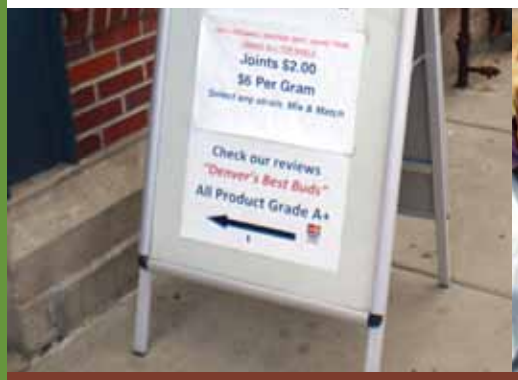
ISSUE BRIEFING

PROTECTING OUR YOUTH

Options for Marijuana Regulation in California

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EXECUTIVE SUMMARY

I. Introduction

California is likely to have at least one marijuana legalization initiative on the ballot in November 2016. This white paper assesses policy and regulatory options for protecting young people from the risks associated with legalization, drawing from the lessons learned from legalizing alcohol. It does not take a position on the merits or advisability of legalization.

MARIJUANA AND YOUTH: A RISKY COMBINATION

Shifting from a criminal justice to a public health framework requires careful consideration of the manner in which marijuana will be regulated in the marketplace. Of particular concern is the potential impact on youth. Recent research suggests that marijuana use during adolescence and early adulthood results in impaired neural connectivity in several areas of the brain, including the hippocampus, a critical region of the brain associated with learning and memory. There are no definitive findings on whether or not these impairments are reversible over time with abstinence or reduced consumption. The impact on the brain may provide an explanation for the various developmental problems associated with regular marijuana use during adolescence, which include lower IQ scores, poorer school performance, higher school dropout rates and impaired verbal cognitive and attention performance. These adverse effects increase in severity with early onset and heavy use.

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LESSONS FROM ALCOHOL POLICY

Alcohol policy provides important guidance and lessons for developing a regulatory structure for marijuana legalization that will protect youth from harm. A common misconception regarding the history of alcohol policy is that it represents a successful shift from criminal Prohibition to a public health-oriented regulatory framework – marijuana legalization need only mimic current alcohol regulatory structures. Although public health was the primary foundation of the structuring of the alcohol market following Prohibition, this foundation has been substantially eroded over time. In truth, alcohol is increasingly treated as an ordinary consumer product that should not be subject to special public health-oriented regulatory rules or restrictions. The powerful alcohol industry has played a major role in promoting this "ordinary commodity" shift through its lobbying and marketing activities.

A successful, public health-oriented, marijuana legalization effort that protects youth from long term harms needs to understand the reasons behind this shift in alcohol policy from a public health to a commercial framework and develop regulatory strategies to avoid a similar outcome over time. This white paper provides a set of recommendations for achieving this goal.

IMPORTANCE OF RELYING ON AND PROTECTING LOCAL REGULATORY AUTHORITY

A key lesson from both alcohol and tobacco policy in California is the critical role of local governments in developing and enhancing effective regulatory strategies to protect public health and safety, operating within a state-based regulatory structure. The California State Legislature is currently considering proposals to enhance and protect local control over medical marijuana, providing a potential foundation for effective municipal regulation should a legalization initiative be approved by voters.

II. Regulatory Recommendations for Reducing Legal Marijuana's Risk to Youth

A. RECOMMENDATIONS FOR REGULATING MARIJUANA SALES AND MARKETING

1. Establish an age 21-year marijuana furnishing, use, and possession law.
2. Strictly enforce the age 21 marijuana furnishing, use, and possession law with a primary focus on adult providers.
   - Conduct regular, comprehensive compliance checks;
   - Provide specific mandate and adequate funding to local law enforcement agencies to conduct these checks.
3. Limit sale of products that are attractive to young people or put them at heightened risk of harm.
4. Restrict marketing and advertising practices that appeal to youth.
   - Limit both youth exposure to advertising and messaging that is attractive to youth;
   - Craft restrictions that are consistent with Constitutional requirements regarding the protection of commercial speech.
5. Keep marijuana prices artificially high, although not too high to foster underground markets and illegal cultivation.
   - Impose taxes based on intoxicating effect, index taxes to the Consumer Price Index (to avoid gradual decline in real value), and establish tax rates so that they do not promote illegal production;
   - Consider minimum pricing strategies and severely restrict marketing strategies that rely on discount pricing (e.g. happy hours and quantity discounts);
   - California alcohol tax policy is a poor model for marijuana legalization.
6. Strictly limit the number, type, location and sales practices of marijuana retail outlets.
   - Permit marijuana sales exclusively for use off premises, in marijuana-only businesses;
   - Locate retail stores away from youth-sensitive locations (e.g., schools).
7. Ensure product quality and environmental protection, deter public nuisance activities, and limit unauthorized cultivation, distribution and sales.

