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CANNABIS LEGALIZATION IN STATE LEGISLATURES: PUBLIC HEALTH OPPORTUNITY AND RISK

Daniel G. Orenstein, JD, MPH[†], **Stanton A. Glantz, PhD**[‡]

[†]Visiting Assistant Professor, Indiana University Robert H. McKinney School of Law; J.D., Arizona State University Sandra Day O'Connor College of Law; M.P.H., Harvard T.H. Chan School of Public Health. Primary research and drafting for this manuscript took place while the author was Postdoctoral Fellow, Center for Tobacco Control Research and Education and Philip R. Lee Institute for Health Policy Studies, University of California San Francisco.

[‡]Professor of Medicine, Truth Initiative Distinguished Professor of Tobacco Control, Center for Tobacco Control Research and Education, Philip R. Lee Institute for Health Policy Studies, and Department of Medicine, University of California San Francisco; Ph.D., Stanford University.

Abstract

Cannabis is widely used in the U.S. and internationally despite its illicit status, but that illicit status is changing. In the U.S., 33 states and the District of Columbia have legalized medical cannabis, and 11 states and D.C. have legalized adult use cannabis. A majority of state medical cannabis laws and all but two state adult use laws are the result of citizen ballot initiatives, but state legislatures are beginning to seriously consider adult use legislation. From a public health perspective, cannabis legalization presents a mix of potential risks and benefits, but a legislative approach offers an opportunity to improve on existing legalization models passed using the initiative process that strongly favor business interests over public health. To assess whether state legislatures are acting on this opportunity, this article examines provisions of proposed adult use cannabis legalization bills active in state legislatures as of February 2019 to evaluate the inclusion of key public health best practices based on successful tobacco and alcohol control public health policy frameworks. Given public support for legalization, further adoption of state adult use cannabis laws is likely, but legalization should not be viewed as a binary choice between total prohibition and laissez faire commercialization. The extent to which adult use cannabis laws incorporate or reject public health best practices will strongly affect their impact, and health advocates should work to influence the construction of such laws to prioritize public health and learn from past successes and failures in regulating other substances.

Introduction

Cannabis[1] is the most widely used psychoactive substance in the world that is under international control, with an estimated 181.8 million global users annually as of 2013.[2] In

[1]The terms "cannabis" and "marijuana" (and occasionally "marihuana") all appear in state law. In some states, the terms are interchangeable. *See generally, e.g.*, Medical and Adult-Use Cannabis Regulation and Safety Act, California S.B. 94 (2017) (replacing statutory references to "marijuana" with "cannabis"). In others, the terms have critically different legal meanings. *See, e.g.*, State v. Medina, 836 P.2d 997, 999 (Ariz. Ct. App. 1992)(refusing to apply felony murder rule in a case involving drug possession

the U.S., cannabis is by far the most commonly used illicit substance, with an estimated 24.0 million people age 12 or older reporting use in the past 30 days (8.9% of that population) as of 2016.[3] Use is highest among those 18–25 years old (20.8%).[4] While overall prevalence is far outpaced by licit substances tobacco (63.4 million users age 12 or older; 23.5% of population) and alcohol (136.7 million users age 12 or older; 50.7% of population),[5] cannabis use is remarkably[6] and consistently[7] high given the drug's illicit status.[8]

The illicit status of cannabis, however, is in a state of flux. Despite continued illegality under federal law,[9] between 1996 and June 2019, 33 U.S. states, the District of Columbia, and the territories of Guam, Puerto Rico, and the Virgin Islands legalized use of cannabis for medical purposes, and 11 states, D.C., Guam, and the Northern Mariana Islands legalized recreational or "adult use" of the drug.[10] In these jurisdictions, a lucrative new business sector is rising, complete with professional marketing firms,[11] industry-specific conferences and events,[12] and industry groups actively lobbying for favorable legal changes.[13]

Estimates for the near-term future size of the global legal cannabis market vary and depend heavily on assumptions of future legal changes, but some analysts expect the industry

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because possession of "cannabis," defined under state law as extracted resin and various preparations thereof, was classified as a felony, but possession of "marijuana," defined as the plant itself, was not). Scientifically, "Cannabis" refers to the entire plant genus, including the genetic variants (or possibly distinct species) *Cannabis indica* and *Cannabis sativa*. NAT'L ACADS. OF SCIS., ENG'G & MED., THE HEALTH EFFECTS OF CANNABIS AND CANNABINOIDS 44 (2017), *available at* https://www.nap.edu/catalog/24625/the-health-effects-of-cannabis-and-cannabinoids-the-current-stat. "Marijuana" historically referred to the dried leaves and flowers of the plant, as distinguished from "hashish," made from the resin or resin glands. MARTIN BOOTH, CANNABIS: A HISTORY 8 (Picador 2003). The word "marijuana" may derive from Mexican military slang for a prostitute or brothel, *Maria y Juana* (translating as Mary and Jane, and thus also the likely source for the American cannabis slang term "Mary Jane"), and there is a near-limitless litany of jargon and slang terms for the plant (*e.g.*, pot, weed, ganja, dope, grass) owing to the need for clandestine reference to an illegal product. *Id.* at 158. This article generally uses "cannabis" (rather than "marijuana") to acknowledge the rise of concentrates and extracts (including their use in edibles) as a significant and growing product area, in addition to consideration of the historical use of "marijuana" in the U.S. as a pejorative with racist and xenophobic overtones, though there is by no means consensus on terminology. *See* Alex Halperin, *Marijuana: Is It Time to Stop Using a Word with Racist Roots?*, GUARDIAN (UK), January 29, 2018 (discussing racial history of the terminology); *but cf.* Angela Chen, *Why It Can Be Okay to Call It 'Marijuana' Instead of 'Cannabis'*, VERGE, April 19, 2018 (arguing that "cannabis" is insufficiently specific because it is the name of the entire plant genus, which includes hemp, and that avoiding the term "marijuana" may erase the complicated and problematic racial history of criminalization of the substance).

[2] WORLD HEALTH ORG., THE HEALTH AND SOCIAL EFFECTS OF NONMEDICAL CANNABIS USE 1 (2016), *available at* https://www.who.int/substance_abuse/publications/cannabis/en/.

[3] SUBSTANCE ABUSE AND MENTAL HEALTH SERVS. ADMIN., KEY SUBSTANCE USE AND MENTAL HEALTH INDICATORS IN THE UNITED STATES: RESULTS FROM THE 2016 NATIONAL SURVEY ON DRUG USE AND HEALTH 14–15 (2017), https://www.samhsa.gov/data/sites/default/files/NSDUH-FFR1-2016/NSDUH-FFR1-2016.pdf.

[4] Id.

[5] *Id.* at 11–13.

[6] Among illicit drugs, cannabis use far exceeds all others in terms of use prevalence. In 2016, an estimated 28.6 million persons age 12 and older used illicit drug in the past month. Among these, 24.0 million used cannabis, while 3.3 million or fewer used any other illicit drug. *Id.* at 14.

[7] *Id.* at 11–15. Past-month cannabis use among all persons age 12 and older remained between 6.0% and 8.9% from 2002–2016. *Id.* at 15. While overall prevalence increased over this timeframe, the increase is largely attributable to an increase in use by those over age 26 and to a lesser extent those 18–25; use among adolescents 12–17 actually decreased. *Id.*

[8] In fact, cannabis use rates peaked in the 1970s, despite tightening federal control under the Controlled Substances Act. NAT'L ACADS. OF SCIS., ENG'G & MED., *supra* note 1 at 62.

[9] Controlled Substances Act, 21 U.S.C. § 812 (1970).

[10] Nat'l Conference of State Legislatures, "Marijuana Deep Dive," 2018, http://www.ncsl.org/bookstore/state-legislatures-magazine/marijuana-deep-dive.aspx, last visited June 10, 2019; Associated Press, "Guam Legalizes Recreational Use of Marijuana," WASH. POST, Apr. 4, 2019. The most recent adult use legalization state, Illinois, did so legislatively in June 2019. John O'Connor, *Illinois Becomes 11th State to Allow Recreational Marijuana*, ASSOCIATED PRESS, June 25, 2019, https://www.apnews.com/7b793d88f3c84417b83db0f770854960.

[11] *See, e.g.*, Ganjapreneur.com, "Marijuana Advertising Agencies: Featured Listings," 2019, https://www.ganjapreneur.com/marijuana-advertising-agencies/ (listing multiple cannabis-specific advertising agencies).

[12] Nat'l Cannabis Indus. Ass'n, "Events Calendar," 2019, https://thecannabisindustry.org/ncia-events/, last visited June 10, 2019.

[13] Nat'l Cannabis Indus. Ass'n Home Page, 2019, https://thecannabisindustry.org/, last visited July 10, 2019.

could grow to $75 billion in sales by 2030, surpassing soda, among other industries.[14] The cannabis market has already attracted the attention and investment of major corporate entities in Canada (which legalized adult use in 2018), including Altria (parent company of Philip Morris USA, maker of Marlboro® and other cigarette labels), Constellation Brands (owner of Corona® and other beer labels), and Molson Coors (owner of Molson®, Coors®, and other beer labels), while a number of other large corporations, including Coca-Cola®, are reportedly also considering entry.[15]

Tobacco companies in particular have contemplated entering the cannabis market in the event of legalization since the late 1960s.[16] Public health advocates are justifiably concerned about such corporate entities, especially tobacco, entering the cannabis market, but even an independently developing cannabis industry poses substantial risks if it follows the path of industries like tobacco. As Richter and Levy explain:

> The tobacco industry has provided a detailed road map for marijuana: deny addiction potential, downplay known adverse health effects, create as large a market as possible as quickly as possible, and protect that market through lobbying, campaign contributions, and other advocacy efforts.[17]

Cannabis legalization carries ostensible social benefits, including medical utility for some conditions[18] and the promise of ending discriminatory enforcement practices that have disproportionately affected vulnerable populations, particularly communities of color, throughout the history of cannabis criminalization in the U.S.[19] American voters have been receptive to these arguments and have been increasingly willing to approve medical and adult use legalization ballot initiatives over the past two decades.[20] Particularly for adult use cannabis, ballot initiatives have been advocates' legal vehicle of choice. Only Illinois (2019), Vermont (2018), the Northern Mariana Islands (2018), and Guam (2019), have enacted adult use laws legislatively; the other 9 states and D.C. have all enacted their adult use laws via ballot initiative.[21]

The increasing success of legalization ballot initiatives over time[22] and the current state of U.S. public opinion on the appropriate legal status of cannabis (62% support nationally

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[14]Jeremy Berke, *Coca-Cola is Reportedly Eyeing the Legal Marijuana Industry, and It Could Soon Be a Bigger Market than Soda*, BUS. INSIDER, Sept. 17, 2018.
[15]David Gelles, *When the Makers of Marlboro and Corona Get Into Marijuana*, N.Y. TIMES, Dec. 12, 2018.
[16]*See generally* Rachel A. Barry, et al., *Waiting for the Opportune Moment: The Tobacco Industry and Marijuana Legalization*, 92 MILBANK Q. 207 (2014).
[17]Kimber P. Richter & Sharon Levy, *Big Marijuana – Lessons from Big Tobacco*, 371 NEW ENG. J. MED. 399, 401 (2014).
[18]NAT'L ACADS. OF SCIS., ENG'G & MED., *supra* note 1, at 13–14 (summarizing conclusions regarding therapeutic effects of cannabis and cannabinoids).
[19]*See, e.g.*, Steven W. Bender, *The Colors of Cannabis: Race and Marijuana*, 50 U.C. DAVIS L. REV. 689, 690–702 (2016). Notably, there continue to be troubling disparities in cannabis-related arrests in adult use states, which legalization opponents cite as evidence that legalization is failing to achieve a key outcome advanced by advocates. Kevin S. Sabet, *Marijuana and Legalization Impacts*, 23 BERKELEY J. CRIM. L. 84, 92–93 (2018). Among other factors, disparate enforcement of prohibitions remaining following legalization, including public consumption, youth possession, and driving under the influence, can contribute to continued disparities, reflecting broader inequities tied to racial profiling, "broken window" policing, and law enforcement saturation in neighborhoods of color. Bender, *supra* at 701–03.
[20]Daniel G. Orenstein & Stanton A. Glantz, *The Grassroots of Grass: Cannabis Legalization Ballot Initiative Campaign Contributions and Outcomes, 2004–2016*, __ J. HEALTH POL., POL'Y & L. ___ (forthcoming 2019).
[21]O'Connor, *supra* note 10; Tom Angell, *Governor Signs Marijuana Legalization Bill, Making History In US Territory*, FORBES, Sept. 21, 2018; Nat'l Conference of State Legislatures, "Marijuana Overview," 2017, http://www.ncsl.org/research/civil-and-criminal-justice/marijuana-overview.aspx.
[22]Orenstein & Glantz, *supra* note 20 at ___.

for legalization as of 2018[23]) make further legalization highly likely in additional states. From a legal and public health perspective, cannabis legalization has likely become more a question of "how," rather than "if" in the U.S.[24] As additional states[25] contemplate adult use legalization, the public health implications of this policy evolution will depend in part on the content of legalization laws and how well they govern the new legal market.

On one side, legalization represents the potential to better regulate a substance that has remained commonly used despite strict federal prohibition and to improve public awareness of the health effects (both adverse and therapeutic) of use. On the other, legalization may also increase use prevalence and frequency, encourage youth initiation, reproduce existing inequities for vulnerable populations, and lead to other social harms. The influence of corporatization may exacerbate such negative effects, replicating the ills of tobacco and alcohol markets. Legislative approaches to cannabis legalization thus present both opportunities and risks for public health.

Public health best practice frameworks provide critical guidance on how to regulate cannabis effectively and minimize negative health impacts. A public health approach to legalization prioritizes public health over other goals, including industry profits, state tax revenues, and business development, that, while valid bases for government action generally, may lead to detrimental outcomes in regulating potentially harmful substances. A public health approach draws on the successes and failures of domestic and international regulatory frameworks for other substances, most notably tobacco and alcohol. However, these substantive concerns do not exist within a vacuum, but rather intersect with the procedural question of how a state legalizes adult use cannabis – *i.e.,* ballot initiative or legislation. To further understand this intersection, this article assesses the adoption or absence of public health best practices in proposed legislative adult use cannabis laws.

Part I provides background information on the history and current status of cannabis under U.S. federal and state law. This section also introduces the foundations of a public health approach to cannabis legalization based on best practices from tobacco and alcohol control. Part II defines a rubric for evaluating proposed legislative legalization and applies this rubric to proposed bills from 2018–2019, finding that elements of a public health approach have gained traction in at least some proposals. Part III discusses the implications of these findings, concluding that proactive adoption of adult use cannabis legalization via state legislatures could benefit public health by obviating pro-industry, advocate-driven initiatives and preserving legislative and regulatory flexibility to address developing evidence and implementation challenges in the future.

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[23]Hannah Hartig & Abigail Geiger, "About Six-in-Ten Americans Support Marijuana Legalization," Pew Research Center, 2018, http://www.pewresearch.org/fact-tank/2018/10/08/americans-support-marijuana-legalization/.

[24]*But see* William A. Galson & E.J. Dionne, Jr., "The New Politics of Marijuana Legalization: Why Opinion is Changing," Governance Studies at Brookings, May 2013, *available at* https://www.brookings.edu/wp-content/uploads/2016/06/Dionne-Galston_NewPoliticsofMJLeg_Final.pdf (assessing support for legalization and concluding that while opposition is unlikely to return to prior levels, consistent trajectory of opinions should not be assumed and will depend in part on the effects of ongoing legalization measures).

[25]The unique complexities of cannabis legalization in tribal jurisdictions are beyond the scope of this paper. *See generally* Brad A. Bartlett & Garrett L. Davey, *Tribes and Cannabis: Seeking Parity with States and Consultation and Agreement from the U.S. Government*, 64 FED. LAW. 54 (2017); Katherine Florey, *Budding Conflicts: Marijuana's Impact on Unsettled Questions of Tribal-State Relations*, 58 B.C. L. REV. 991 (2017).

I. Background

A. Brief History of Cannabis Legalization in the U.S.

1. The Path to Prohibition and Back Again—Cannabis cultivation has a long and complex history in human civilization.[26] Cannabis was one of the earliest cultivated plants, and its potential medicinal properties have been documented in Western medicine since the 19th century (and likely much longer in other traditions).[27] Cannabis appeared in the *Pharmacopeia of the United States* from 1851 until 1942 with reference to use as an analgesic, hypnotic, and anticonvulsant.[28] Despite this, most states banned cannabis in the early 20th century, and the federal government followed suit in 1937.[29] Much of this push toward criminalization in the early 1900s was rooted in racial animus toward Mexican immigrants and African-Americans.[30] Various international drug control treaties also developed in the early- and mid-20th century, ultimately consolidated in the 1961 Single Convention on Narcotic Drugs.[31] The Single Convention and subsequent amendments created a scheduling system for controlled substances and obligated treaty parties to criminalize possession of such drugs.[32] The U.S. played a pivotal role in shaping the treaty, led by Harry J. Anslinger, the nation's first commissioner of the Federal Bureau of Narcotics (the precursor to the Drug Enforcement Administration (DEA)) who had spearheaded cannabis criminalization in the U.S.[33]

Under the Controlled Substances Act (CSA) of 1970,[34] cannabis became one of the most highly restricted drugs under U.S. law.[35] The CSA placed cannabis ("marihuana" in the statutory language) on Schedule I, meaning it was found to have: 1) high potential for abuse, 2) no currently accepted medical use in treatment in the U.S., and 3) a lack of accepted safety for use under medical supervision.[36] Other Schedule I drugs include a variety of powerful opiates and opium derivatives (*e.g.*, heroin), hallucinogens (*e.g.*, LSD), and, as of 2012, several newer synthetic street drugs, including synthetic cannabinoids (sometimes called "K2" or "spice").[37] Either Congress or the U.S. Attorney General (via the DEA and with recommendation from the Secretary of Health and Human Services) has authority to

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[26] *See, e.g.*, Brian M. Blumenfeld, *State Legalization of Marijuana and Our American System of Federalism: A Historio-Constitutional Primer*, 24 VA. J. SOC. POL'Y & L. 77, 81–82 (2017) (discussing cultivation and use dating back to fifth-century Greece and Rome).

[27] NAT'L ACADS. OF SCIS., ENG'G & MED., *supra* note 1, at 43.

[28] Id.

[29] Id.

[30] Tamar Todd, *The Benefits of Marijuana Legalization and Regulation*, 23 BERKELEY J. CRIM. L. 99, 104–06 (2018). While not technically a prohibition on cannabis, this was the practical effect of the Marihuana Tax Act of 1937. MARK K. OSBECK & HOWARD BROMBERG, MARIJUANA LAW IN A NUTSHELL 44–45 (West Academic 2017).

[31] Single Convention on Narcotic Drugs, Mar. 30, 1961, 18 U.S.T. 1407, 520 U.S.T.S. 7515; *see also* DAVID BEWLEY-TAYLOR & MARTIN JELSMA, TRANSNATIONAL INSTITUTE, FIFTY YEARS OF THE 1961 SINGLE CONVENTION ON NARCOTIC DRUGS: A REINTERPRETATION 2–5 (2011), *available at* https://www.tni.org/files/download/dlr12.pdf. Potential conflicts between state cannabis legalization and U.S. obligations under this treaty are beyond the scope of this paper. *See generally* Michael Tackeff, *Constructing a "Creative Reading": Will US State Cannabis Legislation Threaten the Fate of the International Drug Control Treaties?*, 51 VAND. J. TRANSNAT'L L. 247 (2018).

[32] Tackeff, *supra* note 31, at 258–59. The Single Convention also charges the World Health Organization (WHO) to assess the dangers posed by illicit drugs. Single Convention, *supra* note 31. WHO published a report on cannabis in 2016, its first in 20 years. WORLD HEALTH ORG., *supra* note 2.

[33] BEWLEY-TAYLOR & JELSMA, *supra* note 31, at 7–8.

[34] 21 U.S.C. § 812.

[35] Notably, the CSA's approach to cannabis was in some respects actually less punitive than the prior Boggs Act of 1951, which applied mandatory minimum sentencing for simple possession. OSBECK & BROMBERG, *supra* note 30, at 46–52.

[36] Id.

revise this approach; however, petitions for rescheduling cannabis have failed as recently as 2016,[38] despite growing evidence that cannabis has some therapeutic utility.[39] Congress did legalize hemp production under the 2018 Farm Bill;[40] however, hemp includes only cannabis with minimal concentration of Δ^9-tetrahydrocannabinol (THC, responsible for the "high" associated with cannabis intoxication, among other effects).

Despite the Schedule I status of cannabis, the FDA has licensed three medications based on cannabinoid compounds responsible for the drug's effects. Among over one hundred identified cannabinoids, two receive by far the most attention from both the medical community and from regulators: THC and cannabidiol (CBD).[41] The first two FDA-approved cannabinoid medications used synthetic THC: dronabinol (trade name Marinol®) and nabilone (trade name Cesamet®), both used for chemotherapy-associated nausea and vomiting. In 2013 FDA granted investigational new drug status to the first medication using non-synthetic cannabinoids derived from the cannabis plant, a concentrated CBD oil under the trade name Epidiolex® for the treatment of epilepsy-related seizures.[42] Because Epidiolex® is derived from cannabis itself, some observers see its approval as potentially triggering reclassification of cannabis under federal law based on FDA's formal recognition of medical utility, one of the core elements of drug scheduling under the CSA.[43]

Shortly after enactment of the CSA, several states reduced their own criminal penalties for cannabis possession, with 11 states enacting such laws in the 1970s, though this policy development then stalled until the mid-1990s.[44] In 1996 California became the first state to legalize cannabis for medical use under state law, and 7 other states and D.C. followed suit by 2000.[45] The next two decades saw even more sweeping changes. By the end of 2018, 20 states and D.C. had decriminalized possession of small amounts of cannabis, 15 states had legalized limited forms of medical cannabis (*e.g.*, high-CBD, low-THC products), 33 states and D.C. had fully legalized medical cannabis, and 10 states and D.C. had legalized adult use cannabis.[46] As of July 2019 there were only 4 states (Idaho, Kansas, Nebraska, and South Dakota) with total prohibitions on cannabis under state law.[47]

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[37] *Id.*; *Deadly Synthetic Drugs: The Need to Stay Ahead of the Poison Peddler: Hearing Before the S. Comm. on the Juudiciary,* 114th Cong. (2016) (statement of Douglas C. Throckmorton, Deputy Director, Regulatory Programs, U.S. Food and Drug Admin.), *available at* https://www.judiciary.senate.gov/imo/media/doc/06-07-16%20Throckmorton%20Testimony.pdf.

[38] Denial of Petition to Initiative Proceedings to Reschedule Marijuana, 81 Fed. Reg. 53767 (Aug. 12, 2016); *see also* Diane Hoffman, et al., *Will The FDA's Approval Of Epidiolex Lead To Rescheduling Marijuana?*, Health Aff. Blog, https://www.healthaffairs.org/do/10.1377/hblog20180709.904289/full/; JOHN HUDAK & GRACE WALLACK, BROOKINGS, HOW TO RESCHEDULE MARIJUANA, AND WHY IT'S UNLIKELY ANYTIME SOON (2015), https://www.brookings.edu/blog/fixgov/2015/02/13/how-to-reschedule-marijuana-and-why-its-unlikely-anytime-soon/. The DEA previously rejected petitions for rescheduling cannabis in 1989 (responding to a petition originally filed in 1972) and 2011 (responding to a petition filed in 2002). *See* Alliance for Cannabis Therapeutics v. Drug Enforcement Admin., 15 F.3d 1131 (D.C. Cir. 1994) (upholding DEA's 1989 denial); Americans for Safe Access v. Drug Enforcement Admin., 706 F.3d 438 (D.C. Cir. 2013) (upholding DEA's 2011 denial).

[39] *See* NAT'L ACADS. OF SCIS., ENG'G & MED., *supra* note 1, at 85–140.

[40] Agriculture Improvement Act of 2018, H.R. 2, 115th Cong. § 10113.

[41] *See* NAT'L ACADS. OF SCIS., ENG'G & MED., *supra* note 1 at 53–55.

[42] Id.

[43] *See generally* Y. Tony Yang & Jerzy P. Szaflarski, *The US Food and Drug Administration's Authorization of the First Cannabis-Derived Pharmaceutical: Are We Out of the Haze?*, 76 JAMA NEUROLOGY 135 (2018).

