MICHAEL N. FEUER
CITY ATTORNEY

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REPORT RE:

POLICY OPTIONS FOR BANNING OR RESTRICTING THE SALE OF FLAVORED TOBACCO PRODUCTS TO YOUTH; SURVEY OF LEGISLATIVE REGULATIONS IN OTHER JURISDICTIONS

The Honorable City Council
of the City of Los Angeles
Room 395, City Hall
200 North Spring Street
Los Angeles, CA 90012

Honorable Members:

This Office, in consultation with the Chief Legislative Analyst's Office, has prepared and now transmits for your review this report containing an overview of options and policy considerations relative to banning or restricting the sale of flavored tobacco products in the City of Los Angeles. This report responds to a Motion adopted by Council requesting that the City Attorney, with the assistance of the Chief Legislative Analyst, report on a proposed strategy to prohibit or restrict the sale of flavored tobacco to youth and to report on how other jurisdictions are addressing the issue. Due to the serious health crisis posed by flavored tobacco products for our City's youth, as detailed below, the City Attorney's Office recommends that the City Council enact a Citywide ban on the sale of all flavored tobacco products.

I. EXECUTIVE SUMMARY

E-cigarette usage, also known as "vaping," has created a public health crisis in Los Angeles and across the nation. Within the last week, the Centers for Disease Control and Prevention (CDC) warned Americans not to smoke e-cigarettes while the CDC is investigating why as many as 380 people in 33 states who used e-cigarettes

have reported possible pulmonary disease, seven of whom have died.[1] The CDC's advisory highlighted the CDC's inability to determine which of the many compounds or additives used in vaping devices are causing the injuries and deaths. The symptoms include shortness of breath, fatigue, fever and nausea or vomiting. The Los Angeles County Department of Public Health urged healthcare providers to be on the alert for pulmonary symptoms in e-cigarette users, after confirming that one of the vaping deaths was a Los Angeles County resident.[2]

The reports of serious symptoms and deaths related to the use of e-cigarettes is all the more alarming because youth tobacco product usage has increased exponentially in recent years, largely attributable to the popularity of e-cigarettes and flavored additives. According to the CDC, in 2018 more than one in four high school students had used a tobacco product in the past 30 days. This was a 77.8 percent increase in e-cigarette usage from 2017 and virtually erased any progress achieved in reducing youth tobacco product use that had occurred in prior years.[3] The CDC opines that this sharp increase in youth use is attributable to the availability of e-cigarettes in kid-friendly flavors.[4]

The City has been an early leader in addressing the negative health consequences of tobacco products. Los Angeles was the first city in California to include e-cigarettes in the definition of tobacco products, bringing e-cigarettes within the ambit of City ordinances regulating use and sale. The Los Angeles City Attorney's Office also led in establishing the first tobacco retailer licensing unit -- regulating over 4,000 tobacco retailers -- focusing at the retailer level on the prohibition against sales to youth, through enforcement and education, as well as focusing at the youth level on outreach to discourage tobacco use. More must be done to protect against the negative health consequences of tobacco use, specifically by banning or regulating flavorings that appeal to youth and mask the natural harsh taste of tobacco.

At the federal level, the U.S. Food and Drug Administration (FDA) has been slow to regulate e-cigarettes by delaying efforts to bring flavored e-cigarette products under FDA review and approval requirements. Although the recent pulmonary disease outbreak prompted the FDA to announce an intent to issue a guidance banning flavored

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[1] CDC, *Outbreak of Lung Illness Associated with Using E-cigarette Products,* (September 16, 2019), https://www.cdc.gov/tobacco/basic_information/e-cigarettes/severe-lung-disease.html. The CDC revised downward the original estimate of pulmonary disease cases from more than 400 to 380, but the death toll has now risen from six to seven people, with the recent death of a Fresno, California patient.

[2] Los Angeles County Department of Public Health, *Press Release: Public Health Investigates First Death Associated with E-Cigarettes in LA County, (September 6, 2019),* http://publichealth.lacounty.gov/phcommon/public/media/mediapubhpdetail.cfm?prid=2137.

[3] Karen A. Cullen et al., *Notes From the Field*, *MMWR*, CDC (Nov. 16, 2018), http://dx.doi.org/10.15585/mmwr.mm6745a5.

[4] Office of the Surgeon General, Surgeon General's Advisory on E-Cigarette Use Among Youth (2018), https://e-cigarettes.surgeongeneral.gov/documents/surgeon-generals-advisory-on-e-cigarette-use-among-youth-2018.pdf.

e-cigarettes except those receiving FDA approval, the guidance is not expected to issue until at least May of 2020, during which time flavored e-cigarette products will not be subject to federal oversight. The State of California also has been slow to act. In response to tobacco industry concerns, two recent legislative efforts to regulate flavored tobacco products were watered down to such an extent that medical professionals and health organizations that once backed the bills, became opposed to their passage. The bills are currently stalled.

While efforts at the Federal and California State level have lagged, local jurisdictions have stepped to the forefront to protect public health. The County of Los Angeles Board of Supervisors is scheduled to vote at its September 24, 2019, meeting on an ordinance to ban the sale of flavored tobacco products, including menthol additives. The City and County of San Francisco unanimously passed an ordinance banning the sale of all flavored tobacco products, including menthol. A referendum sponsored by tobacco manufacturers to overturn the San Francisco ordinance lost in an electoral landslide. San Francisco thereafter went one step further by banning the sale of all e-cigarettes lacking Food and Drug Administration (FDA) approval; the ban is set to become operative at the end of 2019.

Other jurisdictions have enacted flavored tobacco bans or regulations. Beverly Hills banned the sale of all tobacco products, flavored and unflavored alike. Oakland, El Cerrito and Yolo County have enacted bans on the sale of flavored tobacco, including menthol flavoring.

According to a survey conducted by the Chief Legislative Analyst's Office, other jurisdictions in California have created a variety of regulatory schemes with carve-outs. Santa Clara County and the City of Palo Alto ban flavored tobacco but exempt adult-only retailers. Manhattan Beach bans the sale of flavored tobacco products but exempts menthol. Contra Costa County and the cities of Berkeley and Hayward create buffer zones around sensitive sites, in which the sale of flavored tobacco products, including menthol products, is prohibited.

A variety of options exist at the federal and state level for regulating the advertisement of flavored tobacco products. A chart of the potential federal and state statutes which could be amended to include e-cigarettes and/or flavored tobacco is attached to this report as Attachment Two for the City Council's information.

Prior to drafting this report, the City Attorney's Office and Chief Legislative Analyst's Office convened a meeting of stakeholders interested in providing input on the policy options for banning or regulating flavored tobacco products. The meeting included public health advocates and medical professionals such as the American Heart Association, the American Lung Association, the American Cancer Society and the Campaign for Tobacco Free Kids, as well as advocates representing the tobacco industry, including JUUL and the Hookah Chamber of Commerce. The policy options

advocated by the stakeholders ran the gamut from outright bans on flavored tobacco products to menthol or product-specific exemptions or to the maintaining of the status quo. The options are provided in this report.

City Council's concern about the role of flavored tobacco products in the tobacco use epidemic, which prompted the request for this report on flavored tobacco products, is both timely and urgent. Given the recent vaping-related deaths and injuries, combined with the prevalence of vaping among the City's youth, this report urges the City to heed the advice of medical experts and enact a Citywide ban on the sale of all flavored tobacco products.

II. CURRENT RESEARCH

A. "Vaping" and the Use of E-Cigarettes

The use of vaporizers (vapes) and e-cigarettes is still so new that there is not yet a comprehensive body of scientific research as with traditional cigarettes and other tobacco products. Particularly lacking are long-term longitudinal studies, which have only begun in the last few years. Yet, as the research is released, it continuously shows health issues associated with the use of vapes and e-cigarettes.

In one recent study, MRIs showed that even vaping a single time can temporarily affect cardiovascular functioning in healthy people.[5] In another, exposure to various e-liquids caused inflammation and other negative consequences in cells, which in turn led to endothelial dysfunction, a risk factor for cardiovascular disease.[6] Researchers have found that e-cigarettes sold in the United States have been contaminated with microbial toxins.[7]

The concentration of nicotine in e-cigarettes poses a number of health risks. Nicotine increases blood pressure and adrenaline, causing accelerated heart rate and increasing the likelihood of a cardiac event.[8] Nicotine is highly addictive. A single e-cigarette cartridge contains approximately the same

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[5] Alessandra Caporale et al., *Acute Effects of Electronic Cigarette Aerosol Inhalation on Vascular Function Detected at Quantitative MRI*, Radiology (2019), https://pubs.rsna.org/doi/pdf/10.1148/radiol.2019190562.

[6] Won Hee Lee et al., *Modeling Cardiovascular Risks of E-Cigarettes with Human-Induced Pluripotent Stem Cell-Derived Endothelial Cells*, 73 Journal of the American College of Cardiology Iss. 21, 2722 (2019), https://www.sciencedirect.com/science/article/pii/S0735109719346960?via%3Dihub.

[7] Mi-Sun Lee, *Endotoxin and (1→ 3)-β-D-Glucan Contamination in Electronic Cigarette Products Sold in the United States*, 127(4) Environmental Health Perspectives 047008-1 (2019), https://ehp.niehs.nih.gov/doi/pdf/10.1289/EHP3469.

[8] *Sympathominetic Effects of Acute E-Cigarette Use: Role of Nicotine and Non-Nicotine Constituents*; Journal of the American Heart Association. https://www.ahajournals.org.

amount of nicotine as a pack of cigarettes and is more readily absorbed.[9] Nicotine affects parts of the brain involved in learning, memory emotion and impulse control.[10] E-cigarette usage in youth is particularly problematic from a developmental and academic standpoint.[11]

Research on the component ingredients of e-liquid solutions has revealed more than concentrated nicotine. The solutions contain propylene glycol and vegetable glycerin, two of the primary ingredients in e-liquids found to be toxic to human cells. Research demonstrates that acetaldehyde and formaldehyde, two components of e-liquid vapor, increases the risk of lung and cardiovascular disease following repeated exposure.[12] Inhaling acrolein, an herbicide which is also present in e-liquid, has caused acute lung injury, including chronic obstructive pulmonary disease (COPD), asthma, and lung cancer.[13]

As previously discussed in this report, the CDC is conducting an investigation into the outbreak of serious and lethal pulmonary disease across the nation and has advised against vaping while the investigation is ongoing.[14]

B. The Use of Flavored Tobacco Products by Minors

According to the US Surgeon General, most tobacco use begins during youth and young adulthood.[15] Scientific evidence also demonstrates that flavors play a major role in youth initiation and continued use of tobacco products.[16] For example, in 2015, a study funded by the National Institute on Drug Abuse (NIDA), National Institutes of Health, the FDA, and the Department of Health and Human Services surveyed youth between the ages of 12 and 17 to determine the

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[9] *How Much Nicotine is in Juul?*, Truth Initiative. https://truthinitiative.org/research-resources/emerging-tobacco-products/how-much-nicotine-juul.
[10] Nicotine and the Adolescent Brain; Journal of Physiology. https://www.ncbi.nlm.nih.gov/pmc/articles/PMC4560573/.
[11] Ibid.
[12] Chronic E-Cigarette Exposure Alters the Human Bronchial Epithelial Proteome. American Journal of Respiratory and Critical Care Medicine. https://www.atsjournals.org/doi/full/10.1164/rccm.201710-2033OC.
[13] Cf. footnote 4 and Toxic Substances Portal – Formaldehyde. Agency for Toxic Substances and Disease Registry. https://www.atsdr.cdc.gov/substances/toxsubstance.asp?toxid=39.
[14] https://www.cdc.gov/tobacco/basic_information/e-cigarettes/severe-lung-disease.html#recommendations-public.

[15] Office of the Surgeon General, *Preventing Tobacco Use Among Youths*, (June 6, 2017), https://www.hhs.gov/surgeongeneral/reports-and-publications/tobacco/preventing-youth-tobacco-use-factsheet/index.html.
[16] American Academy of Pediatrics et al., The Flavor Trap (Mar. 15, 2017), https://www.tobaccofreekids.org/microsites/flavortrap/executive_summary.pdf.

prevalence of flavored tobacco use.[17] This study found that the vast majority of youth who self-reported ever experimenting with a tobacco product reported that they started with a *flavored* tobacco product.[18] Flavorings (other than menthol) are currently prohibited in traditional combustible cigarettes in the United States but widely available in other forms of tobacco products including e-cigarettes, cigars, hookah and smokeless tobacco.

C. Menthol and Minty Flavors

Menthol is a chemical compound with a minty flavor used as a cigarette additive by tobacco companies. By adding menthol to cigarettes, the natural harsh taste of tobacco is masked making the cigarette experience milder. Adding menthol to cigarettes also suppresses the user's instinctive coughing reflex thereby making inhalation of the smoke more tolerable.

Although statistically, traditional cigarette smoking rates have decreased, the prevalence of menthol cigarette use has *increased*. Menthol smokers of all ages show greater signs of nicotine dependence and are less likely to successfully quit smoking compared to other smokers.[19] Studies have also shown that youth smokers remain the most likely group to use menthol cigarettes compared to all other age groups.[20]

The City Attorney's Office was asked to address whether ethnic disparities relative to menthol tobacco exist. Our research has indeed revealed higher use rates of menthol cigarettes amongst African American smokers. This has been attributed to the tobacco industry's focus on African American consumers that dates back to the 1950s. For example, tobacco industry documents reveal a history of targeted marketing towards African American consumers and higher rates of discounts and promotions in African American neighborhoods.[21] The consequences of these tobacco industry marketing practices are not only higher menthol use for this community but also higher rates of some tobacco-caused disease. Each year in the US more than 72,000 African Americans are diagnosed with a tobacco-related cancer and more than 39,000 die from a

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[17] Ambrose BK, Day HR, Rostron B, et al. *Flavored Tobacco Product Use Among US Youth Aged 12-17 Years*, 2013-2014, JAMA (2015).
[18] Bridget K. Ambrose et al., *Flavored Tobacco Product use Among US Youth*, JAMA (2015).
[19] David T. Levy et al., Quit Attempts and Quit Rates Among Menthol and Nonmenthol Smokers in the United States, 101(7) Am. J. Pub. Health 1156, 1241 (2011).
[20] Andrea C. Villanti et al., Changes in the Prevalence and Correlates of Menthol Cigarette use in the USA, 2004–2014, 25 Tobacco Control 1, 14 (2016).
[21] Tess Boley Cruz et al., The Menthol Marketing Mix: Targeted Promotions for Focus Communities in the United States. 12 Nicotine & Tobacco Res. 85, 147 (2010). See also Nina C. Schleider et al., Tobacco Marketing in California's Retail Environment 2011-2014, at 10, 12 (2015).

tobacco-related cancer.[22] Researchers have estimated that, nationally, one-third of the number of lives that would be saved by a ban on menthol tobacco sales would be African American.[23]

Many prominent African American organizations support a ban on the sale of mentholated tobacco products. In 2013, Delta Sigma Theta, the largest African American Sorority, approved a resolution to urge the FDA to prohibit menthol cigarettes.[24] The National Association for the Advancement of Colored People (NAACP) has stated that "the tobacco industry has perniciously targeted African Americans with mentholated products" and in 2016 issued a resolution to support efforts by state and local governments to restrict the sale of menthol tobacco products.[25] On September 9, 2019, consistent with the 2016 resolution, the NAACP issued a Statement commending the State of Michigan for recently banning the sale of all flavored tobacco products, including menthol.[26]

In contrast, there are also community-based organizations that *oppose* a prohibition on the sale of menthol cigarettes. According to the California Department of Public Health, many of these organizations have received funding from the tobacco industry.[27] Despite the life-saving potential of a prohibition on the sale of menthol tobacco, these opposition groups have suggested that a prohibition on menthol unfairly targets the African American community, criminalizes the smoking of menthol cigarettes and makes menthol smokers susceptible to dangerous interactions between police and members of the African American community. These arguments cannot be substantiated. Any restriction on flavored tobacco only would restrict the *sale* of menthol tobacco products not their use. A menthol restriction only would be enforced at the retail sales level by prohibiting tobacco retailers from selling menthol flavored tobacco products. There would be no crime or violation applicable to the purchaser or user of the menthol tobacco product.

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[22] CDC, Vital Signs: Disparities in Tobacco-Related Cancer Incidence and Mortality—United States, 2004-2013, Morbidity & Mortality Weekly Report, (2016), http://www.cdc.gov/mmwr/volumes/65/wr/mm6544a3.htm.

[23] David T. Levy et al., Modeling the Future Effects of a Menthol Ban on Smoking Prevalence and Smoking-Attributable Deaths in the United States, 101(7) Am. J. Pub. Health 1156, 1236 (2011).

[24] Delta Sigma Theta, *Prohibiting the Use of Menthol as a Characterizing Flavor in Cigarettes, 2013 National Convention Workbook*, http://www.tobacco.ucsf.edu/sites/tobacco.ucsf.edu/files/u9/Attachment%205-Delta%20Resolution.pdf.

[25] National Association for the Advancement of Colored People, Resolutions (2016), http://www.naacp.org/wp-content/uploads/2016/03/Resolutions.2016.pdf.

[26] National Association for the Advancement of Colored People, *NAACP Issues Statement on Michigan's Ban on Flavored Cigarettes*, September 9, 2019, https://www.naacp.org/latest/naacp-issues-statement-michigans-ban-flavored-e-cigarettes/.

[27] California Dep't of Pub. Health, *Menthol and Cigarettes* (May 2017), https://www.cdph.ca.gov/Programs/CCDPHP/DCDIC/CTCB/CDPH%20Document%20Library/ResearchandEvaluation/FactsandFigures/FinalMentholFactSheecolo05022017.pdf.

Certain opposition groups that have received tobacco industry funding have also suggested that menthol bans will lead to a dangerous illicit trade despite no definitive evidence to support this concern.[28] Other jurisdictions surveyed by the City Attorney's Office that enacted flavored tobacco restrictions did not report an increase in illicit trade. That said, should any illicit trade develop, the City Attorney's Office has decades of experience prosecuting illicit tobacco trafficking in the context of untaxed and counterfeit cigarettes. The City Attorney's Office, in conjunction with the Los Angeles Police Department (LAPD), is also the recent recipient of a State of California Department of Justice grant award that specifically funds tobacco enforcement efforts for the City. Should City Council enact any type of flavored tobacco prohibition, there are sufficient resources currently available to support and implement any new regulatory efforts.