B. RECOMMENDATIONS FOR REGULATING THE STRUCTURE OF THE MARIJUANA INDUSTRY

1. Establish a three-tier industry structure (producer/wholesaler/retailer) and exercise direct state control over the wholesale tier.
2. Limit the retail tier to not-for-profit organizations as is currently the case with medical marijuana dispensaries. Direct government-controlled retail outlets should be an option for local governments.
3. If medical marijuana continues to be available as a separate commodity at retail outlets, rules regarding its distribution should be substantially revised. Only those individuals who are 21 years of age or older, under direct medical supervision, and suffering from severe medical problems should be permitted to purchase medical marijuana.
4. Impose restrictions on the production and retail tiers of the industry that promote responsible, small business operations.
   - Limit size and establish production/retail caps;
   - Prohibit the accumulation of licenses by single individuals or entities and prohibit license transfers.
5. Impose license fees on producers and retailers adequate to cover the cost of licensing, monitoring industry compliance, and enforcing regulatory provisions.

C. RECOMMENDATIONS FOR STRUCTURING GOVERNMENT REGULATION AND EXPENDITURES

1. Rely on and protect local control – allow local governments to require a local license of business permit and to impose additional regulations and restrictions that are stricter than state controls.
2. Place primary responsibility for state marijuana regulation in the California Department of Public Health, with substantial responsibility delegated to local departments of public health.
3. Ensure adequate revenues for enforcing state and local regulations, monitoring industry activities, evaluating the impact of marijuana legalization, and funding effective prevention, treatment and educational programs.

PROTECTING OUR YOUTH: REGULATORY OPTIONS IF MARIJUANA USE IS LEGALIZED IN CALIFORNIA

I. Introduction

California is likely to have at least one marijuana legalization initiative on the ballot in November 2016. The state is a major target for legalization advocates following successful campaigns in Colorado, Washington, Alaska, and Oregon. The American Civil Liberties Union has formed a high profile blue ribbon commission to study the matter and make recommendations for such an initiative; Lieutenant Governor Gavin Newsom, who has announced his candidacy for Governor in 2018, is chair of the Commission.[1]

This white paper does not take a position on the merits or advisability of legalizing marijuana in California. Rather, it assesses policy and regulatory options for protecting young people from the risks associated with legalization, drawing from the lessons learned from legalizing alcohol more than 80 years ago and the available science regarding marijuana's effects on the adolescent brain. Its purpose is to contribute to the public discussion regarding legalization and offer insights for policy makers and the public as it evaluates legalization proposals. A particular focus is on the role of local government and local policy makers, who may be facing important decisions in a relatively short timeframe should marijuana be legalized through the initiative process.

SHIFTING FROM A CRIMINAL JUSTICE TO A PUBLIC HEALTH FRAMEWORK

Marijuana legalization proposals are grounded in a central tenet that marijuana should be regulated within a public health rather than criminal justice framework. Advocates of legalization argue that treating the production, sale and use of marijuana as criminal activities overburdens the courts and prisons, makes it more difficult to provide treatment and medical services to those who need them, and has resulted in racial and ethnic discrimination in the manner in which the laws are enforced, raising fundamental social justice issues.[2,3] Shifting from a criminal justice to public health paradigm requires careful consideration of the manner in which marijuana will be regulated in the marketplace. As with other addictive substances, marijuana poses special public health risks, and experience with both alcohol and tobacco demonstrates that regulatory measures can be developed and implemented to reduce potential harms. Of particular concern is the potential impact of legalization on youth, in part because research suggests that marijuana use among youth can carry special risks that may not be present among adults (see discussion below).

Legalization, then, should have as its primary goal establishing a legal market while at the same time instituting regulatory structures to prevent and mitigate public health harms, particularly among young people. Marijuana, like alcohol and tobacco, is a potentially addictive substance that should not be treated as an ordinary commodity in the marketplace.

