

CDC should promote strategies proven effective at the local and state levels including banning all flavored tobacco products, improving community education, and engaging vulnerable populations to prevent youth initiation to tobacco, ensure smokefree air, and eliminate tobacco-related disparities

Bonnie Halpern-Felsher, PhD; Maya Vijayarghavan, MD, MAS; Jonathan Polansky, BA;
Anabel Razo, BA; Aditi Venkatesh; Maria Fernanda Bernal;
Lauren Kass Lempert, JD, MPH; Stanton Glantz, PhD

UCSF Tobacco Centers of Regulatory Science

February 11, 2019

We applaud CDC's interest in informing future activities to advance tobacco control practices to prevent initiation of tobacco use among youth and young adults, eliminate exposure to secondhand smoke, and identify and eliminate tobacco-related disparities. While the prevalence of tobacco smoking in the United States has declined to 14.0%,¹ the prevalence is much higher among high-risk subgroups, such as people who are homeless (70%²), non-Hispanic American Indians/Alaska Natives (24%¹), adults with an annual household income less than \$35,000 (21%¹), lesbian/gay/bisexual adults (20%¹), adults with a disability/limitation (21%¹), and adults with serious psychological distress (35%¹). And while cigarette smoking among youth and young adults has declined, the number of youth using e-cigarettes and other new vaping products (herein: e-cigarettes) has reversed progress in reducing youth nicotine addiction, and continues to grow. Over the past year, high school students' use of e-cigarettes including pod-based products has increased by 78%, with 1 in 5 high school students reporting current use. Middle school students' use increased by 48%, with 1 in 20 middle school students reporting recent use.^{3,4}

Recognizing the enormity of the problem, the FDA⁵ and the Surgeon General⁶ have issued public statements describing youth e-cigarette use as an "epidemic." Nevertheless, FDA's recent proposed steps⁷ to reduce youth access to flavored tobacco products do not go far enough

¹ CDC, Current Cigarette Smoking Among Adults in the United States, available at https://www.cdc.gov/tobacco/data_statistics/fact_sheets/adult_data/cig_smoking/index.htm (last updated Feb. 4, 2019)

² Public Health Law Center, Tobacco Use Among the Homeless Population: FAQ (December 2016), <https://publichealthlawcenter.org/sites/default/files/resources/tlc-homeless-tobacco-FAQ-2016.pdf>

³ CDC, National Youth Tobacco Survey (NYTS). Cullen KA, Ambrose BK, Gentske AS, Apelberg BJ, Jamal A, King BA. Notes from the field; Use of electronic cigarettes and any tobacco product among middle and high school students – United States, 2011-2018. MMWR Morb Mortal Wkly Rep 2018; 67:1276-1277. DOI: <http://dx.doi.org/10.15585/mmwr.mm6745a5>

⁴ Wang TW, Gentzke A, Sharapova S, Cullen KA, Ambrose BK, Jamal A. Tobacco product use among middle and high school students — United States, 2011-2017. MMWR Morb Mortal Wkly Rep. 2018;67(22).

⁵ Statement from FDA Commissioner Scott Gottlieb, M.D., on new steps to address epidemic of youth e-cigarette use, September 12, 2018, <https://www.fda.gov/NewsEvents/Newsroom/PressAnnouncements/ucm620185.htm>; Statement from FDA Commissioner Scott Gottlieb, MD on proposed new steps to protect youth by preventing access to flavored tobacco products and banning menthol in cigarettes, November 15, 2018, <https://www.fda.gov/NewsEvents/Newsroom/PressAnnouncements/ucm625884.htm>

⁶ Surgeon General's Advisory on E-cigarette Use Among Youth, December 18, 2018, <https://e-cigarettes.surgeongeneral.gov/documents/surgeon-generals-advisory-on-e-cigarette-use-among-youth-2018.pdf>

⁷ <https://www.fda.gov/NewsEvents/Newsroom/PressAnnouncements/ucm625884.htm>

and would not have any practical effects in the foreseeable future to address youth e-cigarette use. ***This failure of the FDA to take meaningful action makes educational interventions by CDC and educational and policy interventions at the local and state level all the more important.***

We submitted public comments^{8,9} to FDA on February 1, 2019 suggesting measures FDA should take to address the problem, which we incorporate by reference. In this comment, we will address the specific questions raised by CDC in its request for comments and highlight the current literature and discuss strategies that have worked in local communities, cities, and states to combat youth initiation, avoid gateway effects, ban flavors, eliminate second-hand smoke, and eliminate disparities (including race, sexual orientation, mental health, age, disability, homeless people, and military status).

1. What innovative strategies are working in communities to prevent tobacco use among youth, especially in terms of flavored tobacco products and e-cigarettes?

CDC should continue promoting and supporting state and local bans on all flavored tobacco products, including mint and menthol

In order to attract young and new users, the tobacco industry adds characterizing flavors like mint, menthol, fruit, and candy to tobacco, often using the same flavorants that are in fruit-flavored candy, and sometimes at higher doses.¹⁰ There are almost 8000 flavors of e-cigarettes.¹¹ These flavors appeal to new users by masking the harsh taste of tobacco, and in the case of e-cigarettes, resulting in a more pleasant smell than that found with tobacco alone.

Flavor or “taste” is one of the most common persuasive marketing techniques used to promote food (mostly candy and snacks) to children on TV.¹² Exposure to ads for flavored products is positively associated with youth consumption,¹³ and most money spent by youth is on food or beverages, particularly sweets.¹⁴ Research on e-cigarettes yields the same results as these findings, concluding: flavors play an important role for online e-cigarette marketing and boosts

⁸ Lempert LK, Halpern-Felsher B, Glantz S. FDA should use its regulatory authority and take immediate steps to tackle the youth e-cigarette epidemic. Docket No. FDA-2018-N-3952;

⁹ Halpern-Felsher B, Lempert LK, Watkins S, et al. FDA must use its existing authority to combat the youth e-cigarette use epidemic by preventing addiction now, rather than by seeking to treat it after the fact. Docket No. FDA-2018-N-3952

¹⁰ Brown JE, Luo W, Isabelle LM, Pankow JF. Candy flavorings in tobacco. *N Engl J Med*. 2014;370(23):2250-2252.

