

# Legalization of access to cannabis: a growing agenda for tobacco control research in the USA

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The USA experienced a significant reduction in cigarette smoking that relieved the smoking-attributable health and economic burden considerably, thanks to the advancement of comprehensive tobacco control measures.<sup>1</sup> However, public health policy currently stands at the crossroads in a rapidly evolving nexus of conventional tobacco, novel tobacco, and cannabis products.

The legalization of cannabis sales is expected to increase the legal supply of cannabis products inducing behavioral and market-level changes in tobacco and cannabis sectors. Recent evidence suggests increased cannabis use among adults, increased hospital encounters due to cannabis intoxication and poisoning among young children, increased cannabis use among women of reproductive age in preconception and postpartum periods, and increased alcohol use, electronic vapor product use and e-cigarette use among adolescents in the US states that adopted recreational cannabis laws (RCLs) and in Canada postlegalization.<sup>2</sup> Cannabis use among youth is expected to decrease because RCLs eliminate youth (below age 21) access to legal cannabis. Current evidence on the effects of cannabis legalization on youth cannabis use are, however, mixed.<sup>2</sup> The long-term impact of cannabis legalization on population-level cannabis use is still unknown. It will take longer span in the post-implementation period for the full effects to become evident.

While increasing cannabis use may lead to substitution away from tobacco use generating health benefits from reduction in tobacco-induced diseases, co-use of cannabis with tobacco may pose health risks of exposure to toxicants and carcinogens in excess of those associated with exclusive tobacco use.<sup>3</sup> More clarity on the implications of cannabis legalization for tobacco-related health consequences and tobacco control is needed to build awareness and inform the public, users, clinicians, advocates, and policy makers.

Cannabis is a Schedule I controlled substance under the federal Controlled Substances Act and is strictly regulated by the federal Drug Enforcement Agency.<sup>4</sup> In 2018, hemp (cannabis containing no more than a 0.3%

concentration of delta-9-tetrahydrocannabinol [delta-9-THC]—the psychoactive component) was removed from the statutory definition of cannabis. There is, however, wide variation in the legal status of cannabis access and use across states. California was the first state to legalize access to cannabis for “medical” use in 1996. Washington was the first state to legalize access to cannabis for “recreational” use followed by Colorado in the same year in 2012. By 2023, 47 U.S. states, four territories, and Washington DC, legalized access to cannabis for “medical” and/or for “recreational” purposes.

The prevalence of cigarette smoking is disproportionately high among persons who use cannabis and have cannabis use disorders compared to those who do not.<sup>5</sup> Cannabis users are more likely to initiate cigarette smoking and electronic nicotine delivery systems use.<sup>6</sup> Moreover, dual or poly use of cannabis and tobacco may increase the challenges of quitting, sustained abstinence from tobacco smoking, or using e-cigarettes to replace combustible tobacco cigarettes.<sup>7</sup> Among youth specifically, co-use of cannabis and e-cigarettes has grown to an epic proportion due to the popularity of administering cannabis through the modifiable designs of e-cigarettes.<sup>8</sup> Emerging evidence shows that the co-use of e-cigarettes and cannabis in adolescence may lead to more frequent cigarette smoking in young adulthood.<sup>9</sup> Rampant co-use of cannabis with tobacco products and progression to higher smoking prevalence and intensity add up concerns to the already declared public health emergency of the e-cigarette epidemic among youth.<sup>10</sup>

The widespread and increasing co-use of cannabis and tobacco particularly among youth warrants innovations and adaptations of the existing tobacco control measures to the rapidly evolving cannabis market and policy environment. Empirical literature on the relationship of tobacco use with cannabis legalization is nascent, limited, and inconclusive about the population-level changes in tobacco use attributable to cannabis legalization.<sup>11</sup> New and up-to-date data are needed to address the emerging challenges to tobacco control in the post-legalization era. The onus of generating relevant scientific evidence falls on the tobacco control research community.

The evolving legal cannabis market in the USA calls for reevaluation of the effectiveness of tobacco control measures in place. It remains for tobacco control



The Lancet Regional Health - Americas 2023;28: 100630

Published Online xxx  
<https://doi.org/10.1016/j.lana.2023.100630>

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researchers to identify how cannabis legalization and regulations are modifying the impact of tobacco control policy changes on tobacco use and population health and what innovations are necessitated by these changes.

First, tobacco control initiatives that focus on youth e-cigarette use in isolation from cannabis use may run into increased risk of failure in preventing youth from tobacco use. Overall, there is urgency for the identification of the population sub-groups who are at new risk of increased tobacco use due to cannabis legalization and how they can be supported to minimize the risk.

Second, the population-level effect of cannabis legalization on tobacco use may mask the heterogeneity of the effect by population characteristics, retail environment, time and space of implementation, time elapsed since legalization, and variation in the intensity of liberalization and enforcement. The dimension of the measurement of the effect of cannabis legalization is important in informing targeted policy interventions to counteract any unintended adverse health or economic consequences.

Third, there is no evidence on the spillover effects of recreational cannabis legalization in neighboring states. State-level variation in the legal access to cannabis is likely to induce cross-border purchases among residents in the states that have not yet adopted RCLs. This poses an increased risk of co-use of cannabis and tobacco products and safety breaches in the non-RCL states in the absence of any regulatory framework. Closer investigation of the spillover effects of cross-border purchases and their health consequences is needed. Regulation of cannabis by the federal authority and issuance of national-level guidelines on the health risks from cannabis contamination is expected to mitigate this effect.<sup>12</sup>

Fourth, taxation and price regulations determine the relative prices of substances and incentivize consumers to switch to cheaper products.<sup>13</sup> Currently there is no research to show how cannabis tax is expected to influence tobacco use behavior as increasing number of jurisdictions levy and raise cannabis tax.