[44] Rosalie L. Pacula, et al., *Marijuana Decriminalization: What Does it Mean in the United States?* 4 (Nat'l Bureau of Econ. Research, Working Paper No. 9690, 2003), *available at* http://www.nber.org/papers/w9690.pdf.

[45] Nat'l Conference of State Legislatures, "Marijuana Deep Dive," *supra* note 10.

[46] Id.

[47] Nat'l Conference of State Legislatures, "Marijuana Overview," *supra* note 21. The implications of the 2018 Farm Bill's legalization of hemp (and thus CBD derived from hemp) under federal law, and the myriad resulting questions about how such products are to be regulated, are beyond the scope of this paper.

2. Initiatives and Industry—Most state medical and recreational cannabis laws originated as ballot initiatives, rather than legislation. Of the 11 state recreational laws, all but Vermont's and Illinois's were initiatives, as were 18 of the 33 state medical laws.[48] The ballot initiative process arose from late 19th-century Populist and early 20th-century Progressive movements to circumvent the perceived dominance of special interests in state legislatures.[49] Tobacco control efforts in the U.S. are a modern example of the overall anti-special interest character of initiatives. Beginning in the 1970s, tobacco control advocates began using state ballot initiatives and local-level equivalents to adopt smoking restrictions and tobacco taxes, sidestepping the tobacco industry's considerable legislative influence.[50] In response, the tobacco industry (in partnership with other "ballot-prone" industries) monitored initiative activity and advocated for reforms that would make the process more challenging, such as increasing signature requirements, reducing signature gathering periods, and increasing vote requirements for tax increases.[51]

Some critics of direct democracy (including ballot initiatives and referendums), argue that the susceptibility of electorates to campaign advertising allows wealthy interests to dominate the process, enabling exactly the type of special interest advantage the process was designed to counter.[52] The tobacco industry, for example, has adopted a tactic of attempting to defeat tobacco control initiatives by introducing competing "look-alike" initiatives on the same subject that contain fewer or weaker regulations and often incorporate preemption of stronger local laws.[53] Overall, however, an empirical analysis of initiatives relating to three major industries (energy, finance, and tobacco) found that enacted initiatives much more often resulted in laws contrary to industry interests than beneficial to them.[54]

Critics of cannabis legalization have also raised the claim that the initiative process allows outsized influence of moneyed legalization advocates, often based outside of the state in which the initiative is proposed, who are able to commit levels of funding that are difficult for opponents to counter.[55] However, analysis of funding for legalization ballot initiatives from 2004–2016 found that industry funding involvement was low in most states (with some exceptions).[56] While the money raised by advocates is substantial and typically considerably higher than that raised by opponents,[57] changing public opinion over time may better explain the increasing success of initiatives, though the two are likely related.[58] At the same time, there has been an increase in cannabis industry contributions to initiatives, particularly

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[48] Id.
[49] JOHN G. MATSUSAKA, INITIATIVE AND REFERENDUM INSTITUTE, UNIVERSITY OF SOUTHERN CALIFORNIA, SPECIAL INTEREST INFLUENCE UNDER DIRECT VERSUS REPRESENTATIVE DEMOCRACY 1–2 (2018), *available at* http://www.iandrinstitute.org/docs/Matsusaka_Special_Interests_2018_05.pdf.
[50] Elizabeth Laposata, et al., *When tobacco targets direct democracy*, 39 J. HEALTH POL. POL'Y & L. 537, 541–46 (2014).
[51] *Id.* at 541–42, 545–46.
[52] *See* MATSUSAKA, *supra* note 49, at 2–3 (discussing competing views).
[53] *See generally* Gregory J. Tung, et al., *Competing Initiatives: A New Tobacco Industry Sstrategy to Oppose Statewide Cclean Indoor Air Ballot Measures*, 99 AM. J. PUB. HEALTH 430 (2009).
[54] MATSUSAKA, *supra* note 49, at 11–17.
[55] *See generally* SUE RUSCHE, NAT'L FAMILIES IN ACTION, TRACKING THE MONEY THAT'SLEGALIZINGMARIJUANAANDWHYITMATTERS(2017),
[56] Orenstein & Glantz, *supra* note 20, at ___.
[57] *Id.* at ___ (reporting mean advocate contributions of $4.3 million compared to $1.2 million for opponents and median $1.7 million for advocates compared to $30,000 for opponents). Total advocate contributions from 2004–2016 exceeded opponent contributions by over $100 million ($139 million to $37.3 million). *Id.* at ___.
[58] *Id.* at ___.

in the 2015–2016 election cycles, which could indicate an emerging trend toward increased industry involvement in the process.[59] Overall, the current relationship between the cannabis industry and the ballot box appears to differ from that of other industries, insomuch as the cannabis industry is primarily a beneficiary rather than a target of initiatives and has in many cases played only an indirect role in the process.

3. Existing State Frameworks—As of July 2019, successful recreational cannabis initiatives had developed exclusively in the context of existing medical legalization frameworks. All eleven recreational cannabis states had previously adopted medical laws, most by ballot initiative.[60] Kilmer and MacCoun argue that medical legalization eases later passage of recreational laws by: 1) demonstrating the efficacy of voter initiatives in this policy area; 2) enabling changes in public perception that destabilize the War on Drugs; 3) increasing the evidence base to counter concerns regarding the effects of legalization; 4) creating "a visible and active marijuana industry"; and 5) showing that the federal government will not prevent state and local jurisdictions from collecting cannabis tax revenues.[61] Legalization opponents agree that medical cannabis laws facilitate later recreational laws, sometimes claiming that medical laws are mere pretext for recreational use or legalization.[62]

In 2012, Colorado and Washington became the first states to legalize adult use cannabis, followed by Alaska and Oregon in 2014, California, Maine, Massachusetts, and Maine in 2016, Michigan and Vermont in 2018,[63] and Illinois in 2019.

Vermont's law is unique among this group in two respects. First, it was the first to pass legalization legislatively. Second, while Vermont's law made cannabis possession legal as of its effective date (July 1, 2018), it left legalization and oversight of legal sales for a later date. As of July 2019, the legislature had not passed a sales measure, and multiple Vermont bills are included in this analysis. Vermont's current law is more an extension of decriminalization (eliminating not only criminal, but also civil penalties), rather than full legalization as more commonly understood.[64]

Implementation delays and political conflicts between industry, local government, and state government have been common in several states that have legalized adult use.[65] Due to these delays and the recentness of most of the initiatives, there are limited

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[59] *Id.* at ___.

[60] Nat'l Conference of State Legislatures, "State Medical Marijuana Laws" (2018), http://www.ncsl.org/research/health/state-medical-marijuana-laws.aspx.

[61] Beau Kilmer & Robert J. MacCoun, *How Medical Marijuana Smoothed the Transition to Marijuana Legalization in the United States*, 13 ANN. REV. L. & SOC. SCI. 181, 192–97 (2017).

[62] RUSCHE, *supra* note 55, at 12–13.

[63] Nat'l Conference of State Legislatures, "Marijuana Deep Dive," *supra* note 10.

[64] The legalization law in effect in D.C. similarly allows for possession, but not sales, in part due to restrictions imposed by Congress. Petula Dvorak, *Monuments, Museaums, Marijuana: Take a Whiff of D.C.'s New Pot-Infused Tourism*, WASH. POST, April 22, 2019. A popular work-around to the law in D.C. sees cannabis provided as a "gift" with the purchase of some other item at a wildly inflated price (*e.g.*, artwork, baked goods). *Id.*

[65] This is particularly true of Maine, which only lifted a moratorium on implementation of key portions of its 2016 law in 2018 (and then only by overriding a gubernatorial veto). Nat'l Conference of State Legislatures, "Marijuana Overview," *supra* note 21. *See also* Patrick McGreevy, *California's Black Market for Pot is Stifling Legal Sales. Now the Governor Wants to Step Up Eenforcement.*, L.A. TIMES, Feb. 18, 2019; Michael R. Blood, *25 Local Governments Sue over California Marijuana Delivery*, ASSOCIATED PRESS, April 5, 2019.

comprehensive analyses of these laws. The most in-depth of these assesses the legal frameworks in Colorado, Washington, Oregon, and Alaska, ultimately concluding that these states incorporated approximately one-third to one-half of identified public health best practices into their cannabis regulatory structures.[66]

The lack of public health-oriented approaches in these laws likely reflects their origins. Advocates who advanced these initiatives consciously adopted the framing of alcohol policy as an effective political tool, urging voters to "Regulate Marijuana Like Alcohol."[67] This framing was an evolution in approach by advocates, who moved away from arguments based primarily on personal freedom to also include those emphasizing tax revenue, social justice, and the differences in legal treatment of alcohol (an intoxicating substance that is widely available and lightly regulated) and cannabis (an intoxicating substance that is criminalized).[68] This line of argument appears to have resonated with voters, as these newly-branded legalization initiatives were substantially more successful than earlier efforts.[69] Given this framing, it is not surprising that the statutes enacted by the initiatives and the regulations that followed generally accord with alcohol policy.[70] Unfortunately, U.S. alcohol control laws frequently fail to reflect public health best practices, particularly with regard to preventing underage use and heavy consumption.[71] As a result, "regulating marijuana like alcohol" has meant a pro-business approach that is not designed to reduce use.

Based on electoral results and public opinion surveys, momentum currently appears to favor legalization generally.[72] The exact parameters of a new legal framework for cannabis, however, may not yet be established. One of the most pressing questions in the coming years will be whether legislatures can better incorporate public health goals into legalization laws compared to the approaches offered to date by advocates via the initiative process.

B. The Public Health Approach

A public health approach to cannabis legalization prioritizes public health over other policy goals. This article leverages the successes and failures of domestic and international approaches to other substances, most notably tobacco and alcohol, to outline a rubric for evaluation of public health best practices for cannabis regulation. To do so, it draws on several key resources, including reports and policy statements by governmental entities and non-governmental health organizations, international agreements, and health policy scholarship, to define the public health approach.

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[66] Rachel Barry & Stanton Glantz, *Marijuana Regulatory Frameworks in Four US States: An Analysis Against a Public Health Standard*, 108 AM. J. PUB. HEALTH 914, 915 (2018). The specific standards in this analysis are discussed more fully *infra*.

[67] *See, e.g.*, Kirk Johnson, *Marijuana Push in Colorado Likens It to Alcohol*, N.Y. TIMES, Jan. 26, 2012; Matt Ferner, *Why Marijuana Should Be Legalized: 'Regulate Marijuana Like Alcohol' Campaign Discusses Why Pot Prohibition Has Been A Failure*, HUFFPOST, Aug. 28, 2012.

[68] Ferner, *supra* note 67; Molly Ball, *Will Colorado Legalize Pot?*, ATLANTIC, Oct. 9, 2012.

[69] *See* Orenstein & Glantz, *supra* note 20 (detailing results of legalization initiatives over time).

[70] Barry & Glantz, *supra* note 66, at 915.

[71] John T. Carnevale, et al., *A Practical Framework for Regulating For-Profit Recreational Marijuana in US States: Lessons from Colorado and Washington*, 42 INT'L J. DRUG POL'Y 71, 74 (2017); *see also* Barry & Glantz, *supra* note 66.

[72] *See generally* Orenstein & Glantz, *supra* note 20.

1. Existing Models: Health Policy Organizations and International Agreements

a. American Public Health Association: The American Public Health Association (APHA) released a policy statement in 2014 focused on prioritization of public health in the regulation of commercial cannabis.[73] APHA has similar policy statements relating to alcohol, tobacco, and substance use, as well as a prior statement on cannabis (but not legalization specifically).[74] Drawing from both tobacco and alcohol control, APHA lists five broad areas of concern to public health in cannabis legalization: 1) increased availability, 2) passive exposures, 3) quality control and consumer protection, 4) motor vehicle safety, and 5) health effects.[75]

APHA proposes general strategies and action steps, for the most part without suggesting a specific standard. Based on alcohol control policy, APHA calls for 1) retailer liability for injuries to others (*i.e.*, dram shop liability for overservice), 2) impaired driving enforcement, and 3) high minimum purchase age standards (generally supporting a minimum age of 21).[76] Based on tobacco control policy, APHA recommends 4) warning labels, 5) secondhand exposure measures (*e.g.*, public location bans, restrictions on use in multi-unit housing), and 6) cultivation worker protections. Drawing from both alcohol and tobacco control, APHA recommends 7) taxation at levels sufficient to price minors out of the market and reduce access, 8) limits on the days and times of retail operation, 9) restrictions on outlet locations and geographic density, 10) constraints on advertising aimed at adolescents, children, communities of color, and groups of low socioeconomic status, and 11) continuing monitoring of regulatory interventions. APHA also calls for support and funding for health effects research; use of cannabis tax revenue to cover regulatory costs and to fund prevention, treatment, and research; and "development and availability of linguistically competent educational and informational materials for individuals with limited English proficiency."[77]

b. Framework Convention on Tobacco Control: The World Health Organization (WHO) Framework Convention on Tobacco Control (FCTC)[78] and its implementing guidelines,[79] while not designed specifically for cannabis regulation, are a key touchstone for the modern evidence-based public health approach to product regulation and thus carry significant weight as a model for regulating cannabis. The FCTC is a widely adopted health treaty with 168 signatories that sets the global standard for tobacco control,[80] combining price and

[73] Am. Pub. Health Ass'n, Regulating Commercially Legalized Marijuana as a Public Health Priority (Policy No. 201410) (2014), *available at* https://www.apha.org/policies-and-advocacy/public-health-policy-statements/policy-database/2015/01/23/10/17/regulating-commercially-legalized-marijuana-as-a-public-health-priority.
[74] Id.
[75] Id.
[76] Id.
[77] Id.
[78] World Health Org. Framework Convention on Tobacco Control [hereinafter "WHO FCTC"] (2003), *available at* http://apps.who.int/iris/bitstream/10665/42811/1/9241591013.pdf?ua=1.
[79] World Health Org., WHO Framework Convention on Tobacco Control: Guidelines for Implementation [hereinafter "WHO FCTC Guidelines"] (2013), *available at* http://apps.who.int/iris/bitstream/handle/10665/80510/9789241505185_eng.pdf?sequence=1.
[80] WHO FCTC, *supra* note 78, at *v*. While the U.S. is not a Party to the FCTC, U.S. law has incorporated several elements of the treaty, primarily via the Family Smoking Prevention and Tobacco Control Act of 2009, 123 Stat. 1776 (2009).

tax measures to reduce product demand, non-price strategies to reduce demand, and supply reduction interventions.

FCTC Article 8 targets protection from secondhand/environmental tobacco smoke,[81] adopting as a fundamental principle that "[a]ll people should be protected from exposure to tobacco smoke[, and a]ll indoor workplaces and indoor public places should be smoke free."[82] The Implementing Guidelines clarify that any measures short of total elimination of smoking in a space or environment (*e.g.*, ventilation, filtration) are ineffective and insufficient.[83] Given the similarities between tobacco smoke and cannabis smoke,[84] this approach strongly resonates for cannabis regulation.[85]

Article 9 deals with regulation of product contents.[86] The Implementing Guidelines specifically note that "[f]rom the perspective of public health, there is no justification for permitting the use of ingredients, such as flavouring agents, which help make tobacco products attractive."[87] The same can be said for additives in cannabis products intended to stimulate use or to attract youth or vulnerable populations.

Article 11 addresses packaging and labeling and obligates Parties to ensure that these elements are not "false, misleading, deceptive or likely to create an erroneous impression" about a product or its health effects.[88] Article 11 also requires health warnings for all products to be rotating, large, and clearly visible, to cover at least 30% (ideally at least 50%) of the product's principal display area, and to include pictorial elements.[89] The Implementing Guidelines further encourage plain packaging requirements, which prohibit all branding elements.[90]

Article 13 calls for a "comprehensive ban on advertising, promotion and sponsorship," as consistent with applicable constitutional principles.[91] To the extent a comprehensive ban is not possible, Article 13 obligates Parties to prohibit marketing that is false or misleading, require warnings on all advertisements, restrict the use of incentives, require disclosure

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[81]WHO FCTC, *supra* note 78, at 8.
[82]WHO FCTC Guidelines, *supra* note 79, at 20–21.
[83]Id.
[84]David Moir, et al., *A Comparison of Mainstream and Sidestream Marijuana and Tobacco Cigarette Smoke Produced under Two Machine Smoking Conditions*, 21 CHEMICAL RES. TOXICOLOGY 494 (2008).
[85]Additionally, the American Society of Heating, Refrigerating and Air-Conditioning Engineers (ASHRAE), which publishes a highly influential set of ventilation standards for indoor air quality, revised its definition of "environmental tobacco smoke" in 2016 to include both electronic smoking devices and cannabis smoke. Am. Soc'y of Heating, Refrigerating and Air Condition Eng'rs, "ANSI/ASHRAE Standard 62.1–2016 : Ventilation for Acceptable Indoor Air Quality" (2019), *available at* https://www.ashrae.org/technical-resources/bookstore/standards-62-1-62-2. *See also* Stella A. Bialous & Stanton A. Glantz, *ASHRAE Standard 62: Tobacco Industry's Influence over National Ventilation Standards*, 11 TOBACCO CONTROL 315 (2002) (describing the importance of ASHRAE standards and the tobacco industry's efforts to influence them).
[86]WHO FCTC, *supra* note 78, at 9.
[87]WHO FCTC Guidelines, *supra* note 79, at 33.
[88]WHO FCTC, *supra* note 78, at 9–10.
[89]Id.
[90]WHO FCTC Guidelines, *supra* note 79, at 63.
[91]WHO FCTC, *supra* note 78, at 11. The Guidelines' major caveat for constitutional commercial speech protections was the result of U.S. demands, *Adoption of Framework Convention on Tobacco Control*, 97 AM. J. INT'L L. 689, 689–90 (2003), though the U.S. remains one of the few WHO members that is not a Party to the treaty. World Health Org., "WHO Member States (by regions) that are NOT parties to the WHO Framework Convention on Tobacco Control" (2010), https://www.who.int/tobacco/framework/non_parties/en/.

of advertising expenditures, restrict or ban advertising using mass media, and restrict or prohibit industry sponsorship of event and activities.[92]

Article 16 addresses sales to and by minors (age 18 or as set by relevant law) by requiring age verification, banning self-service product displays, prohibiting other products (*e.g.*, sweets) in the form of tobacco products, limiting vending machine access to age-restricted areas, prohibiting free product giveaways, and prohibiting sale of small-quantity products that increase affordability.[93]

Other FCTC provisions call for price and tax measures to reduce consumption,[94] effective public education campaigns,[95] demand-reduction measures focused on treatment and cessation,[96] reduction of illicit trade,[97] support for alternative commercial activities for industry-dependent workers,[98] and protection of the environment and the health of cultivation workers,[99] all of which have relevance to cannabis regulation.

c. CDC Task Force on Community Preventive Services: Using an evidence-based approach that considers both efficacy and cost-effectiveness, the CDC Task Force on Community Preventive Services recommends interventions to improve health across various policy areas, including both tobacco and alcohol. To reduce tobacco initiation, use, and secondhand exposure, the Task Force recommends: 1) comprehensive tobacco control programs; 2) increasing unit price; 3) implementing mass-reach health communication interventions; 4) adopting smokefree policies; and 5) mobilizing the community with additional interventions. [100]

To reduce and prevent excess alcohol consumption, the Task Force recommends: 1) dram shop liability; 2) electronic screening and brief interventions; 3) increasing taxes; 4) limits on days and hours of sale; 5) regulation of outlet density; and 6) enhanced enforcement of laws prohibiting sales to minors.[101] The Task Force also recommends against privatization of retail sales.[102]

d. Healthy People 2020: Managed by the U.S. Department of Health and Human Services, Healthy People is a collaborative initiative that sets national 10-year goals and measurable objectives to improve health and well-being of people and communities. The Healthy People 2020 leading health indicators for substance abuse and tobacco are, collectively: adolescent use in past 30 days, adult cigarette smoking, and adult binge drinking in the past month.[103] The same issues—adolescent use, use of inhaled or smoked

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[92]WHO FCTC, *supra* note 78, at 11–12.
[93]*Id.* at 15–16.
[94]*Id.* at 7–8.
[95]*Id.* at 10–11.
[96]*Id.* at 13.
[97]*Id.* at 13–15.
[98]*Id.* at 16.
[99]Id.
[100]Community Preventive Services Task Force, *CPSTF Findings for Tobacco* (2019), https://www.thecommunityguide.org/content/task-force-findings-tobacco.
[101]Cmty. Preventive Servs. Task Force, "CPSTF Findings for Excessive Alcohol Consumption" (2019), *available at* https://www.thecommunityguide.org/content/task-force-findings-excessive-alcohol-consumption.
[102]Id.

products, and excessive or binge use—are among the most critical regulatory targets for cannabis. While framed as goals rather than specific policy prescriptions, the Healthy People 2020 objectives are highly relevant in assessing the design of cannabis laws and include several implicit policy recommendations. For example, the goal of eliminating laws that preempt local control implies a recommendation to include non-preemption in newly-created laws.

Relevant Healthy People 2020 substance use objectives include: 1) reducing youth use; 2) increasing youth disapproval of use and perception of risk; 3) reducing binge use; and 4) decreasing impaired driving fatalities.[104] Similarly, objectives for tobacco use include: 1) reducing use by adults and adolescents, 2) reducing initiation among children, adolescents, and young adults; 3) reducing proportion of nonsmokers exposed to secondhand smoke; 4) increasing proportion of persons covered by indoor worksite policies that prohibit smoking; 5) establishing smoke-free laws that prohibit smoking in public places and worksites; 6) eliminating state laws that preempt stronger local tobacco control laws; 7) increasing product taxes; 8) reducing proportion of adolescents and young adults exposed to product marketing; and 9) reducing illegal sales to minors by enforcing prohibitions on such sales.[105]

2. Existing Models: Health Policy Scholarship—While there has been meaningful scholarship about cannabis criminalization and the potential for other regulatory alternatives for some time,[106] health policy scholarship focused on how to regulate legal cannabis from a public health perspective developed in earnest after passage of Colorado and Washington's 2012 initiatives to legalize adult use.

In particular, much of the substantive scholarship in this area has been produced by researchers in the RAND Corporation's Drug Policy Research Center.[107] Pacula et al. propose a cannabis-specific policy framework based on tobacco and alcohol control that centers on five policy objectives designed to minimize youth access and use, drugged driving, dependency and addiction, consumption of products with unwanted contaminants or uncertain potency, and concurrent use of cannabis and alcohol (particularly in public).[108] Toward this end, they recommend: 1) artificially high prices via taxation and enforcement; 2) a state monopoly on production, distribution, and/or sale; 3) restriction of licenses and

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[103]U.S. Dep't Health and Human Servs., Office of Disease Prevention and Health Promotion, "Healthy People 2020 Topics & Objectives: Substance Use" (2019), https://www.healthypeople.gov/2020/topics-objectives/topic/substance-abuse/objectives; U.S. Dep't Health and Human Servs., Office of Disease Prevention and Health Promotion, "Healthy People 2020 Topics & Objectives: Tobacco Use" (2019), https://www.healthypeople.gov/2020/topics-objectives/topic/tobacco-use/objectives.

[104]U.S. Dep't Health and Human Servs., "Healthy People 2020 Topics & Objectives: Substance Use" (2019), *supra* note 103.

[105]U.S. Dep't Health and Human Servs., "Healthy People 2020 Topics & Objectives: Tobacco Use" (2019), *supra* note 103.

[106]*See, e.g.*, ROBERT J. MACCOUN & PETER REUTER, DRUG WAR HERESIES: LEARNING FROM OTHER VICES, TIMES, & PLACES (Charles Wolf Jr. ed., Cambridge University Press 2001).

[107]*See, e.g., id.*; JONATHAN P. CAULKINS, ET AL., RAND CORP., CONSIDERING MARIJUANA LEGALIZATION: INSIGHTS FOR VERMONT AND OTHER JURISDICTIONS (2015), *available at* https://www.rand.org/pubs/research_reports/RR864.readonline.html; Rosalie L. Pacula, et al., RAND Corp., *Developing Public Health Regulations for Marijuana: Lessons from Alcohol and Ttobacco*, 104 AM. J. PUB. HEALTH 1021 (2014); Beau Kilmer, *Policy Designs for Cannabis Legalization: Starting with the Eight Ps*, 40 AM. J. DRUG & ALCOHOL ABUSE 259 (2014); Beau Kilmer, *The "10 P's" of Marijuana Legalization*, Spring 2015 BERKELEY REV. LATIN AM. STUD. 52 (2015); Jonathan P. Caulkins, et al., *Marijuana Legalization: Certainty, Impossibility, Both, or Neither?*, 5 J. DRUG POL'Y ANALYSIS 1 (2012); *see also* RAND Corp., "RAND Drug Policy Research Center: Center Staff" (2019), URL: https://www.rand.org/well-being/justice-policy/centers/dprc/about/staff.html (listing RAND affiliates).