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MARIJUANA AND YOUTH: A RISKY COMBINATION

According to one national survey, marijuana use rates for current users (use at least once in the last 30 days) among high school students ranged from 7.2% for 8th graders to 22.6% for 12th graders in 2012.[4] These rates have held fairly steady for the last 20 years with some fluctuations, and are well below the peak rates in the late 1970s. Marijuana is by far the most common illegal drug used by teens, although usage rates are

relatively low when compared to alcohol (with current use alcohol rates ranging from 12.7% for 8th graders to 40% for 12th graders, according to the same survey).[4]

Research regarding marijuana's impact on youth remains in its infancy, although what is known raises serious concerns.[5,6] Perhaps the most troubling findings come from recent research on the developing brain. The brain is in a state of continuing active development from infancy through adolescence and into early adulthood; during this developmental stage, it is more vulnerable to environmental insults, including THC, the active intoxicating ingredient in marijuana. Brain research suggests that regular marijuana use during adolescence results in impaired neural connectivity in several specific areas of the brain, including the hippocampus, a critical region of the brain associated with learning and memory.[6]

This body of brain research may provide an explanation for the developmental problems associated with regular marijuana use during adolescence, which includes lower IQ scores, poorer school performance, higher school dropout rates, and impaired verbal, cognitive, and attention performance when compared to nonusers.[5,6] There are no definitive findings on whether there are critical periods in adolescence that are more susceptible to these degradations and the extent to which the changes in the brain can be reversed with abstinence or reduced use. Even if reversible, poor academic performance can have lasting adverse effects for young people.

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Research has found that driving skills are impaired by both long-term exposure to marijuana and use immediately prior to motor vehicle operation.[6] Recent studies have found that this impairment increases risk of motor vehicle crashes among both adolescents and adults, particularly when marijuana and alcohol use are combined.[7] Marijuana-impaired driving has increased markedly in the last seven years. According to the National Highway Traffic Safety Administration, 8.6% of weekend nighttime drivers tested positive for marijuana in 2007, compared to 12.6% in the most recent roadside survey, conducted in 2013-2014, a 48% increase.[8]

Chronic marijuana use can lead to addiction using the criteria for dependence established in the *Diagnostic and Statistical Manual of Mental Disorders,* 4th Edition.[6] Approximately 9% of those who experiment with marijuana are estimated to be dependent, with the risks of dependence increasing sharply as the age of initiation decreases.[6] Heavy use is also associated with depression and anxiety (although a causal connection has not been established) and can exacerbate the course of illness in patients with schizophrenia and other mental disorders, particularly with early onset.[6] Withdrawal from marijuana dependence is associated with a variety of adverse symptoms, making it difficult and increasing the likelihood of relapse. However, many heavy users are able to reduce or abstain from use as they mature into later adulthood.[6]

In summary, adolescent marijuana use and poses serious public health risks that are not fully understood. They increase in severity with early onset and with heavy use. The increased potency of marijuana therefore contributes to adolescent public health problems and raises additional concerns for local governments regarding increasing marijuana's availability. Legalization proponents argue that marijuana poses fewer health risks than alcohol, and a recently published study supports this conclusion.[9] This assertion may apply to adults, but its accuracy is less clear when applied to adolescents, particularly given the possibility that youthful marijuana use may lead to permanent damage to the brain. The fact that these risks are not fully understood underscores the importance of proceeding cautiously when considering legalization proposals if we want to avoid another public health crisis and the social, health, and economic costs associated with it. Developing a regulatory structure for marijuana legalization that protects youth should therefore be a high priority.

ALCOHOL POLICY AND MARIJUANA LEGALIZATION

Marijuana legalization is largely uncharted territory; we have very little research available that directly assesses the impact of various legalization models on youth consumption and problems. Fortunately, public health research and advocacy addressing other addictive products provides important guidance to the marijuana legalization debate. Alcohol policy is particularly relevant. It was an illegal product during Prohibition and then legalized in 1932.

A common misperception regarding the history of alcohol policy is that it represents a successful shift from criminal Prohibition to a public health-oriented regulatory framework – marijuana legalization need only mimic current alcohol regulatory structures.[10] Although public health was the primary foundation of the structuring of the alcohol market following the end of Prohibition, this foundation has been substantially eroded over time.[11] As a result, alcohol problems among America's youth represent a public health crisis, the subject of numerous government reports and studies, including Congressionally mandated, annual Reports to Congress, the most recent of which was published in 2014.[4,12,13,14]

Recommendations from those reports (reviewed below) regarding regulatory reform have been largely ignored by policy makers despite strong public support.[4,15,16] Instead, alcohol is increasingly treated as an ordinary consumer product that should not be subject to special public health-oriented regulatory rules or restrictions. This, in turn, normalizes alcohol consumption, increases availability, lowers prices, promotes multi-billion dollar marketing and advertising practices and product development that target youth, thereby increasing public health and safety risks and harms.