D. Hookah

Hookah tobacco is a type of flavored tobacco usually mixed with molasses, honey and/or fruit. Hookah tobacco is smoked through a hookah pipe--a water pipe with a smoke chamber, bowl, pipe and hose. Hookah smoke contains high levels of toxic compounds including tar, carbon monoxide, heavy metals and cancer-causing carcinogens. As with cigarette smoking, hookah smoking is linked to lung and oral cancers, heart disease, and other serious illnesses. It is estimated that a 45-to-60 minute hookah smoking session is as harmful as smoking 100 or more cigarettes.[29]

According to the 2018 National Youth Tobacco Survey (NYTS), 4.1 percent of high schoolers and 1.2 percent of middle schoolers, totaling over 700,000 youth, have used hookah in the past month.[30] Several studies have also found that although gains have been made in reducing cigarette use among college students, the prevalence of hookah use is increasing.[31] In addition, the government-sponsored 2013-2014 Population Assessment on Tobacco and Health (PATH) survey revealed that more than three-quarters (78.9 percent) of youth hookah users reported that they use hookah because it comes in appealing flavors.[32]

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[28] The Truth Initiative. *Menthol: Facts, Stats and Regulations* (Aug. 31, 2018), https://truthinitiative.org/research-resources/traditional-tobacco-products/menthol-facts-stats-and-regulations.
[29] Akl, E.A, *The effects of waterpipe tobacco smoking on health outcomes: a systematic review,* International Journal of Epidemiology, (2010).
[30] CDC, *Tobacco Product Use Among Middle and High School Students—United States, 2011-2018,* MMWR, 68, (February 12, 2019), https://www.cdc.gov/mmwr/volumes/68/wr/pdfs/mm6806e1-H.pdf.
[31] Creamer, MeLisa R et al. *College students' perceptions and knowledge of hookah use.* Drug and Alcohol Dependence Vol. 168 (2016).
[32] Ambrose, BK, et al., *Flavored Tobacco Product Use Among US Youth Aged 12-17 Years, 2013-2014,* Journal of the American Medical Association, (2015).

For over 20 years, state law has prohibited the smoking of tobacco (including hookah tobacco) in restaurants and bars. In the City of Los Angeles, despite extensive outreach and education efforts by the City Attorney's Office, many restaurants and bars unlawfully furnish hookah tobacco and allow their patrons to smoke in their businesses. Many of these businesses claim to be "hookah lounges;" however, state law does not recognize the term "hookah lounge" or afford such business any special privilege or exemption from the state's smoking prohibitions. Only smokers' lounges can lawfully allow indoor smoking, and any business that serves food or alcohol cannot, pursuant to state law, qualify as a smokers' lounge.

The Hookah Chamber of Commerce presented the City Attorney's Office with a letter on behalf of their membership requesting an exemption for hookah tobacco. The President of the Hookah Chamber of Commerce declined this Office's request for a membership list and indicated a list would not be provided because some of their members had been previously prosecuted by our Office. A review of our prior cases revealed that indeed over 60 bars and restaurants have been criminally prosecuted by the City Attorney's Office for unlawfully allowing hookah smoking in violation of state law. This Office estimates that there are still over 100 restaurants and bars that continue to unlawfully allow their patrons to smoke hookah in their business in violation of state law.

III. Existing Los Angeles City Initiatives

The City of Los Angeles has consistently been a statewide leader in tobacco control policy. Not only was the City the first jurisdiction in the State to establish a tobacco retailer licensing program (that has since been replicated in over 150 cities/counties in California), but the City of Los Angeles was also the first city in California to include e-cigarettes in the definition of tobacco products—two years before the State of California acted in 2016. Three current initiatives that demonstrate the City's commitment to protecting youth from the dangers of tobacco use and nicotine addiction are the Tobacco Enforcement Program (TEP), the Decreasing Adolescent Tobacco Access (DATA) Initiative and the TEP's ongoing collaborative efforts with the Los Angeles Unified School District (LAUSD).

A. The Tobacco Enforcement Program (TEP)

The Tobacco Retailer's Permit Ordinance established the TEP in May of 2000, with the goal of reducing youth access to tobacco products and decreasing youth smoking rates. Permit fee revenue collected by the City funds the TEP to ensure that the City's more than 4,000 tobacco retailers maintain a yearly tobacco permit and comply with local and state laws regulating tobacco sales—particularly the prohibition against sales to youth.

The TEP continuously engages in outreach aimed at the City's tobacco retailers that includes a wide array of services to support and encourage responsible retailing practices. These ongoing services include direct retailer training, site visits, targeted mailings, resource documents, and both phone and email support. This retailer outreach infrastructure has been utilized successfully to ensure that all City tobacco retailers are made aware of any new tobacco-related laws and regulations. Most recently, the TEP utilized this outreach infrastructure to successfully ensure that all City tobacco retailers were made aware of the expanded state law definition of tobacco products to include e-cigarettes and that the tobacco sales age had been raised from 18 to 21. Likewise, should City Council approve any new tobacco-related law, the TEP has the appropriate infrastructure in place to provide sufficient outreach and education to City tobacco retailers to support their compliance with the law.

B. The Decreasing Adolescent Tobacco Access (DATA) Initiative

In addition to the permit-fee funded TEP, the City Attorney is also the recent recipient of a grant awarded by the California Attorney General's Office. This grant has funded the City's Decreasing Adolescent Tobacco Access (DATA) Initiative which further supports the City's goal of keeping tobacco products away from youth. Through the DATA Initiative, the City has implemented several strategies to address the alarming increase in youth e-cigarette usage, including a comprehensive vaping awareness media campaign, an expanded youth outreach program, and an increase in undercover minor decoy compliance checks conducted by LAPD.

Through the DATA Initiative, traditional tobacco-related education modules have been modernized to stay up to date with current youth trends including the alarming popularity of flavored e-cigarettes. In addition, TEP's expanded youth outreach now regularly includes presentations at parent centers, school assemblies, after-school outreach events and the providing of resource tables at City schools. TEP's youth-focused outreach is also provided at health fairs, community events and includes collaboration with the City's Department of Recreation and Parks. An aggressive public education campaign to youth and their parents is also in development and expected to begin in earnest this Fall.

C. Los Angeles Unified School District (LAUSD)

Beginning in 2002, TEP was asked to be a participant agency in LAUSD's Public Health Advisory Board facilitated by the LAUSD Beyond the Bell Program and funded by the Tobacco Use Prevention and Education (TUPE) program. TEP has also been funded directly by the TUPE program to provide tobacco-use prevention and education at LAUSD schools and has participated in research on

youth tobacco access funded by the Tobacco Related Diseases Research Program (TRDRP).

LAUSD is in the process of revising its policy bulletin, BUL-3277.2, "Preventive Measures and Mandatory Procedures for Students Who Violate Laws Regarding Drugs, Alcohol, Tobacco, and Other Intoxicants." The Division of Instruction, Division of District Operations and the Beyond the Bell Branch have collaborated on the policy and plan to submit their final draft to the LAUSD Superintendent and Board of Education for input and approval. LAUSD expects the new policy to be finalized in the Fall of 2019.

IV. Overview of State and Local Legislation Efforts to Regulate Flavored Tobacco

A. Federal Efforts

i. Food and Drug Administration (FDA)

Although the Federal government has been slow to respond to the market explosion of flavored e-cigarette products, on September 11, 2019, the federal government took a first step when Alex Azar, Secretary of the United States Department of Health and Human Services as well as Ned Sharpless, the Acting Commissioner of the FDA announced that the FDA intends to issue enforcement guidance, requiring that any flavored e-cigarette product (including menthol but not including tobacco flavoring) be removed from the market until the product applies for and secures approval from the FDA under the Tobacco Control Act. The FDA allowed flavored e-cigarette products to remain on the market in the interim, at least through May of 2020. [33]

Previous to the recent announcement, the FDA had delayed efforts to bring flavored e-cigarette products under FDA review and approval requirements. On May 10, 2016, the FDA issued a Final Rule deeming e-cigarette and other nicotine products that were not a part of the original 2009 Federal Tobacco Control Act, including e-cigarettes, to be "tobacco products."[34] The new Rule allowed the FDA to regulate e-cigarettes (including flavored products) and other covered tobacco products in the same way that it could regulate traditional tobacco products under the original 2009 Tobacco Control Act. A year later in May 2017, the FDA issued a Guidance related to the 2016 Deeming Rule, which extended the

[33] https://www.cnbc.com/video/2019/09/11/hhs-secretary-alex-azar-fda-will-finalize-new-e-cigarette-rules.html.
[34] Deeming Tobacco Products to be Subject to the Federal Food, Drug, and Cosmetic Act, 21 CFR pt. 1100, 1140, and 1143 (2016).

compliance period for some tobacco product manufacturers, including flavored e-cigarette manufacturers.[35] This meant that flavored e-cigarette devices that were currently on the market could remain on the market (without any review by the FDA) until August 2022 (now accelerated to May of 2020).

In March of 2018, several health organizations including the American Academy of Pediatrics, the American Cancer Society Cancer Action Network, and the Campaign for Tobacco-Free Kids sued the FDA regarding its decision to grant deadline extensions to e-cigarette manufacturers under the May 2017 Guidance.[36] The court sided with the health organizations and vacated the Guidance for several reasons, including that its outcome (allowing e-cigarettes to be on the market without review by the FDA) cannot be reconciled with the 2009 Tobacco Control Act.[37]

The immediate past Commissioner of the FDA, Scott Gottlieb,[38] issued the Guidance that extended the deadlines set in the Tobacco Control Act. Commissioner Gottlieb gradually revised his views about flavored e-cigarettes. After initially concluding that that the FDA's tentative regulation of flavored e-cigarettes "struck the wrong balance,"[39] by April of 2018, Commissioner Gottlieb recognized "the troubling reality ... that electronic nicotine delivery systems (ENDS) such as e-cigarettes have become wildly popular with kids."[40] By March of 2019, Commissioner Gottlieb stated that "the number of children using e-cigarettes remains at epidemic levels" and announced new, more severe actions the FDA would take against e-cigarette retailers and manufacturers.[41]

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[35] U.S. Dep't of Health and Hum. Serv., Extension of Certain Tobacco Product Compliance Deadlines Related to the Final Deeming Rule (Revised): Guidance for Industry (Mar. 8, 2019), https://www.fda.gov/regulatory-information/search-fda-guidance-documents/extension-certain-tobacco-product-compliance-deadlines-related-final-deeming-rule.

[36] American Academy of Pediatrics v. FDA, No. PWG-18-883, 2019 WL 2123397, F.Supp.3d (Dist. Ct. Md. 2019).

[37] *Id.*

[38] Scott Gottlieb served as the FDA Commissioner from May of 2017 to April of 2019.

[39] Angelica LaVito, *Former FDA Chief Gottlieb*, CNBC (May 21, 2019), https://www.cnbc.com/2019/05/21/former-fda-chief-gottlieb-we-struck-the-wrong-balance-on-e-cigarettes.html.

[40] FDA, Statement from FDA Commissioner Scott Gottlieb on New Enforcement Actions (Apr. 24, 2018), https://www.fda.gov/news-events/press-announcements/statement-fda-commissioner-scott-gottlieb-md-new-enforcement-actions-and-youth-tobacco-prevention.

[41] FDA, Statement from FDA Commissioner Scott Gottlieb on Forceful New Actions (Mar. 4, 2019), https://www.fda.gov/news-events/press-announcements/statement-fda-commissioner-scott-gottlieb-md-forceful-new-actions-focused-retailers-manufacturers.

ii. House Subcommittee on Economic and Consumer Policy

On July 25, 2019, the House of Representatives' Subcommittee on Economic and Consumer Policy, which is a part of the House Committee on Oversight and Reform, held two days of hearings on the topic of youth vaping. The Subcommittee heard from parents, doctors, researchers, and representatives of JUUL. Notably, the Subcommittee questioned JUUL co-founder and current Chief Product Officer, James Monsees, on the second day of hearings.

At present, there are multiple bills to address youth vaping that have been introduced in the House of Representatives, and nearly all of these bills have an equivalent counterpart in the U.S. Senate. Some of these bills include: H.R. 293: Youth Vaping Prevention Act of 2019; H.R. 1498: SAFE Kids Act; H.R. 2111: PROTECT Act; H.R. 2339: Reversing the Youth Tobacco Epidemic Act of 2019; H.R. 2411: Tobacco to 21 Act; and H.R. 3942: Preventing Online Sales of E-Cigarettes to Children Act.

B. State Efforts

i. California State Senate Bill 38

On December 3, 2018, SB 38 was introduced in the California State Senate by Senators Jerry Hill, Mike McGuire, and Anthony Portantino. In its original form, SB 38 prohibited the sale of all flavored tobacco products and was sponsored by the American Lung Association (ALA), the American Cancer Society (ACS), and the American Heart Association (AHA).[42]

On May 23, 2019, the bill was removed from consideration by Senator Hill because of amendments to the bill that carved out exemptions for tobacco products with patents issued prior to January 1, 2000, menthol products, and hookah.[43] According to Senator Hill, "the amendments imposed on the bill erode those protections [that keep flavored tobacco products from children] by creating unnecessary, harmful exemptions."[44] The sponsorship from the ALA, ACS, and AHA were also withdrawn and the previously supportive public health organizations then pivoted to oppose the bill.

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[42] Letter from Lindsey Freitas, Senior Director, Advoc., Am. Lung Ass'n Cal., to Sen. Jerry Hill, Cal. Sen. (May 21, 2019) (On file with Sen. Jerry Hill).
https://sd13.senate.ca.gov/sites/sd13.senate.ca.gov/files/aha_ala_acs_sb_38_opposition.pdf.
[43] SB 38 Amended May 17, 2019 (Cal. Sen.).
[44] Office of State Senator Jerry Hill, *Senator Jerry Hill Withdraws Bill to Ban Flavored Tobacco Products*, Senate District 13 (May 23, 2019), https://sd13.senate.ca.gov/news/2019-05-23-senator-jerry-hill-withdraws-bill-ban-flavored-tobacco-products-rather-accept.

At present, there are no California State Senate bills considering a flavor ban.

ii. California State Assembly Bill 1639

On February 22, 2019, AB 1639 was introduced in the California State Assembly by Assembly Members Gray, Cunningham, Robert Rivas, and Kamlager-Dove.[45] Originally, the bill would have banned flavored e-cigarettes, with broad exceptions. AB 1639 exempts "tobacco, mint, or menthol flavors;" retailers who sell tobacco in stores limited to customers aged 21 and older; and online retailers who verify that the purchaser is at least 21 years of age.[46] On August 20, 2019, the bill was amended to remove the flavor ban altogether. According to media reports, the removal of the flavor ban resulted from opposition groups that felt the originally included ban was too weak due to its exemption for menthol products.[47]

The now stripped-down version of AB 1639 includes increased retailer compliance checks by the California Department of Public Health to reduce the availability of tobacco to persons under 21. The bill also imposes certain advertising restrictions. AB 1639 sets civil fines for noncompliance with various aspects of the bill, as well as escalating license suspension periods (and eventual revocations) for retailers that are found in violation of the law.

At present, AB 1639 is currently pending in the Senate. Two additional Assembly Bills would affect flavored tobacco products: AB 739 and AB 1625. The former would ban sales of flavored tobacco products, but it has been untouched in the Committees on Government Organization and Health since April 1, 2019. The latter would require manufacturers to submit a list of tobacco products sold that do not have a characterizing flavor. This bill has been untouched in the Committees on Government Organization and Judiciary since March 25, 2019.

iii. Executive Order Signed by Governor Newsom

On September 16, 2019, California Governor Gavin Newsom signed an executive order to confront the youth vaping epidemic. The order directs the California Department of Public Health to allocate $20 million to a vaping awareness campaign and develop recommendations to

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[45] AB 1639 was most recently amended on August 20, 2019.
[46] AB 1639 Amended August 13, 2019 (Cal. Assem.).
[47] Catherine Ho, *California Bill Cracking Down on Youth Vaping Moves Forward*, SF Chronicle (August 20, 2019), https://www.sfchronicle.com/business/article/California-bill-cracking-down-on-youth-vaping-14364950.php.

require warning signs about the health risks of vaping at vaping retailers and in vaping advertisements; increase enforcement regarding illegal sales; and to establish standards for nicotine content and uniform packaging for purposes of including nicotine content in the calculation of applicable taxes. The order also directs the California Tax and Fee Administration (CDTFA) to develop recommendations to remove illegal or counterfeit vaping products from stores and to review taxes on e-cigarettes to determine if taxes could be assessed according to nicotine content.

Governor Newson's press release that announced the executive order also expressed the Governor's desire to work with the legislature and build on this executive action to "put together a strong tobacco reform package in 2020."

C. Local Efforts by Other Selected Jurisdictions in California

Cities and counties throughout California have been active in adopting prohibitions on the sale of flavored tobacco. The first local restriction on the sale of flavored tobacco was enacted by Santa Clara County in 2010.[48] Following Santa Clara, 34 cities in California passed some type of restriction on the sale of flavored tobacco. Four of these 34 cities are in Los Angeles County: Manhattan Beach in 2015, West Hollywood in 2016, Beverly Hills in 2018, and Hermosa Beach in 2019. A matrix of Local Ordinances Restricting the Sale of Flavored Tobacco Products compiled by The Center for Tobacco Policy and Organizing is attached to this report as Attachment One.[49]

i. Los Angeles County (Draft Ordinance to Ban Sale of All Flavored Tobacco)

Pursuant to a Motion introduced by Supervisor Mark Ridley-Thomas and Supervisor Janice Hahn, the Board of Supervisors instructed County Counsel to prepare an ordinance to address nuisance tobacco shops and regulate flavored tobacco retailers.[50] At the August 14, 2019 Health and Operations Cluster Meeting, a proposed draft ordinance was

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[48] *County of Santa Clara Raises Purchase Age for Tobacco and Electronic Smoking Products*, County of Santa Clara County News (June 9, 2015), https://www.sccgov.org/sites/opa/nr/Pages/County-Raises-Purchase-Age-for-Tobacco-and-Electronic-Smoking-Products-from-18-to-21-in-Unincorporated-Santa-Clara-County.aspx.