[108]Pacula, et al., *supra* note 107, at 1022.

monitoring of licensees; 4) limiting types of products sold, including additives, flavorings, and cannabinoid content; 5) restrictions on marketing to the extent possible under US law, including plain packaging requirements; 6) limiting public consumption; 7) measuring and preventing impaired driving, and 8) a comprehensive product tracking system.[109]

Two other RAND papers present slates of key policy choices for state legalization without making specific recommendations. Kilmer emphasizes that "legalization is not a binary choice"[110] and suggests a set of ten policy choices (stylized as the "10 P's"):

- Production: the number of producers and amount of production to be allowed, locations where production will be allowed, and types of products to be allowed on the market;
- Profit motive: whether to allow profit-maximizing firms to enter the market or to restrict the market to nonprofit organizations, "for-benefit corporations," or a state-run monopoly;
- Promotion: whether to allow advertising;
- Prevention: whether to devote resources to prevention efforts, including youth prevention, and how to fund such efforts;
- Policing and enforcement: how much time and effort to devote to enforcement of remaining prohibitions (*e.g.*, on public consumption) and how to address remain black market cannabis producers and distributors;
- Penalties: how to sanction noncompliance, including license revocation, civil penalties, and criminal penalties;
- Potency: whether to limit THC content or other cannabinoids;
- Purity: whether and how to regulate mold, pesticides, and other contaminants, and whether to allow alcohol- or nicotine-infused cannabis products on the market;
- Price: how to shape cannabis price, including through license fees, regulations, and taxes; and
- Permanency: how much regulatory flexibility to incorporate into legal frameworks, such as creating independent commissions or including sunset provisions, to address changing evidence and new products.[111]

Similarly, Caulkins et al. provide a "regulatory checklist" in eight categories: 1) types of products allowed; 2) cannabinoid content; 3) retail outlets and delivery; 4) sales to nonresidents; 5) pricing controls; 6) prevention and countermarketing; 7) vertical integration; and 8) local autonomy.[112] The authors emphasize the importance of careful

[109] *Id.* at 1022–25.
[110] Kilmer, *The "10 P's" of Marijuana Legalization*, *supra* note 107, at 53.
[111] Id.
[112] CAULKINS, ET AL. (2015), *supra* note 107, at 103–05.

consideration of policy alternatives in cannabis regulation and the necessity of thinking beyond alcohol control models:

> A jurisdiction considering something other than marijuana prohibition needs to encourage serious conversations about each of these choices. Marijuana is a very different commodity from other regulated goods (even alcohol) and early-adopting states simply cannot use cookie-cutter regulations for alcohol to cover all of the important choices.[113]

Writing in an international context on behalf of the Transform Drug Policy Foundation for a Special Session of the United Nations General Assembly on the World Drug Problem, Rolles and Murkin make recommendations across production, price, tax, consumption methods, potency, packaging, retailer regulation, consumer regulation, retail outlets, and marketing. The authors make several of the same recommendations as other reports cited *supra*, and also add several specific elements, including: separation of ownership between production and retail entities; [114] restriction of home growth based on age and production capacity; [115] price controls; [116] taxation at both production and sales tiers based on THC content by weight;[117] mandatory opaque, resealable, and child-resistant plastic containers;[118] on-package messaging modelled on pharmaceuticals and tobacco products; [119] escalating penalties for noncompliance, including license revocation; [120] restrictions on retailer locations near age-sensitive areas and prohibition of sales of non-cannabis products; [121] and a total ban on all forms of advertising, promotion and sponsorship based on WHO FCTC Article 13. [122] The authors also make several policy recommendations that less frequently appear in (or even contradict) other sources, including: promoting small-scale social clubs; [123] avoiding directing excessive revenue to drug treatment, prevention, or other social programs to prevent dependence on cannabis sales revenue;[124] and encouraging non-smoked consumption methods, including vaporized products (contingent on additional research). [125]

Based explicitly on alcohol control policy lessons, Moser recommends policies targeting social availability, commercial availability, taxation and price, driving under the influence, advertising, and market structure.[126] Among the specific proposals that stand out from other frameworks are application of civil liability to social hosts who provide cannabis to minors at home and to commercial sellers/retailers (*i.e.*, dram shop liability); mandatory

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[113] *Id.* at 112–13.
[114] STEVE ROLLES & GEORGE MURKIN, TRANSFORM DRUG POL'Y FOUND., HOW TO REGULATE CANNABIS: A PRACTICAL GUIDE 50–51 (2014).
[115] Id.
[116] *Id.* 72–74.
[117] *Id.* at 84–85.
[118] *Id.* at 117–18.
[119] Id.
[120] *Id.* at 125–26.
[121] *Id.* at 142–43.
[122] *Id.* at 150–51.
[123] *Id.* at 50–51.
[124] *Id.* at 84–85.
[125] *Id.* at 91–93.
[126] JAMES F. MOSHER, COUNTY OF VENTURA, THE 2016 CALIFORNIA MARIJUANA INITIATIVE AND YOUTH: LESSONS FROM ALCOHOL POLICY 4, 8 (2016), *available at* http://venturacountylimits.org/resource_documents/VC-MJ-AUMA-FNL-REV2-web.pdf.

training for servers and sellers; restrictions on outlet density; restrictions on home delivery; a prohibition on price promotions; zero tolerance laws for youth driving under the influence; permitting advertising in electronic media only when less than 15% of the audience is under 21; a government-controlled or non-profit market structure; limits on the number of licenses in each license tier and restrictions on production or volume per license; restrictions on vertical integration; prohibition of volume discounts between license tiers; and minimum price markups at the wholesale and retail levels.[127]

Leveraging lessons learned from the specific experiences of Colorado and Washington, the first two states to legalize adult use, Carnevale et al. offer policy proposals in five areas: "cultivation, production, and processing; sales, consumption, and possession; taxes and finance; public health and safety; and governance."[128] Notably, the authors explicitly adopt "practicality"[129] as their primary touchstone, rather than theoretically ideal policy.[130] As a result, there are several public health-oriented policies they note would be desirable, but do not recommend because they judge them to be impractical, including plain packaging,[131] minimum unit pricing,[132] and non-commercial or not-for-profit market structure.[133]

Owing to the emphasis on practicality and likelihood of adoption, Carnevale et al. recommend a more limited, but still important, suite of policies. Those that add to previously cited proposals include:

- Restricting use to those 21 years and older with significant penalties for sales to minors;[134]
- Maximum limit on sales quantity per person or transaction;[135]
- Unitary recreational and medical regulatory system;[136]
- Taxes designed to keep prices artificially high without fueling the illicit market;[137]
- Robust data collection and performance monitoring;[138] and
- Restrictions on industry involvement in the regulatory process based on alcohol and tobacco control.[139]

The authors supplement these specific recommendations within an overarching emphasis on regulatory flexibility, viewing as paramount the ability of government to adjust to new data,

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127 Id.
128 Carnevale, et al., *supra* note 71, at 74.
129 The authors' approach to practicality relies on a judgment of "what [the authors] believe are the practically viable legalization regimes likely to occur in US states under current circumstances and law […] begin[ning] with the approach that [they] judge most likely to be implemented." *Id.* at 72. As part of this judgment, the authors include "US culture, the parties at work in the legalization movement, existing federal law and federal guidance […], and the experience of states that have legalized." *Id.*
130 *Id.* at 72, 74.
131 *Id.* at 78.
132 Id.
133 *Id.* at 72.
134 *Id.* at 77.
135 *Id.* The authors do not recommend a specific limit, but do note a 1-ounce limit in multiple states. *Id.*
136 *Id.* at 82.
137 *Id.* at 78.
138 *Id.* at 83.
139 *Id.* at 81.

new products, and other developments.[140] They also aptly describe a key difference between existing regulatory approaches to tobacco and alcohol that is especially relevant to cannabis policy decisions:

> [E]ven a brief examination of the US alcohol and tobacco industries illustrates how regulatory goals can affect markets, even within commercialized, for-profit models that share much in common. US alcohol and tobacco systems look quite similar at first blush; yet, alcohol regulations seek to limit use in specific circumstances (e.g., by youth or by adults at work, in public, or while driving) but do not seek to discourage use—that is, they do not attempt to reduce the size of the market. In contrast, current US tobacco regulations actively seek to reduce the size of the industry ….[141]

Barry and Glantz provide a detailed framework for assessing adult use cannabis laws based on a survey of public health best practices from tobacco control, arguing that alcohol control models are typically inadequate to protect public health. They offer a 30-point assessment across 11 policy areas,[142]expanded in a subsequent paper to a 67-point framework across 16 policy areas.[143] Some of the included policy prescriptions are quite detailed and thus better suited to evaluating regulations than legislation,[144] but the most critical elements they recommend that have not already been discussed include:

- State health department as lead regulatory agency;
- Creation of advisory groups that have expertise in cannabis prevention and control with strict conflict of interest prohibitions and a prohibition on industry participation;
- Licensure fees that cover costs of administration and enforcement;
- Frequent, routine, and unannounced compliance checks with dedicated revenue;
- Prohibition on point-of-sale displays, with all products sold behind the counter;
- Prohibition on electronic commerce (*e.g.*, sales via text message or social media);
- Prohibition on use of cartoon characters or imagery encouraging use or consumption;
- Prohibition on brand stretching or sharing;
- Prohibition on product placements or paid popular media promotions;
- Dedicated revenue for enforcement, prevention and control, and research;
- Smokefree laws that prohibit cannabis use where tobacco use is prohibited;

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[140] *Id.* at 71, 75–76, 81, 83.
[141] *Id.* at 74.
[142] Rachel A. Barry & Stanton A. Glantz, *A Public Health Framework for Legalized Retail Marijuana Based on the US Experience: Avoiding a New Tobacco Industry*, 13 PLOS MED. e1002131, 4 (2016).
[143] Barry & Glantz, *supra* note 66, at 914, Supplemental Table A.
[144] The authors created the framework to apply to the collective body of state law regulating cannabis, including initiatives, bills, executive orders, and administrative rules. *Id.* at 914–15.

- Non-preemption of local smoking restrictions, licensing, and retail sales environment control;
- Prohibition on additives that are toxic or injurious (*e.g.*, nicotine), enhance color or palatability (*e.g.*, menthol), imply a health benefit (*e.g.*, vitamins), or are associated with energy and vitality (*e.g.*, caffeine); and
- Government approval of all packaging and labeling.[145]

Cannabis regulation is a complex and multifaceted area that intersects with numerous areas of law (*e.g.*, land use, insurance, professional regulation), but this article concerns itself exclusively with measures directly relating to protecting public health. Even with multiple public health frameworks to draw from, there remain several important health issues beyond the scope of this article. These include, among others, equity and social justice programs to ameliorate impacts of the War on Drugs,[146] restrictions on pesticide use and other elements of cultivation,[147] comprehensive product testing requirements,[148] cannabis worker protections,[149] constraints on actual or apparent conflicts of interest among state and local government employees and law enforcement personnel,[150] and protections for employees and renters against discrimination for cannabis use.[151] While this paper focuses on specific provisions common across multiple public health best practice models for tobacco, alcohol, and cannabis regulation, such other legal elements also have clear ties to health and should receive due consideration and analysis.

This paper also focuses on state law. As such, it does not address cannabis regulation at the federal level or the interaction of cannabis regulation and federalism. Should the federal government alter its approach to cannabis, this would certainly have substantial implications for state laws; however, the public health approach outlined here (and advanced by others) would also apply to a potential federal legalization framework. Cannabis regulation on sovereign tribal lands and conflict with international treaty obligations are also beyond the scope of this article, though emerging cannabis legalization frameworks in Canada and Uruguay are likely to establish a path forward in one or both of these areas.

II. Public Health Approach Rubric for Legislative Adult Use Cannabis Legalization

Based on the foundational frameworks discussed in Part I, *supra*, this section applies a consolidated set of sixteen core public health elements common across existing

145 *Id.* at 914, Supplemental Table A.

146 Such provisions include those addressing, among other issues, expungement of prior criminal convictions for cannabis possession, limitation of criminal consequences for cannabis possession by minors, and provision of targeted funding to community reinvestment for populations disproportionately affected by cannabis criminalization. *See, e.g.*, Bender, *supra* note 19, at 16–20.

147 *See, e.g.* Nate Seltenrich, *Into the Weeds: Regulating Pesticides in Cannabis*, 127 ENVTL. HEALTH PERSPECTIVES 42001 (2019).

148 *See, e.g.*, Todd Subritzky, et al., *Issues in the Implementation and Evolution of the Ccommercial Recreational Cannabis Market in Colorado*, 27 INT'L J. DRUG POL'Y 1, 6–7 (2016).

149 *See, e.g.*, Kevin M. Walters, et al., *An Overview of Health and Ssafety in the Colorado Cannabis Industry*, 61 AM. J. INDUS. MED. 451 (2018).

150 *See generally* Candice M. Bowling & Stanton A. Glantz, *Conflict of Interest Provisions in State Laws Governing Medical and Adult Use Cannabis*, 109 AM. J. PUB. HEALTH 423 (2019).

151 *See, e.g.*, Connor P. Burns, *I Was Gonna Get a Job, But Then I Got High: An Examination of Cannabis and Employment in the Post-Barbuto Regime*, 99 B.U. L. REV. 643 (2019); Jinouth Vasquez Santos, *Pot-Protective Employment Laws Loom in 2019*, 41 L.A. LAW. 12 (2018); Bender, *supra* note 19, at 701–04; Bruce D. Stout & Bennett A. Barlyn, *The Human and Fiscal Toll of America's Drug War: One State's Experience*, 6 ALBANY GOV'T L. REV. 525, 560 (2013).

recommendations and best practice compilations that are suitable for inclusion at the statutory level in proposed adult use legislation.[152] These elements situate in three broad categories: 1) market and regulatory structures; 2) consumer-facing product and retailer regulation; and 3) youth, environmental exposure, and normalization. We apply these principles to a set of bills representing all active state legislation as of February 2019, as detailed in the Appendix.

A. Market and Regulatory Structures

1. Health Department Authority—The priorities and approaches of regulatory agencies will shape the effects of legalization nearly as much as initial enabling legislation. One of the most critical aspects of legalization legislation is therefore the government agency or agencies charged with developing and enforcing subsequent regulations. Legislatures may grant this authority to a variety of existing entities or create entirely new ones; however, from a public health perspective, the ideal approach is to designate the applicable health authority (*i.e.*, state health department or equivalent) as the lead agency for this purpose.[153]

Other authorities (*e.g.*, tax boards) are capable of such regulation and may play supporting roles, but placing public health in the lead role fosters a regulatory approach that prioritizes public health over private industry profit when the two are in conflict, as is often the case.[154] Legislatures can appropriately charge the health authority with a mandate to limit or discourage use for the benefit of public health. Health authorities often operate with such goals in regulating tobacco, for example, and are well-positioned to do so for cannabis. However, to date, legalizing states have instead typically created new cannabis-specific agencies or given regulatory authority to existing alcohol control boards or departments of tax/revenue.[155] Such bodies are more likely to have mandates to encourage business development or manage revenue.

While, as of July 2019, several existing adult use states included their health department or equivalent among the administrative agencies tasked with implementation of adult use legalization,[156] none have made their health department the lead or primary agency, often vesting authority in liquor control boards or state commerce departments.[157] However,

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[152]There are a number of other critical elements in existing adult use cannabis laws and proposed laws that have important public health effects. We have not included, for example, provisions that remain the subject of unsettled debate within the public health community, such as specific limits on the potency of cannabis and cannabis products. We have also not included elements more likely to be addressed through regulatory action than in statute, such as the content of public education campaigns.

[153]*See, e.g.*, Barry, et al., *supra* note 16, at 3.

[154]*Id.* This is not to say that a for-profit market is a given. As discussed *infra*, a state-controlled or not-for-profit market is preferable from a public health perspective. However, even in such systems, there may be a role for private companies and, as such, potential for conflict between private and public interests.

[155]Barry & Glantz, *supra* note 66 (assessing Alaska, Colorado, Oregon, and Washington); California Proposition 64 (2016) §§ 26001(b), 26010 (Bureau of Marijuana Control within Department of Consumer Affairs); Nevada State Question 2 (2016) § 3(4), 5 (Department of Taxation); Massachusetts Question 4 (2016) § 76 (creating Cannabis Control Commission); Michigan Question 1 (2018) §§ 3, 7.1 (Department of Licensing and Regulatory Affairs). *See also* Maine Question 1 (2016) § 2444 (granting authority to Department of Agriculture, Conservation and Forestry).

[156]For example, the California Department of Public Health oversees standards for cannabis manufacturing, including production, packaging, and labeling of all cannabis products. CAL. BUS. & PROF. CODE §§ 26012(3), 26106.

[157]*See, e.g.*, WASH. REV. CODE § 69.50.325 (authority of the Washington State Liquor and Cannabis Board); OR. REV. STAT. § 475B.025 (powers of Oregon Liquor Control Commission); CAL. BUS. & PROF. CODE § 26012(1) (authority of Bureau of Cannabis Control within Department of Consumer Affairs); ALASKA STAT. § 17.38.080 (powers of Marijuana Control Board within Department of Commerce, Community and EconomicDevelopment). Illinois's new law similarly vests most authority in the

some proposed bills would establish the state health department as the lead regulatory authority, including in Hawaii[158] and Minnesota,[159] the latter of which also includes explicit reference to "public health standards and practices" as guiding principles for implementation.[160] A West Virginia bill would place adult use cannabis under the regulatory authority of the Bureau for Public Health,[161] which also regulates the state's medical cannabis program.[162] A Missouri bill would vest primary authority for regulation in the Division of Alcohol and Tobacco Control, within the state's Department of Public Safety.[163]

Several other proposed bills would give the state health department authority over some aspects of the adult use regulatory program, such as regulating testing and manufacturing,[164] designing safety inserts,[165] administering community reinvestment grants and cannabis health and safety funds,[166] or collecting and analyzing data.[167] Others would place the health department in a more limited or advisory role, such as providing assistance on labeling rules[168] or consulting on development of a public health campaign regarding adult use cannabis.[169]

2. State Monopoly or Non-Profit Requirement—State control of one or more aspects of the cannabis market is likely to help mitigate negative public health impacts of legalization. In alcohol policy, government monopolies allow control of price, location, advertising, and other elements that affect behavior, particularly excessive consumption.[170] Transitioning from state-run to privatized alcohol markets is associated with increased alcohol sales,[171] including increased purchase frequency by younger drinkers.[172] CDC's Community Preventive Services Task Force specifically recommends against privatization of alcohol markets.[173] While no U.S. states have yet adopted a state-run cannabis market

Department of Agriculture and Department of Financial and Professional Regulation, with the Department of Public Health in a supporting and advisory role. H.B. 1438, 101st Gen. Assem., Reg. Sess. §§ 5–10, 5–15, 5–25(a) (Ill. 2019).

[158]H.B. 1581 §§ 1, 11 (Haw. 2019).

[159]H.F. 420 §§ 3–4 (Minn. 2019); S.F. 619 §§ 3–4 (Minn. 2019).

[160]H.F. 420 § 1, subdiv. 18 (Minn. 2019); S.F. 619 § 1, subdiv. 18 (Minn. 2019). Another, less comprehensive Minnesota bill also includes a provision making the state health department the primary agency. H.F. 4541 § 3, subdiv. 1 (Minn. 2017).

[161]H.B. 2331 § 16A-17–6 (W. Va. 2019).

[162]W. VA. CODE § 16A-3–1.

[163]H.B. 551 §§ 195.2150 (1)(2), 195.2159 (1) (Mo. 2019).

[164]H.B. 2376 § 11–16A-15(d),(f) (W. Va. 2019).

[165]H.B. 3129 § 5B-8–12 (W. Va. 2019).

[166]H.B. 356 § 4 (N.M. 2019).

[167]H.B. 481 § 6 (318-F:22) (N.H. 2019).

[168]*E.g.*, H.B. 1438, 101st Gen. Assem., Reg. Sess. § 5–25(a) (Ill. 2019); A.B. 1617 § 31 (art. 11, § 181) (N.Y. 2019); A.B. 3506 § 31 (art. 11, § 181) (N.Y. 2017); S.B. 1527 § 31 (art. 11, § 181) (N.Y. 2019); S.B. 3040 § 31 (art. 11, § 180) (N.Y. 2017).

[169]*E.g.*, S.B. 1509, pt. VV § 2 (art. 2, § 19) (N.Y. 2019); H.B. 1438, 101st Gen. Assem., Reg. Sess. § 5–30 (Ill. 2019).

[170]Pacula, et al., *supra* note 107, at 1022–23. We acknowledge that, in the U.S., state alcohol monopolies are the target of both ideological and economic criticism and face numerous political and practical challenges despite their demonstrated public health utility. *See generally* Robin Room, *Alcohol Monopolies in the U.S.: Challenges and Opportunities*, 8 J. PUB. HEALTH POL'Y 509 (1987) (surveying the history of state alcohol monopolies and assessing challenges). Despite these challenges, we include market structure in our assessment of a public health approach to cannabis based on its demonstrated public health benefits in alcohol control. *Contra* Carnevale, et al., *supra* note 71, at 72–73 (noting that state cannabis monopolies and other non-commercial market structures might be beneficial but declining to include this element in proposed framework because it would not be practically feasible).

[171]Alexander C. Wagenaar & Harold D. Holder, *Changes in Alcohol Consumption Resulting from the Elimination of Retail Wine Monopolies: Results from Five U.S. States*, 56 J. STUD. ALCOHOL 566 (1995) (examining wine sales in five U.S. states following privatization of wine sales in those jurisdictions).

[172]William C. Kerr, et al., *Changes in Spirits Purchasing Behaviours after Privatisation of Government-Controlled Sales in Washington, USA*, 38 DRUG ALCOHOL REV. 294 (2019) (finding increased purchase frequency among drinkers 18–29 following market privatization in Washington State).

[173]Community Preventive Services Task Force, "CPSTF Findings for Excessive Alcohol Consumption" (2019), https://www.thecommunityguide.org/content/task-force-findings-excessive-alcohol-consumption.

(likely due in part to federal illegality), Uruguay has adopted this approach in their national legalization framework.[174]

As in states that adopted legalization via initiative, most legislative proposals also adopt a for-profit, commercial structure. One notable exception, however, is New Mexico's S.B. 577, which would create a state monopoly on sales.[175]

3. Unitary Regulatory System—Merging the regulatory structures for medical and adult use cannabis seeks to reduce regulatory complexity because complexity benefits larger business entities that have more extensive financial resources.[176] A unitary system is also more transparent and more consistent with regulation of other products, few of which are regulated under bifurcated systems depending on how they are used.[177] While tax rates and other aspects may differ between medical and adult use cannabis operations within a unitary market, entirely separate regulatory systems may encourage misuse of the medical system by either consumers or suppliers.[178] The added complexity also makes enforcement of regulations more difficult, a particular problem in resource-limited states.

Some existing adult use states have merged their medical and adult use regulatory systems.[179] Proposed bills in New Jersey,[180] New Mexico,[181] Rhode Island, [182]Vermont, [183] and West Virginia[184] would similarly create unitary systems overseeing both medical and adult use cannabis regulation.