¹¹ Zhu, S-H, Sun, JY, Bonnevie, E., Cummins, SE, Gamst, A., Yin, L., Lee, M. Four hundred and sixty brands of e-cigarettes and counting: implications for product regulation. *Tob Control*, 2014;23:iii3–iii9. doi:10.1136/tobaccocontrol-2014-051670

¹² Jenkin G, Madhvani N, Signal L, Bowers S. A systematic review of persuasive marketing techniques to promote food to children on television. *Obesity reviews*. 2014;15(4):281-293.

¹³ Cairns G, Angus K, Hastings G, Caraher M. Systematic reviews of the evidence on the nature, extent and effects of food marketing to children. A retrospective summary. *Appetite*. 2013;62:209-215.

¹⁴ Kraak VI, Gootman JA, McGinnis JM. *Food marketing to children and youth: Threat or opportunity?* National Academies Press; 2006.

user interaction and positive emotion;¹⁵ flavored (vs. unflavored) e-cigarette ads elicit greater appeal and interest in buying and trying e-cigarettes; and the appeal of ads marketing flavors is linked to rapid and persistent adoption of e-cigarettes among youth.¹⁶

Youth are Attracted to Flavored Tobacco Products

The vast majority of youth in the US who try tobacco initiate with flavored tobacco products, including 81% of e-cigarette ever users, 65% of cigar ever users, and 50% of cigarette ever smokers.¹⁷ Adolescents are more likely to report interest in trying an e-cigarette from a friend if it is menthol-, candy-, or fruit-flavored than if unflavored.¹⁸ Flavor preferences are associated with higher e-cigarette use among adolescents.¹⁹ Most adolescent current tobacco users cite flavors as a reason for use (including 81% for past 30-day e-cigarette users; 74% for past 30-day cigar users).¹⁰ ***Three quarters of adolescent and young adult flavored tobacco product users reported they would quit if flavors were unavailable.***²⁰

Youth and young adult tobacco users are more likely than older adult tobacco users to use flavored products, including menthol cigarettes,²¹ flavored smokeless tobacco,²² and flavored cigars.²³ Young smokers (12-17 years of age) are three times as likely to smoke menthol cigarettes than smokers 35 years and older.²⁴ Research among approximately 4000 school-going youth shows that for 98% of them, first e-cigarettes used were flavored to taste like something other than tobacco, compared to 44.1% of older adults nationwide. Fruit and candy flavors predominated for all groups; and, for youth, flavors were an especially salient reason to use e-

¹⁵ Liang Y, Zheng X, Zeng DD, Zhou X. Impact of flavor on electronic cigarette marketing in social media. 2015;278-283.

¹⁶ Vasiljevic M, Petrescu DC, Marteau TM. Impact of advertisements promoting candy-like flavoured e-cigarettes on appeal of tobacco smoking among children: An experimental study. *Tob Control*. 2016;25(e2):e107-e112.

¹⁷ Ambrose B, Day H, Rostron B, et al. Flavored tobacco product use among us youth aged 12-17 years, 2013-2014. *J Am Med Assoc*. 2015;314(17):1-3. doi:10.1001/jama.2015.13802.

¹⁸ Pepper JK, Ribisl KM, Brewer NT. Adolescents' interest in trying flavoured e-cigarettes. *Tob Control*. 2016;25(Suppl 2):ii62-ii66. doi:10.1136/tobaccocontrol-2016-053174.

¹⁹ Morean ME, Butler ER, Bold KW, Kong G, Camenga DR, Cavallo DA, Simon P, O'Malley SS, Krishnan-Sarin S. Preferring more e-cigarette flavors is associated with e-cigarette use frequency among adolescents but not adults. *PloS one*. 2018 Jan 4;13(1):e0189015

²⁰ Loukas A, Jackson CD, Marti CN, Perry CL. Flavored tobacco product use among youth and young adults: What if flavors didn't exist? *Tob Regul Sci*. 2017;3(2):168-173.

²¹ Villanti AC, Mowery PD, Delnevo CD, Niaura RS, Abrams DB, Giovino GA. Changes in the prevalence and correlates of menthol cigarette use in the USA, 2004–2014. *Tob Control*. 2016;25(Suppl 2):ii14-ii20. doi:10.1136/tobaccocontrol-2016-053329.

²² Oliver AJ, Jensen JA, Vogel RI, Anderson AJ, Hatsukami DK. Flavored and nonflavored smokeless tobacco products: Rate, pattern of use, and effects. *Nicotine Tob Res*. 2013;15(1):88-92. doi:10.1093/ntr/nts093.

²³ Delnevo CD, Giovenco DP, Ambrose BK, Corey CG, Conway KP. Preference for flavoured cigar brands among youth, young adults and adults in the USA. *Tob Control*. 2014;24(4):389-394. doi:10.1136/tobaccocontrol-2013-051408.

²⁴ Villanti AC, Mowery PD, Delnevo CD, Niaura RS, Abrams DB, Giovino GA. Changes in the prevalence and correlates of menthol cigarette use in the USA, 2004–2014. *Tob Control*. 2016:1-7. doi:10.1136/tobaccocontrol-2016-053329.

cigarettes.²⁵ Finally, a recent study showed that only 1.5% of adolescent and young adult e-cigarette users used tobacco flavored-Juuls and .9% used tobacco-flavored other e-cigarette products. Instead, the majority used fruit or dessert flavors (33% for Juul users and 64% for other e-cigarette users) and 27% of Juul users and 12% of other e-cigarette users used mint or menthol flavors.²⁶

Mint and Menthol Target Vulnerable Populations

Despite ongoing tobacco industry claims that menthol simply adds flavor, tobacco industry documents have revealed that the industry manipulates menthol levels to control a cigarette's intensity to cater to new and long-term smokers.²⁷

Menthol and other flavors appeal to new users by masking the harsh taste of tobacco, and bright packaging associates flavored tobacco products with candy and other flavors.^{28,29} Additionally, tobacco products with a characterizing flavor including fruit-flavored e-cigarettes³⁰ and menthol cigarettes¹⁴ are perceived to be less harmful than unflavored or tobacco-flavored products. In addition, there is some evidence that menthol cigarettes are harder to quit.^{31,32}