[49] The Center for Tobacco Policy and Organizing, *Matrix of Local Ordinances Restricting the Sale of Flavored Tobacco Products*, Am. Lung Assoc. (May 2019) https://center4tobaccopolicy.org/wp-content/uploads/2019/05/Matrix-of-Local-Ordinances-Restricting-Flavored-Tobacco-2019-05-07.pdf.

[50] County of Los Angeles, Motion by Supervisors Mark Ridley-Thomas and Janice Hahn (Sept. 25, 2018), http://file.lacounty.gov/SDSInter/bos/supdocs/126756.pdf.

jointly presented by County Counsel, the Department of Public Health and the Treasurer and Tax Collector. This draft Ordinance prohibits the retail sales of flavored tobacco products, including menthol. Additionally, the draft Ordinance requires "tobacco only" shops to obtain a separate business license, prohibit the entrance of customers under 21 years of age, and prohibit the consumption of food or alcoholic beverages on the premises. The proposed draft Ordinance is scheduled to be formally presented at the meeting of the Board of Supervisors on September 24, 2019.

ii. San Francisco and Other California Cities (Ban on Sale of All Flavored Tobacco, No Exemptions)

On June 20, 2017, the San Francisco County Board of Supervisors voted unanimously to pass an Ordinance amending the city's Health Code by adding Article 19, to ban the sale of all flavored tobacco products, including menthol.[51] Thereafter, opponents of the ban (funded in large part by tobacco manufacturers) gathered enough signatures to put a referendum on the June 2018 ballot to overturn the Ordinance.[52] Although over $10 million was spent to overturn the Ordinance, the referendum was not successful with 68 percent of San Francisco residents voting in favor of the flavored tobacco prohibition.[53] Despite overwhelming voter approval of the ban, the tobacco industry has initiated a second attempt to put a referendum on a future ballot to overturn the San Francisco law. In May 2019 JUUL introduced and funded a new ballot initiative (for the November 2019 election) to overturn the voter-approved flavored tobacco prohibition.

Notably, shortly after San Francisco enacted this flavored tobacco ban, the Board of Supervisors voted to prohibit the sale of e-cigarettes altogether. On June 28, 2019, San Francisco Mayor London Breed signed and approved the addition of Article 19R to the San Francisco County Health Code to prohibit the sale of all e-cigarettes that lack Food and Drug Administration premarket approval. This prohibition is set to take effect at the end of 2019. As with the flavored tobacco ban, JUUL has indicated its intent to seek to overturn this law by way of referendum.

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[51] San Francisco Health Code Ordinance No. 140-17 (2017). *See also* Lesley McClurg, *San Francisco Passes First-in-the-Nation Flavored Tobacco, Vaping Ban*, KQED (June 6, 2018), https://www.kqed.org/futureofyou/441395/sf-voters-may-ban-vape-flavors-menthol-cigarettes.
[52] McClurg, *supra* note 13. *See also* Ballotpedia, *Proposition E, Ban on the Sale of Flavored Tobacco*, https://ballotpedia.org/San_Francisco,_California,_Proposition_E,_Ban_on_the_Sale_of_Flavored_Tobacco_(June_2018) (last visited July 1, 2019).
[53] Ballotpedia, *supra* note 10.

In addition to San Francisco, other California cities have enacted comprehensive flavored tobacco bans. The California cities with jurisdiction-wide flavored tobacco bans include Oakland, Palo Alto and El Cerrito. Some California jurisdictions have enacted flavor bans with exemptions. The County of Santa Clara exempts certain retailers and Manhattan Beach exempts menthol flavoring.

iii. Beverly Hills (Ban on sale of All Tobacco Products, Flavored and Unflavored)

One of the most expansive restrictions on tobacco sales in the State was enacted recently in the adjoining City of Beverly Hills. On June 4, 2019, the Beverly Hills City Council approved an Ordinance to prohibit the sale of all tobacco products (flavored and unflavored) in the city.[54]

iv. Palo Alto (Ban on Sale of All Flavored Tobacco Products, 21 and Over Venues Exempted)

Palo Alto City Council passed an Ordinance in October of 2017 which restricts the sale of flavored tobacco products to retailers that generate more than 60 percent of their gross annual revenue from the sale of tobacco products, are adult-only, do not sell food or alcohol for consumption in the premises, and post signage outside the premises that clearly and conspicuously informs patrons that the premises is off-limits to persons who are under 21 years old.[55]

v. Berkeley and Other California Cities (Ban on Sale of All Flavored Tobacco Products, 21 and Over Venues Exempted)

The City of Berkeley prohibits the sale of flavored tobacco products, including menthol flavored tobacco products, within a 600 foot buffer zone of a school, defined to include public and private Kindergarten through 12th grade with an enrollment of at least 25 students. The 600 foot buffer zone ordinance is applicable to all tobacco products, including mentholated products. The City of Manhattan Beach has a similar buffer zone ordinance.

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[54] This Ordinance exempted three existing cigar lounges, hotels that sell tobacco products only to guests through concierge services, and those who can prove an exceptional hardship caused by the ban. City of Beverly Hills Municipal Code Ordinance No. 19-0-2783. *See also* City of Beverly Hills, *Information for Businesses*, http://www.beverlyhills.org/citymanager/smokinginformation/informationforbusinesses/ (last visited July 2, 2019). *See also* Kim Baldonado, *Beverly Hills Moves Ahead with a Plan to Outlaw all Tobacco Sales*, NBC 4 (May 7, 2019), https://www.nbclosangeles.com/news/local/Beverly-Hills-Considering-Ban-on-Tobacco-Sales-509613541.html.

[55] City of Palo Alto Municipal Code Ordinance No. 5418.

V. Advertising Restrictions Pursuant to Settlement Agreements

The City Council requested that City Attorney's Office and Chief Legislative Analyst's Office report on the options, at the Federal and State levels, to regulate the advertising and marketing of e-cigarettes products. The majority of advertising restrictions currently applicable to tobacco products are a result of terms in the Master Settlement Agreement (MSA) and The Smokeless Master Settlement Agreement (SMSA).[56] Although e-cigarettes are a type of flavored tobacco product, they were not contemplated by the MSA or the SMSA and therefore not included in either settlement.

The MSA and SMSA provide the following restrictions on tobacco products (not including e-cigarettes):[57]

- Prohibit direct or indirect targeting of youth in advertising, marketing and promotions.
- Prohibit brand name sponsorship of concerts, sports events, events with an intended audience having a significant percentage of youth and events with paid participants who are youth.
- Prohibit access by youth to free samples of tobacco products.
- Prohibit payments for placement of tobacco products in the media.
- Prohibit outdoor advertising of tobacco products.
- Prohibit transit ads, on or in public or private vehicles.
- Prohibit using cartoons to advertise tobacco products.
- Prohibit tobacco brand-name merchandise.

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[56] The Master Settlement Agreement (MSA) is a settlement reached in November 1998 between the state Attorneys General of 46 states, five U.S. territories, the District of Columbia and the five largest cigarette manufacturers in the United States concerning the advertising, marketing and promotion of cigarettes. The Smokeless Master Settlement Agreement (SMSA) was executed at the same time as the MSA between the leading manufacturer of smokeless tobacco in the United States and the jurisdictions that signed the MSA, plus Minnesota and Mississippi. https://oag.ca.gov/tobacco/msa.

[57] For those tobacco products covered under the MSA and the SMSA, the following advertisements are exempted:

- Advertisements that are 14 square feet or smaller, and are either outside a tobacco retail store but on store property, or on the window of a tobacco retailer store facing outward;
- Advertisement inside a tobacco retail store that are not placed on a window facing outward;
- Advertisements located inside an adult-only facility (where operator ensure that no minors are present);
- Outside Advertisements at the site of the adult-only facility advertising the event with a brand name for the duration of the event and no more than 14 days before the event;
- Billboards advertising a tobacco brand sponsored event at the site of the event for 90 days before the initial sponsored event and 10 days after the last sponsored event; or
- Advertisements outside a tobacco manufacturing facility.

A matrix listing additional advertisement restrictions, at both the federal and state levels, unrelated to the MSA or SMSA that potentially could be applied to certain types of flavored tobacco products, including flavored e-cigarettes is attached to this report as Attachment Two.

VI. Stakeholder Engagement

On July 17, 2019, the City Attorney's Office and Chief Legislative Analyst's Office convened a stakeholder meeting, where it heard from a number of parties. Tobacco industry representatives, JUUL, the Hookah Chamber of Commerce and certain civil rights groups attended the meeting to oppose a citywide ban on the sale of flavors, including hookah and menthol. The American Heart Association, American Lung Association, American Cancer Society, The Campaign for Tobacco Free Kids, several medical doctors and other constituent groups attended the meeting to express their support for a citywide ban on the sale of flavors, including menthol.

After the July 17, 2019 stakeholder meeting, dozens of organizations, coalitions, advocates, and individuals provided the City with additional materials. These materials included formal letters of opposition or support, informational pieces, studies, charts, graphs, images, constituent letters and signatures, slides, and links to additional materials such as Congressional hearings.

VII. Legislative Options

Legislative options initiated by other jurisdictions at the state and local level are listed below by decreasing severity:

- Ban the retail sale of all tobacco products, including flavored tobacco products;
- Ban the retail sale of all flavored tobacco products without exemption;
- Ban the retail sale of all flavored tobacco products, exempting menthol cigarettes and/or hookah;
- Ban the retail sale of all flavored tobacco products except in 21-and-over specially licensed tobacco shops;
- Ban the retail sale of all or some flavored tobacco products near sensitive sites; or
- Reduce tobacco retail location concentration or by overall number.

VIII. City Attorney Recommendation

The health and well-being of an entire generation of our youth will be affected by the City's leadership during this current vaping crisis. We have been here before: The tobacco industry previously used the lure and masking qualities of kid-friendly flavors to

addict youth to combustible tobacco products, resulting in immense human suffering and billions of dollars in medical costs. The Master Settlement Agreement with tobacco manufacturers executed two decades ago eliminated flavored combustible cigarettes resulting in a steady and dramatic decline in smoking rates.

The tobacco manufacturers regrouped. With the introduction of e-cigarettes, which were not covered by the Master Settlement Agreement, flavored products were reintroduced to a new generation of our youth with resulting increase in youth tobacco usage. The current health crisis was a predictable result and so too should be the City's response. The City Attorney's Office recommends nothing short of a Citywide ban on the sale of all flavored tobacco products, without exception, as the best option to protect our current generation of youth and the generations to follow from the negative health consequences associated with use of tobacco products.

IX. Conclusion

This Office will be pleased to draft an ordinance to implement any of the legislative options discussed in this report and transmit that ordinance to the City Council for its consideration and adoption.

If you require any further information or have any questions, please contact the undersigned at (213) 202-5595. She or another member of this Office will be available when you consider this matter to answer any questions you may have.

Sincerely,

MICHAEL N. FEUER, City Attorney

By 
CELINA PORRAS
Deputy City Attorney

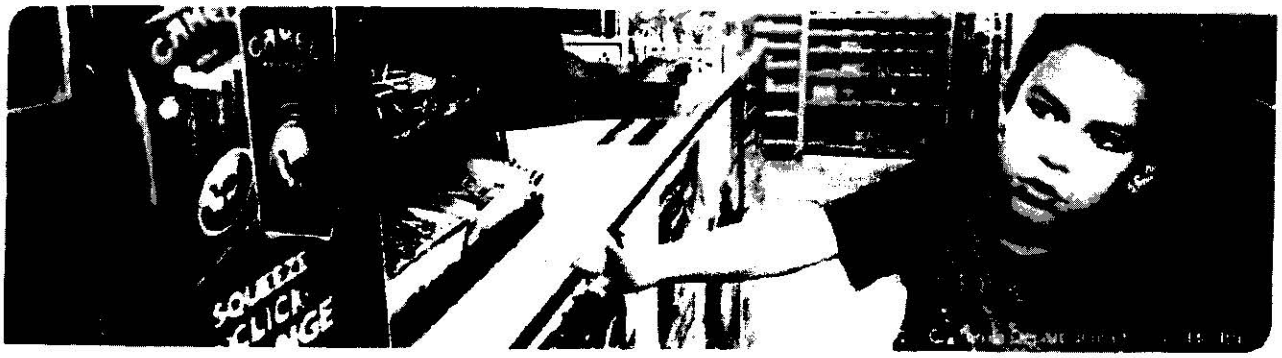
VF:CP:ac

ATTACHMENT ONE

AMERICAN LUNG ASSOCIATION. IN CALIFORNIA

Matrix of Local Ordinances Restricting the Sale of Flavored Tobacco Products

THE CENTER for Tobacco Policy & Organizing



MAY 2019

The tobacco industry has a long history of using flavored tobacco to target youth and communities of color. The majority of youth who start experimenting with tobacco begin with flavored tobacco.[1] These products come in a variety of candy-like flavors including bubble gum, grape, menthol and cotton candy and include e-cigarettes, hookah tobacco, cigars, smokeless tobacco, and even flavored accessories such as blunt wraps.

Since 2009, the United States Food and Drug Administration (FDA) has banned flavored cigarettes nationwide. However, this ban included an exemption for menthol flavored cigarettes and doesn't extend to non-cigarette tobacco products. There are currently no state laws in California restricting the sale of flavored tobacco products. It is up to local communities to take action to protect their youth from the lure of enticing flavored tobacco.

The first community to restrict the sale of flavored tobacco in California was Santa Clara County in 2010. Since then, thirty-five communities have passed similar policies.

What products may be included?

1. E-Cigarettes – Restricts the sale of flavored electronic cigarettes.

2. Menthol – Restricts the sale of tobacco products labelled as menthol, including cigarettes, smokeless tobacco, little cigars, etc.

3. Little Cigars – Restricts the sale of flavored little cigars, which are small, usually filtered cigars wrapped in brown paper containing tobacco leaf. Little cigars became a popular alternative following the FDA's ban on flavored cigarettes.

4. Smokeless Tobacco – Restricts the sale of flavored smokeless tobacco such as chewing tobacco, dip, snus and snuff.

5. Components & Accessories – Restricts the sale of flavored accessory products such as blunt wraps and e-juice additives. These products cannot be smoked alone and serve as a delivery system for smoked products.

6. Products Marketed as Flavored – Tobacco companies sometimes try to circumvent flavor restrictions by marketing products as flavored without directly labelling them as such. This policy option allows communities to broaden the definition of flavored tobacco to include these products.

What exemptions are allowed?

1. Adult-Only Stores Exempted – Adult-only retailers are limited to customers who are 21 and over. This limits sales of flavored tobacco to stores that youth do not have access to.

2. Grandfathered Retailers Exempted – Allows retailers that were in operation prior to a specifed date to continue selling flavored tobacco products.

3. Limited to Youth-Populated Areas – Retailers are required to be a certain distance away from schools, parks, or other youth-oriented locations. Since many flavored tobacco products target youth, including buffer zones is a way to limit their access to flavored products.

Resources

The Center has additional resources on tobacco retailer licensing ordinances, plug-in policies, and ordinances restricting menthol tobacco available at: http://center4tobaccopolicy.org/tobacco-policy/tobacco-retail-environment/ . ChangeLab Solutions has model ordinance language available for ordinances restricting flavored tobacco at: http://changelabsolutions.org.

The Center for Tobacco Policy & Organizing | American Lung Association in California
1531 I Street, Suite 201, Sacramento, CA 95814 | Phone: (916) 554.5864 | Fax: (916) 442.8585

San Carlos April 2019	X	X	X	X	X	X		
Larkspur April 2019	X	X	X	X	X	X		
Sacramento April 2019	X	X	X	X	X	X		
Albany April 2019	X	X	X	X	X	X		
Corte Madera March 2019	X	X	X	X	X	X		
Hermosa Beach Jan 2019	X	X	X	X	X	X	X	
San Pablo Dec 2018	X	X	X	X	X	X		
Alameda Nov 2018	X	X	X	X	X	X		
Santa Cruz Nov 2018	X	X	X	X	X	X		
Marin County Nov 2018	X	X	X	X	X	X		
Saratoga Oct 2018	X		X	X	X	X		
Half Moon Bay Oct 2018	X	X	X	X	X	X		
Portola Valley Sep 2018	X	X	X	X	X	X		
Beverly Hills August 2018	X	X	X	X	X	X		
Richmond July 2018	X	X	X	X	X	X		
Sausalito July 2018	X	X	X	X	X			
San Mateo County June 2018	X	X	X	X	X	X		
San Francisco June 2018	X	X	X	X	X	X		
Mono County July 2018	X							
Windsor March 2018	X		X**	X	X	X		

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						Flavored tobacco is flavored			
Cloverdale Dec 2017	X		X	X		X			
Fairfax Dec 2017	X		X**	X	X	X			
San Leandro Oct 2017	X		X	X	X	X			
Palo Alto Oct 2017	X	X	X	X	X	X	X		
Oakland Sep 2017	X	X	X	X	X	X	X		
Contra Costa County July 2017	X	X	X	X	X	X			X 1000 ft
Los Gatos May 2017	X	X	X	X	X	X	X		
Novato Jan 2017	X		X**	X	X	X			
Santa Clara County Oct 2016	X	X	X	X	X	X	X		
Yolo County Oct 2016	X	X	X	X	X				
Manhattan Beach Dec 2015	X		X	X	X	X	X		
El Cerrito Oct 2015	X	X*	X	X	X	X			
Berkeley Sep 2015	X	X	X	X	X	X			X 600 ft
Sonoma June 2015	X		X**	X	X	X			
Hayward July 2014	X	X*	X	X	X	X		X	X 500 ft

[1]Ambrose, B.K., et al., Flavored Tobacco Product Use Among US Youth Aged 12-17 Years, 2013-2014. JAMA,2015: p.1-3.