THE ALCOHOL INDUSTRY AND ALCOHOL POLICY: LESSONS FOR MARIJUANA

The gradual shift in alcohol policy from a public health to a commercial framework can be traced to the political and economic prowess of the alcohol industry, which is dominated by a small number of transnational, mostly foreign companies. Nine companies control more than 50% of the U.S. alcohol market.[17,18,19] The market is enormous, with annual consumer expenditures exceeding $200 billion, and the three largest companies – Anheuser Busch/InBev, Miller/Coors, and Diageo – report approximately $20 billion in annual profits.[17,19] These companies are the primary architects and funders of a sophisticated advertising and marketing campaign (increasingly focused on social media) that totaled approximately $3.5 billion in 2011.[20] They also fund and direct a powerful lobbying campaign at both the federal and state levels.[21]

A series of reports from the Center on Alcohol Marketing and Youth document the industry's youth targeting tactics.[22,23,24] Public health research demonstrates that the earlier young people initiate alcohol (marijuana and tobacco) use, the more likely they are to be heavy users in later life.[4,6,12] Further, youth constitute at least 10% of the alcohol market.[12] From the transnational alcohol companies' perspective, maintaining and expanding markets is critical to success, and engaging youth early is central to market maintenance and expansion. These powerful companies vigorously, and usually successfully, oppose regulatory proposals that restrict their ability to market alcohol as an ordinary commodity and to reach a youth market. Their political clout should not be underestimated.

Another common misconception is that opposition to regulation by the alcohol industry reflects an inevitable conflict between commercial and public health interests. The handful of transnational companies that largely control the production tier of the industry do in fact oppose most public health strategies that have been proven effective and conflict with their market expansion goals. They exert enormous influence over wholesalers and retailers, making it difficult for other industry members to accept or support public health efforts. Nevertheless there are numerous examples of alcohol industry members supporting public health goals. For example, small producers (e.g., craft brewers, small wineries) have largely avoided marketing practices that target youth.[22,23,24] Many retailers support and implement Responsible Beverage Service programs to reduce risks of selling to minors or intoxicated persons and work closely with local communities

and policy makers to reduce community harms.[25] Various tiers of the industry routinely support other restrictions on alcohol availability.

A large, legal marijuana industry is already developing. A marijuana industry investment firm estimates that the legal marijuana market in the United States has grown 47% in the last year – from $1.5 billion in 2013 to $2.7 billion in 2014 – and anticipates continued exponential growth, projecting a $10.8 billion industry in 2019.[26] Legalization in California would account for a large portion of this growth. California is already home to a large medical marijuana industry that provides a possible foundation for establishing a fully legal marijuana market. The challenge for marijuana legalization is to develop regulatory strategies that shape this burgeoning legal marijuana industry so that it is profitable and viable while at the same time maintaining public health-oriented restrictions over the long term. Perhaps the most important lessons from alcohol (and tobacco) policy involve this aspect of the legalization process.

IMPORTANCE OF RELYING ON AND PROTECTING LOCAL REGULATORY AUTHORITY

A key lesson from both alcohol and tobacco policy is the critical role of local governments in developing and enhancing effective regulatory strategies to protect public health and safety, operating within a state-based regulatory structure. Local citizens have more access and influence at the local level than at the state level. In addition, local policy makers are in a better position than state officials to assess adverse impacts of legalization, develop and test innovative strategies for responding to them, and resist the pressures exerted by commercial interests to forego public health and safety initiatives.[27] Local law enforcement and public health officials will likely be on the front lines in addressing the adverse impact of legalization, an additional factor that supports the need for local policy making authority.

The California State Legislature is currently considering proposals to enhance and protect local control over medical marijuana, providing a potential foundation for effective municipal regulation should a legalization initiative be approved by voters.[28] Both the League of California Cities and the California Police Chiefs Association have expressed strong support for local control in the medical marijuana regulatory context.[29]

REPORT OVERVIEW

This report first provides specific recommendations for regulating a legal marijuana market that will reduce risks to young people. It then examines regulatory strategies for shaping the marijuana industry to minimize the divide between industry and public health interests, thereby securing regulatory strategies for protecting youth over time. It concludes with recommendations for structuring government oversight and earmarking revenues generated by fees and taxes. The recommendations are based on research findings and policy development in the alcohol policy field and, to a lesser extent, lessons from regulating the tobacco industry. Many of these recommendations are drawn directly from the National Research Council/Institute of Medicine report ("NRC/IOM Report"): *Reducing Underage Drinking: A Collective Responsibility.*[12] Congress commissioned the report as a means to develop a comprehensive national strategy to address the underage drinking public health crisis.