In the general population, differences in menthol use exist across race, gender, age, and sexual orientation. Rates of use of menthol flavored tobacco products are often higher in marginalized populations. African American smokers consistently have the highest menthol use rate.³³ Menthol use is also higher among female smokers;²⁷ Lesbian, Gay, and Bisexual

²⁵ Harrell MB, Weaver SR, Loukas A, Creamer M, Marti CN, Jackson CD, Heath JW, Nayak P, Perry CL, Pechacek TF, Eriksen MP. Flavored e-cigarette use: Characterizing youth, young adult, and adult users. *Preventive medicine reports*. 2017 Mar 1;5:33-40

²⁶ McKelvey, K., Baiocchi, M., Halpern-Felsher, B. Adolescents' and young adults' use and perceptions of pod-based electronic cigarettes. *JAMA Network Open*, 2018;1(6):e183535. doi:10.1001/jamanetworkopen.2018.3535

²⁷ Kreslake JM, Wayne GF, Alpert HR, Koh HK, Connolly GN. Tobacco industry control of menthol in cigarettes and targeting of adolescents and young adults. *Am J Public Health*. 2008;98(9):1685-1692. doi:10.2105/AJPH.2007.125542.

²⁸ Yerger VB. Menthol's potential effects on nicotine dependence: a tobacco industry perspective. *Tob Control*. 2011;20(Suppl 2):ii29-i36. doi:10.1136/tc.2010.041970.

²⁹ Lewis MJ, Wackowski O. Dealing with an innovative industry: A look at flavored cigarettes promoted by mainstream brands. *Am J Public Health*. 2006;96(2):244-251. doi:10.2105/AJPH.2004.061200.

³⁰ Pepper JK, Ribisl KM, Brewer NT. Adolescents' interest in trying flavoured e-cigarettes. *Tob Control*. 2016;25(Suppl 2):ii62-ii66. doi:10.1136/tobaccocontrol-2016-053174.

³¹ Pletcher MJ, Hullely BJ, Houston T, Kiefe CI, Benowitz N, Sidney S. Menthol cigarettes, smoking cessation, atherosclerosis, and pulmonary function. 2006;166.

³² Trinidad DR, Pérez-Stable EJ, Messer K, White MM, Pierce JP. Menthol cigarettes and smoking cessation among racial/ethnic groups in the United States. *Addiction*. 2010;105(SUPPL.1):84-94. doi:10.1111/j.1360-0443.2010.03187.x.

³³ Villanti AC, Mowery PD, Delnevo CD, Niaura RS, Abrams DB, Giovino GA. Changes in the prevalence and correlates of menthol cigarette use in the USA, 2004–2014. *Tob Control*. 2016:1-7. doi:10.1136/tobaccocontrol-2016-053329.

smokers³⁴ (although see Rath et al 2013³⁵); people with severe psychological distress; people with fewer years of education and lower income; and those who are unmarried or uninsured.³⁶

The tobacco industry cultivated menthol use among African Americans by manipulating social factors of the civil rights era,³⁷ advertising menthol brand cigarettes, little cigars, and cigarillos in African American media and retail settings in African American neighborhoods,^{38,39} and donating to African American leadership organizations.⁴⁰ The strategy has been so successful that even by 6th grade, African American youth were three times more likely to recognize menthol brands than their peers.⁴¹

Need for Local and State Flavor Bans

Given the abundance of studies showing that flavors attract youth, and that mint and menthol clearly attract vulnerable populations, it is critical to ban all flavors, including mint and menthol. The FDA has the authority to end the sale of flavored e-cigarettes immediately by removing from the market all e-cigarettes that have not submitted premarket approval applications and have not obtained FDA authorization based on a demonstration that these flavors are good for the public health.⁴² FDA has, unfortunately not shown any interest in using its authority to do so.

³⁴ Fallin A, Goodin AJ, King BA. Menthol cigarette smoking among lesbian, gay, bisexual, and transgender adults. *Am J Prev Med.* 2015;48(1):93-97. doi:10.1016/j.amepre.2014.07.044.

³⁵ Rath JM, Villanti AC, Rubenstein RA, Vallone DM. Tobacco use by sexual identity among young adults in the united states. *Nicotine Tob Res.* 2013;15(11):1822-1831. doi:10.1093/ntr/ntt062.

³⁶ Hickman NJ, Delucchi KL, Prochaska JJ. Menthol use among smokers with psychological distress: findings from the 2008 and 2009 National Survey on Drug Use and Health. *Tob Control.* 2014;23(1):7-13. doi:10.1136/tobaccocontrol-2012-050479.

³⁷ Gardiner PS. The African Americanization of menthol cigarette use in the United States. *Nicotine Tob Res.* 2004;6 Suppl 1:S55-65. doi:10.1080/14622200310001649478.

³⁸ Henriksen L, Schleicher NC, Dauphinee AL, Fortmann SP. Targeted advertising, promotion, and price for menthol cigarettes in California high school neighborhoods. *Nicotine Tob Res.* 2012;14(1):116-121. doi:10.1093/ntr/ntr122.

³⁹ Kostygina G, Glantz SA, Ling PM. Tobacco industry use of flavours to recruit new users of little cigars and cigarillos. *Tob Control.* 2014;tobaccocontrol-2014-051830-. doi:10.1136/tobaccocontrol-2014-051830.

⁴⁰ Yerger VB, Malone RE. African American leadership groups: Smoking with the enemy. *Tob Control.* 2002;11(4):336-345. doi:10.1136/tc.11.4.336.

⁴¹ Dauphinee AL, Doxey JR, Schleicher NC, Fortmann SP, Henriksen L. Racial differences in cigarette brand recognition and impact on youth smoking. *BMC Public Health.* 2013;13(1):170. doi:10.1186/1471-2458-13-170.

⁴² Had the premarket review and authorization provisions of the Tobacco Control Act been enforced as intended, all e-cigarettes would have been removed from the market by the effective date of the Deeming Rule (i.e., August 8, 2016). Instead, the FDA submitted to the OMB a proposed Deeming Rule that included a compliance or grace period of 12 months from the date a final rule is promulgated. However, OMB doubled the length of the compliance period to twenty-four months from the date a final rule is promulgated, i.e., to August 8, 2018. We submitted public comments to the Deeming Rule docket opposing that extension.