*Does not include menthol cigarettes

**Exempts packages of at least 5 or more

***Doesn't apply to pipe tobacco

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ATTACHMENT TWO

ATTACHMENT TWO

Federal and State Advertising Restrictions Respective to Tobacco Products

Topic	Law	Summary
Storefront Advertising	Cal. Business and Professions Code §§ 25612(c)(7), 25617, 25619 (Lee Law)	No more than 33 percent of the square footage of windows and clear (e.g. glass) doors of an alcohol retailer may have advertisement of any sort, including tobacco.
Blunt Wrap Advertising	Cal. Business and Professions Code §§ 22958(a), 22962 (STAKE Act) Cal. Penal Code 308	No person or business may place advertising for blunt wraps lower than four feet above the floor. No person or business offering blunt wrap for sale may place blunt wrap advertising within two feet of a candy, snack, or nonalcoholic beverage display.
State Building Advertising	Cal. Gov't Code § 19994.35	No advertising for any product containing tobacco shall be allowed in any building owned and occupied by the state.
Video Games	Cal. Penal Code § 308.5	The law prohibits paid commercial advertising for alcohol and tobacco products in video games intended for either private use or use in a public establishment, and intended primarily for use by any person under the age of 18 years. Paid commercial advertising includes, for example, containers or packaging, product brand names, trademarks, or copyrighted slogans.
Samples, Coupons, and Promotional Offers	Cal. Health and Safety Code §118950 Cal. Code of Regulations Title 18, § 4081 Cal. Business and Professions Code § 17534, 17535, 17537.3	Free or nominal cost cigarettes or smokeless tobacco products (or coupons, coupon offers, rebate offers, gift certificates, gift cards, or "other similar offers" for such products) may not be distributed on public grounds or private grounds that are open to the public. Free samples of smokeless tobacco products may not be distributed within a two-block radius of any premises or facility whose primary purpose is directed towards person under the age of 21, including schools, clubhouses, and youth centers, when those premises are being used for their primary purposes. Promotional offers, mail in and telephone

ATTACHMENT TWO

Federal and State Advertising Restrictions Respective to Tobacco Products

		requests for promotional offers must state they are not available to individuals under 21 years of age and must include appropriate efforts to ensure person is at least 21 years of age (asking date of birth). Mailing unsolicited samples of smokeless tobacco as part of an advertising program is prohibited.

ATTACHMENT TWO

Federal and State Advertising Restrictions Respective to Tobacco Products

Television/Radio Cigarette Advertising	15 USC §§ 1335, 1338, 1339	The law prohibits advertising cigarettes or little cigars (defined by weight) on any medium of electronic communication subject to the jurisdiction of the U.S. Federal Communications Commission (FCC) (such as television and radio). - Law does not apply to regular size cigars.
Television/Radio Smokeless Tobacco Advertising	15 USC §§ 4402, 404, 4405	The law prohibits advertising smokeless tobacco on any medium of electronic communication subject to the jurisdiction of the FCC (such as television and radio).
Federal Laws on Misleading Consumers, Content Disclosures to Public and Permissible Forms of Advertisement		
Ban on Misleading Consumers about FDA endorsements	21 USC § 331(tt), 333, 372 (Tobacco Control Act)	Illegal to make any express or implied statement to consumers in tobacco product labeling or through the media that would mislead consumers to believing that a tobacco product is: 1) Approved by the FDA; 2) Endorsed by FDA; 3) Deemed safe by the FDA: or 4) Less harmful due to FDA regulation.
Content Disclosures to the Public	21 USC § 387d, 387n (Tobacco Control Act) 15 USC §§ 1333, 1336, 1338, 1339	U.S. Dept. of Health and Human Services (HHS) will determine whether tar or nicotine yields of cigarette and tobacco products must be disclosed on all product packages and advertisements.
Permissible Forms of Labeling and Advertising	21 USC § 333, 372, 387a-l, 387f(d) (Tobacco Control Act) 21 Code of Federal Regulation Section 1140.30(a)	Manufacturer, distributor or retailer must notify FDA 30 days prior to advertising cigarettes or smokeless tobacco in a medium other than the following: 1) Periodicals or other publications; 2) Billboards; 3) Posters and placards; or 4) Promotional Materials (direct mail, POS materials). Notice must disclose exposure to those under the age of 18.

Martinez, Ruben

From:	OUT Tobacco <o
Sent:	Monday, October 25, 2021 3:56 PM
To:	PublicComment-AutoResponse
Cc:	director@latinoequalityalliance.com; mreataza@appealforhealth.org; shannon.kozlovich@gmail.com; ryanoda10@gmail.com; hodgekaitlyn@gmail.com; christiang@tramutola.com
Subject:	Item 11 - Letter of Support from OUT Against Big Tobacco
Attachments:	OABT_LOS_Pasadena_Flavors_Oct2021.pdf

To Pasadena City Council,

OUT Against Big Tobacco Los Angeles would like to send a letter of support for Item 11.

Best,
Eddie Martinez

October 25, 2021

Pasadena City Council
City Hall
100 North Garfield Ave.

Pasadena, CA 91101

Re: Item 11 – An Ordinance of the City of Pasadena, California Amending the Tobacco Retailer License Ordinance, Title 5, Chapter 5.74 of the Pasadena Municipal Code; and the Tobacco Use Prevention Ordinance, Title 8, Chapter 8.78 of the Pasadena Municipal Code

Dear Pasadena City Council Members:

The OUT Against Big Tobacco Coalition supports restricting the sale of **all** flavored tobacco products, without exemption, to protect our communities. We are an alliance of LGBTQ individuals, allies, and community organizations collectively working to address tobacco control and health inequity issues within our local LGBTQ+ community.

Our coalition strongly supports this ordinance, which would restrict the sale of all flavored tobacco products with no exemptions in the City of Pasadena. You have the opportunity to go further than the state legislature did with SB793 and include *ALL* flavored tobacco products in this ordinance, including hookah and premium cigars. We urge the Council to advance this ordinance to a second reading without the addition of exemptions.

When Congress passed the 2009 Tobacco Control Act, they restricted the sale of all flavored cigarettes except for menthol. Menthol being the flavor that is used most heavily within communities of color and by 70% of LGBTQ+ young people. This flavor is known to increase addiction to tobacco and increase the harms from the use of tobacco products. Yet, the federal government didn't think our community deserved equal protection from the tobacco industry.

In 2020, California attempted to correct this federal oversight and passed a bill to restrict the sale of flavored tobacco products. But Big Tobacco stepped in to protect their profits over the health of the people. This 2-year delay will make them a *billion* dollars in Menthol cigarette sales alone! We deserve better. Our lives should not be traded for a profit margin.

Restricting the sale of flavored tobacco ensures that tobacco users who want to quit are set up for success. Flavors not only mask the harsh taste and feel of a tobacco product, but they also increase nicotine addiction. Removing them from the shelves adds an additional barrier to non-tobacco users by no longer allowing Big Tobacco to hide their dangerous products behind pleasant tastes and smells.

The LGBTQ+ community is up to 4x more likely to use tobacco products compared to those who don't identify as LGBTQ+. Estimates of smoking rates among LGBTQ+ young people range from 38% to 59%, compared to just 28% to 35% of youth generally. Research from

Los Angeles County indicates that up to 38% of our local LGBT community are tobacco users, including up to 80% of transgender women.

Tobacco advertisements leverage LGBTQ+ values (e.g., pride, freedom, acceptance) and cultural elements (e.g., rainbow flag, same sex couples, drag queens, etc.) to appeal to LGBTQ+ people and make us feel like using tobacco is a key part of our LGBTQ+ identity. Big Tobacco funds AIDS and LGBTQ+ nonprofit organizations and sponsors pride celebrations and events at gay bars to portray themselves as "friends" of our community — even as they harm our health and undermine our progress.

These messages, in combination with tactics that appeal to younger members of the LGBTQ+ community like promotions in bars and clubs, have placed LGBTQ+ youth and young adults at higher risk than their non-LGBTQ+ counterparts. In fact, understanding this trend led the FDA to develop *This Free Life*, the first national LGBTQ+ tobacco prevention campaign to educate LGBTQ+ young adults about living a tobacco-free life. Restricting the sale of all flavors in all tobacco products will protect upcoming generations of LGBTQ+ people by removing the products from the market that hook them in the first place.

In our local area El Monte, and the County of Los Angeles have already passed city/countywide restrictions on the sale of *all* flavored tobacco products, including Menthol and Hookah. The OUT Against Big Tobacco Coalition encourages Pasadena to protect the local community in ways that the FDA has refused to, and California was unable to by restricting the sale of **all** flavors in **all** tobacco products. Policies that prohibit the sale of flavored tobacco products, without exemption, offer the strongest protection for our youth and our communities from a lifetime of addiction and a preventable premature death.

Sincerely,

Eddie Martinez

Eddie Martinez
Coalition Chair
OUT Against Big Tobacco Los Angeles

OUT Against Big Tobacco

OUT Against Big Tobacco, staffed by Equality California Institute, is an alliance of LGBTQ+ individuals, allies and community organizations collectively working to address tobacco control and health inequity issues within Los Angeles County's LGBTQ+ community. We advocate for common sense policies that protect LGBTQ+ people — especially the most vulnerable members of our community — from Big Tobacco's predatory marketing tactics.

Martinez, Ruben

From: Rodriguez, Yaneth <
Sent: Monday, October 25, 2021 4:18 PM
To: PublicComment-AutoResponse
Cc: Lourdes Baez Conde; Jessica L. Barrington-Trimis; 'ylr@usc.edu'
Subject: Ordinance Amending The Tobacco Retailer License Ordinance (Agenda item #11)
Attachments: USC Flavor and E-cigarette _Info Sheet_ 05.22.19 (PDF).pdf; Tobacco Retail Licensing and Youth Product Use.pdf; 1.Examining Hookah as an Introduction to Nicotine Products among College Students (9.21.2021); Measurement and predictive value of susceptibility to cigarettes ecigarettes cigars and hookah among Texas adolescents.pdf

From: Rodriguez, Yaneth
Sent: Friday, October 22, 2021 1:34 PM
To: VGordo@cityofpasadena.net; Awilson@cityofpasadena.net; Smadison@cityofpasadena.net; Jrivas@cityofpasadena.net; Gmasuda@cityofpasadena.net; Jkennedy@cityofpasadena.net; FWilliams@cityofpasadena.net; thampton@cityofpasadena.net
Cc: Baezconde-Garbanati, Lourdes <baezcond@usc.edu>; Jessica Barrington-Trimis (jtrimis@usc.edu) <jtrimis@usc.edu>
Subject: Ordinance Amending The Tobacco Retailer License Ordinance (Agenda item #11)

Dear Mayor, Vice Mayor & City Council Members of the City of Pasadena,

We are aware you are considering an ordinance to amend your tobacco retail license, that include prohibiting the sale of flavored tobacco products. As you consider the health of the community, in particular during this unprecedented time with COVID-19, you are also thinking of the health of future generations. Attached is an information sheet which contains research findings from the University of Southern California's Tobacco Center of Regulatory Science (USC TCORS). I hope this information is useful in your consideration of this ordinance.

A main research point I would like to highlight is that **a strong comprehensive tobacco retail ordinance to regulate e-cigarettes, flavored, and menthol tobacco products has tremendous potential to substantially reduce youth-use of tobacco products including e-cigarettes**. A Southern California research study showed that a strong tobacco retail license and enforcement preventing sales to minors was associated with lower rates of youth and adult initiation of combustible and e-cigarette use. A comprehensive ban on the sale of flavored tobacco products would include traditional combustible menthol cigarettes, as well as flavored chewing tobacco and flavored hookah.

I have also attached to this email additional information for your consideration regarding hookah. For each of the data points below, I have included a copy of the PDF article with important data points highlighted.

Hookah considerations:

- Hispanic/Latinx adolescents are more susceptible to hookah and 44% more likely reported current hookah use.
- One out of four college nicotine users started with hookah.

Current research suggests that it is important to consider the overall impact of e-cigarette and tobacco use on all segments of the population; however, the weight of the evidence points to a far more detrimental effect on youth.

We hope that this research can educate and inform your decisions. Please let me know if you have any questions our team may be able to answer.

Thank you, Yaneth

Examining Hookah as an Introduction to Nicotine Products among College Students, Subst Use Misuse. 2018 Sep 19;53(11):1869-1877. doi: 10.1080/10826084.2018.1441308. PMID: 29533684:

- One out of four nicotine users started with hookah, pg 1869, 1870, 1872, 1874
- Hookah use is second to cigarette smoking as the first tobacco product used, pg 1869-1870, 1872
- Hispanic/Latinx adolescents 44% more likely reported current hookah use. Pg 1873

Measurement and predictive value of susceptibility to cigarettes ecigarettes cigars and hookah among Texas adolescents, Addict Behav Rep. 2018 Aug 18;8:95-101. doi: 10.1016/j.abrep.2018.08.005. PMID: 30140729 Free PMC article.:

- Hispanic/Latinx adolescents are more susceptible to hookah, pg 96

Yaneth L. Rodriguez, MPH
Center for Health Equity in the Americas
Department of Population and Public Health Sciences
Keck School of Medicine of USC
University of Southern California

Office 302N; MC 9239
Los Angeles, CA 90032

Keck School of Medicine of USC

Flavor and Menthol Tobacco Products and E-cigarettes

Since e-cigarettes have come to the Southern California market, the University of Southern California's expert faculty and research staff at the Keck School of Medicine have focused on exploring the potential impacts of e-cigarettes and flavored tobacco products on the general population as well as vulnerable populations, such as adolescents and young adults.

E-cigarettes are drawing in new youth smokers who would have otherwise been unlikely to smoke combustible cigarettes.

- Two studies examining trends in tobacco use over time have shown that youth with no history of cigarette use and who are otherwise unlikely to have smoked combustible cigarettes are initiating e-cigarettes (1, 2).
- Cartoon images and non-traditional flavors and unique flavor names are appealing to youth and increase youth interest in e-cigarettes; most youth report initiation and continued use with flavored e-cigarettes (3-7).*
- A study from Southern California youth reported that the most common reason for use of e-cigarettes are the availability of e-cigarettes in a wide variety of flavors (i.e. fruit, dessert, mint, etc.) (7, 8).
- E- cigarette companies actively market and re-post flavor-related information on social media at a much higher rate than non-flavor related posts (9).
- The availability of flavored e-cigarettes has been tied not only to initiation but also to continued use among youth, and a majority of youth reported that they would no longer use e-cigarettes if flavors were not available (6, 11).†
- JUUL and other low profile products that resemble computer flash drivers thwart efforts to enforce smoking policy by providing easy concealment from authorities (3).
- A content analysis of customer reviews of 103 vape shops revealed that the most important attribute of a shop was related to their flavor selection (10).
- 17.3% of California high school students reported being a current user of an electronic vapor product, versus 13.2% national (12). †

There are clear health-related consequences of e-cigarette use among youth.

- Youth who use e-cigarettes are 3 times as likely as those who have never used e-cigarettes to begin smoking combustible cigarettes (13-19)*.
- Youth who use e-cigarettes and subsequently begin smoking cigarettes follow a similar trajectory into more frequent cigarette smoking as their peers who began smoking cigarettes without using e-cigarettes first (1, 2).
- A study among Southern California Hispanic young adults reported that using e-cigarettes increased the likelihood of transitioning from a non-user to user of cigarettes or marijuana and was not associated with smoking cessation (38).
- Level of nicotine in e-cigarettes has been associated with higher frequency of subsequent cigarette smoking (36).
- Exposure to nicotine in e-cigarettes is addictive (14-19)*.
- E-cigarettes can have adverse respiratory effects (20)*.
- E-liquids contain many harmful chemicals (i.e. acetals, formaldehyde, cinnamaldehyde, diacetyl, benzaldehyde, etc.) that are used to create the wide variety of flavors (21, 22). †

Keck School of Medicine of USC

Flavor and Menthol Tobacco Products and E-cigarettes

There is inconsistent evidence regarding the use of e-cigarette as a cessation tool among youth, young adult, and adult smokers.

- Studies have shown that many cigarette smokers, after using e-cigarettes, are likely to remain cigarette smokers rather than transitioning to e-cigarettes or quitting smoking (19, 23-25)*.
- More recently, a single clinical trial has shown that regular e-cigarette use alongside counseling services increased cessation relative to other cessation products among participants in England; similar findings have not been observed in the US to date (37). †

Menthol products makes smoking cessation more difficult and are disproportionately marketed to vulnerable populations such as ethnic minorities.

- Among adult smokers in California, 18% of white cigarette smokers smoke menthol cigarettes where as 70% of African American cigarette smokers use menthol. Additionally, almost 50% of LGB smokers use menthol cigarettes compared to 28% of straight smokers (31). †
- Among Hispanic/Latino current adult smokers in the US, 46% smoke menthol cigarettes (27). †
- Among Hispanic/Latino young adult current smokers (aged 18-25) in the US from 2008 to 2010, 47.3% smoked menthol cigarettes (28). †
- Between 2008-2010 and 2012-2014, the largest increase in menthol cigarette use among race/ethnic groups was in found in Hispanic smokers (rising 9.8 percentage points) (29). †
- The use of flavored products, such as menthol cigarettes, makes cessation more difficult (26). †
- Studies have displayed negative associations among menthol cigarette use and successful cessation in Hispanic communities (30). †
- Approximately 90% of all cigarettes have menthol in them regardless of if they are advertised as menthol cigarettes or not (34). †

Implementing enforceable regulations can prevent youth initiation of e-cigarettes and other tobacco products.

- In Southern California, strong enforcement preventing sales to minors was associated with lower rates of youth and adult initiation of combustible and e-cigarette use (35). Communities that had tobacco retail licenses with sufficient fees to conduct enforcement efforts (e.g., sting operations) had lower rates of youth cigarette and e-cigarette use.
- A retail license ordinance to regulate e-cigarettes, flavored, and menthol tobacco products in Los Angeles County has tremendous potential to substantially reduce youth-use of tobacco products including e-cigarettes (35).
- The availability of e-cigarettes in flavors, and current location of retailers in close proximity to areas where youth congregate increases use of these products among young people (35); policies to reduce availability of these products across the community will likely have a substantial impact on youth use of tobacco products.

Current research suggests that it is important to consider the overall impact of e-cigarettes on all segments of the population; however, the weight of the evidence points to a far more detrimental effect on youth. We hope that this research can educate and inform future decision-makers.