II. Regulatory Recommendations for Reducing Legal Marijuana's Risk to Youth

A. RECOMMENDATIONS FOR REGULATING MARIJUANA SALES AND MARKETING

1. Establish an age 21-year marijuana furnishing, use, and possession law.

As discussed above, young people face special risks associated with marijuana consumption (notably associated with brain development) until at least 21 years of age. During the 1980s, all states adopted a

21-year drinking age, making it illegal, with some exceptions, for underage youth to possess alcohol and for others to furnish alcohol to them. Before that time, many states maintained an 18-year drinking age. Research shows that this was a highly effective means to reduce youth alcohol consumption and motor vehicle crashes.[12] According to the National Highway Traffic Safety Administration, 24,560 young lives were saved between 1975 and 2005.[30] A major factor in the success of the drinking age law is its impact on alcohol consumption among those not directly affected by the law – those under 18 years of age. Increasing the drinking age made alcohol less available to younger cohorts. Thus the 21-year drinking age serves to delay initiation, a key goal in both alcohol and marijuana policy.[12]

2. Strictly enforce the age 21 marijuana furnishing, use, and possession law with a primary focus on adult providers.

Research demonstrates that focusing enforcement and prevention efforts on retail and noncommercial furnishing of intoxicants such as alcohol (rather than underage possession) is most effective in reducing youth consumption and associated problems.[12,31] Yet many states have lax or non-existent enforcement programs targeting alcohol retailers, and instead prioritize arresting and criminalizing underage possession, which has been shown to be ineffective and raises social justice concerns.[4,32]

Regular and comprehensive compliance checks provide the foundation for enforcing underage drinking laws and provide a model for marijuana enforcement. Specific authorization, mandate, and funding for local law enforcement agencies are critical, since they are in the best position to implement the intervention. Research shows that compliance checks reduce sales to underage drinkers by 35-45%, especially when combined with targeted media and other community activities.[12,31]

A marijuana legalization initiative or law should include a mandated compliance check program that includes adequate funding (see below for recommendations related to funding of enforcement efforts).

3. Limit the sale of products that are attractive to young people or put them at heightened risk of harm.

An important lesson from alcohol and tobacco policy is the need to monitor the types of potentially harmful products allowed in the market before they are introduced into the stream of commerce; once introduced, it is very difficult to have them removed.[33] As a result, many products are available that have particular youth appeal, including candy and gum cigarettes, alcopops, and alcoholic whip cream and milk shakes. Packaging for these and other products often use imagery that is attractive to youth. Taking this lesson to heart, alcohol policy activists are seeking legislation to prohibit powdered alcohol from entering the market before a producer can obtain federal approval for its introduction.[34]

Guidelines should be provided for marijuana products to ensure that they do not have special appeal to youth...

Guidelines should be provided for marijuana products to ensure that they do not have special appeal to youth and should include prohibitions of such products as hard candies, candy bars, and lollipops. Approval by a public health panel of experts should be required before any new product is allowed on the market. If edible marijuana products are allowed, potency should be strictly regulated and special packaging should be required that avoids youth appeal and provides adequate cautions regarding the contents and dosage. Restrictions on youth access to marijuana delivery devices (e.g., vaporizers, vape pens, e-cigarettes) should also be considered.

4. Restrict marketing and advertising practices that appeal to youth.

There is now a significant body of research establishing the link between alcohol and tobacco advertising and marketing exposure and youth consumption.[35,36] Numerous studies have also documented these

industries' sophisticated marketing strategies targeting youth, which led to large court settlements of unfair business practices claims brought against tobacco companies in state and federal courts.[21,22,23,37]

Similar marketing strategies are likely to develop in the legal marijuana market as it matures over time unless regulatory controls are put into place. This risk will be heightened if large, transnational corporations are allowed to enter and play a significant role in the marijuana market, a topic discussed below.

Regulating legal marijuana advertising and marketing will be complicated by the fact that the California and U.S. Constitutions provide some protection to truthful, non-deceptive commercial speech.[38] This protection does not extend to marijuana advertising targeting underage youth, however, since the transactions would be illegal, and does not preclude reasonable time, place and manner restrictions.