<https://tobacco.ucsf.edu/sites/tobacco.ucsf.edu/files/u9/FDA-comment-2014-06-06%20Dutra%20Glantz%20cost%20of%202-year%20compliance%20period-%201jy-8cis-ski5.pdf>

FDA has announced that they are considering new regulations, but these regulations do not go far enough, and are likely years away from being fully executed. Meanwhile, an untold number of youth will be encouraged to use flavored tobacco through the flavors and flavor ads.

While only FDA can regulate the use of flavors in tobacco products, localities and states do have the authority to restrict the sale of these products. Some have already exercised this authority. All can and should put in ordinances to ban all flavors including mint and menthol. These bans must include not only all flavors including mint and menthol, but in all retail outlets. Restricting the sale of flavored tobacco products to adult-only retailers still allows for the sale of these flavored products in venues will only lead to youth illegally accessing tobacco.

A number of cities have already passed ordinances restricting the sale of flavored tobacco products.⁴³ In California, nearly 30 cities have passed flavor bans at some level, with the most restrictive and comprehensive bans being in San Francisco⁴⁴ and Yolo Counties⁴⁵. Further, several other cities are proposing similar bans (e.g., New York, NY and Albany, CA), and several states (e.g., California and Hawaii) are proposing flavor bans.

CDC should provide educational materials and technical assistance to localities and states to encourage passage and implementation of comprehensive flavor bans.

Community Engagement

Setting up community engagement and grass roots efforts are also important to reduce use of all tobacco products. The African American Tobacco Control Leadership Council (<https://www.savingblacklives.org>) has been a major leader in this area. The CDC should actively partner with them and similar organizations.

Importance of Engaging Parents

Engaging parents is an important step to helping reduce youth tobacco use. Parents are not always aware of the latest tobacco products on the market, and therefore don't think to or know how to talk to their children. Thus, parents need to stay informed, be active, and be advocates for their children.

<https://tobacco.ucsf.edu/sites/tobacco.ucsf.edu/files/u9/FDA%20comment-Substantial%20Equiv-%201jy-8cos-3k4o.pdf>

In August 2017, FDA announced that it would use its discretion and further extend the compliance date for e-cigarettes to August 8, 2022.

<https://www.fda.gov/downloads/TobaccoProducts/Labeling/RulesRegulationsGuidance/UCM557716.pdf>

⁴³ <https://center4tobaccopolicy.org/wp-content/uploads/2018/11/Matrix-of-Local-Ordinances-Restricting-Flavored-Tobacco-2018-11-14.pdf>

⁴⁴ San Francisco Health Code, Article 19Q: Prohibiting the Sales of Flavored Tobacco Products, effective July 20, 2018. Available at:

[http://library.amlegal.com/nxt/gateway.dll/California/health/article19qprohibitingthesaleofflavoredto?f=templates\\$fn=default.htm\\$3.0](http://library.amlegal.com/nxt/gateway.dll/California/health/article19qprohibitingthesaleofflavoredto?f=templates$fn=default.htm$3.0)

⁴⁵ Yolo County, Cal., Code § 6-15.10(e) (2017). Available at:

[http://library.amlegal.com/nxt/gateway.dll/California/yolocounty_ca/title6sanitationandhealth/chapter15to baccoretailerpermit?f=templates\\$fn=default.htm\\$3.0\\$vid=amlegal:yolocounty_ca\\$anc=JD_6-15.10](http://library.amlegal.com/nxt/gateway.dll/California/yolocounty_ca/title6sanitationandhealth/chapter15to baccoretailerpermit?f=templates$fn=default.htm$3.0$vid=amlegal:yolocounty_ca$anc=JD_6-15.10)

There are a number of national, local, and grassroots efforts providing resources to engage parents. The CDC should review these materials and work with some of these agencies to disseminate and bring to scale these efforts. Here are some examples of programs that have reached large groups of parents.

- The **Stanford Tobacco Prevention Toolkit** (tobaccopreventiontoolkit.stanford.edu) provides a number of resources for parents/guardians.⁴⁶ In addition, Dr. Halpern-Felsher, Founder and Executive Director of the Toolkit and her team have developed a number of talks for parents, including local talks at schools (e.g., <https://youtu.be/O0GnlzB9Q18>). They have also partnered with FCD Prevention Works to develop and present a presentation to parents, which was recently given to over 1000 parents across the globe: <https://attendee.gotowebinar.com/recording/7433474156170661378>.
- **Parents Against Vaping E-cigarettes (PAVe)**; (<https://www.parentsagainstvaping.org>) is a new grassroots parent group providing resources for parents and opportunities for parents to get involved and be advocates.
- **California Department of Public Health** (stillblowingsmoke.org. flavorshookkids.org) provides high quality public education, with an orientation toward local and state policymaking.

Youth-focused Community-based Prevention Programs

In addition to engaging parents, there are several youth-focused community-based prevention programs that the CDC should review and consider partnering with.

- **The Stanford Tobacco Prevention Toolkit** (tobaccopreventiontoolkit.stanford.edu) is a free, online set of tobacco-prevention curriculums aimed at preventing and reducing middle and high school students' tobacco use, with modules focused on vaping/pods, smokeless tobacco, hookah, nicotine addiction, and positive youth development. The evidence-informed and evidence-based Toolkit includes not only PowerPoint talks, but activities, worksheets, online fun quizzes, factsheets and other materials for youth, parents, educators and healthcare providers. The Toolkit was developed through grassroots efforts that included parent, youth, educator, and healthcare provider input. Well over 250,000 youth and parents have been reached through this Toolkit since its launched in October 2016. You can find more information at <https://tinyurl.com/TPT-Flyer> and <https://tinyurl.com/TPT-Brochure>.
- **California Youth Advocacy Network** (<https://www.cyanonline.org/youth-program>)⁴⁷ is an organization focused on working with youth to create change in communities all across California. The Youth Program provides trainings all over the state for adult-partners and youth. They work with a group of nine youth, the Youth Board of Directors, to plan events such as Youth Quest and the Statewide Youth Advocacy Conference to engage hundreds of youth and teach them about issues

⁴⁶ <http://med.stanford.edu/tobaccopreventiontoolkit/resource-directory.html#parents/guardians>

⁴⁷ <https://www.cyanonline.org/youth-program>

surrounding tobacco and build advocacy skills.