Finally, the marketing of cannabis products may influence the harm perceptions and use of tobacco and nicotine vaping products especially among youth due to the commonalities of product features (i.e., shape, size, color) and joint use (e.g., cannabis e-cigarettes used for inhaling cannabis extracts through vaporizers). As the tobacco industry diversifies its product portfolio with cannabis products and attempts to reposition itself in the health care and wellness sector,<sup>14</sup> there will be growing need to anticipate the industry marketing strategies at the cannabis-tobacco interface and regulate cannabis products. While emerging evidence suggests that pictorial warnings on cigars may discourage the use of blunts (cigar wrap filled with cannabis),<sup>15</sup> there is no research to show

how warning on cannabis products or lack of it can interact with tobacco use behavior.

#### Contributors

NN conceptualized the commentary and prepared the original draft; SA reviewed the relevant literature, and reviewed and edited the draft for final submission.

#### Declaration of interests

We declare no competing interests.

#### Acknowledgements

Funding: NN and SA are employed by the American Cancer Society, which receives grants from private and corporate foundations, including foundations associated with companies in the health-care sector for research outside of the submitted work. The donors do not have any role in the writing of the manuscript or the decision to submit for publication. The authors have not been paid to write this article by a pharmaceutical company or other agency. The authors were not precluded from accessing data in the study, and they accept responsibility to submit for publication.

#### References

- 1 U.S. Department of Health and Human Services. *The health consequences of smoking—50 Years of progress: a report of the surgeon general*. Atlanta: U.S. Department of Health and Human Services, Centers for Disease Control and Prevention, National Center for Chronic Disease Prevention and Health Promotion, Office on Smoking and Health; 2014. Accessed August 29, 2023.
- 2 Assanangkornchai S, Kalayasiri R, Ratta-Apha W, Tanaree A. Effects of cannabis legalization on the use of cannabis and other substances. *Curr Opin Psychiatry*. 2023;36(4):283–289. <https://doi.org/10.1097/YCO.0000000000000868>.
- 3 Meier E, Hatsukami D. A review of the additive health risk of cannabis and tobacco co-use. *Drug Alcohol Depend*. 2016;166:6–12. <https://doi.org/10.1016/j.drugalcdep.2016.07.013>.
- 4 Congressional Research Service. The federal status of marijuana and the expanding policy gap with states. Available from: <https://crsreports.congress.gov/product/pdf/IF/IF12270>. Accessed August 29, 2023.
- 5 Weinberger AH, Wyka K, Goodwin R. Impact of cannabis legalization in the United States on the trends in cannabis use and daily cannabis use among individuals who smoke cigarettes. *Drug Alcohol Depend*. 2022;238:109563. <https://doi.org/10.1016/j.drugalcdep.2022.109563>.
- 6 Kalam ME, Brewer NT. Longitudinal transitions in e-cigarette and cigarette use among US adults: prospective cohort study. *Lancet Reg Health Am*. 2023;22:100508. <https://doi.org/10.1016/j.lana.2023.100508>.
- 7 Weinberger AH, Delnevo CD, Wyka K, et al. Cannabis use is associated with increased risk of cigarette smoking initiation, persistence, and relapse among adults in the United States. *Nicotine Tob Res*. 2020;22(8):1404–1408. <https://doi.org/10.1093/ntr/ntz085>.
- 8 Nicksic NE, Do EK, Barnes AJ. Cannabis legalization, tobacco prevention policies, and Cannabis use in E-cigarettes among youth. *Drug Alcohol Depend*. 2020;206:107730. <https://doi.org/10.1016/j.drugalcdep.2019.107730>.
- 9 Islam T, Eckel S, Liu F, et al. Effects of dual use of e-cigarette and cannabis during adolescence on cigarette use in young adulthood. *Tob Control*. 2023. <https://doi.org/10.1136/tc-2022-057542>. Epub ahead of print.
- 10 Surgeon general's advisory on E-cigarette use among youth. Available from: [https://www.cdc.gov/tobacco/basic\\_information/e-cigarettes/surgeon-general-advisory/pdfs/surgeon-general-advisory-on-e-cigarette-use-among-youth-2018-h.pdf](https://www.cdc.gov/tobacco/basic_information/e-cigarettes/surgeon-general-advisory/pdfs/surgeon-general-advisory-on-e-cigarette-use-among-youth-2018-h.pdf). Accessed August 29, 2023.
- 11 Anderson DM, Rees DI. The public health effects of legalizing marijuana. *J Econ Literature*. 2023;61(1):86–143. <https://doi.org/10.3386/w28647>.
- 12 Jameson LE, Conrow KD, Pinkhasova DV, et al. Comparison of state-level regulations for cannabis contaminants and implications for public health. *Environ Health Perspect*. 2022;130(9):97001. <https://doi.org/10.1289/EHP11206>.

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- 13 He Y, Ma S, Yang Q, Shang C. How cigarette excise tax pass-through to prices responds to the uptake and evolution of e-cigarettes (ECs). *Tob Control*. 2023. <https://doi.org/10.1136/tc-2023-058078>. Epub ahead of print.
  - 14 Ling PM, Kim M, Egbe CO, Patanavanich R, Pinho M, Hendlin Y. Moving targets: how the rapidly changing tobacco and nicotine landscape creates advertising and promotion policy challenges. *Tob Control*. 2022;31(2):222–228. <https://doi.org/10.1136/tobaccocontrol-2021-056552>.
  - 15 Kowitz SD, Goldstein AO, Ross JC, et al. Perceived effectiveness of cigar warnings in discouraging blunt use. *Nicotine Tob Res*. 2023;11:ntad199. <https://doi.org/10.1093/ntr/ntad199>.