In contrast, bills in Maryland,[185] Minnesota,[186] and West Virginia,[187] among others, would create new adult use regulatory frameworks without altering existing oversight of medical cannabis programs. By example, a New Jersey bill would create a new Division of Marijuana Enforcement in the Department of Law and Public Safety to oversee adult use cannabis regulation while leaving the state's Department of Health in charge of regulating medical cannabis.[188] Illinois's enacted bill similarly leaves the state's medical cannabis program intact, with conflicts between the new adult use law and the medical program

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[174]Nick Miroff, *In Uruguay's Marijuana Experiment, the Government is Your Pot Dealer*, WASH. POST, July 7, 2017.
[175]S.B. 577 § 3(H) (N.M. 2019).
[176]Barry, et al., *supra* note 16, at 3.
[177]Carnevale, et al., *supra* note 71, at 82.
[178]Id.
[179]*See, e.g.*, Medicinal and Adult Use Cannabis Regulation and Safety Act, S.B. 94 (Cal. 2017) § 1(g) (stating purposes of law, including single regulatory structure); WASH. REV. CODE § 69.50.375 (2018) (medical marijuana endorsement process for retail licensees). *See also* OR. REV. STAT. § 475B.025 (stating powers of Oregon Liquor Control Commission, including authority pursuant to statutes governing both adult use and medical cannabis); *but see* OR. REV. STAT. § 475B.949 (giving rulemaking authority over medical cannabis program to the Oregon health Authority).
[180]A.B. 4497 §§ 7–8 (N.J. 2018)(Cannabis Regulatory Commission); S.B. 2703 § 7 (N.J. 2018)(Cannabis Regulatory Commission).
[181]H.B. 356 § 3(B) (N.M. 2019)(Cannabis Control Division).
[182]S.B. 2895 § 1(21–28.11–3) (R.I. 2017).
[183]H.B. 196 § 2 (tit. 7, § 841(b)(4)) (Vt. 2019); S.B. 54 § 9 (tit.7, § 841(b)(4) (Vt. 2019).
[184]H.B. 2331 § 16A-17–6(a) (W.Va. 2019) (authorizing Bureau of Public Health to adopt implementing rules). The Bureau of Public Health oversees the state's existing medical cannabis program. W. VA. CODE § 16A-3–1 (2017).
[185]H.B. 632 § 1 (art. XX § 2(B)(2)(IV)) (Md. 2019) (prohibiting regulations issued under new law from limiting licensure of businesses dealing only in medical cannabis).
[186]H.F. 465 §§ 2(subdiv. 1), 26 (Minn. 2019) (creating Bureau of Cannabis Oversight without altering authority of Commissioner of Health to regulate medical cannabis).
[187]H.B. 2376 § 11–16-A (W. Va. 2019) (defining "regulatory agency"); W. VA. CODE § 16A-3–1 (2017).
[188]A.B. 3819 §§ 6, 22 (N.J. 2018).

as related to medical cannabis patients to be resolved in favor of the medical program's provisions.[189]

4. Exclusion of Industry from Formal Regulatory Roles—As stated in the Implementing Guidelines to Article 5.3 of the WHO FCTC, "[t]here is a fundamental and irreconcilable conflict between the tobacco industry's interests and public health policy interests."[190] The WHO recognizes that the industry "sees itself as a legitimate stakeholder in tobacco control and attempts to position itself as a legitimate partner," but unequivocally concludes that the industry "is not and cannot be a partner in effective tobacco control."[191] Tobacco industry interference precipitates policies that are scientifically inaccurate and do not adequately protect public health,[192] and the industry routinely presents misleading scientific evidence.[193]

The cannabis industry is not the tobacco industry (at least not yet[194]), but the innate conflict between the cannabis industry's interests and those of public health are no less concerning. Notwithstanding the potential medical applications of cannabis, which are not the focus of this analysis, adult use cannabis is a product with harmful health effects that can result in use disorders and dependence.[195] Even in the absence of objectively bad corporate behavior like that of the tobacco industry, the cannabis industry's profit-seeking orientation[196] will ultimately lead to business strategies that increase demand and ensure continuing initiation of young consumers to replace those that stop using (whether by cessation or expiration).[197] These interests are unalterably opposed to those of public health.

Consequently, relations between the cannabis industry and regulatory agencies, advisory boards, and other entities should be limited to transparent, arms-length interactions. Among existing adult use states, Oregon has prohibited industry representatives from having formal policymaking roles, while Colorado and Alaska have allowed industry members to serve on advisory boards, and Alaska has even allowed two industry members to serve on a five-person committee to design the state's regulatory system.[198]

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189 H.B. 1438, 101st Gen. Assem., Reg. Sess. § 55–85(a) (Ill. 2019).
190 WHO FCTC Guidelines, *supra* note 79, at 5, 22.
191 WORLD HEALTH ORG., TOBACCO INDUSTRY INTERFERENCE WITH TOBACCO CONTROL 5, 22 (2008), *available at* https://www.who.int/tobacco/resources/publications/Tobacco%20Industry%20Interference-FINAL.pdf.
192 *See, e.g.*, Stella A. Bialous & Derek Yach, *Whose Standard Is It, Anyway? How the Tobacco Industry Determines the International Organization for Standardization (ISO) Standards for Tobacco and Tobacco Products*, 10 TOBACCO CONTROL 96 (2001). (discussing industry interference in setting international standards for tobacco products in the ISO).
193 *See, e.g.*, Selda Ulucanlar, et al., *Representation and Misrepresentation of Scientific Evidence in Contemporary Tobacco Regulation: A Review of Tobacco Industry Submissions to the UK Government Consultation on Standardised Packaging*, 11 PLOS MED. e1001629 (2014) (discussing industry scientific evidence presented on standardized packaging in the United Kingdom).
194 *See generally* Barry, et al., *supra* note 16.
195 *See* Alan J. Budney, et al., *An Update on Cannabis Use Disorder with Comment on the Impact of Policy Related to Therapeutic and Recreational Cannabis Use*, 269 EUR. ARCHIVES PSYCHIATRY CLINICAL NEUROSCIENCE 73 (2019); Nat'l Inst. on Drug Abuse, "Marijuana: Is marijuana addictive?" (2018), https://www.drugabuse.gov/publications/research-reports/marijuana/marijuana-addictive; Am. Psychiatric Ass'n, DSM-5 Diagnoses and New ICD-10-CM Codes (2017), *available at* http://www.acbhcs.org/providers/qa/docs/training/DSM-IV_DSM-5_SUD_DX.pdf.
196 An exception would be a government-controlled monopoly or a not-for-profit restriction, as discussed *supra*.
197 As the tobacco industry well understands, and explicitly stated in a confidential internal memorandum in the 1980s, "[y]ounger adults are the only source of replacement smokers." Memorandum, R.J. Reynolds, The Importance of Younger Adults (Undated) at 50341 8151 (available from Truth Tobacco Industry Documents, R.J. Reynolds Records, https://www.industrydocuments.ucsf.edu/docs/jzyl0056).
198 Barry & Glantz, *supra* note 66, at 915.

Most state proposals do not explicitly address industry participation in official regulatory bodies.[199] Those that do take positions at both extremes. Three Minnesota bills would bar cannabis industry members from serving on the advisory council created under the bill.[200] In stark contrast, a New Mexico bill would require a comparable advisory committee to include an industry representative.[201] A New Hampshire bill would create an eleven-member advisory board with up to six positions potentially open to industry members, based on the description of expertise required.[202] Illinois's enacted 2019 legislation reserves 1 of 24 positions on the newly created Adult Use Cannabis Health Advisory Committee for a representative of cannabis business licensees.[203]

5. Local Control and Non-Preemption—A well-crafted cannabis legal framework preserves the authority of local jurisdictions to regulate business operations within their borders in keeping with community needs and values. Local regulation is a cornerstone of public health law. While the federal government's authority is supreme, state and local governments are closer to the people and typically better able to respond to the health needs of the community because of their "local knowledge, civic engagement, and direct political accountability."[204] Local government has more limited authority, and its authority is dependent largely on delegations of power under state law, but public health issues often place local officials on the "front line."[205]

Local jurisdictions have historically been leaders in advancing public health approaches to health hazards. This is particularly evident in the history of tobacco control. Local jurisdictions were the first to adopt smoking restrictions for workplaces and public places, building critical mass and political will for states to follow suit.[206] Advancing state laws that include preemption of local regulatory action is a favored tactic of the tobacco industry for precisely this reason and creates a significant obstacle for tobacco control.[207] Eliminating preemption of local tobacco control measures in state law remains a goal of health advocates,[208] and nascent cannabis laws should avoid creating similar obstacles to local regulation. Preemption (specifically ceiling preemption) of local regulation can hinder beneficial public health action in situations where cross-jurisdictional uniformity is not necessary.[209]

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[199]This does not include provisions addressing direct conflicts of interest for regulators. *See generally, e.g.*, Bowling & Glantz, *supra* note 150; see also Barry & Glantz supra note 66.
[200]H.F. 420 § 4, subdiv. 3 (Minn. 2019); H.F. 4541 § 3, subdiv. 2 (Minn. 2017); S.F. 619 §4, subdiv. 3 (Minn. 2019).
[201]H.B. 356 § 3(E)(1) (N.M. 2019).
[202]H.B. 481 § 6 (318-F:8(II)), 166th Sess., 1st Year (N.H. 2019).
[203]H.B. 1438, 101st Gen. Assem., Reg. Sess. § 5–25(b)(23) (Ill. 2019).
[204]LAWRENCE O. GOSTIN, PUBLIC HEALTH LAW: POWER, DUTY, RESTRAINT 81 (University of California Press 2nd ed. 2008).
[205]JAMES G. HODGE, JR., PUBLIC HEALTH LAW IN A NUTSHELL 36–38 (West Academic
[206]*See generally* Michael Siegel, et al., *Preemption in Tobacco Control. Review of an Emerging Public Health Problem*, 278 JAMA 858 (1997).
[207]U.S. Ctrs. for Disease Control & Prevention, *State Preemption of Local Ttobacco Control Policies Restricting Smoking, Advertising, and Youth Access--United States, 2000–2010*, 60 MORBIDITY & MORTALITY WKLY. REP. 1124 (2011); Siegel, et al., *supra* note 206.
[208]U.S. Dep't Health and Human Servs., "Healthy People 2020 Topics & Objectives: Substance Use," *supra* note 103.
[209]*See, e.g.*, INST. OF MED., FOR THE PUBLIC'S HEALTH: REVITALIZING LAW AND POLICY TO MEET NEW CHALLENGES 48–52 (2011), *available at* https://www.nap.edu/read/13093/chapter/1#ii.

Existing legalizing states have generally preserved local authority to regulate cannabis businesses. Alaska, Colorado, Oregon, and Washington all authorize local jurisdictions to restrict or prohibit commercial cannabis operations within their borders (with Oregon requiring a general election referendum to do so).[210] California also vests local governments with such control,[211] though the boundaries of this authority remain in question to some extent and subject to litigation and political maneuvering.[212]

Proposed bills generally would give localities authority to limit or prohibit operation of cannabis business within their jurisdiction. As presented in Table 1, bills that explicitly address this issue preserve local authority to prohibit at least some classes of cannabis business entities within their borders, and the majority allow localities to completely prohibit cannabis operations.

6. Revenue Allocation—It is essential that revenues from cannabis regulation and taxation fully cover, at minimum, the costs of administering and enforcing regulatory structures established to oversee the new market. Ideally, revenues should also cover reasonably anticipated economic externalities, including future health costs, though these are difficult to quantify in advance, particularly given the current state of scientific evidence regarding the effects of cannabis use. An appropriate model for estimating these costs may be to base the estimates on the effects of comparable levels of tobacco use (which are presently higher than cannabis use). Tobacco represents an historic failure to address such externalities. Tobacco use imposes massive costs on healthcare systems, but it was not until the 1998 Master Settlement Agreement (MSA) that states began to recover costs to their public health systems from smoking-related illnesses and death.[217] Despite large influxes of revenue from the MSA, states have continued to direct less than 1% of these funds to tobacco prevention programs and to fund such efforts at levels far below those recommended by the CDC, stymying their effectiveness.[218]

The health effects of cannabis use are not yet well understood, making projections of future health costs challenging. Analogies to other substances, such as tobacco, are useful but incomplete because cannabis use patterns differ and appear to be in flux. For example, as of 2017 dried flower remained the most commonly used cannabis product and had the most direct parallels to tobacco use, but cannabis edibles and other consumption methods were growing in popularity.[219] Given the uncertainty of other costs, cannabis revenues should fund continuing research efforts to better understand the impact of legalization, including health effects, to avoid the accumulation of substantial unfunded costs as has occurred for

[210]Carnevale, et al., *supra* note 71, at 77.
[211]CAL. BUS. & PROF. CODE § 26200(a) (2016).
[212]Ongoing litigation addresses whether localities have the authority to prohibit cannabis deliveries within their borders. Blood, *supra* note 65. A 2019 state legislative proposal would also require localities that voted in favor of the state's 2016 legalization initiative to issue a number retail cannabis licenses equal to 25% of active alcoholic beverage sales licenses in the jurisdiction. A.B. 1356, 2019 Assem., Reg. Sess. (Ca. 2019).
[217]Pub. Health Law Ctr., "The Master Settlement Agreement: An Overview" 1–2 (2018),https://publichealthlawcenter.org/sites/default/files/resources/MSA-Overview-2018.pdf.
[218]*Id.* at 8; Campaign for Tobacco-Free Kids, "Actual Annual Tobacco Settlement Payments Received by the States, 1998–2010," 2019, https://www.tobaccofreekids.org/assets/factsheets/0365.pdf.
[219]NAT'L ACADS. OF SCIS., ENG'G & MED., *supra* note 1, at 52.

tobacco. Cannabis revenue allocation (and underlying taxation levels) should adapt to this new evidence as it develops.

However, using cannabis revenues for other purposes is politically attractive. For example, Colorado legalization advocates made education funding via cannabis revenues a centerpiece of campaign advertisements in 2012.[220] State budgets also tend to absorb funds that are not earmarked for specific purposes, as has often been the case for tobacco revenues.[221] However, there is also some risk in directing cannabis revenues exclusively to cannabis-related programs if regulatory agencies become dependent on the sales of the substance they regulate.[222]

Of the first four legalizing states, only Washington dedicated a portion of revenue to funding a continuous research program, though health departments in the other three states subsequently acted to support such efforts with existing funding sources or sought to obtain new funds.[223] Later legalizing states, for example California, earmarked some annual funding for research, enforcement, and youth prevention, among other purposes.[224]

As described in Table 2, state proposals take dramatically different approaches to revenue allocation. Many appropriately set aside funds first to cover administration and enforcement. Some bills direct remaining funds primarily to cannabis-related programs, including public education, drug treatment, intoxicated driving prevention, mental health services, and cannabis research. However, other bills dedicate substantial revenues to other purposes, including infrastructure, business development, and state general funds.

Legislatures are at times plain in their intention to generate significant revenue from cannabis. For example, a Hawaii bill includes a provision stating, “The legislature finds that it is high time Hawaii begins to reap the revenue benefits from taxing adult cannabis use.”[225] Similarly, several New York bills would explicitly require the responsible agency to regularly review tax rates and recommend changes to further three purposes: “maximizing net revenue,” minimizing illegal industry, and discouraging underage use.[226]

7. Enforcement and Liability—Unannounced compliance checks, including those using underage decoy buyers, are a key component of effectively enforcing retailer compliance regarding sales to minors. Existing evidence from tobacco and alcohol control indicates that active, frequent enforcement utilizing escalating penalties, up to and including license revocation, is appropriate and effective to influence retailer behavior and reduce sales

[220]Matt Ferner, *Marijuana Legalization TV Ad Says: ‘Let’s Have Marijuana Tax Money Go To Our Schools Rather Than Criminals’*, HUFFPOST, October 4, 2012.
[221]Kerry Cork, Public Health Law Center, “Toking, Smoking, and Public Health: Lessons from Tobacco Control for Marijuana Regulation” 8 (2018), *available at* http://www.publichealthlawcenter.org/sites/default/files/resources/Toking-Smoking-Public-Health-2018.pdf.
[222]ROLLES & MURKIN, *supra* note 114, at 91–93.
[223]Barry & Glantz, *supra* note 66, at 916.
[224]CAL. REV. & TAX. CODE § 34019(b)–(h). However, as of July 2019, cannabis revenues have been far lower than initial projections and consumed by enforcement costs. As a result, no earmarked state funds for other programs have yet been distributed, though some localities have used local cannabis revenues for a variety of programs. *See* Lisa M. Krieger, *Where Does California’s Cannabis Tax Money Go? You Might Be Surprised.*, MERCURY NEWS, May 25, 2019.
[225]H.B. 1581 § 1 (Haw. 2019).
[226]A.B. 1617 § 33 (art. 18-A § 447(3)) (N.Y. 2019); A.B. 3506 § 33 (art. 18-A § 447(3)) (N.Y. 2017); S.B. 1527 § 3 (art. 18-A § 447(3)) (N.Y. 2019); S.B. 3040 § 33 (art. 18-A § 447(3)) (N.Y. 2017).

to minors.[227] In contrast, the absence of compliance testing and penalties for violation limits the effectiveness of state laws prohibiting sales to minors.[228] To counter the potential for adult use markets to increase youth access and the appeal of cannabis to youth, maintaining high retailer compliance is crucial.[229]

Among the first four adult use states, Washington provides for an unannounced compliance check program, but Alaska, Colorado, and Oregon do not.[230] Compliance reviews in Washington and Colorado in the early stages of legalization found overall high levels of compliance by retailers (88% and 91%, respectively).[231]

Several proposed bills do not specifically provide for license revocation for sales to minors, but leave establishment of grounds and procedures for license revocation to future regulations.[232] Some bills do provide for specific penalties for sales to minors. For example, multiple New Jersey bills would penalize employees or agents of a licensee with increasing civil penalties up to $1,000 per violation and potentially result in revocation of the licensee's license following a hearing.[233] Illinois's enacted 2019 legislation authorizes random and unannounced inspections by regulators and state and local law enforcement,[234] and provides for broad license suspension and revocation powers for violations generally,[235] but does not explicitly apply these penalties to sales to minors.[236]

Civil liability for retailers provides additional, indirect regulation on the behavior of commercial actors. Borrowed from alcohol service, commercial host or "dram shop" liability (sometimes called "gram shop liability" for cannabis[237]) is retailer liability for injuries resulting from overservice or underage service and is a well-established but non-universal principle of state statutory tort law that relies primarily on deterrence effects.[238] Thirty states have statutes imposing civil liability on establishments that sell or serve alcohol to individuals whose intoxication results in harms; twenty-two restrict liability to service of obviously intoxicated persons or persons under the legal drinking age.[239] Dram shop liability laws are associated with reductions in alcohol consumption and fatal crash ratios.[240]

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[227] *See, e.g.*, Lindsay F. Stead & Tim Lancaster, *A Systematic Review of Interventions for Preventing Tobacco Sales to Minors*, 9 TOBACCO CONTROL 169, 175 (2000) (regarding tobacco); U.S. Ctrs. for Disease Control & Prevention, *Enhanced Enforcement of Laws to Prevent Alcohol Sales to Underage Persons--New Hampshire, 1999–2004*, 53 MORBIDITY MORTALITY WKLY REP. 452 (2004) (regarding alcohol).

[228] J. R. DiFranza & G. F. Dussault, *The Federal Initiative to Halt the Sale of Tobacco to Children--the Synar Amendment, 1992–2000: Lessons Learned*, 14 TOBACCO CONTROL 93, 97 (2005).

[229] *See, e.g.*, Carnevale, et al., *supra* note 71, at 80; Barry & Glantz, supra note 66.

[230] Barry & Glantz, *supra* note 66

[231] Carnevale, et al., *supra* note 71, at 80.

[232] *E.g.*, H.F. 420 §§ 4 (subdiv. 2), 6 (subdiv. 5) (Minn. 2019); H.B. 3129 § 5B-8–11(c)(1) (W. Va. 2019); S.B. 577 § 3(G)(1) (N.M. 2019); H.B. 250 § 7(tit. 7, § 882) (Vt. 2019); H.B. 196 § 9 (tit. 7, § 882) (Vt. 2019); H.B. 902 § 45(a)(1) (Ill. 2019).

[233] S.B. 2702 § (6)(b) (N.J. 2018); A.B. 3819 § 5(b) (N.J. 2018); A.B. 3581 § 6(b) (N.J. 2018).

[234] H.B. 1438, 101st Gen. Assem., Reg. Sess. § 15–135 (Ill. 2019).

[235] *Id.* § 45–5.

[236] *See id.* §§ 10–20 (regarding identification).

[237] Jessica Berch, *Reefer Madness: How Non-Legalizing States Can Revamp Dram Shop Laws to protect Themselves from Marijuana Spillover from Their Legalizing Neighbors*, 58 B.C. L. REV. 863 (2017); Hayley Dean, *Through the Haze: Fashioning a Workable Model for Imposing Civil Liability on Marijuana Vendors*, 49 GONZ. L. REV. 611 (2014).

[238] Berch, *supra* note 237, at 885; Frank A. Sloan, et al., *Liability, Risk Perceptions, and Precautions at Bars*, 43 J. L. & ECON. 473 (2000).

[239] Nat'l Conference of State Legislatures, "Dram Shop Civil Liability and Criminal Penalty State Statutes" (2013), http://www.ncsl.org/research/financial-services-and-commerce/dram-shop-liability-state-statutes.aspx.

Despite the prevalence of dram shop liability laws nationally, none of the reviewed bills included provisions explicitly detailing retailer liability for cannabis. However, other state statutory or case law may impose such liability.

B. Consumer-Facing Product and Retailer Regulation

1. Packaging and Labeling—A comprehensive public health approach to warning labels for cannabis and cannabis products should include evidence-based, effective measures from global tobacco control, such as plain packaging, graphic warning labels, and rotating health messaging.[241] However, states may ultimately address these elements by rule rather than statute.

a. Packaging: Packaging is fundamentally a marketing tool, one that other industries, including tobacco and alcohol, have used to great effect. As with these products, branding on cannabis products offers the industry a secondary marketing opportunity to make up for other venues that may be legally restricted.[242]

Plain packaging, devoid of all branding elements other than the brand name and product variant in plain text and specified font, is one of the most important and effective advances in tobacco control. Plain packaging improves the effectiveness of warnings, reduces product appeal to adolescents and young adults, and increases attention and perception of harm, among other benefits.[243] While existing adult use states have not adopted plain packaging requirements,[244] Oregon allows producers and manufacturers to bypass labeling and packaging approval if they use pre-approved, generic labels and packaging,[245] effectively creating an opt-in plain packaging approach. Outside the U.S., Canada[246] and Uruguay[247] have adopted plain packaging provisions as part of their national adult use cannabis legalization frameworks.

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[240]Michael Scherer, et al., *Effects of Dram Shop, Responsible Beverage Service Training, and State Alcohol Control Laws on Underage Drinking Driver Fatal Crash Ratios*, 16 TRAFFIC INJURY PREVENTION S59 (2015). Some scholars, notably Berch, propose gram shop laws not only for legalizing states, but also non-legalizing states that border them, with the aim of holding cannabis sellers accountable for injuries caused by consumers who travel or return to the non-legalizing neighbor state, Jessica Berch, *Weed Wars: Winning the Fight Against Marijuana Spillover from Neighboring States*, 19 NEV. L.J. 1 (2018); Berch, *supra* note 237, a proposition beyond the scope of this paper.

[241]DANIEL G. ORENSTEIN & STANTON A. GLANTZ, UCSF CTR. FOR TOBACCO CONTROL RES. AND EDUC., PUBLIC HEALTH LANGUAGE FOR RECREATIONAL CANNABIS LAWS, *available at* https://escholarship.org/uc/item/05d5g5db.

[242]*See, e.g.*, *id.* at 7–8.

[243]Melanie Wakefield, et al., *Australian Adult Smokers' Responses to Plain Packaging with Larger Graphic Health Warnings 1 Year after Implementation: Results from a National Cross-sectional Tracking Survey*, 24 TOBACCO CONTROL ii17 (2015); P. Beede & R. Lawson, *The Effect of Plain Packages on the Perception of Cigarette Health Warnings*, 106 PUB. HEALTH 315 (1992); Victoria White, et al., *Has the Introduction of Plain Packaging with Larger Graphic Health Warnings Changed Adolescents' Perceptions of Cigarette Packs and Brands?*, 24 TOBACCO CONTROL ii42 (2015); Daniella Germain, et al., *Adolescents' Perceptions of Cigarette Brand Image: Does Plain Packaging Make a Difference?*, 46 J. ADOLESCENT HEALTH 385 (2010); Ingeborg Lund & Janne Scheffels, *Young Smokers and Non-smokers Perceptions of Typical Users of Plain vs. Branded Cigarette Packs: A Between-subjects Experimental Survey*, 13 BMC PUB. HEALTH 1005 (2013); Crawford Moodie, et al., *Young Adult Smokers' Perceptions of Plain Packaging: A Pilot Naturalistic Study*, 20 TOBACCO CONTROL 367 (2011); Emily Brennan, et al., *Mass Media Campaigns Designed to Support New Pictorial Health Warnings on Cigarette Packets: Evidence of a Complementary Relationship*, 20 TOBACCO CONTROL 412 (2011); Judith McCool, et al., *Graphic Warning Labels on Plain Cigarette Packs: Will They Make a Difference to Adolescents?*, 74 SOC. SCI. MED. 1269 (2012).

