federal E-Cigarette Youth Access Enforcement Regulations

- Health Canada inspectors conduct enforcement of vaping regulations—including inspections of retailers, specialty stores, manufacturers, online retailers, and other places where vaping products are sold, promoted, manufactured, and labelled—and shares the results publicly.
- A 2019 report found that 84% of vape shops and 12% of convenience stores were non-compliant with federal vaping regulations.
- A 2016 Ipsos study found that across Canada 67% of retailers refused to sell e-cigarettes to underage youths.

Health Canada inspectors conduct enforcement of vaping regulations. Inspectors regularly perform inspections of vaping retailers, specialty stores, manufacturers, online retailers, and other establishments where vaping products are sold, promoted, manufactured and labelled (Government of Canada, 2020). Health Canada also provides education to the vaping industry to raise awareness of regulations (Government of Canada, 2020). The vaping industry is responsible for understanding and complying with all federal and provincial vaping regulations (Government of Canada, 2020). Health Canada shares the results of compliance and enforcement activities related to vaping products (Government of Canada, 2020).

In June, 2019 Health Canada wrote retailers to remind them of their responsibilities under the *Tobacco and Vaping Products Act* (TVPA) (Health Canada, 2019). In a recent report, Health Canada stated that it increased inspections of retailers, festivals, websites and other locations where e-cigarettes are marketed or promoted (Government of Canada, 2020).

A 2016 Ipsos study based on a sample of 4,012 mystery shopper visits conducted at retail outlets across Canada found that the overall refusal to sell e-cigarettes to a youth was 67% (Ipsos, 2016). The refusal to sell e-cigarettes to underage youth varied by province, with the rate of refusal significantly higher than the rest of Canada for Prince Edward Island (92%), New

Brunswick (85%), Manitoba (82%), British Columbia (77%), Nova Scotia (76%), Alberta (74%), and Ontario (70%). The rate of refusal to sell e-cigarettes to a youth was significantly lower in Quebec (45%) (Ipsos, 2016). Across Canada, only 64% of youth who tried to purchase an e-cigarette product were asked to provide ID. Vendors who sell tobacco to minors usually also fail to ask for proof of age. Retailers were much less likely to sell to youth aged 15 (78%) compared to teens aged 17 (59%). The rate of refusal to sell was significantly higher at grocery stores (77%), chain convenience stores (75%) and gas convenience stores (71%). The rate of refusal was lower when a youth test shopper attempted to purchase at independent convenience stores (53%). Refusal to sell e-cigarettes to the test shopper was significantly lower at retail locations near schools (58%) in comparison to locations farther from a school (69%).

Canadian Provincial/Territorial Youth Access Enforcement Regulations

- Almost all Canadian jurisdictions have compliance measures in place to enforce tobacco regulations. Alberta does not yet have regulations in place, and no information was found about New Brunswick.
- British Columbia has recently brought in a rigorous system for e-cigarette compliance.
- Quebec is the only province that imposes fines for underage youth who attempt to purchase.
- More work is needed to understand the extent to which tobacco enforcement mechanisms include e-cigarettes, and their alignment with best practices from the literature.

Almost all Canadian jurisdictions have compliance measures in place to enforce e-cigarette regulations. Alberta does not yet have provincial legislation in place and no information was found about New Brunswick. British Columbia has introduced a rigorous system for compliance—including regular reporting requirements for retailers—and clear enforcement mechanisms including education, stakeholder relations, inspections, surveillance operations and administrative tribunals. Quebec is the only jurisdiction that imposes fines on minors for attempts to purchase.