- **The Campaign for Tobacco-Free Kids**
(<https://www.tobaccofreekids.org/what-we-do/youth-programs>)⁴⁸ works with youth in a multitude of ways to foster change. They provide resources for students around the country to run activities during Kick Butts Day, have an online and in-person training program, the Taking Down Tobacco Training Program, to engage youth in the fight against tobacco, and conduct the National Youth Ambassador program to help a selected group of youth leaders around the country to become better advocates and push for change in their local communities and nationally. The organization also recognizes outstanding youth advocates through their annual Youth Advocates of the Year Awards.
- **Rethink Vape**
(http://rethinkvape.org/?fbclid=IwAR2imoJTszFbUE3BQyv1mrVs5_cKJti6ssvdRs_dRh_Bi0VY9ZoHoHrrlRk). Rethink Vape is a prevention campaign with a mission to educate the public about the dangers associated with vaping, especially among youth and non-smoking adults.
- **The Foundation for a Smokefree America**
(https://tobaccofree.org/?fbclid=IwAR1tsf9xx1a3n8e9vGnHugzSm2qGu31PTbfnZBit1v_tSyKHGW72sHV2O5k). The Foundation for a Smokefree America is an organization with a mission of inspiring youth to remain tobacco free, as well as assisting current smokers to quit successfully.
- **Asian Pacific Islanders Partners and Advocates Countering Tobacco**
(https://tobaccofree.org/?fbclid=IwAR1tsf9xx1a3n8e9vGnHugzSm2qGu31PTbfnZBit1v_tSyKHGW72sHV2O5k). APIPACT is a regional tobacco program located in the Central Valley in California aimed in reducing tobacco related health disparities and improving health amongst Asian/Pacific Islanders.
- **American Nonsmokers' Rights Foundation** (<https://no-smoke.org/at-risk-people/>). ANRF has materials and information concerning ways to reduce children and youth's exposure to secondhand smoke, including smokefree cars and homes.

2. How can CDC best educate all community members about the harmful effects of secondhand smoke exposure?

It is important to educate community members about the harmful effects of second and thirdhand smoke and aerosol exposure. Data show that while some people may understand the effects of secondhand smoke, when not provided with accurate information support for such

⁴⁸ <https://www.tobaccofreekids.org/what-we-do/youth-programs>

policies may be lessened.⁴⁹ Several efforts have been put forth to provide such information.

Partnering with the media and having media be part of the advocacy process will likely inform the public and garner support.⁵⁰ Other studies have shown that youth are significantly less likely to smoke cigarettes if they are aware of and acknowledge the harms linked to secondhand smoke.^{51,52}

American Nonsmokers' Rights Foundation (<https://no-smoke.org/at-risk-people/>) has extensive materials on best practices and policies to reduce exposure to secondhand and thirdhand smoke, including reducing exposure in multi-unit and public housing.

3. How can CDC support state and local health departments and their partners to improve community engagement with populations most at risk for tobacco use?

There is clear evidence that the tobacco industry has targeted people in the inner cities, and targeted those most at risk for tobacco use.⁵³

Older smokers could be the strongest supporters for U.S. government regulation of tobacco: a focus group study. Given the Food and Drug Administration's new authority to regulate tobacco products, findings suggest that some of the tobacco industry's "best customers" (older, established smokers and ex-smokers) may be strong supporters of government regulation of tobacco.⁵⁴

4. What innovative strategies are effective in communities to decrease tobacco use in population groups that have the greatest burden of tobacco use and secondhand smoke exposure?

⁴⁹ Yerger, VB, Battle, RS, Moore, RS. Evaluating the implementation process of a citywide smoke-free multiunit housing ordinance: Insights from community stakeholders. *Am J Public Health*. 2014 Oct;104(10):1889-91. doi: 10.2105/AJPH.2014.302075. Epub 2014 Aug 14.

⁵⁰ McDaniel, PA., Offen, N., Yerger, V., Forsyth, S., Malone, RE. "Tired of watching customers walk out the door because of the smoke?" A content analysis of media coverage of voluntarily smokefree restaurants and bars. *BMC Public Health*. 2015; 15: 761.

⁵¹ Halpern-Felsher, BL, & Rubinstein, ML. Clear the air: Adolescents' perceptions of the risks associated with second hand smoke. *Preventive Medicine*. 2005 Jul; 41(1): 16-22. PMID: 15916988.

⁵² Perceptions of Second-hand Smoke Risks Predict Future Adolescent Smoking Initiation. *Journal of Adolescent Health*. 2009 Dec; 45 (6):618-625. PMID: 19931835.

⁵³ Yerger, VB, Przewoznik, J, Malone, RE. Racialized geography, corporate activity, and health disparities: Tobacco industry targeting of inner cities. *J Health Care Poor Underserved*. 2007 Nov;18(4 Suppl):10-38.

⁵⁴ Yerger, VB, Cataldo, JK, Malone, RE. Older smokers could be the strongest supporters for U.S. government regulation of tobacco: A focus group study. *Tob Induc Dis*. 2013 Aug 17;11(1):17. doi: 10.1186/1617-9625-11-17

The prevalence of tobacco use in low-income populations in the United States (U.S.) is at least two times higher than that of the general population (27% versus 15%).⁵⁵ Low-income populations bear a disproportionate burden of tobacco-related chronic diseases due to increased exposure to secondhand smoke (SHS) among non-smokers and reduced rate of successful cessation among smokers.⁵⁶

Benefits of smoke-free policies in multi-unit housing

Smoke-free policies, one of the most effective tobacco control strategies, not only reduce SHS exposure among non-smokers but they also reduce cigarette consumption, increase quit attempts, and reduce relapse to smoking among smokers.⁵⁷ In 1994, California implemented the first statewide comprehensive smoke-free policy that included bans on smoking in public places, hospitality establishments, and workplaces. Since then considerable progress has been made towards increasing the number of statewide comprehensive smoke-free policies across the U.S. However, these policies do not eliminate SHS from all sources, especially private settings such as people's homes.