[244]Barry & Glantz, *supra* note 66, at Supplemental Table A.

[245]OR. ADMIN. R. 845–025-7060.

[246]Cannabis Regulations SOR/2018–144 §§ 111–121 (Can).

[247]*See* Miroff, *supra* note 174.

Two Minnesota bills would require minimalist packaging that includes most elements of a plain packaging standard, prohibiting product depiction, cartoons, and any images other than the company logo or name.[248] (The allowance for a logo is the only departure from a comprehensive plain packaging standard.) Like many other states' proposed or enacted laws, this bill would also require the packaging to be opaque and child-resistant.[249]

Several bills have packaging restrictions that target attempts to appeal to youth, but they often use broad, vague language. Two Vermont bills would prohibit packaging that makes a cannabis product more appealing to children.[250] Two New Mexico bills would prohibit packaging that is "designed to be appealing to a child."[251] A Hawaii bill would require future regulations to prohibit "the use of any images designed or likely to appeal to minors, such as cartoons, toys, animals, or children; and any other likeness of images, characters, or phrases that are popularly used to advertise to children."[252] Illinois's enacted 2019 legislation contains a nearly identical provision, but adds a prohibition on "any packaging or labeling that bears reasonable resemblance to any product available for consumption as a commercially available candy."[253]

A Virginia bill uses particularly weak language with respect to packaging, prohibiting products labeled or packaged "in a manner that is *specifically designed* to appeal *particularly* to persons under 21."[254] Manufacturers could easily escape culpability under such a standard by arguing that they design their packaging to appeal to lawful young adult consumers (*i.e.*, 21 and over) and that any appeal to underage consumers is unintentional. One need look no further than the online marketing tactics of e-cigarette maker JUUL Labs Inc. (now partially owned by Philip Morris USA parent company Altria) and the company's subsequent statements to see how an industry may deploy such a defense to parry accusations of inappropriately targeting youth.[255]

b. Warning Labels: Warning labels have demonstrated efficacy in tobacco control, influencing risk perceptions, health knowledge, motivation to quit, and appeal to youth. Warnings are most effective when they are large, prominently positioned, clearly worded, periodically changed to reduce familiarity, and designed to include pictorial content in addition to text.[256]

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[248] H.F. 420 § 13 (Minn. 2019); S.F. 619 § 13 (Minn. 2019).

[249] H.F. 420 § 13 (Minn. 2019). It would also require packaging to be recyclable or reusable if such materials are available, *id.*, an important environmental public health consideration, particularly in light of serious environmental pollution harms from tobacco products. *See, e.g.*, WORLD HEALTH ORG., TOBACCO AND ITS ENVIRONMENTAL IMPACT: AN OVERVIEW 24–28 (2017), *available at* https://apps.who.int/iris/bitstream/handle/10665/255574/9789241512497-eng.pdf;jsessionid=A3D1E3A7AB57F0836E0E64DBF2B1CD2B?sequence=1.

[250] H.B. 250 § 7 (tit. 7, § 881(a)(3)(F)) (Vt. 2019); H.B. 196 § 9 (tit. 7, § 881(a)(3)(F) (Vt. 2019).

[251] S.B. 577 § 12(B) (N.M. 2019); H.B. 356 § 17(B) (N.M. 2019).

[252] H.B. 1581 § 11(16) (Haw. 2019).

[253] H.B. 1438, 101st Gen. Assem., Reg. Sess. § 55–21(f)(5) (Ill. 2019).

[254] Virginia H.B. 2373 art. 4 § 3.2–4155(C)(2) (emphasis added).

[255] *See* Press Release, Kevin Burns, CEO, JUUL Labs, JUUL Labs Action Plan (Nov. 13, 2018) (defending the company and arguing that their "intent was never to have youth use JUUL products"); *but see* ROBERT K. JACKLER, ET AL., STANFORD UNIVERSITY SCHOOL OF MEDICINE, JUUL ADVERTISING OVER ITS FIRST THREE YEARS ON THE MARKET, STANFORD RESEARCH INTO THE IMPACT OF TOBACCO ADVERTISING 1, *available at* http://tobacco.stanford.edu/tobacco_main/publications/JUUL_Marketing_Stanford.pdf (concluding based on content analysis that "JUUL's advertising imagery in its first 6 months on the market was patently youth oriented. For the next 2 ½ years it was more muted, but the company's advertising was widely distributed on social media channels frequented by youth, was amplified by hashtag extensions, and catalyzed by compensated influencers and affiliates.").

As of July 2019, none of the existing adult use states required a warning label with pictorial content like that of tobacco graphic warning labels, though some do require a small (likely ineffective) warning symbol for cannabis products.[257] Similarly, none of the proposed bills include specific requirements for rotating health warnings or pictorial content. However, many bills would vest decision-making authority for package warnings in one or more regulatory bodies,[258] meaning these entities could potentially adopt such requirements.

For example, four New Jersey bills would require a warning label to "adequately inform consumers about safe marijuana use and warn of the consequences of misuse or overuse."[259] A New Mexico bill would require labels that warn of potential adverse effects.[260] Six New York bills would authorize the responsible agency to seek the assistance of the state health department in developing regulations for warning labels including "any potential impact on human health resulting from the consumption of marihuana products … if such labels are deemed warranted."[261]

Bills that do specify warning content tend to include minimal warnings similar to existing alcohol warning labels, which are the product of a voluntary code and do not appear to be particularly effective.[262] These types of warning labels address only specific populations (*e.g.*, children, pregnant women), use by minors, or driving while intoxicated.[263] Some are even more basic, such as a West Virginia bill that would simply require a warning that the product is intoxicating and to keep it away from children.[264]

Illinois's enacted 2019 legislation charges the state's Department of Public Health with defining and updating health warnings for cannabis, but also includes specific warning language to be used unless modified by rule. Among other label content, the bill requires all cannabis products to include a statement that "use can impair cognition and may be habit forming" and requires cannabis that may be smoked to include the statement, "Smoking is hazardous to your health."[265] While there are no requirements for pictorial or rotating elements in the legislation and some of the specified language does not reflect best practices, these are nonetheless a rare example of health-specific cannabis warnings.

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[256] *See* ORENSTEIN & GLANTZ, *supra* note 241, at 12–16 (summarizing existing evidence from tobacco control and application to cannabis).

[257] *See, e.g.*, CA. CODE REGS. tit. 17, § 40412 (2018); OR. ADMIN. R. 333–007-020 (2018); 1 COLO. CODE REGS. § 212–1 (2018); Memorandum, James Burack, Director, Marijuana Enforcement Division, Colorado Department of Revenue, Re: Adoption of a Single Universal Symbol for Medical and Retail Marijuana, *available at* https://www.colorado.gov/pacific/sites/default/files/IB%2018–04%20Universal%20Symbol%20Rules.pdf; Oregon Health Authority, "Cannabis Universal Symbol," https://www.oregon.gov/oha/PH/PreventionWellness/marijuana/Pages/symbol.aspx, last accessed May 30, 2019; WASH. ADMIN. CODE § 314–55-106 (2018).

[258] S.B. 80 § 11(3)(f) (Ky. 2019); H.B. 196 § 9 (tit. 7, § 907(D)) (Vt. 2019); H.B. 250 § 7 (tit. 7, § 907(D)) (Vt. 2019); S.B. 54 § 7 (tit. 7, § 907(D)) (Vt. 2019); A.B. 3581 § 9(a)((7) (N.J. 2018); A.B. 3819 § 8(a)(7) (N.J. 2018); A.B. 4497 § 16(a)(7) (N.J. 2018); S.B. 577 § 3(E) (N.M. 2019); A.B. 1617 § 181 (N.Y. 2019).

[259] A.B. 3819 § 8(a)(7)(c) (N.J. 2018); A.B. 4497 § 16(a)(7)(c) (N.J. 2018); S.B. 2703 § 16(a)(7)(c) (N.J. 2018).

[260] H.B. 356 § 17(C)(6) (N.M. 2019).

[261] A.B. 1617 § 31 (art. 11 § 181(4)) (N.Y. 2019); A.B. 2009 art. 4 § 78(3) (N.Y. 2019), A.B. 3506 § 181(4) (N.Y. 2017_); S.B. 1509 § 78(3) (N.Y. 2019), S.B. 1527 § 181(4) (N.Y. 2019); S.B. 3040 § 180(4) (N.Y. 2017).

[262] Barry & Glantz, *supra* note 66, at 919.

[263] *See, e.g.*, S.B. 2895 § 1(21–28.11–8(d)(4)) (R.I. 2017); H.B. 2371 art. 4 § 3.2–4149(A)(9) (Va. 2018); H.B. 2373 art. 4 § 3.2–4155(A)(9) (Va. 2018); S.B. 2702 § (9)(a)(7)(d)(viii).

[264] H.B. 3129 § 5B-8–12 (W.V. 2019).

[265] H.B. 1438, 101st Gen. Assem., Reg. Sess. § 55–21(i)–(j) (Ill. 2019).

2. Product Taxes—Taxes on products like tobacco and alcohol are an effective means of decreasing consumption, particularly among adolescents, who are generally more price-sensitive.[266] However, the existence of a robust illicit market for cannabis is distinguishing and requires a balanced approach in which taxes are high enough to discourage abuse and youth use, but low enough to establish a stable legal market.[267] While the public health approach distinctly prioritizes health interests over commercial interests, the legal market does have public health benefits over the illicit market with respect to age restriction, labeling, and product testing, among other areas. Experimentation among implementing jurisdictions will likely be necessary to identify characteristics of the supply and demand curves for legal cannabis and establish an ideal level of tax, which may also change as the legal market takes hold.

As shown in Table 3, state proposals would take a variety of approaches to taxation. Illinois's enacted 2019 legislation is notable not only because it was the only proposed bill to pass as of July 2019, but also because of its unique taxation approach. The legislation differentiates among cannabis products by THC content, taxing more potent products at a rate more than double that of lower-potency products (25% sales tax on products over 35% THC compared to 10% tax on products at or below that threshold) and also distinguishes between infused products and other product categories.[268]

3. Product Access—Unlike tobacco (and in many states alcohol), adult use cannabis is (so far) sold only in age-restricted venues. Provided this restriction remains in place and subject to active and comprehensive enforcement, it alleviates some product access concerns. The Family Smoking Prevention and Tobacco Control Act of 2009 prohibited tobacco vending machines and self-service displays outside of adult-only facilities.[269] However, access restrictions address more than youth use. Total prohibitions on tobacco vending machines in all locations are associated with reduced smoking propensity, with those who live in an area with a total prohibition less likely to smoke.[270]

Three Vermont bills would prohibit any direct customer access to cannabis products in a retail shop and require all products to be stored behind a counter or similar barrier.[271] Two Virginia bills would prohibit vending machines, drive-through windows, and internet-based sales platforms, among other restrictions.[272] Illinois's enacted 2019 legislation similarly prohibits drive-through windows and vending machines.[273] In contrast, two bills in Hawaii would explicitly allow operation of vending machines.[274]

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[266] *See, e.g.*, Summer S. Hawkins, et al., *Impact of Tobacco Control Policies on Adolescent Smoking*, 58 J. ADOLESCENT HEALTH 679 (2016) (finding most price sensitivity among youngest adolescents with respect to cigarettes); Michael F. Pesko, et al., *E-cigarette Price Sensitivity among Middle- and High-school Students: Evidence from Monitoring the Future*, 113 ADDICTION 896 (2018) (finding price sensitivity among adolescents for e-cigarettes); Xin Xu & Frank J. Chaloupka, *The Effects of Prices on Aalcohol Use and Its Consequences*, 34 ALCOHOL RES. & HEALTH 236, 239–40 (2011) (discussing studies that consistently demonstrate inverse relationship between price and alcohol consumption among adolescents and youth).

[267] *See, e.g.*, Mark A. R. Kleiman, *We're Legalizing Weed Wrong*, SLATE, Nov. 7, 2016, *available at* : http://www.slate.com/articles/business/moneybox/2016/11/america_is_legalizing_marijuana_wrong.html.

[268] H.B. 1438, 101st Gen. Assem., Reg. Sess. § 65–10(a) (Ill. 2019).

[269] Family Smoking Prevention and Tobacco Control Act, 123 Stat. 1776 (2009); 21 C.F.R. § 1140.16(c).

[270] Mike Vuolo, et al., *Impact of Total Vending Machine Restrictions on US Young Adult Smoking*, 18 NICOTINE & TOBACCO RES. 2092 (2016).

[271] H.B. 250 § 2(881)(4)(B) (Vt. 2019); H.B. 196 § 9 (tit. 7, § 881(4)(B)) (Vt. 2019); S.B. 54 § 7 (tit. 7, § (881)(4)(B)) (Vt. 2019).

[272] H.B. 2371 art. 3 § 3.2–4142(B)(2)(a)(Va. 2018); H.B. 2373 art. 2 § 3.2–4146(B)(2)(a) (Va. 2018).

There is some debate as to public health best practices with respect to allowing product delivery. Deliveries are difficult to regulate[275] and increase the risk of illegal youth access, particularly given the inadequacy of most age verification approaches.[276] However, Health Canada acknowledged an advantage to some cannabis delivery models in that their discretion (compared to more visible brick-and-mortar retail outlets) may not encourage increased usage.[277] The Canadian Public Health Association also expressed concern that storefront retailers could stimulate increased product variety and noted that a delivery-only system (as Canada operated for its medical cannabis program) "eliminates the likelihood of placement of shops near areas where children congregate, and concerns regarding signage and advertising for such shops."[278]

Combined with the risk that storefront retailer concentration may normalize and increase use (based on evidence from tobacco and alcohol control[279]), cannabis delivery may offer both benefits and risks for public health, and a total prohibition on delivery may not ultimately be ideal. However, age verification processes would require substantial improvement in order to realize potential benefits while mitigating risks. As with many other open questions regarding cannabis regulation, as evidence develops it will be far easier to liberalize an overly restrictive policy than to attempt to eliminate an established facet of the market.

Of those bills that explicitly address delivery, seven bills in four states would prohibit it, while sixteen bills in nine states would permit it, as noted in Table 4, below.

4. Outlet Density Restrictions—Alcohol outlet density is positively associated with excessive consumption and related harms.[280] Because this finding applies to both on-and off-premises outlets (*i.e.*, both bars and liquor stores), there are parallels to cannabis regulation whether or not a jurisdiction permits on-site consumption. Higher tobacco outlet density is also associated with increased youth smoking rates,[281] and outlet density also affects adult smoking via interaction between price sensitivity and access costs, including travel time.[282] While the economics of cannabis markets and their impact on youth and

[273] H.B. 1438, 101st Gen. Assem., Reg. Sess. §§ 15–65(n)(7)–(8) (Ill. 2019).
[274] H.B. 1515 § 2(712)(3) (Haw. 2019); S.B. 779 § 2(712)(3) (Haw. 2019).
[275] Barry & Glantz, *supra* note 142, at 5.
[276] *See* Rebecca S. Williams & Kurt M. Ribisl, *Internet Alcohol Sales to Minors*, 166 ARCHIVES PEDIATRRIC & ADOLESCENT MED. 808 (2012) (finding that age verification by internet alcohol vendors failed to prevent sales to minors in 45% of study cases and that 59% of vendors used weak or no age verification).
[277] HEALTH CANADA, A FRAMEWORK FOR THE LEGALIZATION AND REGULATION OF CANNABIS IN CANADA (2016), *available at* https://www.canada.ca/content/dam/hc-sc/healthy-canadians/migration/task-force-marijuana-groupe-etude/framework-cadre/alt/framework-cadre-eng.pdf.
[278] Canadian Public Health Association, "A Public Health Approach to the Legalization, Regulation and Restriction of Access to Cannabis" (2017), https://www.cpha.ca/public-health-approach-legalization-regulation-and-restriction-access-cannabis.
[279] Pacula, et al., *supra* note 107, at 1023–24.
[280] *E.g.*, Carla A. Campbell, et al., *The Effectiveness of Limiting Alcohol Outlet Density as a Means of Reducing Excessive Alcohol Consumption and Alcohol-related Harms*, 37 AM. J. PREVENTIVE MED. 556 (2009). *See also* Task Force on Community Preventive Servs., Recommendations for Reducing Excessive Alcohol Consumption and Alcohol-related Harms by Limiting Alcohol Outlet Density, AM. J. PREVENTIVE MED. 570 (2009); Pacula, et al., *supra* note 107 (summarizing evidence and recommending limitations on outlet density to reduce harms).
[281] Lisa Henriksen, et al., *Is Adolescent Smoking Related to the Density and Proximity of Tobacco Outlets and Retail Cigarette Advertising Near Schools?*, 47 PREVENTIVE MED. 210 (2008); Scott P. Novak, et al., *Retail Tobacco Outlet Density and Youth Cigarette Smoking: A Propensity-modeling Approach*, 96 AM. J. PUB. HEALTH 670 (2006); Laura J. Finan, et al., *Tobacco Outlet Density and Adolescents' Cigarette Smoking: A Meta-analysis*, 28 TOB CONTROL 27 (2019).
[282] *See, e.g.*, John E. Schneider, et al., *Tobacco Outlet Density and Demographics at the Tract Level of Analysis in Iowa: Implications for Environmentally Based Prevention Initiatives*, 6 PREVENTIVE SCI. 319 (2005).

adult use are less well-established than those of alcohol and tobacco, broadly similar effects are likely and a reasonable basis for limiting cannabis retail outlet density to protect public health.

A New Jersey bill would set a statewide maximum of 218 licenses, including 98 medical licenses, with each legislative district receiving at least 2 licenses and the remaining 40 licenses considered at-large.[283] Illinois's enacted 2019 legislation prohibits location of a retail cannabis dispensary within 1,500 feet of the property line of any pre-existing dispensary.[284]

In contrast, some states address density from the perspective of minimum rather than maximum outlets. Another New Jersey bill would require a "sufficient number of [retailers] to meet the market demands of the state, and giving regard to geographical and population distribution."[285] A separate New Jersey bill would require a minimum one retail store per county, amounting to 21 in the state, but would allow local governments to set maximums to account for population distribution and consumer access.[286] A West Virginia bill would set a minimum of one retail cannabis store for every ten retail liquor stores, though regulators could reduce this if there are an insufficient number of qualified applicants.[287]

5. Day and Time Operating Restrictions—Evidence from alcohol control indicates that limits on the days and hours during which alcohol can be sold are an effective intervention to reduce excessive consumption and related harms. Studies that support the effectiveness of these approaches typically assess the effects of removing existing restrictions, demonstrating an association between such a change and increased consumption and motor vehicle-related harms.[288] Studies on imposing new limits are lacking. However, a systematic review of studies on day and time operating restrictions (as well as outlet density) found that most studies support the existence of an effect on one or more key outcomes (overall alcohol consumption, drinking patterns, and damage from alcohol).[289] A precautionary approach to cannabis based on existing alcohol control evidence is warranted given the similar intoxicating potential of cannabis use.

State proposals in general do not address cannabis establishment operating hours, leaving them to implementing regulations or local rules. However, at least three bills address operating hours at the statutory level. Bills in New Hampshire and West Virginia would leave specific operating hour restrictions to implementing regulations, but stipulate that the regulations not allow retailers to operate before 6:00 a.m. or after 11:45 p.m.[290] Illinois's enacted 2019 legislation limits dispensary operating hours to between 6:00 a.m. and 10 p.m.[291]

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[283]S.B. 2702 § 9(a)(14) (N.J. 2018).
[284]H.B. 1438, 101st Gen. Assem., Reg. Sess. § 15–65(n)(15) (Ill. 2019).
[285]A.B. 4497 § 16(a)(14) (N.J. 2018).
[286]A.B. 3819 § 8(a)(14) (N.J. 2018).
[287]H.B. 2376 §11–16A-15(c)(5)(A) (W. Va. 2019).
[288]Task Force on Community Preventive Servs., Recommendations on Maintaining Limits on Days and Hours of Sale of Alcoholic Beverages to Prevent Excessive Alcohol Consumption and Related Harms, 39 AM. J. PREVENTIVE MED. 605 (2010).
[289]Svetlana Popova, et al., *Hours and Days of Sale and Density of Alcohol Outlets: Impacts on Alcohol Consumption and Damage: A Systematic Review*, 44 ALCOHOL & ALCOHOLISM 500 (2009).
[290]H.B. 481 § 6 (318-F:9(I)(n)) (N.H. 2019); H.B. 2376 § 11–16A-15(c)(10) (W. Va. 2019).

C. Youth, Environmental Exposure, and Normalization

1. Minimum Purchase Age—All U.S. states have adopted a legal drinking age of 21, though many did not do so until pressured by the federal government in the 1980s.[292] A growing number of jurisdictions have also raised their minimum legal age for tobacco purchase to 21.[293] All existing state adult use cannabis laws have established 21 as the minimum purchase and possession age.[294] Notably, Canada has adopted a minimum age of 18,[295] consistent with the country's minimum alcohol purchase age.[296] As with alcohol, provinces can adopt their own higher age minimums for cannabis.[297]

Based on existing public health evidence, a minimum age of 21 is the most appropriate standard for cannabis. Like alcohol, cannabis has risks associated with intoxicated driving.[298] Raising the minimum age for alcohol was associated with a reduction in motor vehicle accidents,[299] and similar public health protection is appropriate for cannabis. Raising the minimum age for alcohol was also associated with decreased alcohol consumption among those ages 18–20 and 21–25.[300] Based on existing scientific evidence, the potential negative effects of cannabis use on brain development[301] (which continues up to approximately age 25) strongly support efforts to reduce consumption by young adults. Assuming similar policy effects on cannabis consumption as for alcohol, a minimum age of at least 21 is prudent.

In nearly all cases, proposed legislative adult use bills set 21 as the legal age for purchase and possession[302] (as does Illinois's enacted 2019 legislation[303]). The sole exceptions are two bills in Hawaii that would set the age at 18.[304] However, both of these bills are

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[291]H.B. 1438, 101st Gen. Assem., Reg. Sess. §§ 15–65(j) (Ill. 2019).

[292]In 1984 Congress passed the National Minimum Drinking Age Act, 23 U.S.C. § 158 (2012), which threatened to withhold a portion of federal highway funding for states that did not establish 21 as the minimum legal age for purchase and public possession of alcohol. The Supreme Court subsequently upheld the Act's constitutionality in *South Dakota v. Dole*, 483 U.S. 203 (1987).

[293]As of March 2019, 7 states and at least 440 localities had adopted 21 as the minimum legal age for tobacco purchases. Campaign for Tobacco-Free Kids, "States and Localities That Have Raised the Minimum Legal Sale Age for Tobacco Products to 21" (2019), https://www.tobaccofreekids.org/assets/content/what_we_do/state_local_issues/sales_21/states_localities_MLSA_21.pdf.

[294]ALASKA STAT. § 17.38.020; CAL. HEALTH & SAFETY CODE § 11362.1(a) (2017); COLO. CONST. art. XVIII, § 16(3)(e); ME. REV. STAT. ANN. tit. 28-B. § 1501(1) 2017); MASS. GEN. LAWS ch. 94G, § 2(b) (2017); MICH. COMP. LAWS § 333.27955(1) (2018); NEV. REV. STAT. § 453D.110 (2017); OR. REV. STAT. § 475B.316(1)(a) (2018); VT. STAT. ANN. tit. 18, § 4230a (2018); WASH. REV. CODE § 69.50.4013(5) (2015).

[295]Cannabis Act, 2018 S.C., ch. 16 § 8 (Can.).

[296]Each province or territory sets its own minimum drinking age. The minimum drinking age is 18 in three provinces and 19 in the other 10. Canadian Centre on Substance Use and Addiction, "Policy and Regulation (Alcohol): Legal Drinking Age in Canada," https://www.ccsa.ca/policy-and-regulations-alcohol, accessed May 28, 2019.

[297]As of July 2019, two provinces (Alberta and Quebec) have adopted 18 as the minimum age, and all others have adopted 19. Health Canada, "Cannabis in the provinces and territories," https://www.canada.ca/en/health-canada/services/drugs-medication/cannabis/laws-regulations/provinces-territories.html (last modified Feb. 4, 2019).