Marijuana advertising and marketing restrictions that should be considered and that are consistent with Constitutional requirements include:

- Prohibit false and misleading advertising, which includes advertising that, irrespective of falsity, creates a misleading impression through ambiguity, omission or inference or through the addition of irrelevant, scientific or technical matter;
- Prohibit advertising that targets underage youth;
- Define "targeting" as any advertisement that reasonably would be expected to induce minors to purchase or consume marijuana or which is placed in venues where the audience is likely to include 15% or more underage youth (the standard used in tobacco control);
- Prohibit advertising on in-state television and radio programs that have a youth audience exceeding 15%;
- Impose a similar 15% youth audience limit for marijuana advertising in magazines;
- Prohibit marijuana billboards and other outdoor advertising within 1,000 feet of youth-sensitive locations, including schools, parks, and libraries;
- Require prominent, rotating health warning messages on all marijuana packaging and advertising;
- Prohibit advertising and packaging that uses images or slogans with particular youth appeal;
- Require effective age verification software on all websites sponsored by industry members, including webpages sponsored on social media websites such as Facebook and Twitter;
- Prohibit industry sponsorships of any college or school events or any sporting, music, and other events that occur on public property;
- Prohibit industry sponsorships of any sporting, music or other event on private property where underage youth are anticipated to make up 15% or more of the intended audience;
- Fund a large mass media campaign through tax revenues (see below), and include in the mandate of the campaign the inclusion of counter-advertising messages.

These regulatory options have been proposed and/or implemented in various forms in addressing tobacco and alcohol advertising targeting youth.[13,35,39]

5. Keep marijuana prices artificially high, although not too high to foster underground market and covert cultivation.

A large body of research studies shows that raising alcohol and tobacco prices decrease youth consumption and related problems.[40] The NRC/IOM Report made the following recommendation based on these findings:

"Congress and state legislatures should raise excise taxes to reduce underage consumption and to raise additional revenues for this purpose. … [E]xcise tax rates for all alcoholic beverages should be indexed to the consumer price index so that they keep pace with inflation without the necessity of further legislative action."[12 (at p. 244)]

Taxes also provide a mechanism for funding prevention, treatment and enforcement programs (see below for discussion).

The need for indexing taxes to the Consumer Price Index is critical; alcohol taxes have been falling steadily relative to inflation and are now at historically low rates.[41] Beer, wine and distilled spirits are taxed at different rates, with distilled spirits rates generally much higher than rates for beer and wine. Public health research supports equalizing alcohol taxes based on alcohol content.[41,42] A recent RAND report (the "RAND Report") outlines various methods for taxing marijuana in a legal environment. In general, tax rates should be consistent across products based on their intoxicating effects.[43]

California's alcohol tax policy provides a poor model for developing a sound marijuana tax policy. Its alcohol taxes are among the lowest in the country, with wine and beer taxes particularly low, and they are steadily dropping over time due to inflation.[44] The revenues go to the general fund, and prevention, treatment enforcement, and educational initiatives lack adequate funding. Repeated efforts to increase the tax, including a failed initiative in 1990, have been successfully opposed by the powerful alcohol industry lobby in the state.[45,46,47]

Excessively high marijuana tax rates can encourage illicit production. This problem can be addressed by: (1) establishing a regulatory structure that makes tax collection routine; and (2) strict enforcement for those illegally operating outside the regulatory structure.[33,41] (See below for discussion of the regulatory structure and funding of enforcement efforts.) Initial tax rates may need to be more moderate, with increases put into effect over time as the regulatory structure is established and illicit production is controlled. The phasing in of the tax rates should be included in the initiative or legislation that legalizes marijuana. This strategy has been highly successful in alcohol policy. After Prohibition, illicit alcohol production was a major problem; today taxes are routinely collected and illicit production accounts for only a tiny portion of the alcohol market.[40,41]

State-imposed minimum retail prices represent an additional pricing strategy for reducing underage alcohol consumption. Minimum pricing affects the cheapest products on the market, which are likely to be the most popular among youth because of their limited resources. [48]

Other marketing strategies that rely on discount prices should also be restricted or banned, such as happy hours and quantity discounts.[13,14]

6. Strictly limit the number, type, location, and sales practices of marijuana retail outlets.

Research has demonstrated a strong positive relationship between alcohol outlet density, alcohol misuse, unintentional injuries and crime.[49] High concentrations of alcohol outlets in small geographic regions (e.g., within a 3-4 city block area) appear to be particularly problematic.[35] Studies have shown that these relationships extend to increased underage drinking and youth violence.[50] Limiting the number of retail outlets also makes monitoring retail practices and enforcing compliance easier and less costly. These findings are likely to be applicable to marijuana retail outlets.