Individuals living in multi-unit housing are particularly susceptible to SHS exposure because it infiltrates into smoke-free living units from units where smoking occurs.⁵⁸ Approximately 80 million Americans live in multi-unit housing; and approximately 7 million live in government-subsidized public housing.⁵⁹ Individuals living in public housing, including children, the poor, the disabled, the elderly, and those who belong to racial/ethnic minorities, are most affected by tobacco use.

To reduce the harms from tobacco use, the U.S. Department of Housing and Urban Development (HUD) put into effect a mandatory smoke-free rule that required all public housing authority (PHA) housing across the U.S. to prohibit the use of any combustible tobacco in indoor dwelling and shared areas and in outdoor areas within 25 feet of exits and windows.⁶⁰ This smoke-free rule was finalized in January 2016, and is expected to apply to all 3200 PHA housing in the U.S.. This policy will impact more than 700,000 low-income households, including more

⁵⁵ Jamal, A., King, B. A., Neff, L. J., Whitmill, J., Babb, S. D., & Graffunder, C. M. (2016). Current Cigarette Smoking Among Adults - United States, 2005-2015. *MMWR Morb Mortal Wkly Rep*, 65(44), 1205-1211.

⁵⁶ Jamal, A., King, B. A., Neff, L. J., Whitmill, J., Babb, S. D., & Graffunder, C. M. (2016). Current Cigarette Smoking Among Adults - United States, 2005-2015. *MMWR Morb Mortal Wkly Rep*, 65(44), 1205-1211.

⁵⁷ IARC Handbook of Cancer Prevention. Tobacco Control, Vol. 13: Evaluating the effectiveness of smoke-free policies (2009: Lyon, France).

⁵⁸ King BA, Travers MJ, Cummings KM, et al. Secondhand smoke transfer in multiunit housing. *Nicotine Tob Res* 2010;12:1133–41.

⁵⁹ Office of Policy Development and Research, U.S. Department of Housing and Urban Development. Smoke-free Public Housing: Research and Implementation. Available at: <https://www.hudusergov/portal/periodicals/em/winter16/highlight2html> 2016.

⁶⁰ Instituting Smoke-Free Public Housing. 24 CFR Parts 965 and 966 Department of Housing and Urban Development; 2016:15.

than 775,000 children. While this is a commendable policy that will lead to not only substantial improvements in morbidity and mortality outcomes among populations disproportionately impacted by tobacco use, but also cost savings from reduced tobacco-related maintenance costs in subsidized housing and societal costs from reduced tobacco-related healthcare utilization.

The homeless population a neglected population in terms of implementing smoke-free policies

There are several gaps in the implementation of the HUD policy that the CDC can help close by providing more education to the public on the harms of SHS exposure and the detrimental impact of tobacco use on the financial wellbeing and health in low-income populations. One of the primary gaps in the policy is that it only impacts PHA housing, but not mixed-income subsidized housing or Section 8 Project-based Voucher subsidized housing for low-income residents. Nor does the policy impact another disproportionately impacted population – the homeless population. Homeless adults smoke at an alarming rate of 70%.⁶¹ This prevalence has not declined despite over four decades of population-wide tobacco control efforts, and successful quit rates are exceedingly low in this population compared to the general population.⁶² Permanent supportive housing is subsidized housing with closely linked or on-site services to formerly homeless adults with dual mental illness and substance use disorders, and is the preferred and proven approach to ending chronic homelessness.⁶³ Most homeless adults exit homelessness and enter permanent supportive housing. In 2016, over 300,000 individuals were housed in permanent supportive housing, of whom 75% reported a mental health condition, a substance use disorder, or a dual diagnosis that included both mental health and substance abuse.⁶⁴ Tobacco use is highest and the need for interventions greatest among these populations who not only face adverse health consequences but also experience substantial financial burden from tobacco use.

Homeless adults spend a third of their monthly income on tobacco use,⁶⁵ an amount that is equivalent to the rent that is required to obtain permanent supportive housing. Homeless individuals who qualify for permanent supportive housing must agree to spend 30% of their household income on rent. If clients are unable to do that, they risk eviction. Thus, continuing tobacco use could threaten homeless individuals' ability to exit homelessness and recently housed individuals' ability to maintain housing. Policies that discourage tobacco use in permanent supportive housing could mitigate both the financial and health-related burden of tobacco use in these populations and also promote anti-tobacco norms, which are one of the primary motivators of cessation behaviors.

⁶¹ Baggett TP, Tobey ML, Rigotti NA. Tobacco use among homeless people--addressing the neglected addiction. *N Engl J Med*;369:201-4.

⁶² Vijayaraghavan M, Tieu L, Ponath C, Guzman D, Kushel M. Tobacco Cessation Behaviors Among Older Homeless Adults: Results From the HOPE HOME Study. *Nicotine Tob Res* 2016;18:1733-9.

⁶³ Tsemberis S, Gulcur L, Nakae M. Housing First, consumer choice, and harm reduction for homeless individuals with a dual diagnosis. *Am J Public Health* 2004;94:651-6.

⁶⁴ The US Department of Housing and Urban Development. The 2016 Annual Homeless Assessment Report (AHAR) to Congress. Available at: <https://www.hudexchange.info/resources/documents/2016-AHAR-Part-2.pdf>

⁶⁵ Baggett TP, Rigotti NA, Campbell EG. Cost of Smoking among Homeless Adults. *N Engl J Med*. 2016;374(7):697-698.

Supportive housing generally do not have smoke-free policies because there is a concern that policies contradict the harm reduction framework of supportive housing.⁶⁶ However, findings from a study that described the experiences of an early adopter of smoke-free policies in permanent supportive housing suggests that most residents are supportive and support increased more among smokers than non-smokers during policy implementation.⁶⁷ None of the residents left the property and there were no evictions.⁶⁸

Recommendations for the CDC

To mitigate the burden of tobacco use in the very low-income populations in the U.S., the CDC should take four steps to close these gaps in the implementation of smoke-free policies in multi-unit subsidized housing.