[298]NAT'L ACADS. OF SCIS., ENG'G & MED., *supra* note 1, at 227–30; Rebecca L. Hartman & Marilyn A. Huestis, *Cannabis Effects on Driving Skills*, 59 CLINICAL CHEMISTRY 478 (2013); R. Andrew Sewell, et al., *The Effect of Cannabis Compared with Alcohol on Driving*, 18 AM. J. ADDICTION 185 (2009).

[299]Adoption of the national minimum age of 21 for alcohol in the U.S. was associated with a 16% median decrease in motor vehicle crashes, as well as decreased alcohol consumption among those aged 18 to 20 and those aged 21 to 25. U.S Ctrs. for Disease Control and Prevention, "Age 21 Minimum Legal Drinking Age" (2018), https://www.cdc.gov/alcohol/fact-sheets/minimum-legal-drinking-age.htm.

[300]Id.

[301]Kirsten Weir, *Marijuana and the Developing Brain*, MONITOR ON PSYCHOLOGY, Nov. 2015, at 48, *available at* https://www.apa.org/monitor/2015/11/marijuana-brain. Considerable development in this area of research is likely as data become available from the ongoing Adolescent Brain Cognitive Development (ABCD) Study, a landmark 10-year longitudinal study of nearly 12,000 participants supported by the National Institutes of Health (NIH) that will include study of the effects of cannabis use, among myriad other factors. *See generally* Nat'l Inst. on Drug Abuse, "Longitudinal Study of Adolescent Brain Cognitive Development (ABCD Study)" (2019), https://www.drugabuse.gov/related-topics/adolescent-brain/longitudinal-study-adolescent-brain-cognitive-development-abcd-study.

primarily aimed at decriminalization, rather than the establishment of a legal adult use cannabis market in the state.[305] Additionally, a New Jersey bill would allow cannabis delivery staff to be as young as 18,[306] though the bill would authorize sales only to those over 21.[307]

2. Flavors and Other Additives—Flavors have documented impacts on attracting young smokers to traditional tobacco products[308] and e-cigarettes.[309] Flavors disguise the unpleasant taste of smoke, and some have even more far-reaching effects. Menthol, for example, contributes to nicotine dependence through behavioral reinforcement[310] and increases nicotine exposure by encouraging breath holding.[311] In 2009 FDA banned characterizing flavors in cigarettes.[312] This prohibition controversially failed to include menthol cigarettes or flavored non-cigarette tobacco (*e.g.*, cigars), but still succeeded in reducing the probability of being a smoker and number of cigarettes smoked among adolescents.[313] Local jurisdictions are now leading efforts to prohibit other flavored tobacco products, including electronic tobacco products (*e.g.*, JUUL®) that have rapidly increased in popularity among youth.[314]

In alcohol policy, "control jurisdictions" (those that operate monopolies over some aspect of distribution) have banned or restricted a variety of products due to flavoring that appeals to youth, among other reasons.[315] The FDA has also acted to prohibit alcohol manufacturers from adding caffeine to their products, deeming it an "unsafe food additive" in the context of alcoholic malt beverages.[316]

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[302] *E.g.*, S.B. 686 § 2 (Haw. 2019)("personal use"); H.B. 902 § 5 (Ill. 2019); S.B. 80§§ 2, 3 (Ky. 2019); H.B. 632 § 1, art. XX(1)(A) (Md. 2019); H.B. 420 § 2(subdiv. 2) (Minn. 2019); S.B. 577 § 22 (N.M. 2019); A.B. 1509 § 65 (N.Y. 2019); H.B. 250 § 907(b) (Vt. 2019); H.B. 3108 § 19–37-2 (W. Va. 2019).

[303] H.B. 1438, 101st Gen. Assem., Reg. Sess. §§ 1–10, 10–5(a) (Ill. 2019).

[304] H.B. 1515 § 2, 30th Legislature, Reg. Sess. (Haw. 2019); S.B. 779 § 2, 30th Legislature, Reg. Sess. (Haw. 2019).

[305] H.B. 1515 § 1, 30th Legislature, Reg. Sess. (Haw. 2019); S.B. 779 § 1, 30th Legislature, Reg. Sess. (Haw. 2019).

[306] S.B. 2703 §§ 27(h)(4), 29(c), 218th Legislature, First Ann. Sess. (N.J. 2018).

[307] S.B. 2703 § 6, 218th Legislature, First Ann. Sess. (N.J. 2018).

[308] Carrie M. Carpenter, et al., *New Cigarette Brands with Flavors that Appeal to Youth: Tobacco Marketing Strategies*, 24 HEALTH AFF. 1601 (2005); U.S DEP'T OF HEALTH & HUMAN SERVS., PREVENTING TOBACCO USE AMONG YOUTH AND YOUNG ADULTS: A REPORT OF THE SURGEON GENERAL (2012), *available at* https://www.ncbi.nlm.nih.gov/books/NBK99237/; Andrea C. Villanti, et al., *Flavored Tobacco Product Use in Youth and Adults: Findings From the First Wave of the PATH Study (2013–2014)*, 53 AM. J. PREVENTIVE MED. 139 (2017).

[309] Bridget K. Ambrose, et al., *Flavored Tobacco Product Use Among US Youth Aged 12–17 Years, 2013–2014*, 314 JAMA 1871 (2015); Grace Kong, et al., *Reasons for Electronic Cigarette Experimentation and Discontinuation Among Adolescents and Young Adults*, 17 NICOTINE & TOBACCO RES. 847 (2015); Emily A. McDonald & Pamela M. Ling, *One of Several 'Toys' for Smoking: Young Adult Experiences with Electronic Cigarettes in New York City*, 24 TOB CONTROL 588 (2015).

[310] Karen Ahijevych & Bridgette E. Garrett, *The Role of Menthol in Cigarettes as a Rreinforcer of Smoking Behavior*, 12 NICOTINE & TOBACCO RES. S110 (2010).

[311] Samuel Garten & R. Victor Falkner, *Role of Mentholated Cigarettes in Increased Nicotine Dependence and Greater Risk of Tobacco-attributable Disease*, 38 PREVENTIVE MED. 793 (2004).

[312] Family Smoking Prevention and Tobacco Control Act, 123 Stat. 1776 § 907 (2009).

[313] Charles J. Courtemanche, et al., *Influence of the Flavored Cigarette Ban on Adolescent Tobacco Use*, 52 AM. J. PREVENTIVE MED. e139 (2017).

[314] Madison Park & Ron Selig, *San Francisco Bans Sales of Flavored Tobacco Products*, CNN.COM, https://www.cnn.com/2018/06/06/health/san-francisco-flavored-cigarettes-proposition-e/index.html; Associated Press, *Nation's First E-Cigarette Ban Proposed in San Francisco*, CBS NEWS, https://www.cbsnews.com/news/san-francisco-e-cigarettes-temporary-ban-proposed-vaping-juul/.

[315] Elyse R. Grossman, et al., *The Use of Regulatory Power by U.S. State and Local Alcohol Control Agencies to Ban Problematic Products*, 53 SUBSTANCE USE & MISUSE 1229 (2018).

[316] U.S. Food & Drug Admin., "Caffeinated Alcoholic Beverages" (2010), https://www.fda.gov/food/ingredientspackaginglabeling/foodadditivesingredients/ucm190366.htm.

Two Vermont bills would prohibit including nicotine or alcoholic beverages in cannabis products offered for sale.[317] A Virginia bill would prohibit additives in edible products that are toxic or harmful to humans or are specifically designed to make the product more addictive or to appeal to persons under 21.[318] A New Hampshire bill would similarly require the newly created regulatory agency responsible for cannabis in the state to promulgate regulations that include "a prohibition on any vaporization device that includes toxic or addictive additives,"[319] and would also explicitly prohibit nicotine as an additive.[320] A Kentucky bill would also charge the regulatory agency with restricting additives "that are toxic or increase the likelihood of addiction."[321] None of the proposed bills explicitly prohibits flavoring agents, though implementing regulations could address this and other shortcomings.

In most states, detailed determinations on questions such as which additives are considered toxic, addictive, or attractive to youth would be answered by applicable regulatory agencies consistent with the state's administrative rulemaking procedures. For example, in California's adult use framework, the state's Department of Public Health oversees manufactured cannabis products and regulates what additives are permitted.[322] Among other elements, the Department prohibits manufacturing cannabis products containing alcoholic beverages and those with additives that "increase potency, toxicity, or addictive potential," including nicotine and caffeine.[323] Illinois's enacted 2019 legislation similarly vests the Department of Public Health with authority to adopt and enforce rules for the manufacture and processing of infused products, but does not specifically address additives.[324]

3. Advertising and Marketing—Restrictions on tobacco advertising and marketing efforts are among the most universally recommended policy interventions in tobacco control, as reflected in WHO FCTC Article 13's call for a "comprehensive ban on advertising, promotion and sponsorship" as consistent with applicable constitutional principles.[325] A total ban is likely inconsistent with U.S. law, and indeed the caveat for national constitutional principles was in part shaped by opposition from the U.S.,[326] which nevertheless remains one of only a small number of WHO member states that has not ratified the treaty.[327] The U.S. Surgeon General concluded that tobacco advertising and

[317] H.B. 250 § 881(a)(3)(F)(ii) (Vt. 2019); H.B. 196 § 9 (tit. 7, § 881(a)(3)(F)(ii)) (Vt. 2019).
[318] H.B. 2371 § 3.2–4151(A)(5) (Va. 2018). The bill does not define who would make such determinations, but would presumably leave this to regulation under the Board of Agriculture and Consumer Services, which would have authority to adopt additional health and safety regulations. *Id.* § 3.2–4151(B); *see generally id.* § 3.2–4122 (powers and duties of the Board).
[319] H.B. 481 § 6 (318-F:9(I)(t)) (N.H. 2019). This section also authorizes restrictions on "types of vaporizers that are particularly likely to be utilized by minors without detection," *id.*, likely a response to the growing popularity of easily concealed nicotine vaporizers such as JUUL®.
[320] H.B. 481 § 6 (318-F:9(I)(p)(3)) (N.H. 2019).
[321] S.B. 80 § 4(3)(*i*) (Ky. 2019).
[322] *See* Cal. Dep't of Pub. Health, DPH-17–010: Cannabis Manufacturing Licensing (2018) § 40300.
[323] *Id.* § 40300(a)–(b). However, following a public comment period, the Department of Public Health rejected recommendations, including from the authors of this paper, to include naturally-occurring caffeine (*e.g.*, coffee), as well as menthol and other characterizing flavors, among prohibited additives. Cal. Dep't of Pub. Health, "DPH-17–010: Cannabis Manufacturing Licensing, Response to Comments Received During the 45-Day Comment Period," https://www.cdph.ca.gov/Programs/CEH/DFDCS/MCSB/CDPH%20Document%20Library/DPH17010_45DayResponses.pdf (last accessed May 7, 2019); *see also* Daniel G. Orenstein, et al., "Comment on Proposed Regulation: DPH-17–010, July 3, 2018, *available at* https://tobacco.ucsf.edu/sites/tobacco.ucsf.edu/files/wysiwyg/Comment%20on%20DPH-17–010%2C%20Cannabis%20Manufacturing%20Licensing.pdf.
[324] H.B. 1438, 101st Gen. Assem., Reg. Sess. § 55–5(e) (Ill. 2019).
[325] WHO FCTC, *supra* note 78, at 11.
[326] "Adoption of Framework Convention on Tobacco Control," AM. J. INT'L L. 689, 689–90, (2003).

promotional activities are causally related to youth smoking initiation and continuation,[328] and the WHO attributed one-third of youth tobacco experimentation to exposure to tobacco advertising.[329] Alcohol advertising exposure is similarly associated with youth initiation and with overconsumption.[330]

Restrictions on speech are disfavored under First Amendment jurisprudence; however, government regulation of commercial speech to protect consumer health and safety is a well-supported exercise of public health authority when applied within appropriate parameters. Commercial speech is speech proposing a commercial transaction, defined as a form of advertising that identifies a specific product for the purpose of economic benefit. While commercial speech nominally receives less constitutional protection than other forms of speech (and received none until 1975), these protections are still significant.[331] For commercial speech about a lawful product that is truthful and not misleading, government must show that it has a substantial interest, that the regulation of speech advances that interest, and that the regulation is no more extensive than necessary to serve the government's stated interest,[332] a familiar test originating in *Central Hudson*.[333]

Government has interests in regulating advertising that increases use of harmful products, markets age-restricted products to youth, or misleads the public.[334] Government interest in controlling cannabis use to protect public health is almost certainly substantial. State interests in protecting health, safety, and welfare are almost always found to be substantial, including interests in prevention of youth smoking, traffic safety, and temperance,[335] all three of which are closely related to cannabis use, as well. As a result, the key issues for restrictions on cannabis advertising will be the extent to which the regulations directly advance this interest and whether the restrictions are more extensive than necessary.[336]

A Connecticut bill would prohibit "any type of marketing and advertising of the sale of recreational marijuana,"[337] although the constitutionality of such a broad provision may be questionable.[338] Other Connecticut bills would bar "mass-market campaigns that

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[327] World Health Org., *supra* note 91.
[328] U.S DEP'T OF HEALTH & HUMAN SERVS., *supra* note 308.
[329] World Health Org., WHO Report on the Global Tobacco Epidemic pt. 30 (2013), *available at* http://apps.who.int/iris/bitstream/10665/85380/1/9789241505871_eng.pdf.
[330] David Jernigan, et al., *Alcohol Marketing and Youth Alcohol Consumption: A Systematic Review of Longitudinal Studies Published Since 2008*, 112 ADDICTION 7 (2017).
[331] GOSTIN, *supra* note 204, at 345–47.
[332] *Id.* at 347–50.
[333] Cent. Hudson Gas & Elec. Corp. v. Pub. Serv. Comm'n, 447 U.S. 557 (1980). The split between federal and state law on the legality of cannabis complicates application of commercial speech protections to cannabis. Depending on state constitutional law, cannabis advertising may receive lesser commercial speech protections because the drug is illegal under federal law and thus its advertising arguably fails to satisfy a required element for protection under *Central Hudson*. Leslie Gielow Jacobs, *Regulating Marijuana Advertising and Marketing to Promote Public Health: Navigating the Constitutional Minefield*, 21 LEWIS & CLARK L. REV. 1081 (2017); *see also* ORENSTEIN & GLANTZ, *supra* note 235, at 23–27. For purposes of this article, we presume that cannabis advertising has *some* level of commercial speech protection.
[334] GOSTIN, *supra* note 204, at 344–45.
[335] *Id.* at 350–52.
[336] *See id.* at 352–55 (detailing commercial speech analysis in public health regulation).
[337] H.B. 5595 (Conn. 2019).
[338] *See, e.g.*, ORENSTEIN & GLANTZ, *supra* note 235, at 23–25. If appropriately limited to regulation of sales conduct that is non-expressive, restrictions on commercial speech may survive judicial scrutiny, though direct regulation of the conduct (e.g., price discounting techniques) may accomplish the same objective with less risk of overstepping constitutional boundaries. Jacobs, *supra* note 333, at 1104–06, 1132–33. Nevertheless, if adequately justified and targeted to directly advance a substantial government interest, even restrictions on protected commercial speech can withstand constitutional challenge. *Id.* at 1117–21.

have a high likelihood of reaching children,"[339] a stricter standard than those setting audience composition ceilings (*e.g.*, prohibiting advertising in publications or media where the percentage of viewers under the legal age for purchase is reasonably expected to be above a certain threshold[340]). A New Hampshire bill would similarly prohibit "mass-market campaigns that have a high likelihood of reaching minors," as well as promotional products and product giveaways.[341]

A New Jersey bill would restrict advertising "in ways that target or are designed to appeal to [persons under 21]," including depictions of persons under 21 or the presence of objects suggesting the presence of a person under 21, such as toys or cartoon characters, and also restricts "any other depiction designed *in any manner* to be especially appealing to a person under 21."[342]

Multiple New Jersey bills would also impose restrictions on cannabis advertising, including:

- Limiting retailers to a single sign of up to 1,600 square inches (approximately 11 square feet) visible to the general public;
- Prohibiting advertising "on television, radio or the Internet between the hours of 6:00am and 10:00pm;"[343]
- Requiring "reliable evidence that no more than 20 percent of the audience … is reasonably expected to be under [21]";
- Prohibiting marketing using location-based devices (*e.g.*, cell phones) except under limited circumstances;
- Prohibiting sponsorship of charitable, sports, musical, artistic, cultural, social, or other similar events absent "reliable evidence" that no more than 20% of the audience is expected to be under 21; and
- Prohibiting advertising within 200 feet of schools, recreation centers, parks, child care centers, playgrounds, public pools, libraries, or on public transit vehicles, transit shelters, or on or in public owned and operated property.[344]

A New Mexico bill would explicitly prohibit cannabis product advertising via billboard, radio, television, or other broadcast media.[345] Anticipating possible constitutional challenge, the bill also provides that this prohibition would cease to be in effect in the event of federal cannabis legalization.[346] The bill would also prohibit advertising that:

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[339]H.B. 5458 § 13(10) (Conn. 2018); S.B. 487 § 19(a)(9) (Conn. 2018); H.B. 1581 § 2 (adding § 11(a)(12))(Haw. 2019).
[340]*See, e.g.*, A.B. 4497 § 16(9)(c) (N.J. 2018) (allowing cannabis advertising only if the licensee "has reliable evidence that at least 71.6 percent of the audience for the advertisement is reasonably expected to be 21 years of age or older"); H.B. 250 § 7 (tit. 7, § 864)(b) (Vt. 2019) (limiting cannabis advertising "unless the licensee can show that no more than 30 percent of the audience is reasonably expected to be under 21 years of age").
[341]H.B. 481 § 6 (318-F:9(I(*l*)) (N.H. 2019).
[342]A.B. 3581 § 9(a)(7)(a)(iv) (N.J. 2018) (emphasis added).
[343]It is unclear how such time restrictions could be imposed on web-based advertising.
[344]A.B. 3581 § 9(a)(9) (N.J. 2018); A.B. 3819 8(a)(9) (N.J. 2018).
[345]H.B. 356 § 21(A)(1)(a) (N.M. 2019).
[346]H.B. 356 § 21(B) (N.M. 2019). *See also* Jacobs, *supra* note 333, at 1097–98 (noting that commercial speech protections in some state constitutions are similar to those of the U.S. Constitution); *but see* ORENSTEIN & GLANTZ, *supra* note 235, at 15–16 (noting that commercial speech analysis under state law may differ from federal law and that federal protections may not apply due to cannabis' federal illegality).

- is false, deceptive or misleading, including unproven health benefit claims;
- depicts consumption by persons under 21;
- is designed using cartoon characters;
- mimics other product brands;
- is within 300 feet of a school, church, or daycare center;
- is in public transit vehicles or stations or on publicly owned or operated property; or
- is an unsolicited internet pop-up.[347]

Illinois's enacted 2019 legislation similarly prohibits advertising that:

- is false or misleading;
- promotes overconsumption;
- depicts actual consumption;
- depicts consumption by a person under 21;
- "makes any health, medicinal, or therapeutic claims";
- includes "cannabis leaf or bud" imagery;
- includes images "designed or likely to appeal to minors, including cartoons, toys, animals, or children, or any other likeness to images, characters or phrases that is designed in any manner to be appealing to or encourage consumption" by persons under 21;
- is within 1,000 feet of schools grounds or a playground, recreation center, child care center, public park, public library, or game arcade not restricted to adults;
- is on or in public transit vehicles or shelters;
- is on or in publicly owned or operated property.[348]

The Illinois legislation also prohibits promotions incorporating cannabis giveaways or any games or competitions related to cannabis consumption.[349]

4. Public Use and On-Site Consumption—Decades of research have firmly established the link between tobacco smoke and various serious health harms to nearly every organ of the human body, as well as cancer, inflammation, fetal harm, and impaired immune function.[350] Secondhand exposure similarly causes a variety of harms with no risk-free level of exposure.[351] The similarity of tobacco smoke and cannabis smoke[352] is therefore

[347]H.B. 356 § 21(A)(1) (N.M. 2019).
[348]H.B. 1438, 101st Gen. Assem., Reg. Sess. §§ 55–20(a)–(b) (Ill. 2019).
[349]*Id.* § 55–20(d).
[350]U.S. DEP'T OF HEALTH AND HUMAN SERVS., THE HEALTH CONSEQUENCES OF INVOLUNTARY EXPOSURE TO TOBACCO SMOKE: A REPORT OF THE SURGEON GENERAL 3–8 (2006), *available at* https://www.ncbi.nlm.nih.gov/books/NBK44324/pdf/Bookshelf_NBK44324.pdf.
[351]Id.
[352]Moir, et al., *supra* note 84.

cause for concern. Moreover, there is already substantial evidence for a relationship between cannabis use and negative respiratory effects,[353] as well as evidence for associations with cardiovascular disease, respiratory disease, neurological disease, and cancer.[354]

The establishment of comprehensive smokefree laws in states and localities over the past several decades is an important public health achievement that protects the health of employees in enclosed workplaces as well as countless members of the community in public places. Similar restriction on the public use of cannabis and cannabis products is appropriate to avoid undermining public health progress by allowing smoking (of any type) in public locations or re-normalizing smoking behavior generally.[355]

Social equity considerations that attach to public smoking bans when applied to cannabis must be addressed,[356] but it is typically much easier to liberalize a restrictive policy than to ratchet up restrictions on behavior. The long public health battle to reduce secondhand smoke exposure in bars, restaurants, and other public locations is a key example of the latter.[357] At minimum, an effective public health strategy to cannabis regulation should include addition of cannabis smoke and vapor to existing smokefree laws covering tobacco products to prevent erosion of progress reducing environmental tobacco exposure.[358]

All 10 states that legalized adult use prior to 2019 have prohibited public use.[359] They have also frequently added cannabis to existing smokefree laws.[360] However, some states have explicitly authorized on-site consumption exemptions to indoor smoking restrictions[361] or allowed localities to do so.[362] Such exemptions threaten to undermine other smokefree laws if the tobacco industry attempts to leverage them to create additional smoking spaces in an effort to renormalize smoking behavior. Jurisdictions adopting this approach should explicitly prohibit tobacco use in such locations by law and consider other limitations to reduce secondhand cannabis smoke exposure for employees, such as restricting consumption

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353 NAT'L ACADS. OF SCIS., ENG'G & MED., *supra* note 1, at 16, 181–96.

354 *Id.* at 15–16, 19; Xiaoyin Wang, et al., *One Minute of Marijuana Secondhand Smoke Exposure Substantially Impairs Vascular Endothelial Function*, 5 J. AM. HEART ASS'N e003858 (2016); Pal Pacher, et al., *Cardiovascular Effects of Marijuana and Synthetic Cannabinoids:The Good, the Bad, and the Ugly*, 15 NATURE REVS. CARDIOLOGY 151 (2018); Kelly P. Owen, et al., *Marijuana: Respiratory Tract Effects*, 46 CLINICAL REV. ALLERGY IMMUNOLOGY 65 (2014); Madeline H. Meier, et al., *Persistent cannabis users show neuropsychological decline from childhood to midlife*, 109 PROCEEDINGS NAT'L ACAD. SCI. U.S.A. E2657 (2012); RAJPAL S. TOMAR, ET AL., CAL. ENVT'L PROTECTION AGENCY, EVIDENCE ON THE CARCINOGENICITY OF MARIJUANA SMOKE (2009), *available at* https://oehha.ca.gov/media/downloads/crnr/finalmjsmokehid.pdf.

355 *See* Stanton A. Glantz, et al., *Marijuana, Secondhand Smoke, and Social Acceptability*, 178 JAMA INTERNAL MED. 13 (2018) (discussing social norm change with respect to tobacco and cannabis use).

356 *See, e.g.*, ORENSTEIN & GLANTZ, *supra* note 235, at 35–36.

357 *See* STANTON A. GLANTZ & EDITH D. BALBACH, TOBACCO WAR: INSIDE THE CALIFORNIA BATTLES 1–18 (University of California Press. 2000); *see generally, e.g.*, Andrew Hyland, et al., *Smoke-free Air Policies: Past, Present and Ffuture*, 21 TOBACCO CONTROL 139 (2012).