For additional information, contact Yaneth Rodriguez at ylr@usc.edu

†=Not current USC Research, *=Both USC and Outside Research

Updated 5/22/2019

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Tobacco Retail Licensing and Youth Product Use

Roee L. Astor, MPH,[a] Robert Urman, PhD,[a] Jessica L. Barrington-Trimis, PhD,[a] Kiros Berhane, PhD,[a] Jane Steinberg, PhD,[a] Michael Cousineau, PhD,[a] Adam M. Leventhal, PhD,[a] Jennifer B. Unger, PhD,[a] Tess Cruz, PhD,[a] Mary Ann Pentz, PhD,[a] Jonathan M. Samet, MD, MS,[b] Rob McConnell, MD[a]

BACKGROUND: Restricting youth access to tobacco is a central feature of US tobacco regulatory policy, but impact of local tobacco retail licensing (TRL) regulation on cigarette smoking rates remains uncertain. Effects of TRL on other tobacco product use and use as adolescents reach the age to legally purchase tobacco products has not been investigated.

METHODS: Prevalences of ever and past 30-day cigarette, electronic cigarette (e-cigarette), cigar, and hookah use were assessed in a survey of a cohort of 1553 11th- and 12th-grade adolescents (mean age: 17.3 years); rates of initiation were evaluated 1.5 years later. An American Lung Association (2014) youth access grade was assigned to each of 14 political jurisdictions in which participants lived on the basis of the strength of the local TRL ordinance.

RESULTS: At baseline, participants living in 4 jurisdictions with "A" grades (ie, with most restrictive ordinances) had lower odds of ever cigarette use (odds ratio [OR] 0.61; 95% confidence interval [CI] 0.41–0.90) and of past 30-day use (OR 0.51; 95% CI 0.29–0.89) than participants in 10 D- to F-grade jurisdictions. At follow-up at legal age of purchase, lower odds of cigarette use initiation (OR 0.67; 95% CI 0.45–0.99) occurred in jurisdictions with stronger TRL policy. Lower odds of e-cigarette initiation at follow-up (OR 0.74; 95% CI 0.55–0.99) and of initiation with past 30-day use (OR 0.45; 95% CI 0.23–0.90) were also associated with better regulation.

CONCLUSIONS: Strong local TRL ordinance may lower rates of cigarette and e-cigarette use among youth and young adults.

WHAT'S KNOWN ON THIS SUBJECT: Restricting youth access to tobacco has long been a central feature of US tobacco regulatory policy, but the impact of local tobacco retail licensing regulation on electronic cigarette use rates remains uncertain.

WHAT THIS STUDY ADDS: Strong local tobacco retail licensing ordinances may lower rates of cigarette and electronic cigarette use among youth and young adults. Success of regulations restricting youth access to cigarettes and alternative tobacco products may depend on ensuring a robust enforcement scheme.

[a]Department of Preventive Medicine, Keck School of Medicine, University of Southern California, Los Angeles, California; and [b]Colorado School of Public Health, University of Colorado Anschutz Medical Center, Aurora, Colorado

Dr McConnell conceptualized and designed the study and reviewed and revised the manuscript; Mr Astor collected data on tobacco retail licensing in study communities, conducted a literature review, and drafted the manuscript; Dr Urman conducted all data analyses; Drs Barrington-Trimis, Berhane, Steinberg, Cousineau, Leventhal, Unger, Cruz, Pentz, and Samet provided advice on the analysis and interpretation of results and reviewed and provided guidance on the development of the manuscript; and all authors approved the final manuscript as submitted.

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Address correspondence to Rob McConnell, MD, Department of Preventive Medicine, Keck School of Medicine, University of Southern California, 2001 N Soto St, 230-D, Los Angeles, CA 90089. E-mail: rmcconne@usc.edu

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Most US states have had laws to restrict the sale of cigarettes to minors for decades.[1] Because there was widespread violation of these laws by tobacco vendors,[2] Congress passed the Synar Amendment to the Public Health Service Act in 1993,[3] which required that states enact laws banning cigarette sales to minors and that they enforce such laws with compliance checks using undercover "decoys" posing as underage customers.[4,5]

Enforcement of these youth access regulations is a central feature of US tobacco control programs. However, although compliance checks of vendors have been shown to reduce sales to minors, their effectiveness in reducing youth smoking rates is less certain, for example, because they may obtain cigarettes legally purchased by older friends.[6,7] Key regulatory features that are reported to reduce both compliance violations and youth cigarette use include a mandatory tobacco retailer licensing fee to provide sustainable funding of undercover decoys to make at least 1 annual visit to each vendor and fines or penalties for violations.[7,8] Low rates of vendor compliance checks, which occur annually at only a small fraction of tobacco vendors under existing state and federal enforcement programs,[9,10] and inadequate penalties may explain why associations with youth smoking rates have not consistently been observed.[7] Within states, compliance enforcement may vary markedly on the basis of local ordinances that provide funding to do so. Given the expense involved in enforcement and the lack of expert consensus on its benefits, additional studies are warranted to assess the effectiveness in reducing youth cigarette use.

The impact of youth access restriction on the initiation of alternative tobacco products, such as electronic cigarettes (e-cigarettes), hookah, and cigars, has not been studied, although prevalence of ever using these products is high.[11] An additional gap in understanding the effectiveness of youth tobacco access restriction is during the transition to the legal age of purchase. Most adult smokers historically have initiated cigarette use by age 18,[12] which is the legal age of purchase in most states. There have been few prospective studies examining the effect of tobacco licensing and youth access restriction on cigarette and alternative tobacco product use during this transition to adult life.

Among participants in the Southern California Children's Health Study, we evaluated whether youth living in jurisdictions with a strong tobacco retail licensing (TRL) ordinance had reduced prevalence of cigarette and other tobacco use, compared with participants in jurisdictions with a poor TRL ordinance. In addition, using prospectively collected data, we assessed the association of local ordinances with the initiation of tobacco product use during a cohort follow-up as youth reached 18 years of age, the age at which the sale of tobacco products was legal in California at the time of the study.

METHODS

Study Population

Between January and June of 2014, a total of 2097 11th- and 12th-grade participants in the Southern California Children's Health Study (mean age: 17.3; SD: 0.6) completed self-administered questionnaires collecting detailed information about cigarette and alternative tobacco product use. Follow-up online questionnaire data were collected on 1553 participants (74% of the 2097 at baseline) as they reached 18 years of age, between January 2015 and June 2016 (mean age: 18.8; SD: 0.6). Additional characteristics of the study sample have been described previously.[13,14]

Ethics Statement

The study was approved by the University of Southern California Institutional Review Board. Parental written informed consent and child assent were obtained for all Children's Health Study participants <18 years of age. Participants age 18 or older provided written informed consent.

Tobacco and Alternative Tobacco Product Use

At each survey, participants were asked whether they had ever tried e-cigarettes, cigarettes, cigars, or hookah and the number of days each product was used in the past 30 days.[12] Participants who had "never tried" a product (not "even 1 or 2 puffs") were classified as never users. Those reporting an age at first use of each tobacco product were classified as ever (lifetime prevalent) users of that product at baseline. Rates of initiation were calculated on the basis of a new report of use of a tobacco product at follow-up among participants not reporting use of that product at baseline. Both prevalent users and initiators of each tobacco product were further characterized on the basis of past 30-day use.

Evaluation of Local Tobacco Regulatory Licensing to Reduce Youth Access

There were 14 political jurisdictions with corresponding tobacco product ordinances across the 12 participating Children's Health Study communities. Four study jurisdictions were assigned an A grade on the basis of the 2014 American Lung Association (ALA) "Reducing Sales of Tobacco Products" to youth scale, which is used to evaluate the strength of the local TRL ordinance across California.[15] An A grade required adequate annual retail license fees, which were paid by all tobacco retailers (including gas stations, convenience stores, larger grocery stores, and pharmacies),

to cover the administration of an enforcement program and regular compliance checks in each store. An A grade also required (1) an annual renewal of this local license; (2) a provision that any violation of local, state, or federal law is a violation of the license; and (3) a graduated penalty system for violators, including financial deterrents such as fines or other penalties, including license revocation or suspension.[15]

The remaining study jurisdictions were assigned an F grade (8) or a D grade (1). An F grade indicated either (1) no local ordinance mandating a license fee or (2) a fee insufficient to fund administrative and compliance checks as well as none of the 3 other provisions for an A grade. The jurisdiction with the D grade had a licensing fee that was insufficient to cover administration and compliance checks, but it had at least 1 of the other 3 provisions listed above that were needed for an A grade. The D and F communities were collapsed for data analysis, because the insufficient annual fee is a central feature of regulation to reduce youth access.[7,15] No study jurisdiction in this sample had B or C grades corresponding to TRL policies of intermediate quality.[15]

ALA assigned grades to other categories of tobacco policy (smoke-free housing policy, smoke-free outdoor policy, and overall tobacco policy).[15] These policies, which are not specific to youth tobacco product access, were not associated with tobacco product use in this study, and results are not presented.

Covariates

Self-administered questionnaires completed by parents of participants were used to assess sociodemographic characteristics, including sex, ethnicity (Hispanic, non-Hispanic white, other), age at baseline, and parental education (completed high school or less, some college, or completed college or more).

Statistical Analysis

Unconditional logistic regression models were used to evaluate the associations of living in a jurisdiction with an ALA grade A versus D or F TRL ordinance with baseline ever and past 30-day use of cigarettes, e-cigarettes, hookah, cigars, or use of any of these tobacco products in separate models. Models were also fit to evaluate associations of ALA grade with the initiation of each product, with or without past 30-day use. In models used to evaluate the initiation of use of each tobacco product between baseline and follow-up, the sample was restricted to baseline never users of that product. Odds ratios (ORs) and 95% confidence intervals (CIs) were used to estimate the association of each tobacco product use with an ALA grade. All models were adjusted for sex, ethnicity, highest parental education, and baseline age, factors that have been associated both with e-cigarette use and cigarette use in previous studies.[13,14] Each tobacco product–specific model was also adjusted for a baseline history of use of any other tobacco product, because there was clustering of the tobacco product outcomes.[13] A missing indicator category for covariates and any other tobacco product use was included where appropriate. Additionally, all models included a random effect for community to account for similarities among subjects within jurisdictions. In a sensitivity analysis, models were further adjusted for time between baseline and follow-up questionnaire completion. Statistical analyses were based on 2-sided hypotheses tested at a 0.05 level of significance, using SAS 9.4 (SAS Institute, Inc, Cary, NC).

RESULTS

Of the 2097 participants, 31.1% (652) lived in a jurisdiction with an ALA 2014 TRL A grade, and 68.9% (1445) students lived in jurisdictions with D or F grades. Sex and ethnic distributions were similar in A and D or F jurisdictions, but students in A jurisdictions were more likely to come from less-educated households (Table 1). Unadjusted prevalence and initiation rates for each tobacco product were lower in jurisdictions with A than with D or F grades, with the exception of new initiation of hookah with past 30-day use. Initiation rates were substantial among never tobacco product users at baseline, in particular for e-cigarette use. Both prevalence and initiation rates of past 30-day tobacco product use generally did not exceed 10% for any product.

For baseline prevalence of ever and past 30-day use of cigarette and e-cigarette ever use, and to a lesser degree for prevalence of cigar use, jurisdictions with A grades had generally lower use rates than D or F jurisdictions (Supplemental Fig 3). However, within both grade groups, there was considerable variability in prevalence rates across jurisdictions for all tobacco products. Rates in individual jurisdictions had wide CIs (results not shown) because of small sample size. Rates of tobacco product initiation at follow-up were also generally quite variable across the jurisdictions within both A and D or F grades (Supplemental Fig 4).

At baseline, participants living in the 4 jurisdictions with A grades had lower odds of ever using a cigarette (OR 0.61; 95% CI 0.41–0.90) and of past 30-day use (OR 0.51; 95% CI 0.29–0.89) than participants in 10 D- to F-grade jurisdictions, after adjusting for sociodemographic covariates and other tobacco product use at baseline (Fig 1).

Living in A-grade jurisdictions was associated with lower odds of initiation of cigarette use between baseline and the follow-up questionnaire (OR 0.67; 95% CI 0.45–0.99 [Fig 2]). The risks of

TABLE 1 Prevalence of Sociodemographic Characteristics, Lifetime, and Current (Last 30-Day) Use of Each Tobacco Product at Baseline and Rates of Product Initiation at Follow-up Among Youth Residing in a Jurisdiction With ALA Reduced Tobacco Sales, Grade A or D or F

	Grade A	Grade D or F
	N (%[a])	*N* (%[a])
Sex		
Male	324 (49.7)	735 (50.9)
Female	328 (50.3)	710 (49.1)
Ethnicity		
Hispanic white	349 (53.5)	736 (50.9)
Non-Hispanic white	230 (35.3)	504 (34.9)
Other	73 (11.2)	205 (14.2)
Parent education		
Less than or equal to high school	245 (41.3)	460 (34.3)
Some college	219 (36.9)	502 (37.4)
College or more	129 (21.8)	379 (28.3)
Prevalent ever tobacco product use at baseline		
Cigarette	89 (13.7)	302 (21.0)
E-cigarette	123 (19.0)	379 (26.4)
Hookah	158 (24.3)	411 (28.6)
Cigars	69 (10.6)	204 (14.2)
Any tobacco product	214 (32.9)	564 (39.2)
Prevalent past 30-d tobacco product use at baseline		
Cigarette	24 (3.7)	95 (6.6)
E-cigarette	56 (8.6)	145 (10.1)
Hookah	62 (9.5)	162 (11.3)
Cigars	21 (3.2)	55 (3.8)
Any tobacco product	107 (16.5)	267 (18.6)
Initiation of tobacco product use (between baseline and follow-up)[b]		
Cigarette	52 (13.1)	156 (18.0)
E-cigarette	92 (24.7)	235 (29.7)
Hookah	55 (15.9)	146 (18.9)
Cigars	49 (12.0)	158 (17.1)
Any tobacco product	85 (27.7)	198 (30)
Initiation with past 30-d tobacco product use at follow-up[b]		
Cigarette	17 (4.3)	52 (6.0)
E-cigarette	17 (4.7)	69 (8.9)
Hookah	16 (4.7)	32 (4.2)
Cigars	12 (2.9)	36 (3.9)
Any tobacco product	24 (7.9)	78 (12.1)

[a] The denominator (652 in grade A; 1445 in grade D or F) varies because of missing values in covariates.
[b] Restricted to nonusers of each product (or of any tobacco product) at baseline.

initiation of e-cigarettes (OR 0.74; 95% CI 0.55–0.99) and of initiation with past 30-day use (OR 0.45; 95% CI 0.23–0.90) were also lower in A-grade than D- or F-grade jurisdictions. In sensitivity analyses adjusting for time since turning 18 at follow-up, there was no change in the protective effect estimate of living in a well-regulated (A-grade) jurisdiction (results not shown). Participants still living in their jurisdiction of origin at follow-up evaluation would have had consistent exposure to the same regulatory environment. In this sample, there were stronger protective A-grade compared with D- or F-grade associations with cigarette and e-cigarette initiation at follow-up (and of initiation of e-cigarettes with past 30-day use) than in the entire sample (results not shown). The protective association of A-grade residence with initiation of cigar use was similar in magnitude to the association with cigarette and e-cigarette use but was not statistically significant.

DISCUSSION

Central features of the ALA TRL grade include a licensing fee sufficient to fund compliance checks and enforcement of regulations prohibiting tobacco sales to minors and penalties for violating the law, features of TRL that have been reported to be necessary to reduce sales to and use by youth.[7] Compared with living in a jurisdiction with poor TRL policy, youth in a jurisdiction satisfying these criteria were less likely to smoke in high school. In a prospective follow-up of the cohort, the odds of initiation of e-cigarette use, with or without past 30-day use, and of initiation of cigarette use were also lower in well-regulated jurisdictions. Stronger associations among participants still living in their jurisdiction of origin at follow-up evaluation, with consistent exposure to the same regulatory environment throughout, also suggest that the benefits of good TRL policy extended both beyond cigarette use to e-cigarette use and into early adult life at age 18 when the sale of tobacco products was legal at the time of the study. The protective associations were large, with risk lower by one-third to a half in the strong compared with weak TRL jurisdictions (depending on the outcome).

There has been uncertainty regarding the effects of youth access restrictions on cigarette use.[6,7,16] Some authors of prospective studies in which age-specific prevalence of tobacco use was assessed before and after regulatory intervention to restrict youth access found reductions in cigarette use,[17–20] but others found no benefit.[21,22] Authors of 1 review of studies that reported changes in smoking associated with youth access restrictions found no relationship of vendor compliance or of changes in vendor compliance, with smoking prevalence in a meta-analysis of available studies,[6] perhaps because the restriction of commercial access resulted in a shift to social sources of cigarettes such as older friends or siblings. Authors of other observational studies have

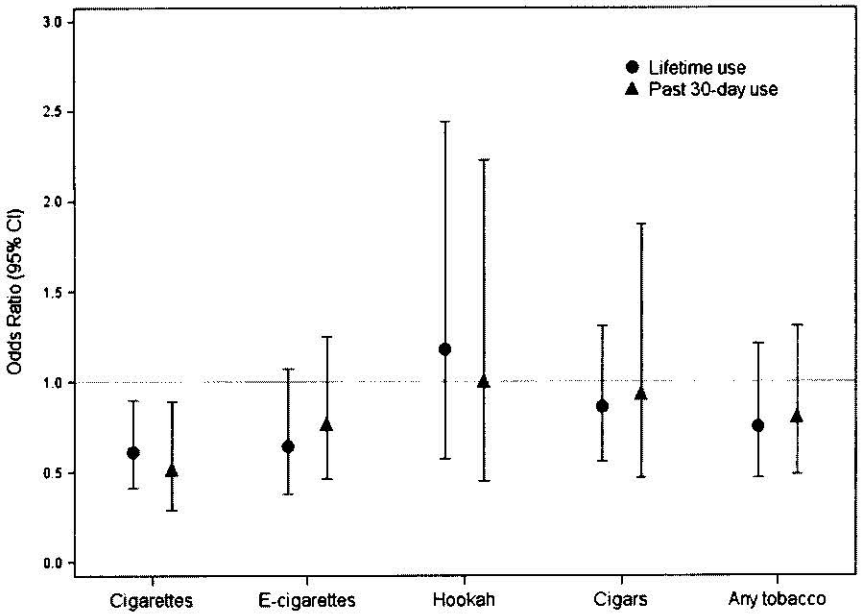

FIGURE 1

Associations of prevalent lifetime and current (last 30-day) use of each tobacco product at baseline with residence in ALA Reduced Tobacco Sales grade A jurisdictions, compared with residence in grade D or F jurisdictions. Models were adjusted for sex, ethnicity, parental education, age at baseline, and for any other tobacco product use at baseline (except for any tobacco product use prevalence, which was compared with never users of any tobacco product) and included a random effect for jurisdiction.