Also important are the types of marijuana outlets permitted: In general, retail outlets that are frequented by young people (e.g., convenience stores and other outlets in residential areas) increase the risk of youth access and related problems.[51] Marijuana retail sales should be restricted to marijuana-only off-sale establishments, with limited days and hours of sale. On-premises marijuana consumption should be banned in light of the risks associated with bars, nightclubs and other on-sale establishments. Research suggests that 40-50% of drinking driving incidents originate in these premises, and that binge

drinking is particularly likely to occur.[52,53] Marijuana legalization should be attentive to where retail outlets are placed, avoiding locations close to youth-sensitive activities, such as schools, day care centers, parks, and libraries. Sales staff should be at least 21 years of age and be required to attend training courses that include age identification procedures and techniques for advising consumers on potency and related risks.

The RAND Report provides a detailed list of potential regulatory provisions that address these availability variables (see Table 6.1, pp. 103-105).[43]

7. Ensure product quality and environmental protection, deter public nuisance activities, and limit unauthorized cultivation, distribution and sale.

Marijuana cultivation can cause extensive environmental damage through the use of pesticides and disruption of natural habitats.[54,55] Cultivation amounts, personal use exemptions, and transfers between growers, processors, distributors and retailers need to be monitored to deter illegal markets.[33] Commercial cultivation should be prohibited in residential areas to reduce risks of public nuisance activities.

B. RECOMMENDATIONS FOR REGULATING THE STRUCTURE OF THE MARIJUANA INDUSTRY

1. Establish a three-tier industry structure (producer/wholesaler/retailer) and exercise direct state control over the wholesale tier.

After Prohibition, federal and state governments established a three-tier structure for the alcohol market. Eighteen states adopted a "monopoly" or "control" system, where the state operated retail and/or wholesale operations for at least some portion of the market.[11] Research has found that monopoly systems are effective in reducing alcohol problems.[56] Nevertheless, the state monopoly systems have been steadily eroded in the face of commercial pressures, with state operations gradually being turned over to privately-held companies.[57]

The three-tier system has three key regulatory advantages: (1) it protects retailers from undue pressure from producers regarding sales and advertising practices; (2) it facilitates the collection of taxes and imposition of minimum pricing requirements; and (3) it facilitates monitoring the activities of both the retail and producer tiers, including quality control, environmental practices (e.g., use of pesticides), and production limits.[58]

The state should maximize these advantages by exercising direct control over the wholesale tier of the marijuana market. This can be accomplished by either establishing state-run wholesale operations or by contracting with private providers, with the contractors performing the state's monitoring and enforcement functions based on specifications provided in the contract.

2. Limit the retail tier to not-for-profit organization, as is currently the case with medical marijuana dispensaries. Direct government-controlled retail outlets should also be an option for local governments.

Many California communities have medical marijuana cooperatives and collectives that operate dispensaries for their members, and which are required to be not-for-profit operations.[59] Many local governments have already enacted zoning ordinances to restrict their number and location.[60] Should marijuana be legalized, one option is to allow existing dispensaries to become legal marijuana retail outlets, repeal the requirement that they sell only to members, and maintain the requirement that they operate as non-profit organizations. Any new retail outlets should also be required to maintain a non-profit status.

Direct control over the retail tier should also be considered, the model used after alcohol Prohibition in 18 states. State-controlled retail outlets could be allowed either as an alternative to or in addition to non-profit retailers. As discussed below, local governments can be given the authority to determine which model to adopt. Minnesota and Maryland allow at least some local governments to operate government-controlled alcohol retail outlets.

3. If medical marijuana continues to be available as a separate commodity at retail outlets, rules regarding its distribution should be substantially revised to ensure that only those under direct medical supervision with severe medical conditions have access.

An additional issue to be addressed if legalization occurs in California is whether medical marijuana should be regulated separately, maintaining the current retail structure, and exempting it from taxes and fees in light of its medical function. This option should only be considered if the rules regarding medical marijuana retail access are substantially revised. Only those individuals who are 21 years of age or older, under direct medical supervision, and suffering from severe medical problems should be permitted to purchase medical marijuana. Current medical marijuana rules are easily circumvented by those without serious medical conditions. They therefore may undermine the new regulatory structure being developed under legalization, and may increase availability to youth.