358 *See* AMERICANS FOR NONSMOKERS' RIGHTS, MODEL ORDINANCE PROHIBITING SMOKING IN ALL WORKPLACES AND PUBLIC PLACES (100% SMOKEFREE) 3–4, 7 (2018);

359 ALASKA STAT. §§ 17.38.020(4), 17.38.040; CAL. HEALTH & SAFETY CODE § 11362.3(a)(1) (2017); COLO. CONST. art. XVIII, § 16(3)(d); ME. REV. STAT. ANN. tit. 28-B, § 1501(2)(A)(2017); MASS. GEN. LAWS ch. 94G, § 13(c) (2017); MICH. COMP. LAWS § 333.27954(e) (2018); NEV. REV. STAT. § 453D.400 (2017); OR. REV. STAT. § 475B.381 (2018); VT. STAT. ANN. tit. 18, § 4230a(a)(2)(A) (2018); WASH. REV. CODE § 69.50.445 (2015).

360 *E.g.*, CAL. HEALTH & SAFETY CODE § 11362.3(a)(2) (2017); ME. REV. STAT. ANN. tit. 28-B, § 1501(2)(B)(2017); MASS. GEN. LAWS ch. 94G, § 13(c) (2017); VT. STAT. ANN. tit. 18, § 4230a(a)(2)(A) (2018).

361 *E.g.*, ALASKA ADMIN. CODE tit. 3, § 306.200(a) (2019); *see also* Memorandum from April Simpson, Office of the Lieutenant Governor, to Debbie Morgan, Department of Commerce, Community and Economic Development (Mar. 12, 2019), *available at* https://aws.state.ak.us/OnlinePublicNotices/Notices/Attachment.aspx?id=116574.

362 *E.g.*, CAL. BUS. & PROF. CODE § 2600(g) (2018).

areas to outdoor locations or requiring strict physical separation from employee work areas. However, only completely smokefree environments fully protect nonsmokers.[363]

As in existing adult use states, proposed bills (and Illinois's enacted 2019 legislation) uniformly prohibit public consumption of cannabis, though there are some distinguishing features, as presented in Table 4, below.

A Hawaii bill would apply any restrictions on tobacco products and smoking to non-medical cannabis.[364] Multiple New York bills would similarly prohibit cannabis smoking in public and any location where smoking tobacco is prohibited by law.[365] A New Mexico bill would prohibit smoking cannabis in public places, but would not include electronic devices creating a vapor in the definition of "smoking."[366] Two New Jersey bills would prohibit smoking cannabis in any location where tobacco smoking is prohibited, as well as any indoor public place even if tobacco smoking is permitted. They would also prohibit cannabis smoking within the campuses and facilities of public and private higher education institutions.[367]

A Minnesota bill would add not only smoked cannabis, but all lighted and vapor cannabis products to the state's clean indoor air act.[368] Taking advantage of an opportunity to revise this law, the bill would also add electronic nicotine devices (ENDS) to existing indoor smoking prohibitions (*e.g.*, at public schools).[369]

A Connecticut bill would prohibit all cannabis consumption (including smoking, vaping, and other forms) in all places where tobacco smoking is prohibited and in any public place.[370]

Illinois's enacted 2019 legislation prohibits "smoking" cannabis where smoking is prohibited by the state's clean indoor air law without explicitly including vapor products,[371] but also more generally prohibits "using" cannabis in any public place,[372] which is broadly defined and applies to most non-residential locations.[373] The legislation also specifically prohibits using cannabis "knowingly in close physical proximity to anyone under 21 years of age who is not a registered medical cannabis patient" in the state.[374]

Several state bills would make exceptions to smokefree laws for on-site consumption areas, but restrictions on such locations vary. Some bills would allow on-site cannabis sales,[375]

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363 *See, e.g.*, U.S. Ctrs. for Disease Control and Prevention, "Ventilation Does Not Effectively Protect Nonsmokers from Secondhand Smoke" (2018), https://www.cdc.gov/tobacco/data_statistics/fact_sheets/secondhand_smoke/protection/ventilation/index.htm (listing conclusions from reports by the U.S. Surgeon General, WHO, and ASHRAE). We have recommended in other work that legalizing jurisdictions initially prohibit on-site consumption areas, on the basis that it is easier to liberalize policy later when evidence on the impacts of cannabis smoke is better established than to regulate such spaces out of existence once in operation, as well as concern that existing tobacco restrictions could suffer. *See* ORENSTEIN & GLANTZ, *supra* note 235, at 32–36.
364 S.B. 686 § 2 (329-B(f)) (Haw. 2019).
365 A.B. 3506 § 25 (N.Y. 2017); A.B. 3506 § 25 (N.Y. 2017); S.B. 1527 § 25 (N.Y. 2019); S.B. 3040 § 25 (N.Y. 2017).
366 H.B. 356 § 31(C) (N.M. 2019).
367 A.B. 4497 §§ 4(c), 73 (N.J. 2018); S.B. 2703 §§ 4(c), 73 (N.J. 2018).
368 H.F. 420, art. 3 § 1 (Minn. 2019).
369 H.F. 420, art. 3 § 1 (Minn. 2019).
370 S.B. 487 § 21 (Conn. 2018).
371 H.B. 1438, 101st Gen. Assem., Reg. Sess. §10–35(a)(4)) (Ill. 2019).
372 *Id.* § 10–35(a)(3)(F).
373 *Id.* § 10–35(a).
374 *Id.* § 10–35(a)(3)(G).

others would either allow or require consumers to bring their own cannabis.[376] Some would require consumption areas to be part of a licensed retailer or medical dispensary,[377] others would allow or require independent licensure,[378] and some would allow on-site consumption only in conjunction with a producer license[379] (similar to a tasting room at an alcohol production facility). Some would allow consumers to leave with unused cannabis or cannabis products,[380] but may require the product to be repackaged.[381] Frequently, bills authorizing on-site consumption would not permit alcohol, tobacco, or nicotine sales or consumption at the same location.[382] The effects of various restrictions are undetermined, but they are likely to impact the number and location of on-site consumption areas. For example, if on-site sales are prohibited, this would limit profit-making potential and likely result in fewer licensed venues. The number and location of on-site consumption areas, in turn, will likely influence the extent to which they contribute to cannabis use normalization or erosion of smokefree restrictions in an area.

III. Policy Implications

A. Legalization is Dynamic, and States are Poised to Act

Cannabis policy is evolving quickly. Medical legalization spread from a single state in 1996 to 33 states and D.C. in 2018.[383] Recreational legalization was non-existent until 2012 and in 2018 included 10 states and D.C. Given the recent electoral success of legalization campaigns, legalization in additional states is highly likely, though the precise form legalization may take remains up for debate.[384]

Despite the dramatic pace of change in this policy area over the last several years, there remains the potential for considerable additional change at the state level. As of July 2019, there were 23 states that allow citizens to place an issue on the ballot via initiative (not including legislative referenda).[385] Of these, 14 did not have adult use cannabis laws, 5 did not have comprehensive medical legalization laws, and 3 lacked even limited medical legalization for CBD/low-THC products (Table 5).[386] The absence of legalization laws in many of these states in combination with recent legal changes in other states and overall

375 *E.g.*, S.B. 1527 § 31 (170(5)) (N.Y. 2019) (allowing only retail licensees to be licensed for on-site consumption); A.B. 4497 § 72(a)(2) (N.J. 2018) (specifying that consumption areas must be separate from but on the same premises as a cannabis retailer or dispensary).

376 *E.g.*, A.B. 4497 § 3 (N.J. 2018) ("cannabis consumption area" may allow consumption of cannabis items "either obtained from the retailer or center, or brought by a person to the consumption area"); H.F. 465 § 16(subdiv. 1(b)(3)–(4)) (Minn. 2019) (sale or exchange of cannabis on premises prohibited).

377 *E.g.*, H.B. 356 § 6(H) (N.M. 2019), S.B. 1527 § 31 (170(5)) (N.Y. 2019).

378 For example, a Connecticut bill would allow "marijuana lounges," which would be "licensed to sell marijuana or marijuana products to consumers *solely for on-site consumption*." H.B. 5458 § 1(11) (Conn. 2018) (emphasis added). This would be similar to many alcohol licenses for bars and restaurants.

379 S.B. 577 § 4(B) (N.M. 2019). This is in part because the bill creates a state monopoly on retailer licensure.

380 *E.g.*, S.B. 2703 § 72(k)(1) (N.J. 2018).

381 *E.g.*, S.B. 2702 § 42(*l*)(1) (N.J. 2018).

382 *E.g.*, A.B. 4497 § 72(i)(2) (N.J. 2018); S.B. 2703 § 72(i)(2) (N.J. 2018); H.F. 465 § 16(c)(2) (Minn. 2019) (alcohol); H.B. 2371 § 3.2–4142(B)(4) (Va. 2018) (allowing cannabis retailers to sell any other product otherwise permitted by law other than tobacco or alcohol).

383 Nat'l Conference of State Legislatures, "Marijuana Deep Dive," *supra* note 10.

384 Orenstein & Glantz, *supra* note 20 at ___.

385 INITIATIVE & REFERENDUM INST., SIGNATURE, GEOGRAPHIC DISTRIBUTON AND SINGLE SUBJECT (SS) REQUIREMENTS FOR INITIATIVE PETITIONS (2018). This total does not include an unusual and restrictive process in Illinois. *Id.*; *see also* Initiative & Referendum Institute, "Illinois," http://www.iandrinstitute.org/states/state.cfm?id=9, *last visited* April 10, 2019.

public opinion trends creates a policy vacuum on the issue. In the absence of legislative action, ballot initiatives are likely to fill this space.

Based on electoral results between 2012 and 2018 and various public opinion polls,[391] voters are highly supportive of medical legalization and moderately supportive of recreational legalization as general principles.[392] Depending on how much faith one has in the electorate to be discerning in evaluating ballot questions, it may be fair to ask whether, at this current high water mark for legalization support, voters will approve any legalization initiative that appears at face value to accomplish these goals. For now, at least, it appears that they will not. For example, Ohio's 2015 Initiative 3 would have legalized both medical and recreational cannabis. [393] According to an April 2015 state poll, 84% of Ohio voters supported medical legalization and 52% supported adult use legalization.[394] Yet the initiative failed by a wide margin, capturing only 36% of the vote, the lowest of any legalization ballot measure of any type in any state since at least 2004.[395] The Ohio measure was unusually constructed, giving oligopolistic control of the proposed cannabis market to a small cadre of interconnected corporate investors who provided nearly all of the initiative's funding support, which appears to have contributed heavily to its defeat.[396]

B. Advantages of Legislative Legalization

There are potential public health advantages to legislative legalization, whether medical or recreational.[397] First, legislatively-enacted laws are considerably easier to change than voter-enacted laws. With relatively few limits, legislatures are free to later change statutes they have enacted.[398] This allows a legislature to adjust course to correct for, among other issues, drafting errors or ambiguities, incorrect assumptions (*e.g.*, tax forecast[399]), changing

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[386] Nat'l Conference of State Legislatures, "Marijuana Deep Dive," *supra* note 10.; Nat'l Conference of State Legislatures, "State Medical Marijuana Laws," *supra* note 60.

[391] *See generally* Press Release, Quinnipiac University Poll (April 6, 2015), *available at* https://poll.qu.edu/images/polling/sw/ps04062015_Spg72ho.pdf/; ProCon.org, "Medical Marijuana: Votes and Polls, 2000-Present" (2017), https://medicalmarijuana.procon.org/view.background-resource.php?resourceID=000149; Nat'l Org. for the Reform of Marijuana Laws (NORML), "State Polls" (2019), https://norml.org/library/state-polls-legalization.

[392] *See* Orenstein & Glantz, *supra* note 20 at ___ (detailing election results for cannabis legalization ballot initiatives).

[393] Ballotpedia.org, "Ohio Marijuana Legalization Initiative, Issue 3 (2015)" (2019), https://ballotpedia.org/Ohio_Marijuana_Legalization_Initiative,_Issue_3_(2015).

[394] Quinnipiac University Poll, *supra* note 391.

[395] Orenstein & Glantz, *supra* note 20 at ___.

[396] David A. Graham, *Why Did Ohio's Marijuana-Legalization Push Fail?*, ATLANTIC, Nov. 3, 2015; *see also* Orenstein & Glantz, *supra* note 20 at ___.

[397] A legislative approach may also be advantageous for advocates, as Caulkins et al. explained following the defeat of California's 2010 recreational initiative (Proposition 19) and before Colorado and Washington began the modern wave of recreational legalization: "*Focusing on propositions may be short-sighted*: To date, propositions have come closer to achieving marijuana legalization than has legislation. However, inasmuch as marijuana legalization has never been tried in the modern era and there are many complicated choices and details, it seems improbable that the initial design will get it right; likely it will take some trial and error and incremental adjustment to get the scheme worked out …. However, propositions are harder to adjust than are regimes established by legislation …. If pursuing a proposition, leave the specifics up to the policy makers: Some people who voted 'no' on Proposition 19 opposed its specifics, not legalization in the abstract. To win these swing voters, proponents should consider propositions that defer the details to state legislatures or other state-level policy makers." Caulkins, et al. (2012), *supra* note 107, at 19–20 (internal reference omitted and emphasis added).

[398] The principle of legislative entrenchment generally bars a legislature from binding a future legislature, for example by requiring a larger legislative majority to change a statute. *Compare* Eric A. Posner & Adrian Vermeule, *Legislative Entrenchment: A Reappraisal*, 111 YALE L.J. 1665 (2002) (arguing that prevailing doctrine against legislative entrenchment should be discarded and that legislatures should be able to bind future legislatures within the boundaries of other constitutional limitations) *with* John C. Roberts & Erwin Chemerinsky, *Entrenchment of Ordinary Legislation: A Reply to Professors Posner and Vermeule*, 91 CAL. L. REV. 1773 (2003) (arguing that the prohibition on legislative entrenchment is correct as a matter of law and of good policy).

[399] *See, e.g.*, Carnevale, et al., *supra* note 71, at 79 (discussing both Colorado's massive overestimation of projected first year cannabis tax revenue and Washington's comparable underestimation).

market dynamics, improved scientific understanding of the health effects of cannabis consumption, and the observed impacts of different policy models in other jurisdictions.

In contrast, several states' laws afford voter-enacted laws substantial protection from legislative changes. For example, unless specifically authorized in the initiative language, California law prohibits the legislature from amending initiatives without returning to the people for a vote.[400] Arizona law prohibits the state legislature from amending laws passed by initiative or referendum with less than a three-fourths supermajority, and even with such a majority, the legislature may only make amendments that further the purpose of the law. To fundamentally alter or repeal the law, the legislature must submit the change to the voters via referendum.[401] Several other states require legislative supermajorities to amend citizen initiatives or require a specified period of time to pass before the legislature can amend.[402]

State efforts to regulate around voter-enacted marijuana initiatives may also face substantial legal challenge. For example, a Colorado regulation that would have required marijuana-focused publications to be kept behind store counters in order to reduce access by minors was struck down by a federal court after even the responsible regulatory agency and state attorney general's office conceded its unconstitutionality.[403] However, the construction of some state initiatives, such as those in Washington and Colorado, has allowed legislatures to more easily make changes.[404]

The difficulties legislatures face in altering voter initiatives exist by design because initiatives are a vehicle for bypassing or overruling an unresponsive or resistant legislature.[405] However, the inflexibility of initiatives can have broad and sometimes unintended consequences, especially when the initiative is exceedingly specific.[406] Rigid legal frameworks imposed by initiative can restrict options for correcting errors, mitigating undesirable results, and reacting to changing circumstances,[407] precisely the type of nuanced, careful, and responsive policymaking tools frequently cited as necessary for cannabis policy in light of limited and fast-changing scientific evidence.[408]

Second, legislative legalization allows public health experts and advocates to play a more direct role in policy development (if they chose to participate). Voter initiatives are

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[400] CAL. CONST. art. II, § 10(c).
[401] ARIZ. CONST. art IV, pt. 1 § 1(6)(B)–(C).
[402] *See generally* Ballotpedia.org, "Legislative Alteration," https://ballotpedia.org/Legislative_alteration, last visited June 10, 2019.
[403] Trans-High Corp. v. Colorado, 58 F.Supp.3d 1177, (D. Colorado 2013) (mem.).
[404] Kleiman, *supra* note 259.The Colorado legislature used this authority to, among other things, address poorly labeled or easily overconsumed edibles. *Id.* In contrast, Arizona's 2016 proposal (which ultimately failed by a narrow margin) would have altered the state constitution and been exceedingly difficult to change, while the flexibility of California's legalization initiative was between these two types. *Id.* However, lingering outgrowth of California's earlier adoption of medical legalization may limit legislative options in some respects. For example, the state's medical legalization initiative did not specify a limit on the amount of cannabis a qualified patient could possess or purchase. The legislature subsequently imposed such a limit, but the state supreme court invalidated this restriction. People v. Kelly, 47 Cal. 4th 1008 (Ca. Sup. Ct. 2010).
[405] John Dinan, *State Constitutional Initiative Processes and Governance in the Twenty-first Century*, 19 CHAP. L. REV. 61, 84–85 (2016) (citing ELISABETH R. GERBER, THE POPULIST PARADOX: INTEREST GROUP INFLUENCE AND THE PROMISE OF DIRECT LEGISLATION 291–92, 298 (Princeton University Press. 1999); *see also* Daniel G. Orenstein, *Voter Madness? Voter Intent and the Arizona Medical Marijuana Act*, 47 ARIZ. ST. L.J. 391(2015) (arguing that the language of Arizona's medical cannabis law should be interpreted broadly in part because the initiative enacting the law was a direct response to prior state legislative resistance).
[406] Dinan, *supra* note 405, at 84–88. These concerns are particularly acute when the initiative alters a state constitution. *Id.*
[407] *Id.* at 84–85.
[408] Kleiman, *supra* note 259; CAULKINS, ET AL. (2015), *supra* note 107.

entirely the creations of the advocates who draft them. While they may adopt a variety of perspectives, they have neither the obligations to the public nor the resources of state legislatures. Legislatures have the authority, ability, and responsibility to involve a variety of perspectives in their decision-making. Among other powers, legislatures can actively involve public health experts through, among other avenues, expert testimony and grant-making to generate analysis.

Third, legislative legalization better leverages the benefits of the "laboratories of democracy." A small number of advocacy groups are responsible for most state legalization initiatives to date. As a result, states' approaches have been highly similar. Whether via an enduring state-oriented approach[409] or eventual federal legalization, greater variety in state policy will help demonstrate the effects of various policy decisions and aid future decision-making. The findings discussed in Part II illustrate that not only are public health principles gaining some traction in legislative legalization proposals that has been largely absent in ballot initiatives, but also that state legislatures will address problems in different ways, ultimately providing critical evidence to aid development of future best practice recommendations.

C. The Window for State Legislative Action is Open, But Limited

Public health advocates have the opportunity to appropriate the momentum of the legalization movement and the underlying shift in public opinion to effect the positive impacts of legalization (*e.g.*, market regulation) while potentially avoiding or at least blunting the negative effects of unfettered cannabis commercialization. Rather than presenting voters or legislators the binary choice between prohibition and laissez-faire legalization, public health-oriented legalization provides a more nuanced and beneficial middle path grounded in historical lessons and hard-learned best practices.

Some of the public health approaches outlined may seem unachievable in the current policy environment. However, public health policies often progress slowly but ultimately yield largescale changes. Tobacco control is a leading example. In 1965, almost 42% of U.S. adults smoked cigarettes; it is now less than 16%.[410] In the 1970s only the boldest advocates for nonsmokers' rights sought even to require non-smoking *sections* in restaurants and other public places, and their early efforts received limited support from health organizations.[411] Tobacco companies used cartoon characters in their marketing until the practice was proscribed by the 1998 Master Settlement Agreement.[412] U.S. law did not prohibit smoking

[409] *See, e.g.*, Erwin Chemerinsky, et al., *Cooperative Federalism and Marijuana Regulation*, 62 UCLA L. REV. 74, 74–102 (2015) (arguing in favor of a system of "cooperative federalism" in which the federal government permits states with policies meeting specific benchmarks to opt out of CSA provisions relating to cannabis and exert exclusive control in this area under state law).

[410] U.S. Ctrs. for Disease Control and Prevention, "Table 47. Current cigarette smoking among adults aged 18 and over, by sex, race, and age: United States, selected years 1965–2016" (2017), https://www.cdc.gov/nchs/data/hus/2017/047.pdf. Prevalence for specific populations was even higher. In 1965 over 50% of adult men and nearly 60% of adult African-American men smoked cigarettes. In 2016 those rates had dropped to 17.7% and 20.3%, respectively. *Id.*

[411] *See generally* GLANTZ & BALBACH, *supra* note 357, at 1–18 (discussing early tobacco control efforts relating to California's failed Proposition 5 in 1978).

[412] Pub. Health Law Ctr., "Master Settlement Agreement" (2019), https://publichealthlawcenter.org/topics/tobacco-control/tobacco-control-litigation/master-settlement-agreement. Prior to the Master Settlement Agreement, in which major tobacco companies agreed to accept various restrictions on their business practices, the Federal Trade Commission had also filed a complaint alleging that R.J. Reynolds Tobacco Company's "Joe Camel" campaign, featuring an anthropomorphic camel cartoon character, violated federal law by targeting children and adolescents. Press Release, Federal Trade Commission, Joe Camel Advertising Campaign Violates Federal

on airplanes until 1990 (and until 2000 this prohibition included only domestic flights),[413] after over 20 years of advocacy to overcome opposition from the tobacco industry and its allies.[414] The history of tobacco control illustrates that the political and legal status quo does not dictate the potential for future public health policy success (and also that the road to such success is long and perilous, especially against powerful and entrenched industries).

Ballot initiatives are born of frustration with perceived legislative inaction, obstinacy, or misalignment of interests. In the case of cannabis, the myriad failures and extensive collateral damage of the War on Drugs makes such frustration understandable. Still, the speedy adoption of legalization via initiative has outpaced scientific understanding of cannabis and its effects on health, leading to a difficult policy crossroads with no ideal resolution. The best available path forward is the one that most readily allows for course correction and minimizes unintended negative effects. A public health approach to cannabis legalization, adopted legislatively, is such a path for states unless and until a change in federal law, but the window for doing so will not remain open indefinitely.

Policymakers' reticence to adopt comprehensive cannabis legalization may be prudent in light of the current state of cannabis science. However, changing public opinion has forced the issue. In states with a ballot initiative process, legalization advocates will bring their case directly to voters, and they are very likely to succeed. In states where this process is not available, there is a separate but related risk. As state cannabis markets around the country (and in other countries) mature and larger corporate entities enter[415] or emerge,[416] the ability of the nascent legal cannabis industry to influence lawmakers will grow. The borders of legalizing jurisdictions will not contain this influence. If the cannabis industry gains sway in state legislatures (or Congress), policy will likely favor industry interests at the expense of public health. To protect public health, the best approach is to enshrine a public health approach in legalization from the outset, rather than to fight these battles defensively.

D. The Stakes for Public Health are High

The cannabis industry is not, at present, comparable to either the tobacco or alcohol industries. However, both tobacco and alcohol companies, among others, have begun to obtain or at least explore entry into the cannabis market.[417] These efforts have, to date, been fairly small in relation to the size and positioning of the industries as a whole, likely due to continuing illegality in most countries, including the U.S. at the federal level, and are likely to change as legalization progresses.

Law, FTC Says (May 28, 1997), *available at* https://www.ftc.gov/news-events/press-releases/1997/05/joe-camel-advertising-campaign-violates-federal-law-ftc-says.

413 Press Release, Matthew L. Myers, President, Campaign for Tobacco-Free Kids, As U.S. Celebrates 25 Years of Smoke-Free Airlines, It's Time to Make All Workplaces and Public Places Smoke-Free (Feb. 23, 2015), *available at* https://www.tobaccofreekids.org/press-releases/2015_02_23_planes.

414 *See generally* Peggy A. Lopipero & Lisa A. Bero, *Tobacco Interests or the Public Interest: 20 Years of Industry Strategies to Undermine Airline Smoking Restrictions*, 15 TOBACCO CONTROL 323 (2006).

415 *See* Gelles, *supra* note 15 (discussing corporate entries in Canadian cannabis market); Barry, et al., *supra* note 16 (presenting evidence of longstanding tobacco industry influence in legal cannabis market).

416 *See* Debra Borchardt, *The Cannabis Industry's Top 12 U.S. Multi-State Operators*, GREEN MARKET REPORT (2019), *available at* https://www.greenmarketreport.com/the-cannabis-industrys-top-12-u-s-multi-state-operators/ (compiling license and valuation data for largest multi-state cannabis operations).