2. ***The CDC should release a strong policy statement encouraging all multi-unit housing to implement smoke-free policies.*** The policy statement should focus specifically on housing that is not covered by HUD's current smoke-free policy, including mixed income housing, voucher-based housing, and non-profit permanent supportive housing, and the how inequitable access to such policies can perpetuate tobacco-related disparities.
3. ***The CDC should play a significant role in educating the public on the harms of secondhand smoke exposure, with case studies that resonate with the target populations.*** In this regard, CDC should undertake a public health media campaign using multiple media describing exposure to secondhand smoke, the pervasiveness of smoking in these sites, the financial burden of tobacco use in these populations, and how much a policy could mitigate this burden.
4. ***The CDC should work directly with city governments to support their efforts to implement smoke-free ordinances in multi-unit housing by providing education to residents and staff on the impact of tobacco use and the benefits of a smoke-free policy, and offering capacity building and best practices to support staff in these sites in their implementation and enforcement efforts.*** The lack of a common regulatory authority (such as HUD) in mixed income housing or permanent supportive housing poses challenges to implementing smoke-free policies because the administrative heads in these sites are often non-profit providers or landlords in the private rental market who neither have the bandwidth nor the support from HUD to implement and enforce these policies.
5. ***CDC should play a role in educating landlords and non-profit housing providers on the potential for smoke-free policies to mitigate tobacco burden in these populations, and can create an infrastructure and/or a toolkit to help these housing sites implement such policies.***

⁶⁶ Petersen AB, Stewart HC, Walters J, Vijayaraghavan M. Smoking Policy Change Within Permanent Supportive Housing. *J Community Health*. 2018 Apr;43(2):312-320.

⁶⁷ Petersen AB, Stewart HC, Walters J, Vijayaraghavan M. Smoking Policy Change Within Permanent Supportive Housing. *J Community Health*. 2018 Apr;43(2):312-320.

⁶⁸ Petersen AB, Stewart HC, Walters J, Vijayaraghavan M. Smoking Policy Change Within Permanent Supportive Housing. *J Community Health*. 2018 Apr;43(2):312-320.

Ensuring equitable access to smoke-free policies has the potential to substantially reduce tobacco-related disparities in very low-income populations in the U.S.

5. What science, tools, or resources does the public health sector need CDC to develop in order to enhance and sustain tobacco prevention and control efforts?

CDC Should Increase its Efforts to Make Youth-rated Movies and Other Youth Media Tobacco Free

A review of population studies finds that one of the leading recruiters of new, young smokers — if not the single largest — is their exposure to onscreen smoking. With an attributable risk of smoking of 37 percent (95% [0.34, 0.58]),⁶⁹ the eventual death toll from exposure to tobacco imagery in youth-rated movies could reach 1 million in this generation⁷⁰ with another million at equal risk from R-rated films. In 2012 the Surgeon General concluded that exposure to onscreen smoking in movies caused youth to smoke.⁷¹ The Surgeon General also documented the tobacco industry's decades-long collaboration with the US film industry.⁷² Persistent efforts by the public health community, state health agencies, state Attorneys General, the US Congress, large investors and community-based organizations have helped to alter media companies' risk-calculus around tobacco content in the movies that young people see most.⁷³ US film companies have reduced the number of their top-grossing youth-rated movies with smoking by 50 percent; reduced the number of tobacco incidents in their youth-rated films by 31 percent; and reduced delivery of youth-rated tobacco impressions to movie audiences by 75 percent, from 18.2 billion to 4.6 billion.⁷⁴ However, most of the decline in these measures was experienced by 2010, with no lasting progress since.

⁶⁹ Sargent JD, Tanski S, Stoolmiller M. Influence of motion picture rating on adolescent response to movie smoking. *Pediatrics*. 2012;130(2):228-36; Glantz SA, Updated attributable risk for smoking due to movies: 37%, August 19, 2012, <https://tobacco.ucsf.edu/updated-attributable-risk-smoking-due-movies-37>.

⁷⁰ CDC, Smoking in the Movies, April 26, 2018,

https://www.cdc.gov/tobacco/data_statistics/fact_sheets/youth_data/movies/index.htm

⁷¹ National Center for Chronic Disease Prevention and Health Promotion (US) Office on Smoking and Health. Preventing Tobacco Use Among Youth and Young Adults: A Report of the Surgeon General, Chap. 1, p. 10. Centers for Disease Control and Prevention, 2012. Available from: <https://www.ncbi.nlm.nih.gov/books/NBK99237/>

⁷² National Center for Chronic Disease Prevention and Health Promotion (US) Office on Smoking and Health. Preventing Tobacco Use Among Youth and Young Adults: A Report of the Surgeon General, Chap. 5, pp. 565-566. Centers for Disease Control and Prevention, 2012. Available from: <https://www.ncbi.nlm.nih.gov/books/NBK99237/>

⁷³ UCSF, Smoke Free Movies, <https://smokefreemovies.ucsf.edu>

⁷⁴ Preliminary data show that youth-impressions nearly doubled from 4.6 billion in 2017 to at least 9.0 billion in 2018. The 2018 level is more than triple the historic low of 2.9 billion, which occurred in 2015.

Following up on these findings, CDC has published several studies in MMWR⁷⁵ and elsewhere⁷⁶ and started tracking smoking in movies in an annually-updated Fact Sheet on its website.⁷⁷ These are important steps that have contributed to public awareness of the problem of smoking in movies and have contributed to progress in reducing this stimulus for youth smoking.

The market is changing and CDC needs to adapt its monitoring and educational activities accordingly.

The last ten years have witnessed a digital revolution in media, allowing most content to be experienced anywhere, anytime on any size screen. Boundaries between theatrical film and video are vanishing. Online streaming of films and TV shows, whether legacy, licensed content or commissioned, original content, is the fastest-growing entertainment segment, with the greatest penetration among young viewers. This disruption of the movie-studio model and of linear (fixed-schedule) television sees the rise of new corporate players⁷⁸ and the radical reorganization of others.⁷⁹

For the public health community, one fact is unchanged: young people's exposure to on-screen tobacco imagery is a proven, large-scale health risk. But the media environment is changing rapidly, leaving important questions unanswered:

- Has young people's exposure to movie smoking declined, migrated online or actually grown?
- How much *total* exposure are young people now receiving from films in theaters, films on-demand, legacy television and original programming?
- What is the age-composition of the audience for specific entertainment products? Does the frequently *social* nature of young people's interaction with entertainment media make embedded promotion of behaviors or products even more effective?
- Should policy solutions be cross-platform or platform-specific? (For example, regulation ranges from the FCC's relatively strong role in broadcast to the essentially rule-free Internet.)