4. Impose restrictions on the production and retail tiers of the industry that promote responsible, small business operations.

As discussed in the introduction, a key public health goal in structuring the marijuana industry is to limit the size of particular companies. Small businesses are more likely to be responsive to community and public health concerns, more easily regulated at the local level, and less likely to engage in sophisticated mass marketing strategies and lobbying campaigns. This goal can be accomplished through the following regulatory provisions:

- Limit the size and number of cultivation and production companies and restrict the number of marijuana plants that can be grown and processed (including the amount of edible products).
- Restrict the number of retailers as well as the amount of marijuana that an individual retailer can sell on a monthly or annual basis.
- Consider requiring producers as well as retailers to be non-profit organizations.
- Prohibit the accumulation of licenses by a single individual or corporation.
- Prohibit license transfers. (License transfers can create a private value for licenses that far exceed the cost of obtaining a state license. Anyone leaving the business should have to surrender his/her license, and anyone entering the business should be required to obtain a new license.)

Small businesses are more likely to be responsive to community and public health concerns, more easily regulated at the local level, and less likely to engage in sophisticated mass marketing strategies and lobbying campaigns.

5. Impose license fees on producers and retailers adequate to cover the cost of licensing, monitoring industry compliance, and enforcing regulatory provisions.

Taxpayers should not be subsidizing the costs associated with regulating the marijuana industry. License fees that are adjusted annually should be imposed that cover these costs.

C. RECOMMENDATIONS FOR STRUCTURING GOVERNMENT REGULATION AND EXPENDITURES

1. Rely on and protect local control – allow local governments to require a local license or business permit and to impose additional regulations and restrictions that go beyond state controls.

As discussed in the introduction, a key lesson from alcohol and tobacco policy is the importance of delegating to local governments substantial authority to regulate the alcohol and tobacco markets, operating pursuant to state guidelines.[27,61] This model should be adopted for marijuana legalization. Local governments are in a better position than the state to regulate land uses, shape the availability structure to facilitate enforcement and monitoring, and respond to new developments in the market.[27,36] State regulation should establish the basic regulatory structure, institute quality control standards, and support and guide local licensing and enforcement activities. Local governments should be allowed to require dual licensing and impose additional restrictions that enhance and expand state regulations. They should also be given the option of operating government-controlled retail outlets.

2. Place primary responsibility for state marijuana regulation in the California Department of Public Health, with substantial responsibility delegated to local departments of public health.

The federal government and most state governments place primary responsibility for alcohol control in fiscal agencies or independent agencies that have little public health expertise. For example, at the federal level, the Alcohol and Tobacco Tax and Trade Bureau is housed in the Treasury Department. The California Department of Alcoholic Beverage Control is largely devoid of public health expertise. The California Department of Public Health should be given primary responsibility for state regulation of a new marijuana industry collaborating with public safety agencies. The new department can be parallel to the Tobacco Control Program in the Department and work collaboratively with that program's staff. It should be given broad authority to adopt regulations to ensure effective implementation of the legalization initiative and development of quality control and environmental protection standards. Implementation responsibility can be delegated to local public health departments.

3. Ensure adequate revenues for enforcing state and local regulations, monitoring industry activities, evaluating the impact of marijuana legalization, and funding effective prevention, treatment and educational programs.

The economic and governmental costs associated with alcohol problems dwarf the governmental revenues from alcohol taxes.[62] Revenue from federal and state alcohol taxes is primarily used for general fund purposes, ignoring the costs associated with the product and failing to fund prevention, education, enforcement and recovery programs. Funding for research and evaluation projects to assess the impact of alcohol policy changes and industry marketing activities is also inadequate.

A marijuana legalization initiative should avoid this outcome. As discussed above, marijuana legalization should include adequate state and local licensing fees to cover the cost of monitoring industry compliance with the regulatory provisions and enforcing the regulations. A substantial portion of marijuana tax revenues should be earmarked for prevention, recovery, educational, and enforcement programs to mitigate the public health harms that are likely to accompany legalization, particularly those associated with underage youth. Tax revenues should be reserved to support local, community-based organizations that have as their mission reducing and preventing underage marijuana use and problems. Funding should also be earmarked for research and evaluation, including studies on the impact of legalization and methods for reducing harms associated with the legalization process.

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