



# A single system of retail sale is not working

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## Introduction

In the US, e-cigarettes are the most commonly used tobacco product among teenagers and between 2017 and 2018, youth current e-cigarette use was increased by 78% and 48% respectively among high school and middle school students (1). A recent review of evidence by the National Academies of Sciences, Engineering and Medicine (NASEM) identified that e-cigarette use results in dependence on e-cigarettes, increases risk of subsequent cigarette smoking initiation as well as increased frequency and intensity of smoking among youth and young adults (2). In addition to producing several toxic chemicals in aerosol (formaldehyde, acrolein), e-cigarettes often contain nicotine which is a highly addictive substance (2). Children and youths can develop nicotine dependence with lower level of exposure than adults which may affect their brain development, memory, and concentration (3,4). Irrespective of the possible benefits of e-cigarettes for helping adult smokers to quit, there is consensus that youth should not be buying or using these products.

In order to investigate the youth access to e-cigarettes and extent of retail tobacco marketing, Lisa Henriksen and her team conducted a study in the convenience stores of California (5). In California, some stores have signed an Assurance of Voluntary Compliances (AVCs) which are legally binding agreements between state attorneys general and retail chains. The authors have divided the sample into two groups: corporate-owned stores (signed AVCs) and franchise-owned stores (did not sign AVCs). They then

used underage decoys and professional auditors to measure and compare retail violation rates (RVRs) of requesting IDs, selling e-cigarette illegally and advertisement of tobacco and vaping products between these 2 groups. The results of the study revealed that violation of ID requests, age-of-sale signage regulations and selling e-cigarettes illegally to underage decoys were higher among corporate-owned stores than franchise stores. In contrast, violations of interior content-limited advertising regulations for tobacco products were more common in corporate stores. However, it is noteworthy that a huge percentage, 53.1% and 76.7% of convenience stores respectively violated the age-of-sale signage and content-limited advertising regulations, irrespective of their AVC category. Furthermore, 16.8% of stores were located near at least one K-12 school and significant proportion of these stores violated both exterior advertising regulations and sales prohibition to underage clients. The authors suggested that AVCs could reduce youth access to e-cigarettes and further suggested to expand AVCs to other types of retail stores like supermarkets, pharmacies, gas stations, dollar stores and smoke or vape stores. They have also recommended that greater investments in merchant education and routine enforcement are needed to limit retail tobacco and e-cigarette marketing, which is a risk factor for tobacco initiation among adolescents and youths (5).

Henriksen and colleagues' paper provides an important contribution to the existing literature regarding reducing youth access to e-cigarettes and exposure to tobacco marketing. However, voluntary compliance mechanisms

do not offer sufficient protection for youth. At the same time, the current system of retailing does not allow the safe provision of appropriate products to those who might use e-cigarettes to quit. We will argue that establishing a two-tier system for selling e-cigarette, restricting availability of e-cigarettes to specific stores (i.e., specialty vape shops or pharmacies) and regulating the product characteristics available in general would be much effective ways than expanding and strengthening compliance with AVCs.

### The evidence on availability

There are many ways to restrict youth availability of vaping products to youth. These include age restrictions, limitations of the types of stores where these products can be sold, limitations on the number and locations where these products can be sold, limitations on the types of products allowed to be sold, and limitations on how cheaply they can be sold.

The primary method of restricting use of e-cigarettes among youth has been to enact minimum age regulations that prevent the sale of e-cigarette to people under a certain age. While most youth obtain their e-cigarettes from social sources like friends, older peers, family members and others who can purchase these products, minimum age laws also restrict access from older friends and prevent or delay tobacco use initiation (6,7). The US Food and Drug Administration (FDA) adopted the Tobacco 21 (T21) legislation in 2019 that raised the minimum age of selling tobacco products including e-cigarettes, e-liquids and e-cigarette devices from 18 to 21 years (8). The law requires checking photo ID for age verification of everyone who seems under age 27 before selling tobacco products and showing age-of-sale signage at point-of-sale. Evaluation of the T21 law in California, where it has been adopted since 2016, found reduction in illegal tobacco sales to youth under age 18 (9). However, enacting a law without sufficient enforcement has little impact on lowering youth e-cigarette use. In this respect, key regulatory measures proven to be helpful in enforcing tobacco legislation are mandatory annual retailer licensing fees, regular compliance check inspections and fines of significant amount or penalties for violations, which are also applicable in case of e-cigarette sales (10). Any licensing fee should provide sustainable funding for compliance check inspections and there should be provision of fines of increasing amount in successive violations as well as the ability to suspend or withdraw the