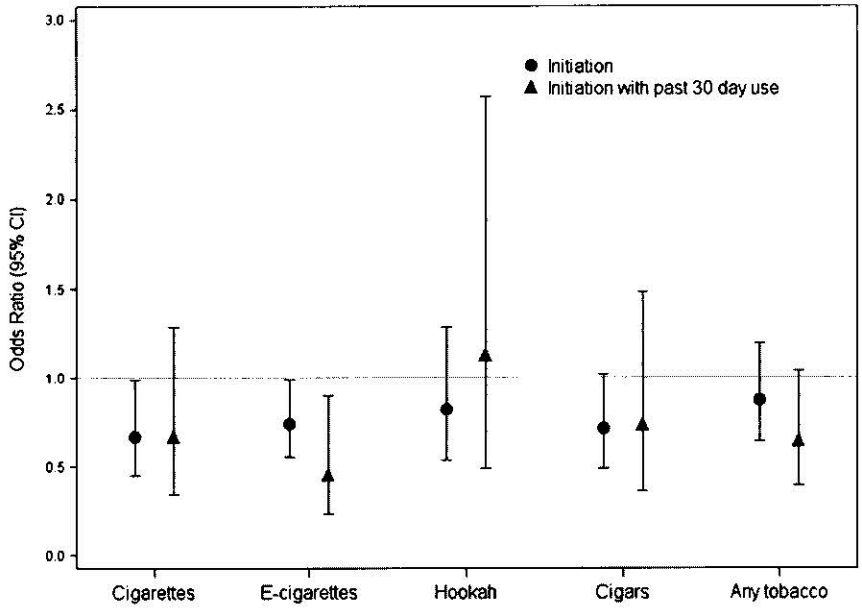

FIGURE 2

Associations of initiation of use of each tobacco product between baseline and follow-up and of initiation and current (last 30-day) use, with residence in ALA Reduced Tobacco Sales grade A jurisdictions, compared with residence in grade D or F jurisdictions. Each model was restricted to nonusers of product at baseline. Models were adjusted for sex, ethnicity, parental education, age at baseline, and for any other tobacco product use at baseline (except for any tobacco product use initiation, which was compared with never users of any tobacco product at either baseline or follow-up) and included a random effect for jurisdiction.

found reduced smoking rates in communities with youth access restrictions, but it was not clear that reduced access mediated the reduction in smoking rates.[19,23] For example, sustained reductions in adolescent daily smoking rates were observed in Minnesota communities that were randomly assigned to intervention supporting community organizers to develop and promote good TLR ordinances, compared with nonintervention communities.[20] However, it was not clear whether the observed reductions in smoking rates were due to youth access restrictions and improved vendor compliance or to other regulatory features resulting from the intervention, such as bans on vending machines and requirements for posted signs reporting age of sale policies, or for storing cigarettes behind the sales counter.[17]

Our results are broadly consistent with findings of a comprehensive review in which authors concluded that lower smoking rates occur if local TRL requires yearly compliance checks with effective enforcement.[7] Our study is 1 of the few that assessed associations of TRL with both prevalence and initiation rates in a prospective assessment of the same participants during an adolescent period of known high incidence of initiation. The prospective cohort design of the study also provided the opportunity to examine the impact of TRL on legal tobacco product use by young adults. The reduced risk of initiation of cigarette and e-cigarette use at follow-up in jurisdictions with better TRL regulation (with effect estimates that were unaffected by adjusting for time since turning 18 at follow-up) suggests that regulation may have lowered initiation rates even after participants reached the age for legal purchase. Although most adult smokers historically first use cigarettes before age 18,[12] in our cohort, rates of initiation of tobacco

product use were substantial, even in well-regulated jurisdictions. For example, in jurisdictions with an A grade, rates of initiation of cigarette and e-cigarette use during the follow-up period were 13.1% and 24.7%, respectively (from Table 1); these high rates of experimentation indicate a need for interventions to reduce initiation in this susceptible age window.

An alternative explanation for the protective effects of better TRL policy is that the associations reflected broadly unfavorable community attitudes toward cigarette use, including other tobacco regulations that affected the use of cigarettes and e-cigarettes to minors. If this were the explanation, we might expect to have seen associations with the other ALA tobacco grades relating to, for example, smoke-free housing, smoke-free outdoor air, or the overall tobacco grade in a jurisdiction. However, protective effects only of the TRL grade were observed.

Lower odds of cigar use initiation associated with better TRL regulation, although not statistically significant, were similar in magnitude to reductions in odds of the initiation of cigarettes and e-cigarettes. However, living in a jurisdiction with stronger regulation was not protective for baseline prevalence or subsequent initiation of hookah use. Sales of hookah paraphernalia often occur in specialty shops and hookah bars where cigarettes may not have been sold[24] and therefore may not consistently have been subjected to the same rigorous compliance checks as traditional cigarette vendors. E-cigarettes are commonly sold at locations that also sell cigarettes that would have been subject to TRL regulation, and a state law passed in 2010 made it illegal to sell e-cigarettes to minors.[25] However, e-cigarettes are also sold in specialty "vape" shops,[26] and at the time of the study, e-cigarettes were not specifically categorized as a tobacco product.[27] Therefore, vape shops were not required by state law to obtain a tobacco vendor license if they were not selling other tobacco products. If strong TRL regulation was responsible for the lower rates of e-cigarette use in A-grade jurisdictions, it is possible that similar TRL requirements for vape shops would have resulted in larger protective effects.

The US Food and Drug Administration (FDA) has contracts with regulators in most states to restrict youth tobacco access and also conducts its own inspections and hires third parties to conduct compliance checks.[28] However, the frequency of compliance checks is generally low, because of resource limitations, and penalties for violation of the law vary widely between states. California, for example, which has been a leader in tobacco control, annually inspected, on average, only 7% of tobacco retailers in 2016.[9,10] If a high rate of compliance checks, accompanied by enforcement, is necessary to reduce youth smoking as our results suggest, then strong local TRL ordinances may be an important option to reduce teen tobacco product use through access restriction.[10,29,30]

The study has some limitations. The ALA criteria for an A grade covered a relatively broad spectrum of TRL policy relevant to youth access, including larger fees, compliance access, and penalties if vendors violated the law. Identifying the possible effects of specific features of the TRL policy was not possible. A minimum proportion of vendors actually undergoing compliance checks was not specified, and it was not possible to assess the effect of the proportion of vendors visited. In addition, the "deeming rule" that defined e-cigarettes and hookah as tobacco products means that TRL will be required of all vendors of these products.[31] The recent increase in the legal age of tobacco product purchase to 21 years in California, passed after data collection for this study was completed, means that the associations of TRL policy with use during the transition to legal age of purchase may no longer be applicable to California. However, the results may broadly be generalizable to local jurisdictions in states with a legal purchase age of 18 years, with the exception of a few states that have prohibited local jurisdictions from enacting more stringent local regulation.[32] The increase of poorly regulated e-cigarette Internet vendors, a relatively new way for minors to obtain tobacco products illegally at the time of data collection, may limit the future impact of TRL as a regulatory tool.[33] Future follow-up of this cohort is warranted to determine the persistence of associations with strong youth TRL and to examine longitudinally potential mediating factors, such as social characteristics of neighborhoods and communities and individuals' changing tobacco social environment over time. There were also other potential confounders or mediators of TRL effects, such as differences in school-level tobacco prevention programs or number of tobacco outlets by jurisdiction, that were not available to study.

CONCLUSIONS

The results suggest that a strong local TRL ordinance that provides adequate resources to fund regular compliance checks and enforcement may result in large reductions in the use of cigarettes and may also result in reduced e-cigarette use. The benefits of these policies may extend into early adult life. The study also suggests that the success of future FDA regulation to reduce youth cigarette and alternative tobacco product access and use, under rules

deeming these products to be subject to FDA regulation,[31] may depend on the availability of resources for universal annual compliance checks and enforcement targeted to both traditional and alternative tobacco product vendors. Continued monitoring is needed to assess the impact on the effectiveness of TRL policy within the rapidly evolving tobacco product patterns of use, new national regulation, and poorly regulated Internet sales.

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ABBREVIATIONS

ALA: American Lung Association
CI: confidence interval
e-cigarette: electronic cigarette
FDA: US Food and Drug Administration
OR: odds ratio
TRL: tobacco retail licensing

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Tobacco Retail Licensing and Youth Product Use

Roee L. Astor, Robert Urman, Jessica L. Barrington-Trimis, Kiros Berhane, Jane Steinberg, Michael Cousineau, Adam M. Leventhal, Jennifer B. Unger, Tess Cruz, Mary Ann Pentz, Jonathan M. Samet and Rob McConnell

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Measurement and predictive value of susceptibility to cigarettes, e-cigarettes, cigars, and hookah among Texas adolescents

Felicia R. Carey, Anna V. Wilkinson, Melissa B. Harrell*, Elisabeth A. Cohn, Cheryl L. Perry

Michael & Susan Dell Center for Healthy Living, University of Texas Health Science Center at Houston, School of Public Health in Austin, 1616 Guadalupe St, Suite 6.300, Austin, TX 78701, United States of America

ABSTRACT

Susceptibility to cigarette smoking, defined as the lack of a firm commitment not to smoke in the future, begins in childhood and is a phase in the transition from never to ever use of cigarettes. While a consistent and validated predictor of cigarette use, little research has assessed whether the susceptibility construct applies equally well across other tobacco products. Baseline data were collected in 2014–2015 from a representative sample of (n = 2844) middle and high school students in five counties surrounding the four largest cities in Texas, (49% female and mean age 13.13 years, with subsequent waves at 6, 12, and 18 months. Confirmatory factor analysis examined the appropriateness of a three-item susceptibility measure (product-specific curiosity, intention to use, and peer influence) across product types and ethnic groups (Hispanic versus non-Hispanic). Logistic regression examined whether product specific susceptibility at baseline predicted future product initiation. At baseline, 11.5%, 17.0%, 17.4% and 29.4%, of adolescent never users were susceptible to cigars, cigarettes, hookah and e-cigarettes, respectively; significantly more Hispanic than non-Hispanic adolescents were susceptible to e-cigarettes (32.4% versus 26%, $p < 0.01$) and cigarettes (19.9% versus 13.9%, $p < 0.05$). Product-specific items were significantly and consistently associated with the respective underlying susceptibility product construct and across ethnic groups ($p < 0.001$ for all). Susceptibility to e-cigarettes (AOR = 2.28–6.64) or any combustible product (cigarettes, hookah, cigars; AOR = 3.38–5.20) significantly predicted subsequent ever use. This study confirms the appropriateness of the susceptibility construct across four tobacco product types and ethnic groups, and the utility of susceptibility in predicting future product use among adolescents.

1. Introduction

Use of conventional tobacco products, like cigarettes and cigars, has decreased in recent years among adolescents, while use of tobacco products, like e-cigarettes and hookah, continues to increase (Singh et al., 2016). These trends and the growing popularity of specific products call for identifying risk factors that predict product use initiation. Numerous studies have demonstrated susceptibility to cigarettes among never smoking adolescents is associated with increased risk of experimentation with cigarettes and becoming an established smoker (Jackson, 1998; Jackson & Dickinson, 2004; Nodora et al., 2014; Pierce, Choi, Gilpin, Farkas, & Merritt, 1996; Pierce, Distefan, Kaplan, & Gilpin, 2005; Spelman et al., 2009; Strong et al., 2015; Unger, Johnson, Stoddard, Nezami, & Chou, 1997). Limited research suggests that susceptibility to e-cigarettes or hookah independently predicts future e-cigarette (Bold, Kong, Cavallo, Camenga, & Krishnan-Sarin, 2017) or hookah use (Lipkus, Reboussin, Wolfson, & Sutfin, 2015), respectively, and that susceptibility to cigarettes predicts future e-cigarette and cigar use (Cole, Kennedy, Chaurasia, & Leatherdale, 2017). Still, few studies have examined product-specific susceptibility measures in predicting future use of products other than cigarettes.

Susceptibility, which reflects the lack of a firm commitment not to use tobacco products in the future, is a critical construct, predictive of tobacco use and amenable to intervention. Research examining the initial susceptibility construct based on behavioral intentions, peer influence, and self-efficacy (Pierce et al., 1996) demonstrated that comprehensive community anti-smoking media programs, are effective in altering and suppressing adolescents' susceptibility to smoking (Meshack et al., 2004). A revised measure of the susceptibility construct, which incorporated curiosity with behavioral intentions and peer influence, demonstrated little loss in internal consistency, but a reduction in predictive validity and accuracy (Pierce et al., 2005). To date, a few studies have assessed whether the original susceptibility to cigarettes construct (Pierce et al., 1996) also can be adapted to measure susceptibility to other products, like e-cigarettes, hookah, and cigars (e.g., Bold et al., 2017; Lechner et al., 2018), and none have examined the susceptibility construct that includes curiosity. Yet, recent survey data suggest that the most common reason for adolescents to try e-cigarettes is out of curiosity (Kong, Morean, Cavallo, Camenga, & Krishnan-Sarin, 2015; Patrick et al., 2016). Thus, utilizing a susceptibility construct that includes curiosity might be particularly useful to our understanding of susceptibility to non-cigarette tobacco products.

Additionally, no studies have assessed whether the susceptibility construct (Pierce et al., 2005) functions equally across ethnic groups.

* Corresponding author.
E-mail address: Melissa.B.Harrell@uth.tmc.edu (M.B. Harrell).

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Table 1
Demographics and susceptibility to e-cigarettes and combustible tobacco products among Hispanic and non-Hispanic never users at baseline, TATAMS (n = 2844; N = 318,097).

Variable	Hispanic	Non-Hispanic	Total
	% (95% CI)	% (95% CI)	% (95% CI)
Sex			
Female	47.7 (41.1–54.5)	50.3 (45.1–55.5)	49.0 (43.7–54.3)
Male	52.3 (45.5–58.9)	49.7 (44.5–54.9)	51.0 (45.7–56.3)
Grade			
6	39.8 (28.4–52.5)	36.6 (23.6–52.0)	38.3 (26.9–51.1)
8	35.3 (24.4–48.0)	34.4 (20.2–51.9)	34.9 (23.7–47.9)
10	24.9 (15.1–38.3)	29.0 (18.4–42.7)	26.9 (17.7–38.6)
Age (mean, SE)	13.14 (0.19)	13.12 (0.19)	13.13 (0.17)
Family SES			**
High	15.8 (12.9–19.3)	25.2 (18.7–33.0)	20.3 (16.2–25.1)
Middle	64.4 (61.2–67.5)	61.6 (56.2–66.7)	63.1 (60.2–65.9)
Low	19.8 (16.8–23.2)	13.2 (10.1–17.2)	16.6 (14.1–19.6)
Susceptibility to e-cigarettes items[a]			
Have you ever been curious about smoking/using e-cigarettes?	26.9 (23.5–30.7)	22.2 (19.0–25.9)	24.7 (21.9–27.7)*
Do you think you will use e-cigarettes in the next 12 months?	10.5 (8.3–13.1)	8.0 (6.1–10.4)	9.3 (7.6–11.3)
If one of your close friends were to offer you an e-cigarette, would you use it?	17.9 (15.1–21.1)	13.0 (10.7–15.6)	15.6 (13.6–17.7)*
Susceptibility to e-cigarettes (derived)[b]	32.4 (28.7–36.3)	26.0 (22.3–30.1)	29.4 (26.2–32.7)**
Susceptibility to cigars (large cigars, cigarillos, and little filtered cigars) items[a]			
Have you ever been curious about smoking/using cigars?	7.6 (5.6–10.3)	7.0 (5.3–9.0)	7.3 (6.0–8.8)
Do you think you will use cigars in the next 12 months?	4.3 (2.8–6.5)	3.2 (2.2–4.6)	3.8 (2.8–5.0)
If one of your close friends were to offer you a cigar, would you use it?	7.4 (5.0–10.8)	4.5 (3.2–6.2)	6.0 (4.6–7.8)
Susceptibility to cigars (derived)[b]	12.8 (9.7–16.7)	10.2 (7.9–13.0)	11.5 (9.5–13.9)
Susceptibility to hookah items[a]			
Have you ever been curious about smoking/using hookah?	14.7 (11.8–18.2)	12.5 (9.6–16.2)	13.7 (11.3–16.4)
Do you think you will use hookah in the next 12 months?	6.9 (5.0–9.4)	5.3 (3.6–7.6)	6.1 (4.6–8.1)
If one of your close friends were to offer you hookah, would you use it?	9.8 (7.6–12.6)	7.8 (5.8–10.5)	8.9 (7.2–10.9)
Susceptibility to hookah (derived)[b]	18.8 (15.2–23.1)	15.7 (12.1–20.2)	17.4 (14.6–20.6)
Susceptibility to cigarettes items[a]			
Have you ever been curious about smoking/using cigarettes?	13.3 (10.8–16.4)	10.0 (8.3–12.1)	11.8 (10.1–13.7)*
Do you think you will use cigarettes in the next 12 months?	5.1 (3.4–7.4)	3.9 (2.8–5.4)	4.5 (3.5–5.8)
If one of your close friends were to offer you cigarettes, would you use it?	8.4 (5.8–12.0)	6.2 (4.6–8.2)	7.3 (5.7–9.3)
Susceptibility to cigarettes (derived)[b]	19.9 (15.6–25.0)	13.9 (11.5–16.7)	17.0 (14.4–20.0)*
Susceptibility to any combustible tobacco product (derived)[b]	29.1 (24.5–34.1)	22.9 (18.8–27.7)	26.2 (22.7–29.9)*

Note: CI = confidence interval, SE = standard error. All frequencies and means are weighted to account for complex survey design. Never users represent adolescents who have never used any of the four product types. n represents the observed sample size, N represents the weighted sample size. "Any combustible" includes cigarettes, cigars, and hookah. *$p < 0.05$, **$p < 0.01$ for Chi-square test of Hispanic versus non-Hispanic across categories of the item.