Table 1: Canadian Provincial and Territorial Compliance Measures

Province/Territory	Compliance Regulations
Alberta	No person shall furnish or offer to furnish a tobacco product or vaping product to a minor in a place referred to in section 3 or 3.1 (e.g., in a public or outdoor place, on school property, in a workplace, etc.) (Government of Alberta, n.d.). No provincial enforcement mechanisms for e-cigarettes were found however legislation was recently introduced.
British Columbia	<p>All retailers must comply with notification and reporting requirements under the <i>E-Substances Regulations</i> (Government of British Columbia, 2020). Six weeks before selling products businesses are required to report to the Ministry of Health what products are being sold, as well as manufacturing details. Businesses are also required to submit sales reports annually (B.C. Ministry of Health, 2020)</p> <p>Enforcement of BC's e-cigarette regulations includes activities such as retailer education, public education, stakeholder relations, inspections, surveillance operations and administrative tribunals (Government of British Columbia, 2020). These activities are conducted by enforcement officers employed by health authorities and are guided by the compliance and enforcement policy manual. Violations may be referred to the provincial court system, or to the Administrator of the <i>Tobacco and Vapour Products Control Act</i> for an administrative hearing. Penalties vary based on violation type, retail history, and enforcement method and may include monetary penalties up to \$5,000 and suspension of tobacco sales authorizations (Government of British Columbia, 2020).</p>
Manitoba	<p>Manitoba law states that no person shall supply or offer to supply a vapour product to a child (Government of Manitoba, n.d.).</p> <p>Manitoba requires tobacco control and cessation branch enforcement officers regularly visit vapour product shops and other e-cigarette and vapour product retailers across Manitoba following the enactment of the regulations (Government of Manitoba, 2020).</p>
New Brunswick	New Brunswick law states that no person shall sell or permit to be sold tobacco, smoking supplies or electronic cigarettes to a person under the age of nineteen years (Government of New Brunswick, n.d.). No information was found about provincial enforcement mechanisms for e-cigarettes.
Newfoundland and Labrador	Compliance checks are set out under the <i>Tobacco and Vapour Products Control Act</i> (Assembly of Newfoundland and Labrador, 2020).
Northwest Territories	<p>Northwest Territories law states that no person shall sell or supply vapour products to minors (Government of Northwest Territories, n.d.).</p> <p>Environmental Health Officers are required to conduct inspections of tobacco and cannabis retailers for compliance with the legislation (Government of Northwest Territories, 2020). It is not clear if inspections are carried out to enforce vaping regulations; however, new regulations are expected regarding this aspect of the new legislation (Government of Northwest Territories, 2020).</p>
Nova Scotia	Enforcement officers of the <i>Tobacco Access Act</i> are assigned to conduct inspections of retailers selling tobacco products including vaping products (Government of Nova Scotia, 2020).
Nunavut	The Tobacco Enforcement program was created in 2015 to ensure that retailers follow regulations. The program includes education and outreach to retailers, and the provision of a toolkit which is available in four different languages. Tobacco inspectors provide public education, conduct inspections of tobacco retailers to ensure compliance with the <i>Tobacco Control Act</i> and its regulations, as well as responding to complaints from the public (Government of Nunavut, 2020).
Ontario	Compliance checks are set out under the <i>Electronic Cigarettes Act, 2015</i> (Public Health Ontario, 2018). Ontario requires proof of age if under 25 (Physicians for Smoke Free Canada, 2020).

Province/Territory	Compliance Regulations
Prince Edward Island	Tobacco enforcement officers conduct inspections and fines for infractions can vary from a minimum of \$250 to a maximum of \$5,000 and the suspension of license to sell tobacco (Government of Prince Edward Island, 2020).
Quebec	<p>Quebec has fines for minors who purchase tobacco for themselves, or someone else and for lying about their age to purchase tobacco (\$100). For adults who purchase tobacco for a minor, the fines can range from \$500-\$1,500, and for repeat offences fines can go up to \$1,000 to \$3,000. Fines for giving tobacco to a minor on the grounds and facilities or buildings used by a school range from \$500 to \$1,500, and repeat offences from \$1,000 to \$3,000 (Government of Quebec, 2020).</p> <p>Quebec is the only province that bans incentives to retailers (Physicians for Smoke Free Canada, 2020).</p>
Saskatchewan	The province expanded the authority of tobacco enforcement officers to include enforcement of vapour/e-cigarette product restrictions (Government of Saskatchewan, 2020).
Yukon	Environmental health officers enforce the <i>Tobacco and Vaping Products Control and Regulation Act</i> . They provide guidance and information as well as investigate complaints (Government of Yukon, 2020).