license. However, as the sale of vaping products is essentially ubiquitous—available at nearly every street corner—if only a small percentage of stores that sell to youth do so, youth can still easily obtain e-cigarettes. To be effective, retail compliance should approach 100% to reduce accessibility of e-cigarettes.

Therefore, truly restricting youth access to e-cigarettes requires restriction on sales of vaping products beyond age restrictions. Another method of limiting access is to restrict the types of stores that can sell e-cigarette products. Currently, in addition to social sources, students also obtain e-cigarettes from commercial sources specially vape shops, specialty tobacco stores, convenience stores, gas stations, liquor stores, or online (7,11). Removing tobacco products from pharmacies has found to be successful in reducing household and population level cigarette purchasing, decreasing tobacco retailer density and ‘Tobacco free pharmacy’ laws which also encompass e-cigarettes have already been adopted in the United Kingdom, Australia, and all provinces of Canada except British Columbia (12,13). As well, vaping products in the US are prohibited to be sold in a vending machine unless in an adult-only facility (14). However, unlike over-the-counter sales, selling products in vending machines and self-service displays make enforcing underage tobacco products sales legislation difficult and promotes shoplifting among students (15). Online retailers also allow adolescents to purchase their own vaping device, as online retailers often have little or no age verification, making it easier to acquire (11).

However, restrictions on sales in pharmacy, vending machines, and online sales will only address the margins of e-cigarette retail availability. Consistent with Henriksen *et al.* (5), e-cigarette retailer density and advertisement volume around schools have been found positively associated with past-month use of e-cigarettes among high school students (16). Strong zoning regulations, for example, limiting the number of retailers based on population density; not permitting any new license in already saturated neighborhoods; maintaining at least 500 feet distance between the stores particularly in the susceptible neighborhoods; permitting new retailers only in the light industrial areas are few plausible policy options for reducing retail availability and density in general. In addition, advertising and retailing vaping products should be prohibited in the residential areas and within 1,000 m of schools and places frequently visited by children and adolescents (day care centers, playgrounds, parks, libraries) (17). Henriksen *et al.* also highlighted that

ownership and corporate structure of the retail location matters just as much as the type of store.

Limiting the number of stores that sell e-cigarettes also limits the potential for youth to be exposed to advertising. A Cochrane review concluded that exposure to tobacco advertising and promotion increases the likelihood of smoking initiation among adolescents (18). Restrictions on interior and exterior advertising; limiting product displays; storing products behind the counter; prohibiting self-service displays; and regulation on interior-content limited packaging which includes avoidance of presenting false impression like health claim, displaying health warnings and quitline information have been implemented or proposed widely (17). But the Henriksen study shows that voluntary agreements to limit advertising are routinely ignored. Moreover, even in countries that limit advertising and display of product more severely, the presence of vaping products in stores is itself an act of promotion, and an indication to youth that these products are accessible, safe, and desirable.

Another way to restrict availability is to restrict the types of products available. For instance, flavor is a primary reason for using e-cigarettes by students. The National Youth Tobacco Survey (NYTS) in the US found that 72.2% and 59.2% of high school and middle school e-cigarette users respectively used flavored e-cigarettes, with fruit, menthol or mint, candy, desserts or sweets being the most commonly reported flavors (19). Similarly, products can vary in their level of addictiveness. NYTS revealed that more than half of the students used JUUL as their usual e-cigarette brand (19). JUUL is one of the newest generation vaping products which use nicotine salt formulation in a pod based delivery system and is particularly popular among adolescents due to its shape like USB flash drive, making it easy to use discreetly (stealth vape) and delivering high nicotine blood concentration.