[a] For set of items, % (95% CI) represents the proportion of adolescents who said anything other than "not at all curious" to the first item and "definitely not" to the second two items.

[b] For items, % (95% CI) represents the proportion of adolescents classified as susceptible.

Hispanic adolescents who have never smoked report greater intentions to smoke cigarettes in the future compared to white peers (Bunnell et al., 2015) and greater curiosity about e-cigarettes (Margolis, Nguyen, Slavit, & King, 2016). In addition, Hispanic adolescents are more susceptible to cigarettes (Fulmer et al., 2015; Ortiz et al., 2003), e-cigarettes (Singh et al., 2016; U.S. Department of Health and Human Services, 2016), and hookah (Unger et al., 2017), compared to non-Hispanic White adolescents. This is a concern because comparatively, Hispanics are the youngest ethnic group in the nation, with a large proportion of the Hispanic population (roughly a third) being under the age of 18 years (Patten, 2016), and Hispanic youth report a higher prevalence of e-cigarette use in middle school in the past 30 days compared to non-Hispanic youth of all races (Singh et al., 2016). Considering existing tobacco-related health disparities (Centers for Disease Control and Prevention, 2018) and the expected near doubling of the Hispanic population over the next 30 years (Krogstad, 2014), it is important to determine whether constructs predicting future use, like susceptibility, are applicable across ethnic groups. Such information can inform the development of culturally sensitive interventions and communication campaigns designed to reduce susceptibility and ultimately product use.

The goal of this study was to evaluate the utility of a three-item susceptibility construct adapted from Pierce et al. (2005), assessing curiosity, intention to use, and peer influence, in measuring susceptibility at baseline to four products (e-cigarettes, hookah, cigars, and cigarettes) and in predicting future initiation of these products among Hispanic and non-Hispanic adolescent never users in grades 6, 8, and 10 in Texas. We hypothesized the measurement of susceptibility would apply equally across products, and each product-specific susceptibility construct would predict future use of each product. We also hypothesized the measurement of susceptibility constructs for each product would apply equally across Hispanic and non-Hispanic subgroups, though prevalence of susceptibility to each product may be higher for Hispanic adolescents.

2. Methods

2.1. Study design and participants

The Texas Adolescent Tobacco and Marketing Surveillance system (TATAMS) is a rapid response surveillance system that follows three population-based cohorts of adolescents, to represent developmental changes in tobacco use behaviors. A complex probability design was used to recruit 3907 students (n) in 79 middle and high schools in 4 major metropolitan areas of Texas (Austin, San Antonio, Dallas-Ft. Worth, & Houston); when sampling weights are applied in statistical data analyses, results are representative of 461,069 (N) students who were enrolled in the 6th, 8th, and 10th grades in 1969 middle and high schools in these cities during the 2014–15 academic year. Further details about TATAMS' sampling methods and recruitment are described

elsewhere in Pérez et al. (2017). Active parental consent was obtained for all surveys, for all students.

Baseline data were collected during the 2014–2015 academic year from 3907 students via web-based surveys administered on tablets in the classroom, with three follow-up data collection periods occurring 6, 12, and 18 months after baseline via similarly formatted web-based surveys administered outside the classroom. At 6 months 64% were retained, at 12 months 70% were retained, and at 18 months 74% were retained. These retention rates are comparable to other cohorts nationwide with similar data collection schedules and incentive structures (Cantrell et al., 2018). Survey items were adapted from valid and reliable measures used for state and national tobacco surveillance, like the Population Assessment of Tobacco and Health (PATH) study (Hyland et al., 2017); cognitive interviewing among students, aged 11–18, assessed the reliability and content validity of all survey questions. The final survey included over 340 items assessing sociodemographic factors, tobacco use behaviors, cognitive and affective factors, and exposure to tobacco marketing. The median number of questions received by students was 137, with an average administration time of 45 minutes. The majority of students (58.1%) answered all items, and 92% of students answered 96% or more of the items (Delk, Harrell, Fakhouri, Muir, & Perry, 2017). Active consent from parents/guardians and assent from students were obtained for all data collection waves. TATAMS was approved by the University of Texas Health Science Center at Houston Institutional Review Board (HSC-SPH-13-0377).

The population for this study was limited to 2844 adolescents, or 72.8% of those enrolled at baseline, classified as never users of any product at baseline (i.e., a never user of e-cigarettes, cigars, hookah, and cigarettes) with complete data on all sociodemographic variables. Sampling weights were utilized, allowing the study population to be representative of 318,097 students enrolled in 6th, 8th, and 10th grades at baseline in these five Texas counties. As can been seen in Table 1, at baseline, sex was equally distributed (51% male), 38.3% of adolescents were in grade 6, and mean age was 13.13 (SE = 0.17). Most adolescents had a middle range family socioeconomic status (SES) (63.1%). Hispanic adolescents represented 52.4% of the study population. Of note, the Hispanic (n = 1430) and non-Hispanic (n = 1414) youth included in this analysis did not differ in terms of susceptibility to any of the four products examined to those excluded from the analysis due to missing covariates ($p < 0.05$ for all; data not shown).

2.2. Measures

2.2.1. Susceptibility

Susceptibility to four product classes was examined among never users of any product: 1) e-cigarettes, 2) cigars (large cigars, cigarillos, and little filtered cigars), 3) hookah, and 4) cigarettes. Susceptibility to each product was assessed by three items asking, "Have you ever been curious about smoking/using [this product]?", "Do you think you will use [this product] in the next 12 months?", and "If one of your close friends were to offer you [this product], would you use it?" Response options included "Not at all curious," "A little curious," "Somewhat curious," or "Very curious" for the first item and "Definitely not," "Probably not," "Probably yes," or "Definitely yes" for the other two items. These items are adapted from a four item measure that has demonstrated good internal consistency in prior studies ($\alpha = 0.74$) (Pierce et al., 2005) and is a strong predictor of future cigarette experimentation (Pierce et al., 1996, 2005).

Adolescents were categorized as non-susceptible to each individual item if they responded "Not at all curious" or "Definitely not," with any other response categorized as susceptible. Derived susceptibility variables were created for each product, with individuals who were non-susceptible to all three items categorized as non-susceptible, those who were susceptible to one or more items categorized as susceptible, and those who were missing on any item labeled as missing. Susceptibility to any combustible product was derived based on susceptibility to cigars, hookah, and cigarettes, with individuals who were non-susceptible to all three products categorized as non-susceptible, those who were susceptible to one or more products categorized as susceptible, and those who were missing on susceptibility variables for all three products labeled as missing.

2.2.2. Ever use

E-cigarette, cigar, hookah, and cigarette ever use were measured at 6, 12, and 18 months by one item each asking, "Have you ever smoked/used [this product], even one or two puffs?" with "Yes" responses classified as ever users of each product and "No" responses classified as never users. Ever use of any combustible product was measured based on whether adolescents were classified as ever users of any of the three combustible products (cigars, hookah, or cigarettes).

2.2.3. Covariates

Covariates included sex (male or female), grade level (6, 8, or 10), age (range: 10–18 years), ethnicity, and family SES. Ethnicity was dichotomized as Hispanic versus non-Hispanic, which includes non-Hispanic adolescents of white, black, and other races. Family SES was measured by one item asking, "In terms of income, what best describes your family's standard of living in the home where you live most of the time?" with response options categorized as high ("very well off"), middle ("living comfortably"), and low ("just getting by," "nearly poor," and "poor") (Gore, Aseltine Jr., & Colten, 1992; Romero, Cuéllar, & Roberts, 2000; Springer, Selwyn, & Kelder, 2006).

2.3. Analyses

The distribution of demographic and susceptibility measures across the total study population and by ethnicity were examined, and Chi-square tests assessed statistically significant differences between Hispanic and non-Hispanic adolescents across categories of these items.

Confirmatory factor analysis (CFA) assessed the fit of the three-item susceptibility construct for each of the four products among the total population and by ethnicity, using a robust weighted least squares approach with mean and variance adjusted estimation. CFA models were evaluated based on significance and size of model parameter estimates, and overall goodness-of-fit parameters, including the root mean square error of approximation (RMSEA, values < 0.06 indicate good fit), the comparative fit index (CFI, values > 0.95 indicate good fit), the Tucker-Lewis index (TLI, values > 0.95 indicate good fit), and the weighted root mean square residual (WRMR, values < 1.0 indicate good fit) (Hu & Bentler, 1999; Yu, 2002).

Following confirmation that each susceptibility construct fit appropriately across products and ethnicities, the predictive value of each derived susceptibility variable on future use of each product was examined at 6, 12, and 18 months among the total population and by ethnicity using Chi-square tests. Due to low numbers of ever users of combustible products, ever use of cigars, hookah, and cigarettes were combined as ever use of any combustible product, and logistic regression models examined the effect of susceptibility to e-cigarettes and any combustible product, separately, at baseline on ever use of these products at follow-up, adjusted for sex, age, family SES, and ethnicity.

All analyses were conducted using Stata 14.0 (College Station, TX) and Mplus Version 7 (Los Angeles, CA), utilizing complete case analysis of never users of any product at baseline. Analyses also incorporated sampling weights and considered clustering within school districts and stratification of schools based on proximity to point of sale tobacco outlets to account for complex design (Pérez et al., 2017).

3. Results

3.1. Descriptive statistics

At baseline (Table 1), the most commonly endorsed susceptibility

item across products was curiosity (24.7% for e-cigarettes, 13.7% for hookah, 11.8% for cigarettes, and 7.3% for cigars), while the least commonly endorsed item was intention to use (9.3% for e-cigarettes, 6.1% for hookah, 4.5% for cigarettes, and 3.8% for cigars). Based on derived susceptibility variables, 29.4% of adolescents were susceptible to e-cigarettes, 17.4% susceptible to hookah, 17.0% susceptible to cigarettes, and 11.5% susceptible to cigars; 26.2% were susceptible to any combustible product (hookah, cigarettes, or cigars).

Significant differences between Hispanic and non-Hispanic adolescents were observed for family SES, e-cigarette susceptibility, cigarette susceptibility, and susceptibility to any combustible product. For e-cigarette susceptibility, Hispanic adolescents, compared to non-Hispanic adolescents, endorsed curiosity (26.9% versus 22.2%) and peer influence (17.9% versus 13.0%) items more often and had a higher prevalence of being susceptible (32.4% versus 26.0%). For cigarette susceptibility, Hispanic adolescents, compared to non-Hispanic adolescents, endorsed curiosity more often (13.3% versus 10.0%) and had a higher prevalence of being susceptible (19.9% versus 13.9%). Hispanic adolescents had a higher prevalence of being susceptible to any combustible product (29.1%) compared to non-Hispanic adolescents (22.9%).

3.2. Confirmatory factor analysis

For the CFA among the total population and by Hispanic and non-Hispanic ethnicity (Table 2), parameter estimates for each item (curiosity, intention to use, and peer influence) were significant ($p < 0.001$) and displayed large loadings onto product specific susceptibility latent factors. Goodness-of-fit statistics suggested each susceptibility model was an appropriate fit to the data (RMSEA < 0.06, CFI > 0.95, TLI > 0.95, WRMR < 1.0 for all) among the total population and Hispanic and non-Hispanic groups specifically.

Among the total population, peer influence displayed the largest factor loading for e-cigarette susceptibility ($\beta = 0.980$, SE = 0.029), cigarette susceptibility ($\beta = 0.904$, SE = 0.055), and hookah susceptibility ($\beta = 0.951$, SE = 0.025), while intention to use displayed the largest factor loading for cigar susceptibility ($\beta = 0.928$, SE = 0.042). Curiosity displayed the lowest loading for all susceptibility constructs among the total population ($\beta = 0.802$, SE = 0.036 for e-cigarettes; $\beta = 0.644$, SE = 0.070 for cigarettes; $\beta = 0.818$, SE = 0.043 for hookah; $\beta = 0.755$, SE = 0.052 for cigars).

Results were consistent overall when examining each construct among Hispanic and non-Hispanic groups, with two exceptions. Among Hispanic adolescents only, intention to use displayed the largest factor loading ($\beta = 0.888$, SE = 0.090) for cigarette susceptibility, while peer influence displayed the largest factor loading ($\beta = 0.931$, SE = 0.070) for cigar susceptibility. Additional tests to examine differences in the measurement of each product specific construct when ethnicity is included in the model, ethnicity was significant to the measurement of susceptibility to e-cigarettes, but not to the measurement of susceptibility to other products (results not shown). However, the overall model fit, as well as factor loadings and the significance of each susceptibility item, remained consistent with e-cigarette models presented in Table 2.

3.3. Predictive validity

Among the total population, there were significant differences in ever use at 6, 12, and 18 months based on susceptibility status at baseline for e-cigarettes, cigarettes, hookah, and any combustible product (Fig. 1). Specifically, 6.3% of adolescents susceptible to e-cigarettes at baseline used e-cigarettes at 6 months, 11.3% at 12 months, and 13.8% at 18 months, versus 0.9%, 2.1%, and 4.6% of non-susceptible adolescents, respectively ($p < 0.05$ for all). Of those susceptible to cigarettes at baseline, 2.6% used cigarettes at 6 months, 6.6% at 12 months, and 9.4% at 18 months, versus 0.7%, 1.5%, and 2.8% of non-susceptible adolescents, respectively ($p < 0.05$ for all). Of those susceptible to hookah at baseline, 1.3% used hookah at 6 months, 2.7% at 12 months, and 3.8% at 18 months, versus 0%, 0.2%, and 0.4% of non-susceptible adolescents, respectively ($p < 0.05$ for all). Among adolescents susceptible to any combustible product at baseline, 3.7% used any combustible product at 6 months, 7.4% at 12 months, and 12.3% at 18 months, versus 0.7%, 1.7%, and 3.5% of non-susceptible adolescents, respectively ($p < 0.05$ for all). There were no significant differences in cigar ever use at any time point based on susceptibility to cigars at baseline.

When ethnicity was considered as a potential effect modifier of these relationships, few differences were noted. Among Hispanic adolescents, there were no significant differences in cigarette ever use at 6 months based on susceptibility to cigarettes at baseline; significant differences in ever use only emerged at 12 and 18 months ($p < 0.05$ for both). Among non-Hispanic adolescents, there were significant differences in cigar ever use at 12 and 18 months based on susceptibility to cigars at baseline, with 4.2% of susceptible adolescents using at

Table 2
Confirmatory factor analysis of susceptibility items for each product, total population and by ethnicity among never users at baseline, TATAMS ($n = 2844$; $N = 318{,}097$).

Susceptibility constructs	Total			Hispanic			Non-Hispanic		
	Factor loading	S.E.	p-Value	Factor loading	S.E.	p-Value	Factor loading	S.E.	p-Value
E-cigarettes									
Curiosity	0.802	0.036	< 0.001	0.781	0.050	< 0.001	0.824	0.041	< 0.001
Intention	0.865	0.029	< 0.001	0.825	0.049	< 0.001	0.914	0.026	< 0.001
Friends	0.980	0.029	< 0.001	1.000	0.041	< 0.001	0.958	0.031	< 0.001
Cigarettes									
Curiosity	0.644	0.070	< 0.001	0.565	0.111	< 0.001	0.735	0.079	< 0.001
Intention	0.856	0.054	< 0.001	0.888	0.090	< 0.001	0.831	0.054	< 0.001
Friends	0.904	0.055	< 0.001	0.858	0.072	< 0.001	0.948	0.073	< 0.001
Hookah									
Curiosity	0.818	0.043	< 0.001	0.792	0.071	< 0.001	0.854	0.053	< 0.001
Intention	0.934	0.024	< 0.001	0.949	0.032	< 0.001	0.912	0.031	< 0.001
Friends	0.951	0.025	< 0.001	0.959	0.033	< 0.001	0.935	0.034	< 0.001
Cigars									
Curiosity	0.755	0.052	< 0.001	0.728	0.076	< 0.001	0.796	0.052	< 0.001
Intention	0.928	0.042	< 0.001	0.909	0.064	< 0.001	0.943	0.045	< 0.001
Friends	0.897	0.049	< 0.001	0.931	0.070	< 0.001	0.858	0.066	< 0.001

Note: SE = standard error. Cigars include large cigars, cigarillos, and little filtered cigars. Factor loadings for each confirmatory factor analysis model are a measure of how well each specific item loads onto the respective factor (i.e., susceptibility construct), ranging from 0 (poor association) to 1 (strong association).

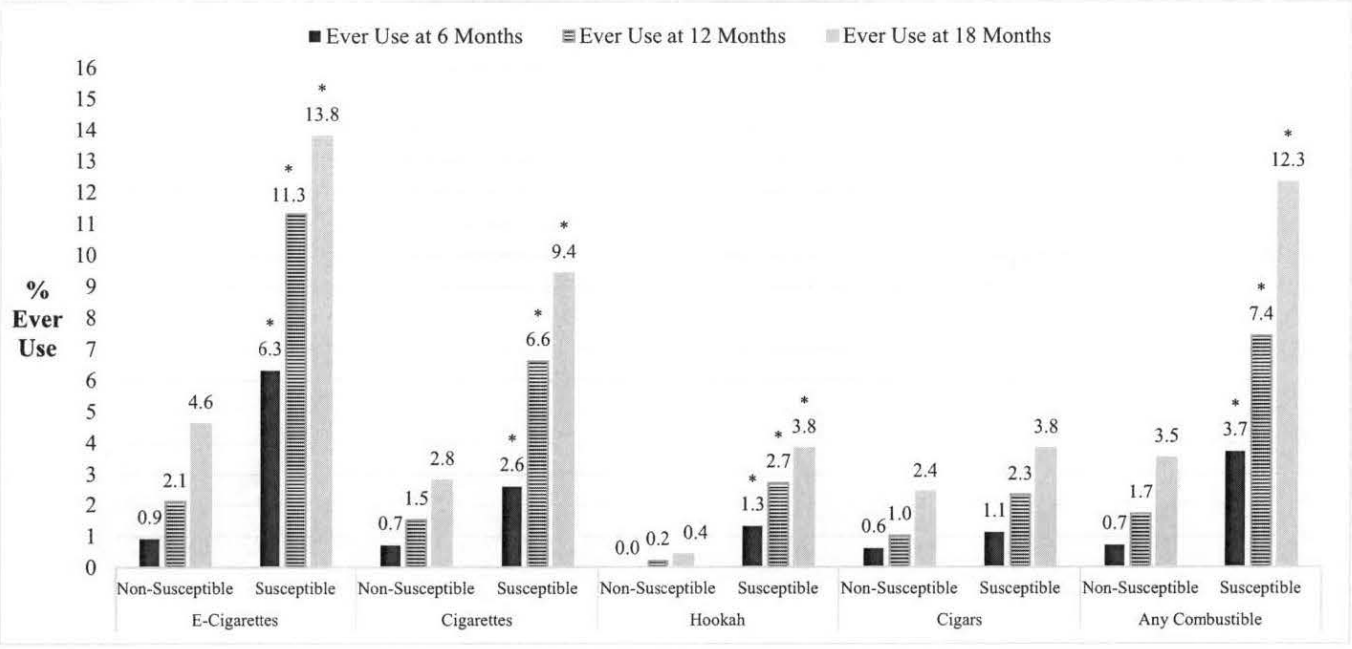

Fig. 1. Comparison of susceptibility at baseline among never users and subsequent ever use of each product at 6, 12, and 18 months. *Note*: * indicates $p < 0.05$ for the Chi-square test of group differences in ever use of each specific product at each time point by susceptibility status for each specific product at baseline.