⁷⁵ Tynan MA, Polansky JR, Titus K, Atayeva R, Glantz SA. Tobacco Use in Top-Grossing Movies — United States, 2010–2016. MMWR 2017;66:681–686, available at:

<https://www.cdc.gov/mmwr/volumes/66/wr/mm6626a1.htm>;

Glantz SA, Mitchell S, Titus K, et al. Smoking in Top-Grossing Movies — United States, 2010, MMWR 2011;60:909-913, available at: <http://www.cdc.gov/mmwr/preview/mmwrhtml/mm6027a1.htm>;

Glantz SA, Titus K, Mitchell S, Smoking in Top-Grossing Movies --- United States, 1991—2009, MMWR 2010; 59(32);1014-1017, available at: <http://www.ncbi.nlm.nih.gov/pubmed/20724967> (2010);

⁷⁶ McAfee T, Tynan M. Smoking in movies: a new centers for disease control and prevention core surveillance indicator. *Prev Chronic Dis.* 2012;9:E162. Available at:

<http://www.ncbi.nlm.nih.gov/pubmed/23137861>

⁷⁷ CDC, Smoking in the Movies, updated April 26, 2018. available at:

https://www.cdc.gov/tobacco/data_statistics/fact_sheets/youth_data/movies/index.htm. CDC's annual fact sheets for 2013-2017 are archived at <https://smokefreemovies.ucsf.edu/research/key-reports/cdc-fact-sheets>.

⁷⁸ Such as Amazon, Google (YouTube), Netflix and, soon, Apple

⁷⁹ In 2019, AT&T's purchase of Time Warner and Disney's acquisition of 20th Century Fox.

Today's digital media is constructed to harvest large amounts of data from its audiences. But much of this data remains proprietary and streaming channels without advertisers disclose almost nothing. In any case, the data collection is designed for specific marketing purposes, such as customer retention.⁸⁰ What is known about how many people watch an on-demand movie or show, how many times? Are surveys needed to understand how media is being used by different groups? Given the tobacco industry's repeated history of penetrating and exploiting new media (radio, movies, TV, the Internet), what safeguards are feasible to disincentivize or sanction such behavior as media platforms continue to evolve?

In addition to research that supplements or illuminates available private-sector data on media habits and consumption, CDC should expand on what has been done to raise the risk profile of on-screen tobacco promotion for producers, policy makers and parents.

The science is conclusive. In polling, the public strongly supports freeing young people's entertainment media from tobacco promotion.⁸¹ The major studios — under pressure — have all published tobacco depiction policies.⁸² At the same time, these companies still contribute by far the largest share of audience exposure.⁸³ The new streaming players and the independent film sector appear as yet untouched by policy advocacy efforts.

- Are parents aware that exposure to on-screen smoking is the single biggest media risk to their children?
- Are policy makers aware that more than two million of today's children are at risk of dying of cancer, heart disease, lung disease and stroke due to tobacco imagery on their screens?
- Or that more than \$30 billion in healthcare costs could be averted simply by including tobacco imagery in the media industry's voluntary, self-administered "R" and "TV-MA" rating standards?⁸⁴

Nearly a half-century ago, on January 1, 1971, the last cigarette commercial aired on US television.⁸⁵

⁸⁰ Inside Big Data, How Netflix Uses Big Data to Drive Success, Jan. 20, 2018, available at: <https://insidebigdata.com/2018/01/20/netflix-uses-big-data-drive-success/>

⁸¹ See "Majority support..." links at <https://smokefreemovies.ucsf.edu/take-action/tools-resources>

⁸² Except for The Disney Company, the MPAA-members' policies include substantial loopholes. See: <https://smokefreemovies.ucsf.edu/whos-accountable/company-policies>

⁸³ 80 percent in the five years 2013-17 (27.2 billion of 34.1 billion youth-rated tobacco impressions)

⁸⁴ Total costs are estimated at \$67 billion; if 50 percent of tobacco exposure, from youth-rated media, were eliminated, the savings would be proportional. For impact of an R-rating, see:

<http://www.surgeongeneral.gov/library/reports/50-years-of-progress/index.html#fullreport> at Chap. 14, pp. 775-777. For healthcare cost estimate, see: <https://smokefreemovies.ucsf.edu/policy-solutions/harm-and-costs-movie-smoking>, Note 4.

⁸⁵ History.com, Nixon signs legislation banning cigarette ads on TV and radio, available at:

<https://www.history.com/this-day-in-history/nixon-signs-legislation-banning-cigarette-ads-on-tv-and-radio>

As we approach the anniversary of that important and hard-won victory for public health, we should remember that the tobacco industry soon embarked on at least two decades of product placement in hundreds of US movies ... that this end-run around the commercial ban meant *movies* with smoking aired on TV for decades ... that the number of youth-rated movies with smoking peaked in 2004 ... the number of youth-rated tobacco incidents in audience impressions peaked in 2005.

The tobacco industry, like any self-preserving organism, adapts as its environment changes. So must public health look beyond the lab and the clinic to the environment around us. In our time, that environment is fundamentally shaped and determined by hours of media.⁸⁶ Our experience monitoring and attempting to reduce media promotion of tobacco use suggests that this promotion blows strongly *against* tobacco prevention campaigns and *undermines* parents' fervent desire that their children not grow up to be smokers.

To strengthen its investment in a tobacco- and nicotine-free future, CDC should increase the visibility of its work on tobacco exposure across the film-video spectrum and to open a straight-talking dialogue with the companies making choices about tobacco content in their entertainment products every day. Ask them to take the following measurable actions:

- Through transparency, to make their production and distribution chains free of tobacco influence
- To market legacy entertainment products, their own or licensed from others, safely and responsibly
- To create their future entertainment products that are accessible to children and adolescents smokefree starting January 1, 2021.

In particular, CDC and the Surgeon General should include a discussion of the science and a call to finally solve this problem in all public discussions of tobacco. The theme could be, "Fifty years after America got rid of tobacco commercials, get rid of tobacco promotion in the shows themselves."

⁸⁶ Perez S, Techcrunch.com, US adults now spend nearly 6 hours per day watching video, July 31, 2018, available at: <https://techcrunch.com/2018/07/31/u-s-adults-now-spend-nearly-6-hours-per-day-watching-video/>