U.S. Federal Enforcement Regulations

- The FDA works with states to conduct enforcement of both brick and mortar and online stores and uses both criminal and civil consequences to address violations. Common penalties include fines and orders prohibiting retailers from selling tobacco for a period.
- In December 2019, the United States raised the federal minimum age to purchase tobacco or e-cigarettes to 21.
- The Truth Initiative and other experts continues to call for increased enforcement regulations and stricter penalties for those in violation of the law.

Federal tobacco enforcement measures date back to the 1992 *Synar Amendment*, which mandated states to set a minimum age of 18 for the sale of tobacco and achieve a retailer compliance rate of 80% (Dobbs et al., 2020). States were required to meet these standards or risk losing federal substance abuse funding (Dobbs et al., 2020). In 2009, the FDA was given the authority to regulate tobacco retailers (Dobbs et al., 2020). In 2010, the FDA made sales of cigarettes to youth a federal violation and established a federal system for stopping sales to underage youths (Campaign for Tobacco Free Kids, 2010).

In 2018, the FDA launched an aggressive enforcement strategy targeting both illegal sales of e-cigarettes to youth and kid-friendly marketing, which resulted in 1300 warnings and fines to retailers who sold to underage youth (U.S. Food and Drug Administration, 2020). The FDA has launched a Youth Prevention Plan, which includes ongoing enforcement of both brick and mortar and online stores selling e-cigarettes (U.S. Food and Drug Administration, 2020). The FDA uses both civil and criminal consequences to address violations of the law including common fines and orders prohibiting tobacco sales for a period.

In December 2019, the U.S. Congress and Senate increased the minimum age to purchase tobacco or e-cigarettes to 21. While public health experts generally support the age limit increase, some experts argue that its effectiveness will depend on scaled up enforcement efforts in both brick and mortar and online stores (U.S. Food and Drug Administration, 2020). The Truth Initiative also continues to call for increased federal enforcement measures to ensure hard fought regulations aren't rendered meaningless to protect youth (Truth Initiative, 2020).

U.S. State Level Youth Access Enforcement Regulations

- A study of enforcement measures associated with 16 state-level minimum-age laws showed the following weaknesses: some laws omitted purchaser identification requirements, lack of public health justification for inspections, wide ranging penalties for infractions, several laws did not require retail licenses, many laws had purchase and/or possession laws that penalize youth, and several states pre-empted tobacco control at the local level.
- The study proposed that enforcement efforts should include test shopping by underage decoys, increased focus on areas with higher levels of tobacco usage, using fines to fund future enforcement efforts, protocols for suspending and revoking tobacco licenses and lastly, education programs for retailers.

Dobbs et al. (2020) developed a tool to assess minimum age 21 laws in 16 states including associated enforcement measures. The assessment showed the following characteristics:

- Two laws omitted purchaser identification requirements.
- While fifteen laws mentioned that enforcement would include inspections, only three provided a public health justification for conducting inspections (i.e., high vaping rates).
- All 16 states provided a penalty structure for retailer/clerk violations; however, there was a wide range of penalties from state to state.
- Fourteen states required tobacco retail licenses, of which nine required annual renewal.
- 10 contained purchase, use or possession laws, which penalized youth; and
- Four states introduced or expanded pre-emption of tobacco regulations at the local level.