417 Candice M. Bowling, et al., *At the Turning Point: Public Health and Medicine's Response to Cannabis Commercialization* (____) (under review).

Many public health best practices developed *post hoc* to address the malfeasance of powerful global industries (*e.g.*, tobacco) that engaged in copious and well-documented bad behavior. As of now, that description does not apply to the cannabis industry. One may argue that policies designed to curtail the past abuses of one industry and prevent repetition are not necessarily applicable to an industry that has yet to engage in such abuses. However, a key lesson from the history of tobacco and alcohol control is that once industries achieve prominence and power, controlling their behavior becomes exponentially more difficult. In regulating cannabis, the opportunity exists to structure legal frameworks to create guardrails that prevent or minimalize damaging industry behavior, rather than ameliorate its effects after the fact.

The state of evidence regarding the health harms of cannabis is far from ideal. While cannabis shares some effects with alcohol and some routes of administration with tobacco, the three are separate and distinct substances with unique characteristics. For example, tobacco, in all forms, is known to be carcinogenic. Cannabis smoke is thought to have similar effects because the two forms of smoke are nearly identical, save for the presence or absence of nicotine and cannabinoids.[418] However, while existing evidence is strongly suggestive, carcinogenicity of cannabis has yet to be conclusively demonstrated,[419] and non-smoked forms of cannabis (*e.g.*, edibles) may not share this health risk. Yet carcinogenicity is not the only harm tobacco smoke poses. Smoking causes myriad other negative health impacts, particularly on the cardiovascular and respiratory systems, and there is evidence that cannabis smoke has a similar risk profile,[420] which is to be expected given their similarity of composition. Several other potential negative health effects associated with cannabis use (*e.g.*, motor vehicle accidents, pediatric overdose injuries, impaired cognition, development of schizophrenia or other psychoses, abuse of other substances)[421] are likely unrelated to mode of use.

The comparative absence of evidence on cannabis's potential health harms as compared to those of tobacco and alcohol may simply be the product of the overall dearth of research on cannabis, largely due to legal restrictions in place for the past several decades. The most comprehensive summary of the possible health effects of cannabis, both positive and negative, comes from the National Academies of Sciences, Engineering & Medicine.[422] While that report does draw important substantive conclusions,[423] its major recommendations all address the need for additional research.[424] Additionally, the report

[418]TOMAR, ET AL., *supra* note 354; Moir, et al., *supra* note 84.
[419]Cannabis smoke (as "marijuana smoke") does appear on California's Proposition 65 list of chemicals known to the state to cause cancer or reproductive toxicity based on an extensive review of existing evidence. CAL. ENVTL. PROTECTION AGENCY, CHEMICALS KNOWN TO THE STATE TO CAUSE CANCER OR REPRODUCTIVE TOXICITY (2019), *available at* https://oehha.ca.gov/media/downloads/proposition-65/p65single01272017.pdf; *see generally* TOMAR, ET AL., *supra* note 354. However, the National Academies, using different inclusion criteria, found moderate evidence of no association between cannabis smoking and incidence of lung, head, or neck cancers, only limited evidence of association between current, frequent, or chronic cannabis smoking and a subtype of testicular cancer, and insufficient evidence to support or refute association between cannabis smoking and several other cancers. NAT'L ACADS. OF SCIS., ENG'G & MED., *supra* note 1, at 141–58.
[420]Wang, et al., *supra* note 354.
[421]NAT'L ACADS. OF SCIS., ENG'G & MED., *supra* note 1, at 17–21. Of note, not all such associations are necessarily causal in nature.
[422]Id.
[423]*Id.* at 13–22.
[424]*Id.* at 9–12.

notes that all cannabis provided to investigators in the U.S. comes from the National Institutes on Drug Abuse, which sources cannabis solely from a single site at the University of Mississippi and does not commonly provide forms of cannabis products other than standard dried flower (*i.e.*, no edibles, concentrates, etc.).[425] As a result, the absence of clear evidence of health harms from non-smoked cannabis products may be due to the absence of research, rather than the absence of effects in reality. Cannabis available for research also often fails to reflect the strains, potency, or other characteristics of products available on the market (licit or illicit),[426] again indicating that absence of evidence for any particular effect or association should not be understood to be evidence of absence. The impacts of cannabis use will become clearer with time and additional research, but responsible regulation of cannabis cannot wait.

Conclusion

Despite the long history of human cannabis use, evidence of potential health harms from the substance is still developing, though there is already more than enough to be cause for concern. Nevertheless, the failures of the War on Drugs and the potential societal benefits of legalization have contributed to strong policy momentum in favor of adult use cannabis legalization. To date, legalization has primarily arisen from ballot initiatives, but legislatures are better situated to craft legalization frameworks that protect public health, and many state legislative proposals to legalize cannabis contain public health best practice elements absent from existing adult use frameworks.

Absent legislative action, legalization advocates will continue to use ballot initiatives to achieve their policy goals, and the nascent legal cannabis industry will continue to cultivate legislative influence. Once industry-friendly policies become entrenched in law, they will be difficult to change. Legislatures should proactively adopt legalization measures to preempt weaker advocate-driven initiatives and future industry-influenced legislation. Legislative legalization may not be ideal based on the state of existing evidence, but it is the best available path forward in a situation where the status quo is demonstrably harmful and the other path potentially allows the repetition of past mistakes in tobacco and alcohol regulation. Legalization carries both opportunities and risks for public health, but inaction is not a viable option.

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APPENDIX

We developed a set of active proposed legislation using WestLaw in February 2019 with the following search string: advanced: (marijuana marihuana cannabis) /50 (“adult use”

[425] *Id.* at 382–83.
[426] Id.

"personal use" recreational legalize legalization). We limited results to past 12 months and excluded jurisdictions with existing adult use laws (Alaska, California, Colorado, District of Columbia, Maine, Massachusetts, Michigan, Nevada, Oregon, and Washington).

This search yielded 234 results. We then rejected duplicates and those that did not address any form of legalization or only modified an existing program based on review of available summary or abstract, yielding 93 results. Application of inclusion criteria yielded a final set of 52 bills in 18 states for full review, as presented in Table A1, below. In July 2019, we revised the analysis to include Illinois's successful H.B. 1438 as enacted. We did not include revised or amended versions of other (unsuccessful) bills in this update.

Table A1:

List of Reviewed Legislation

State	Year	Bill #
Arizona	2019	S.C. Res. 1022
Connecticut	2018	H.B. 5458
Connecticut	2019	H.B. 5595
Connecticut	2019	H.B. 6863
Connecticut	2018	S.B. 487
Connecticut	2019	S.B. 496
Connecticut	2019	S.B. 744
Hawaii	2019	H.B. 1515
Hawaii	2019	H.B. 1581
Hawaii	2019	H.B. 291
Hawaii	2019	S.B. 442
Hawaii	2019	H.B. 708
Hawaii	2019	S.B. 686
Illinois	2019	H.B. 2477
Illinois	2019	H.B. 902
Illinois	2019	H.B. 1438 [enacted]
Indiana	2019	H.B. 1685
Kentucky	2019	S.B. 80
Maryland	2019	H.B. 632
Minnesota	2019	H.F. 265
Minnesota	2019	H.F. 420
Minnesota	2017	H.F. 4541
Minnesota	2019	H.F. 465
Minnesota	2019	S.F. 619
Mississippi	2019	S.B. 2349
Missouri	2019	H.B. 157
Missouri	2019	H.B 551
New Hampshire	2019	H.B. 481

State	Year	Bill #
New Hampshire	2019	H.B. 722
New Jersey	2018	A.B. 3581
New Jersey	2018	A.B. 3819
New Jersey	2018	A.B. 4497
New Jersey	2018	S.B. 2702
New Jersey	2018	S.B. 2703
New Mexico	2019	H.B. 356
New Mexico	2019	S.B. 577
New York	2019	A.B. 1617
New York	2019	A.B. 2009
New York	2017	A.B. 3506
New York	2019	S.B. 1509
New York	2019	S.B. 1527
New York	2017	S.B. 3040
Rhode Island	2017	S.B. 2895
Vermont	2019	H.B. 196
Vermont	2019	H.B. 250
Vermont	2019	S.B. 54
Virginia	2018	H.B. 2371
Virginia	2018	H.B. 2373
West Virginia	2019	H.B. 2331
West Virginia	2019	H.B. 2376
West Virginia	2019	H.B. 3108
West Virginia	2019	H.B. 3129

Table 1:

Local Control and Non-Preemption Provisions in Proposed Bills

Type	State	Bills
Total local prohibition authorized	Arizona	S.C. Res. 1022 § 1 (4–410)[213]
	Connecticut	H.B. 5458 § 11
		S.B. 487 § 17
	Kentucky	S.B. 80 § 16
	Maryland	H.B. 632 § 1, art. XX (2)(C)
	Minnesota	H.F. 420 § 16
		H.F. 4541 § 4
	Missouri	H.B. 551 § A (195.2156)
	New Hampshire	H.B. 481 § 6 (318-F:11)
	New Jersey	A.B. 3581 § 12(b)
		A.B. 3819 §11(c)
		S.B. 2702 § 12(b)
		S.B. 2703 § 20(b)
		A.B. 1617 § 31 (art. 11, § 167(3)(b))
	New York	A.B. 3506 § 31 (art. 11, § 167(3)(b))
		S.B. 1527 § 31 (art. 11, § 167(3)(b))
		S.B. 3040 § 15 (221.05-a)[214]
	Vermont	H.B. 196 § 9 (tit. 7, § 863)
		S.B. 54 § 7 (tit. 7, § 863)
	Virginia	H.B. 2371 art. 3 § 3.2–4145
		H.B. 2373 art. 3 § 3.2–4150
	West Virginia	H.B. 2331 §§ 16A-17–4, −6(c)[215]
Total local prohibition authorized, with restrictions	Illinois [enacted]	H.B. 1438 § 55–25 (may prohibit, but may not regulate more restrictively than state law)
	New Mexico	S.B. 577 §§ 7–8 (may not allow and then later prohibit)[216]
	Rhode Island	S.B. 2895 § 1 (21–28.11–10) (must pass individual referendum for each class of establishment)
Partial local Prohibition authorized	New Hampshire	H.B. 722 § 7 (does not include growing/harvesting)

[213]The Arizona proposal is a legislative concurrent resolution calling for a citizen referendum. S.C. Res. 1022 § 1 (Ariz. 2019). While referenda and initiatives are often grouped together because they both subject policymaking to popular vote, a key difference is that referenda originate in the legislature before submission to voters. As a result, we treat this referendum as a legislative form of legalization for purposes of this article.

[214]The bill would allow localities to prohibit commercial operations, but not to prohibit personal cultivation. S.B. 3040 § 15(2) (N.Y. 2017).

[215]This bill provides for a county-level election to allow cannabis production and sales, with additional municipal-level regulation of the operation, location, and number of cannabis establishments.

[216]As noted *supra*, this bill creates a state-operated sales monopoly.

Type	State	Bills
	New Mexico	H.B. 356 § 11(A)(3) (may prohibit retail cannabis product sales, but not personal production or medical-only sellers)

Table 2:

Revenue Allocation in Proposed Bills

State	Bill	Selected Revenue Allocation Provisions
Arizona	S.C. Res. 1022 § 2 (art. 10, § 42–5453(C))	40% to general fund, 40% to public education grants, 20% to drug treatment and rehabilitation
Hawaii	H.B. 1581 § 2 (19)	Revenues first to implementation and enforcement, with excess to county infrastructure projects (50%) and local farm development grants (50%)
Illinois	H.B. 902 § 85	After implementation and enforcement costs: 50% to general fund; 30% to State Board of Education; 5% to voluntary alcohol, tobacco, and cannabis abuse treatment programs; 5% to Department of Public Health for public education campaign targeting youth and adults; 2.5% to state employee retirement system; 2.5% to teachers' retirement system; 2.%% to state university retirement system; 2.5% to state police for drug recognition experts
Illinois [enacted]	H.B. 1348 § 900–15 (adding § 6z-107(c)(3))	Revenues first to administrative and enforcement costs, with remainder allocated 35% to general fund, 25% to criminal justice reform program, 20% for substance abuse and prevention and mental health, 10% for budget stabilization, 8% to local crime prevention programs relating to illicit cannabis and driving under the influence, and 2% to public education campaign
Kentucky	S.B. 80 §§ 18(4), 19, 20(3)	80% to statewide fund distributed 95% to offset costs of program administration and enforcement, with remainder to substance abuse treatment programs (1%), public education (1%), and law enforcement training (3%); 20% to local funds in jurisdictions with cannabis businesses
Minnesota	H.F.420 § 18; S.F. 619 § 18	$10 million annually to small businesses as part of a social justice program; remaining revenues 60% to the state's general fund, 10% to mental health, 10% to police training, 10% to department of health research, 10% to education and public health programs
Minnesota	H.F. 465 § 25	Revenues first to administration, then 40% mental health services, 40% early childhood education, and 20% to health department for education and public health program
Missouri	H.B. 551 § A (195.2162(2))	Revenues primarily to the state's general fund
New Mexico	H.B. 356 § 54	Revenues support cannabis regulation fund, community grants reinvestment fund, cannabis health and safety fund, cannabis research fund, and local DWI grant program
New York	A.B. 1617 § 32; A.B. 3506 § 32; S.B. 1527 § 32; S.B. 3040 § 32	$1 million to revolving loan fund for licensees and microbusinesses; $1 million to state university to research and evaluate implementation and effects of law, including public health impacts; $750,000 for license tracking and reporting; $750,000 to track and report violations of remaining cannabis laws; remaining funds to state lottery fund (25%), drug treatment education fund 25%), and community grants reinvestment fund (50%)
Virginia	H.B. 2371, art. 6 § 3.2–4155(C)	67% to general fund; 33% to retail marijuana education support fund to be used exclusively for public education
Virginia	H.B. 2373, art. 5 § 3.2–4158(D)	$20 million to Veterans Treatment Fund; remainder 30% to localities with cannabis businesses, 35% to general fund for Standards of Quality basic aid payments, 35% to highway maintenance and operation fund
West Virginia	H.B. 3129 § 5B-8–13	Revenues in excess of operating costs toto teacher compensation and public employee insurance (25%), infrastructure (35%), law enforcement and community fund (15%), small business fund for grants/loans (15%), and public employee retirement system (10%, up to $2 million with excess to general fund)

Table 3:

Tax Rates in Proposed Bills

State	Bill(s)	Selected Provisions
Escalating sales/excise tax with defined increase		
New Jersey	A.B. 3581 § 11(a)	7% sales tax, escalating over 5 years to 15%
New Jersey	A.B. 3819 § 10(a)	7% sales tax, escalating over 5 years to 25% 10% excise tax, escalating to 25%
New Jersey	S.B. 2702 § 11	in 4 years; includes prevailing sales tax
Escalating sales/excise tax with undefined adjustment		
Illinois	H.B. 902 § 80	10% excise tax to be adjusted annually for inflation
New Hampshire	H.B. 481 § 8 (77-H:2(I))	$30 per ounce of flower; $10 per ounce of other plant material; $15 per immature plant; adjusted for inflation
New York	A.B. 1617 § 33; A.B. 3506 § 33; S.B. 1527 § 33; S.B. 3040 § 33	$0.62 per gram of flower and $0.10 per gram of leaves cultivation tax; $1.35 per immature plant nursery tax; 15% excise tax on all nonmedical purchases; rates to be adjusted every 2 years according to cost-of-living adjustment and to be regularly reviewed; local tax up to 2%
Sales/excise tax > 10%		
Hawaii	S.B. 686 § 2(329-I)	15% excise tax
Illinois [enacted]	H.B. 1438 § 65–10	25% excise tax on cannabis over 35% THC; 10% tax on cannabis at or below 35% THC; 20% tax on cannabis-infused products 15% gross revenues of processor;
Minnesota	H.F. 465 §§ 1 (subdiv. 2), 3, 12	12% gross receipts from retail sales and lounge admission; optional 3% local tax
Missouri	H.B. 551 § A (195.2162)	20% at transfer from cultivator; additional local taxes allowed
Vermont	H.B. 196 § 16 (tit. 32, §§ 7901–02)	11% excise tax; optional 3% local tax
West Virginia	H.B. 2331 § 16A-17–7(a)	15% excise tax; optional 5% local tax
West Virginia	H.B. 3129 § 5B-8–13	17.5% excise tax; optional 6% local tax
Sales/excise tax ≤ 10%		
Kentucky	S.B. 80 § 20(2)	Excise tax 10% on flower, 5% on other plant parts, 8% on immature plants; additional sales tax permitted but not specified
New Hampshire	H.B. 722 § 2 A.B. 4497 §§ 18(a),	8% sales tax 5.375% on receipts from retail sale
New Jersey	19(a)	in addition to existing sales tax; additional local tax up to 2%
New Jersey	S.B. 2703 §§ 18(a), 19(a)	5.375% in addition to state sales and use tax; optional 2% local tax
New Mexico	H.B. 356 §§ 48–50	9% excise tax (none on medial); up to 3% municipal tax; up to 3% county tax
New Mexico	S.B. 577 §§ 33–34	4% state excise tax; optional 4% municipal tax; optional 4% county tax
Vermont	S.B. 54 § 14 (tit. 32, § 7901–02); H.B. 250 § 14 (tit. 32, § 7901–02)	10% excise tax; 1% optional local tax
Virginia	H.B. 2373 art. 5 §§ 3.2–4158–59	10% sales tax; optional 5% local tax
Virginia	H.B. 2371 §§ 3.2–4155(A), 3.2–4156(A)	9.7%; optional 5% local tax

Table 4:

Cannabis Delivery in Proposed Bills

Type	State	Bills
Delivery Prohibited	Illinois [enacted]	H.B.1438 §§ 15–65(n)(9)-(10)
	Minnesota	H.F. 420 § 6(9); S.F. 619 § 6(9)
	Vermont	H.B. 250 § 907(e);
		S.B. 54 § 7 (tit. 7, § 907(e))
	Virginia	H.B. 2371 § 3.2–4142(B)(2)(d);
		H.B. 2373 art. 2 § 3.2–4146(B)(2)(d)
Delivery Permitted	Connecticut	S.B. 487 § 18(5)
	Hawaii	H.B. 1581 § 2(11)(a)(6)
	Illinois	H.B. 902 § 935(3.5)
	Kentucky	S.B. 80 § 2(3)(e)
	New Hampshire	H.B. 481 § 6 (318-F:9(*I*)(g))
	New Jersey	S.B. 2703 § (27)(h);
		A.B. 4497 § (27)(h)
	New York	S.B. 1509 § 130(7);
		A.B. 2009 § 130(7);
		A.B. 1617 § 11(165)(5);
		S.B. 1527 § 11(165)(5);
		A.B. 3506 § 11(165)(5);
		S.B. 3040 § 11(165)(5)
	Vermont	H.B. 196 § 9 (tit. 7, § 907(c))
	West Virginia	H.B. 3129 § 5B-8–8(1);
		H.B. 2376 § 11–16A-8(1)

Table 5:

Public Use Provisions in Proposed Bills

Type	State	Bills
Prohibits All Public Cannabis Consumption	Arizona	S.C. Res. 1022 § 1 (4–404)
	Connecticut	H.B. 5595
	Illinois [enacted]	H.B. 1438 § 10–35(a)(3)(F)
	Minnesota	H.F. 420 §§ 2 (subdiv. 7), 8 (subdiv.2(a)(6)(ii)); S.F. 619 §§ 2 (subdiv. 7), 8 (subdiv. 2(a)(6)(ii))
	Missouri	H.B. 551 § A (195.2153(2))
	New Jersey	A.B. 3819 § 3(c); S.B. 2702 § 4(c)
	New Mexico	S.B. 577 § 23(B)
	West Virginia	H.B. 2331 § 16A-17–3(2)
Prohibits Public Cannabis “Smoking”	Kentucky	S.B. 80 § 4
	New Hampshire	H.B. 481 § 6 (318-F:4)
	New Mexico	H.B. 356 § 31(A)
	New York	A.B. 1617 § 25; A.B. 3506 § 25; S.B. 1527 § 25; S.B. 3040 § 25
	Rhode Island	S.B. 2895 § 1 (21–28.10–8)
	West Virginia	H.B. 2376 § 11–16A-5(a); H.B. 3129 § 5B-8–5(a)
	Connecticut	H.B. 5458 §§ 1(11), 5
	Illinois [enacted]	H.B. 1438 § 55–25(3) (as authorized and regulated by localities)
	Maryland	H.B. 632 § 1, art. XX (1)(B)(3)
Exempts Licensed Consumption Areas	Minnesota	H.F. 465 § 16(subdiv. 1)
	New Jersey	A.B. 4497 §§ 3, 4(c); S.B. 2703 §§ 3, 4(c)
	New Mexico	H.B. 356 § 31(A); S.B. 577 § 4(B)
	New York	S.B. 1509 art. 4, § 74; S.B. 1527 § 31 (art. 11, § 178); S.B. 3040 § 31 (art. 11, § 178);
	Virginia	H.B. 2371 art. 7 § 3.2–4160 (A)(3); H.B. 2373 art. 3 § 3.2–4151
Applies Existing Tobacco Consumption Restrictions	Hawaii	S.B. 686 § 329-B(f)
	Connecticut	S.B. 487 § 21
	Illinois[enacted]	H.B. 1438 § 10–35(a)(4)
	New Jersey	S.B. 2703 § 4(c); A.B. 4497 § 4(c)
	New York	A.B. 1617 § 25; A.B. 3506 § 25; S.B. 1527 § 25; S.B. 3040 § 25
	Vermont	H.B. 196 § 2 (tit. 7, §§ 831(5), 833); H.B. 250 § 2 (tit. 7, § 831(5); 833); S.B. 54 § 2 (tit. 7, §§ 831(5), 833);

Type	State	Bills
Applies Existing Alcohol Consumption Restrictions	New Jersey	A.B. 3581 §§ 3 (“public place”), 4(c); S.B. 2702 §§ 3 (“public place”), 4(c); A.B. 4497 §§ 3 (“public place”), 4(c)

Table 6:

Cannabis Legalization in States with Initiative Process[387]

State	Limited Medical	Medical	Recreational
Alaska	--	Yes (1998)	Yes (2014)
Arizona	--	Yes (2010)	**No**[388]
Arkansas	--	Yes (2016)	**No**
California	--	Yes (1996)	Yes (2016)
Colorado	--	Yes (2000)	Yes (2012)
Florida	Yes (2014)	Yes (2016)	**No**
Idaho	**No**[389]	**No**	**No**
Maine	--	Yes (1999)	Yes (2016)
Massachusetts	--	Yes (2012)	Yes (2016)
Michigan	--	Yes (2008)	Yes (2018)
Mississippi	Yes (2014)	**No**	**No**
Missouri	Yes (2014)	Yes (2018)	**No**
Montana	--	Yes (2004)	**No**
Nebraska	**No**	**No**	**No**
Nevada	--	Yes (2000)	Yes (2016)
North Dakota	--	Yes (2016)	**No**[390]
Ohio	--	Yes (2016)	**No**
Oklahoma	--	Yes (2018)	**No**
Oregon	--	Yes (1998)	Yes (2014)
South Dakota	**No**	**No**	**No**
Utah	Yes (2014)	Yes (2018)	**No**
Washington	--	Yes (1998)	Yes (2012)
Wyoming	Yes (2015)	**No**	**No**
States Without:	**3/23**	**5/23**	**13/23**

387 *See* Nat'l Conference of State Legislatures, "State Medical Marijuana Laws," *supra* note 60 (listing medical and adult use laws in all U.S. states and territories).

388 An adult use legalization initiative appeared on Arizona's 2016 ballot but was narrowly defeated, 51.3% −48.7%. Ballotpedia.org, "Arizona Marijuana Legalization, Proposition 205 (2016)" (2019), https://ballotpedia.org/Arizona_Marijuana_Legalization,_Proposition_205_(2016)).

389 The governor vetoed a legislative bill to allow limited medical access in 2015. Nat'l Conference of State Legislatures, "State Medical Marijuana Laws," *supra* note 60.

390 An adult use legalization initiative appeared on North Dakota's November 2018 ballot, but was unsuccessful. Ballotpedia.org, "North Dakota Measure 3, Marijuana Legalization and Automatic Expungement Initiative (2018)" (2019), https://ballotpedia.org/North_Dakota_Measure_3,_Marijuana_Legalization_and_Automatic_Expungement_Initiative_(2018)).