12 months and 5.9% at 18 months, versus 0.9% and 1.7% of non-susceptible adolescents, respectively ($p < 0.05$ for both).

In the adjusted logistic regression models (Table 3) examining the association between susceptibility and ever use at 6, 12, and 18 months for e-cigarettes, age was the only covariate significantly associated with ever use at any time point. Each year increase in age was associated with 1.46 (95% CI: 1.17–1.82), 1.55 (95% CI: 1.31–1.84), and 1.33 (95% CI: 1.08–1.64) times higher odds of e-cigarette ever use at 6, 12, and 18 months, respectively. Similarly, susceptibility to e-cigarettes significantly predicted ever use across time points, with susceptible adolescents having 6.64 (95% CI: 3.39–13.00), 5.01 (95% CI: 2.69–9.34), and 2.88 (95% CI: 1.66–4.97) times higher odds of e-cigarette ever use at 6, 12, and 18 months, respectively, compared to non-susceptible adolescents.

For models considering any combustible product, age was significantly associated with ever use, with each year increase in age being associated with 1.33 (95% CI: 1.09–1.62) and 1.34 (95% CI: 1.16–1.54) times higher odds of ever use of any combustible product at 12 and 18 months, respectively. Similarly, susceptibility to any combustible product significantly predicted ever use at all time points, with susceptible adolescents having 5.20 (95% CI: 1.92–14.07), 3.89 (95% CI: 2.17–6.95), and 3.38 (95% CI: 2.03–5.62) times higher odds of ever use of any combustible product at 6, 12, and 18 months, respectively, compared to non-susceptible adolescents. There were no significant interactions between ethnicity and susceptibility to e-cigarettes or any combustible product at any time point.

4. Discussion

Among this population of Texas adolescents, we observed the three-item susceptibility measure adapted from Pierce et al. (2005) was robust across tobacco products and ethnic groups. Consistent with our first hypothesis and past research examining susceptibility in the context of cigarettes (Nodora et al., 2014; Pierce et al., 1996, 2005), we

Table 3
Adjusted logistic regression of susceptibility to each product at baseline on ever use at 6 months, 12 months, and 18 months among never users at baseline ($n = 2844$; $N = 318{,}097$ at baseline).

Variable		Ever use at 6 months			Ever use at 12 months			Ever use at 18 months		
		OR	95% CI	*p*-Value	OR	95% CI	*p*-Value	OR	95% CI	*p*-Value
E-cigarettes										
Sex (ref: female)	Male	1.30	0.61–2.76	0.488	1.08	0.73–1.61	0.700	1.31	0.88–1.96	0.185
Age		1.46	1.17–1.82	0.001	1.55	1.31–1.84	< 0.001	1.33	1.08–1.64	0.008
Family SES (ref: middle)	High	1.65	0.55–4.98	0.368	1.00	0.45–2.20	0.993	1.24	0.63–2.44	0.521
	Low	0.64	0.22–1.89	0.412	0.45	0.18–1.12	0.085	0.83	0.33–2.07	0.682
Ethnicity (ref: non-Hispanic)	Hispanic	1.29	0.60–2.76	0.599	0.99	0.60–1.63	0.966	0.93	0.60–1.44	0.740
Susceptible to e-cigarettes (ref: no)	Yes	6.64	3.39–13.00	< 0.001	5.01	2.69–9.34	< 0.001	2.88	1.66–4.97	< 0.001
Any combustible product										
Sex (ref: female)	Male	0.85	0.33–2.15	0.725	0.97	0.50–1.89	0.920	1.05	0.59–1.87	0.867
Age		1.18	0.88–1.59	0.267	1.33	1.09–1.62	0.005	1.34	1.16–1.54	< 0.001
Family SES (ref: middle)	High	0.54	0.10–2.81	0.458	1.17	0.58–2.38	0.662	1.30	0.74–2.26	0.356
	Low	1.08	0.29–4.03	0.904	1.21	0.49–3.03	0.673	1.19	0.59–2.43	0.620
Ethnicity (ref: non-Hispanic)	Hispanic	0.74	0.27–2.14	0.575	0.97	0.48–1.95	0.930	0.99	0.61–1.63	0.983
Susceptible to any combustible (ref: no)	Yes	5.20	1.92–14.07	0.001	3.89	2.17–6.95	< 0.001	3.38	2.03–5.62	< 0.001

Note: OR = odds ratio, CI = confidence interval, SES = socioeconomic status. "Any combustible" includes cigarettes, cigars, and hookah.

confirmed curiosity, intention to use, and peer influence are significant and appropriate items to consider in measuring susceptibility to e-cigarettes, cigarettes, hookah, and cigars among this adolescent population. Across products, we observed minor differences in the strength of each item. Specifically, curiosity had the weakest relationship with the underlying susceptibility construct across all products, peer influence had the strongest relationship with susceptibility to e-cigarettes, cigarettes, and hookah, and future intentions had the strongest relationship with susceptibility to cigars. While all three factors may be influential in determining adolescent susceptibility to tobacco products, intervention efforts to alter susceptibility may need to be tailored by product.

We observed almost 30% of adolescents were susceptible to e-cigarettes at baseline, a prevalence nearly double that of each individual combustible product. Adolescents may be more susceptible to e-cigarettes than other products, and more research is needed to investigate factors driving increased susceptibility, like the appeal of flavors (Ambrose et al., 2015) or increased television and digital media marketing (Duke et al., 2014; Mantey, Cooper, Clendennen, Pasch, & Perry, 2016; Pierce et al., 2017). As expected, we observed susceptibility to e-cigarettes and combustible products predicts product use at time points 6, 12, and 18 months in the future. This is consistent with previous research (Bold et al., 2017; Cole et al., 2017; Jackson, 1998; Jackson & Dickinson, 2004; Nodora et al., 2014; Pierce et al., 1996, 2005; Spelman et al., 2009; Strong et al., 2015; Unger et al., 1997) and suggests targeting and lessening susceptibility through intervention efforts remains a significant factor in preventing initiation of multiple forms of product use among adolescents.

Of note, the declining magnitude of the odds ratios predicting initiation from any combustible product over time was not statistically different from each other, based on a comparison of their 95% confidence intervals. In contrast, the declining odds ratios for susceptibility to e-cigarette use over time show a significant drop in influence on ever use at 18 months from susceptibility assessed at baseline. This suggests that by 18 months when compared to 6 and 12 months, other factors exert a stronger influence on experimentation relative to susceptibility status assessed 18 months earlier. In turn, this suggests that assessing susceptibility to e-cigarettes more frequently may be necessary to inform the development of targeted long-term interventions, as is identification of other factors that may be proximally related to e-cigarette use.

Congruous with our second hypothesis, we found the measurement of each susceptibility construct across products applied equally well across ethnic groups. Results among groups were consistent with the entire population, with minor differences. Among Hispanic adolescents, intention to use had the strongest relationship with susceptibility to cigarettes, while peer influence had the strongest relationship among non-Hispanic adolescents. In contrast, peer influence had the strongest relationship with susceptibility to cigars among Hispanic adolescents, while intention to use had the strongest relationship among non-Hispanic adolescents. Additionally, ethnicity was significant to the measurement of susceptibility to e-cigarettes as a whole; the differences in the model when considering ethnicity suggest that while the measurement of susceptibility to e-cigarettes is valid across ethnic groups, the meaning of the construct may vary slightly depending on ethnicity. Thus, while it is appropriate to utilize the same susceptibility measure across ethnic groups, specific influences may be more relevant to predicting susceptibility for Hispanics vs. non-Hispanics depending on product type, and specifically, susceptibility to e-cigarettes should be considered separately by ethnicity.

While we expected Hispanic adolescents would have a higher prevalence of susceptibility to each product than non-Hispanic adolescents, this was observed only for e-cigarettes and cigarettes, with curiosity about these products endorsed more often among Hispanic adolescents. This is consistent with previous research (Margolis et al., 2016), and notable, as curiosity predicts future experimentation with smoking independent of susceptibility (Pierce et al., 2005), warranting further examination of factors leading Hispanic adolescents to be more curious about these products. Despite a higher reported prevalence of susceptibility to e-cigarettes and cigarettes among Hispanic adolescents, no significant interactions were observed between ethnicity and susceptibility in predicting future use. Although more Hispanic adolescents are susceptible to e-cigarettes and cigarettes than their non-Hispanic peers (and Hispanic adolescents endorse curiosity about products more than non-Hispanic peers), the relationship between the measure of susceptibility itself and ever use of e-cigarettes and cigarettes is consistent across ethnic groups. This suggests that tailoring interventions designed to ameliorate susceptibility among Hispanics to address curiosity might be particularly useful.

4.1. Strengths and limitations

One study limitation is the low prevalence of ever users at future time points for specific products, like hookah and cigars. This prevented examination of susceptibility to these products separately at baseline regarding future use; thus, we cannot draw conclusions about specific predictive validity of susceptibility to individual combustible products. Still, our examination of combustible products as a whole provides evidence for susceptibility as a predictor of product use among adolescents. Additionally, our three-item construct only includes a single measure of intentions to use tobacco in the future, rather than both measures originally considered by Pierce et al. (2005), which may limit the ability to make comparisons between our susceptibility measures and those used in other studies. Next, this study population is limited by geography, so findings may not be generalizable to adolescents outside Texas. Finally, despite utilizing measures adapted from established surveys (Hyland et al., 2017) and thorough cognitive testing, self-report of data may lead to response bias.

Despite limitations, this study is strengthened by the large, diverse population of Texas adolescents, which provided adequate power to examine specific associations across ethnic groups and products. The complex survey design and use of analyses accounting for sampling weights and clustering within schools yield results representative of the overall population of urban Texas adolescents in grades 6, 8, and 10. This study's longitudinal design and breadth of tobacco products allows for investigation of all products concurrently, within the same population and across time points, permitting temporal conclusions about the role of susceptibility on future initiation, and extending past research, which has yet to examine multiple product types longitudinally among the same cohort.

4.2. Conclusions

Susceptibility is a key construct for predicting future initiation of tobacco; past research has examined its validity relevant to cigarettes, but not among contemporary adolescent populations and the changing landscape of tobacco products. This study confirms the appropriateness of the measurement of susceptibility (Pierce et al., 2005) across four products (e-cigarettes, hookah, cigars, and cigarettes) and ethnic groups (Hispanic versus non-Hispanic), and the utility of susceptibility in predicting future tobacco product use among adolescents. Implications for intervention and research emphasize the importance of susceptibility in predicting initiation of product use and the need to investigate factors influencing susceptibility to specific products, like e-cigarettes, especially among Hispanic adolescents.

Compliance with ethical standards

Ethical approval

TATAMS was approved by the University of Texas Health Science Center at Houston Institutional Review Board (HSC-SPH-13-0377). All

procedures performed in studies involving human participants were in accordance with the ethical standards of the institutional and/or national research committee and with the 1964 Helsinki declaration and its later amendments or comparable ethical standards. This article does not contain any studies with animals performed by any of the authors.

Informed consent

Informed consent was obtained from all individual participants included in the study.

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Contributors

FRC and EAC conducted the analysis. FRC led the writing and completed the initial draft. AVW and MBH conceptualized and supervised the analysis, and provided critical feedback. CLP provided critical feedback.

Conflict of interest

The authors declare that they have no conflict of interest.

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Martinez, Ruben

From:	Alisha Lopez
Sent:	Monday, October 25, 2021 4:29 PM
To:	PublicComment-AutoResponse
Subject:	Written Comment for Item #11 - Prohibition on the Sale of Flavored Tobacco

To Whom It May Concern with the City of Pasadena,

Please see below for my written public comment for tonight's city council meeting:

Dear Honorable Mayor and City Council members,

My name is Alisha Lopez and I am the Director of Tobacco Prevention Programs at Day One, a local Pasadena non-profit organization with over 30 years of experience building vibrant, healthy cities by advancing public health, empowering youth and igniting change throughout the San Gabriel Valley. Day One is also a long-time member of the Pasadena Tobacco Prevention Coalition.

I am writing to applaud your leadership for consideration of a Tobacco Flavor Ban this evening, per item 11 on the agenda, because implementation will no doubt save countless lives. 90% of adult cigarette smokers begin smoking before the age of 18 and youth are more likely than adults to initiate tobacco product use with flavored tobacco products. With misleading and targeted tobacco industry marketing of flavored tobacco products to youth and the wide-spread availability of products in appealing, youth-friendly flavors like strawberry and cotton candy, strong local policies that restrict sales of flavored tobacco products are urgently needed. The City of Pasadena has already done so much to protect our youth from easy access to tobacco products and exposure to secondhand smoke in outdoor areas and in multi-unit housing--this additional provision will further protect Pasadena youth from beginning a lifelong addiction to tobacco.

As of December 2020, at least 300 local communities in the U.S. currently prohibit the sale of flavored tobacco products, and at least 110 of which prohibit the sale of menthol cigarettes in addition to other flavored products. So, you are not alone!

Again, I applaud your leadership and look forward to an even safer and healthier Pasadena for our youth and future generations.

Thank you for your time and consideration.

Alisha Lopez

10/25/2021
Item 11

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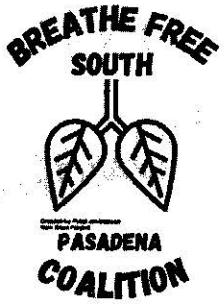
Alisha Lopez | Director of Tobacco Programs
Pronouns: She, Her, Hers
a: , Pasadena, CA 91101
c: 0 e:
Day One builds vibrant, healthy cities by advancing public health, empowering youth, and igniting change
DO **Stay Home** DO **Stay Healthy** DO **Stay Connected**



October 25, 2021

Pasadena City Council
100 North Garfield Ave.
Pasadena, CA 91101

Dear Mayor Victor Gordo and members of the City Council,

The Breathe Free South Pasadena Coalition is committed to protecting the health and well-being of the youth and residents of Baldwin Park. As neighbors and members of the Pasadena Tobacco Prevention Coalition, we support their public health efforts to prevent tobacco-related disease and death and the growing epidemic of youth tobacco use initiation driven by flavored tobacco products. These products contain nicotine and can have damaging impacts on the adolescent brain and cause long-term addiction. Tobacco use and the resulting inhaling of smoke is clearly working opposite to the goal of a healthy, playful Pasadena. We are writing in support of Item #11 as members of the coalition to help promote a healthier environment for all the residents of the city.

The Breathe Free South Pasadena Coalition is working similarly to supports policies that limit the sale of all tobacco, flavored tobacco products, menthol and hookah tobacco. Eight out of ten youth tobacco users start vaping with a flavored tobacco product. Flavored tobacco is attributed to an 135% increase in youth tobacco use between 2017 and 2019. There is growing evidence that e-cigarette use increases the frequency and intensity of future cigarette smoking as youth grow older. Menthol cigarettes are frequently used by youth and vulnerable populations. Over half of youth smokers use menthol cigarettes; the rate is significantly higher among African American youth. Furthermore, hookah use has become increasingly popular among high school students and doubled between 2011 and 2015.

I encourage Pasadena to follow the growing list of California cities that have restricted the sale of flavored tobacco products. Now is the time for Pasadena to become a leader in saving lives by protecting residents from getting hooked on tobacco and candy-flavored tobacco products and a lifetime of nicotine addiction.

Thank you in advance for your consideration.

Sincerely,

Christina Cardenas
Christina Cardenas
Senior Program Manager, LAC USC Medical Center Foundation
Breathe Free South Pasadena Coalition

10/25/2021
Item 11

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AAP-CA Chapter 2
P.O. Box 94127
Pasadena, CA 91109
Tel. (818) 422-9877
Fax: (888) 838-1987
www.aapca2.org

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AKuo@mednet.ucla.edu

AAP-CA Chapter 2
Executive Director
Tomás Torices, MD
chapter2@aap-ca.org
Direct Line: (818) 422-9877

October 25, 2021

Pasadena City Council
100 North Garfield Ave.
Pasadena, CA 91101

2021 OCT 25 PM 6:46

Re: Proposed Flavored Tobacco Ban

Dear Pasadena City Council,

I am writing in support of the proposed city ordinance to ban the sale of all flavored tobacco products.

Tobacco is a major threat to children's health, regardless of the form it takes. However, flavored tobacco poses a unique threat to children and adolescents, and restrictions on selling flavored tobacco products are linked to decreased use of any tobacco product (https://www.aappublications.org/news/2020/01/14/healthbrief011420).

Flavored tobacco products are particularly enticing to adolescents. The tobacco industry is currently exploiting the looser regulation on noncigarette tobacco products to market fruit and candy flavored cigars, small cigars, and electronic nicotine delivery systems. Nicotine from flavored tobacco products is detrimental to the developing brain and further, nearly 90% of tobacco dependent adults initiated their tobacco use well before their 18th birthday (https://pediatrics.aappublications.org/content/136/5/998).

A ban on flavored tobacco products will lead to decreased use of all tobacco products and a decreased risk to child and adolescent health. The choice to ban flavored tobacco products is a choice to protect the health of children.

Sincerely,

Karinne Van Groningen, MD, MPH
Legislative and Policy Analyst
AAP-CA2

10/25/2021
Item 11