Experts proposed that enforcement efforts for conventional tobacco should include: a) compliance checks using decoys aged 18 to 20 years, b) higher levels of retailer compliance checks in areas with higher levels of tobacco usage, c) using fines paid by violators to fund future enforcement efforts, d) protocols for suspending and revoking tobacco retail licenses for repeat violations, and e) educations for retailers (Dobbs et al., 2020; Spivak, 2015; DiFranza, 2005; Winickoff, 2018; Astor et al., 2019; Tobacco Control Legal Consortium, 2016; Lee et al., 2016). Dobbs et al. (2020) concluded that policies that contain weaknesses (i.e., military exemptions, phased in laws, pre-emption) and those that omit strong components (i.e., enforcement, penalties) need to be strengthened to prevent youth access to tobacco.

Regulatory Policy Options and Assessment Criteria

- It is possible that ramping up federal and provincial enforcement efforts to attain a compliance rate of 95% could significantly reduce youth access to e-cigarettes.
- Innovative enforcement mechanisms, including incentives for retailers (e.g., rebating annual retail license fees), should be further studied

Literature from conventional tobacco puts forward a set of best practices for enforcement. It is unclear the extent to which federal and provincial enforcement mechanisms align with these best practices. It is possible that ramping up federal and provincial enforcement efforts to attain an overall compliance rate of 95% could significantly reduce youth access to e-cigarettes. Innovative solutions for increasing enforcement, including financial incentives for retailers (e.g., rebating annual retail license fees), should be studied further.

Federal and provincial e-cigarette enforcement regulations should be assessed against best practices in the literature on tobacco to include components such as a retail licensing system, sustainable funding mechanisms, minimum penalties and test shopping. Provincial regulations should be clear about the extent to which they cover e-cigarettes under existing tobacco enforcement regulations, which may have been written for tobacco cigarettes. There is a need for further study on the impact of e-cigarette enforcement measures on youth access and ultimately youth vaping. Innovative enforcement mechanisms, including incentives for retailers, should be further studied.

Effects

There is limited evidence about the effectiveness of enforcement mechanisms to reduce youth access to e-cigarettes. However, there is substantial evidence that multi-faceted interventions are most effective for reducing youth access to tobacco when combined with ongoing and active enforcement of minimum age restrictions (NICE, 2014). Lack of enforcement of tobacco sales-to-minors laws is associated with higher levels of illegal sales to youth (Rigotti et al., 1997). A

systematic review by DiFranza (2012) demonstrated that any intervention that limits the sale of tobacco to minors will reduce youth smoking.

Studies show that adolescents who are supplying cigarettes to youth, and thus are social sources, typically purchase the product from retailers (Wolfson, 1997; Forster, 2003; Pokorny et al., 2006). By cutting off commercial distribution channels, this reduces the overall supply available to youth via social sources, drives up the price, and discourages sharing among peers (DiFranza & Coleman, 2001; Levinson et al., 2007).

Technical Feasibility

There are likely to be some technical challenges in terms of the expense required to employ enforcement officers, and implementing complex systems including test shop protocols. It is suggested that a retail licensing system could help to keep track of retailers. Using funds raised from retail licensing fees and/or fines to fund enforcement systems could help to sustain strong systems over time.

Political Viability

Recent polling by Angus Reid has shown high support for restrictions targeting youth access to vaping products; however, specific questions about increasing enforcement measures were not asked (Angus Reid, 2020).

Alignment with the Canadian Regulatory Landscape

The *Framework Convention on Tobacco Control* states that tobacco sales to minors should be prevented (World Health Organization, 2010). Signatories to the *Framework* should include plans for enforcement through routine inspections involving test purchases to endure potential legal challenges (DiFranza, 2012).

Discussion

Compliance measures are in place at the federal level in Canada, with additional enforcement measures in place in provincial and territorial jurisdictions. However, Health Canada's recent policy considerations do not include additional compliance and enforcement measures. At the provincial and territorial level, associated fines and penalties for infractions vary. Additional study into enforcement policy options may be helpful in reducing youth access to e-cigarettes including minimum age (21), number of compliance checks per year, annual licensing fees (and possibly rebates as an incentive for performance), sustaining a 95% compliance rate, and education for both retailers and the public.

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