Finally, access to vaping products can be limited through higher prices and evidence suggests that youth customers are particularly price sensitive (20). A 10% increase in the price of e-cigarettes has been estimated to reduce sales of disposable e-cigarettes and reusable e-cigarettes by about 12% and 19% respectively (21). In this respect, raising e-cigarette price through taxation; limiting rebates and discounts; prohibiting delivery of coupons and free samples could potentially reduce youth prevalence of vaping. In addition, tiered tax approaches based on presence or absence and concentration of nicotine can reduce nicotine exposure among adolescents and young adults.

### **The tension at the heart of vaping regulations**

In order to prevent the epidemic of youth e-cigarette use, we must limit how cheaply products can be sold, limit the addictiveness and appeal of legal products, limit where the products can be sold and by whom, and limit who can purchase these products. On the other hand, to encourage adults switching from tobacco to vaping products or to quit using these products we must make these products easily available, cheap, appealing, and with high levels of addictiveness. Each restriction placed to prevent youth use has the effect of also restricting the ability of these products to help adults who smoke.

We know that these products are readily substitutable. For instance, a study on the effects of a minimum age sales laws on vaping products found that pregnant teenagers facing limited availability of e-cigarettes for smoking cessation, increased their use of cigarettes by 0.6 percentage points (22). Yet, we also know that the balance of regulation has (I) not been successful at preventing youth vaping and (II) not been very successful at encouraging adult smokers to quit. We need to be able to shift the balance of regulation making e-cigarettes less accessible to youth but at the same time more accessible to smoking adults.

Henriksen's paper demonstrates that any retail operation that sells the more appealing products must also have limited incentives to sell these products to youth. Franchise stores that collect and profit from illegal sales more directly to the individual making the choice to sell them than corporate stores. Similarly, license restrictions are more meaningful to specialty stores whose entire business might be put at risk by selling to youth compared to stores where nicotine products are only one additional revenue source.

One way to resolve this contradiction is to develop a two-tiered system of availability to protect youths from the harmful effects of e-cigarettes and at the same time, would provide a harm reduction aid to adults who seek e-cigarettes as means of smoking cessation. Currently, there is already a framework for this two-tiered system in Canada as 'recreational' e-cigarettes without a health claim are regulated by 'Tobacco and Vaping Products Act' and 'therapeutic' e-cigarettes containing nicotine and making a health claim are regulated by 'Food and Drugs Act'. 'Therapeutic' e-cigarette face more stringent regulations in order to meet certain criteria of safety, efficacy and quality (23). But to date, this system has not been used effectively. There are currently no therapeutic vaping devices on the market, and yet widespread availability of

high nicotine products with appealing flavors at prices lower than for cigarettes is present (24).

To overcome these issues, regulators must allow greater availability of therapeutic products through allowing more use of flavors, higher nicotine content and lower prices, at the same time as dramatically restricting the use of flavors, and nicotine delivery for recreational products. Therapeutic products need to be more appealing and allowed a greater latitude for addiction potential in order to reach the market of current adult smokers that is currently not using vaping products with any regularity (25).

On the other hand, therapeutic products should be available in locations that can provide services to the adult users who must transition from cigarette or other tobacco products. The learning curve for adult smokers to transition to vaping products may be greater than that of youth who have not necessarily developed tobacco dependence. Both pharmacies and specialty vaping stores can provide this kind of training in learning how to vape that may be needed to transition the adult smokers. Additionally, many pharmacies also have experience in providing smoking cessation and have long served the population through safe distribution of drugs with abuse potential. While the sale of recreational nicotine products is inappropriate in a pharmacy setting, as evidenced by the number of major pharmacies that have voluntarily stopped the sale of these products (12), they could also be a model for the development of an appropriate system of sale and a guide to the number of outlets needed to properly supply the market.

The current network of nicotine retail availability relies upon ubiquitous small retailers: convenience stores, gas stations and grocery stores that oversupply recreational nicotine products primarily to youth and young adults. A new system of availability is needed to do a better job in preventing youth from vaping and helping adults to quit smoking.

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