



Addressing Youth and Cannabis



**Solutions to combat and prevent youth misuse
through a federal regulatory system**



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Executive Summary

The Coalition for Cannabis Policy, Education, and Regulation (CPEAR) presents “Addressing Youth and Cannabis: Solutions to combat and prevent youth misuse through a federal regulatory system,” outlining proven solutions to address youth use and misuse concerns. This policy paper explains youth misuse in the evolving federal cannabis regulation debate, offers solutions within a proposed federal regulatory system, and highlights key findings, including:

- Data reveals youth use either decreases or remains flat in regulated cannabis markets;
- Under government guidance, access to research, and increased exposure to community-driven, science-based after-school programming, cannabis use among young people decreases and prevents intake at an early age;
- Youth cannabis access would probably decline in regulated markets due to a lack of illicit markets.

CPEAR believes local communities should be at the core of any effort to reduce youth use and misuse of cannabis. These efforts include afterschool programs comprised of measurable targets on a timely basis. Additionally, a federal regulatory system should consist of policies to fund community systems and ensure that appropriate resources are available. Finally, a community approach must be driven by data and science to adapt continuously.

Implementing federal cannabis regulation will require a comprehensive approach to account for externalities resulting from widespread access. The most important of which is its impact on youth and the availability of resources to combat any avenues for misuse by that segment of the US population. This policy area is critical as only adults over 21 should consume cannabis, except for treatments proven by clinical trials and a licensed physician has recommended medication.

The solutions presented in this paper make up a substantial part of a comprehensive regulatory system, where public health and safety are inextricably linked with the programs to reduce youth use and misuse.

Contextualizing the Problem: Prevalence of Cannabis Use and Harms in Youth

Section Highlights

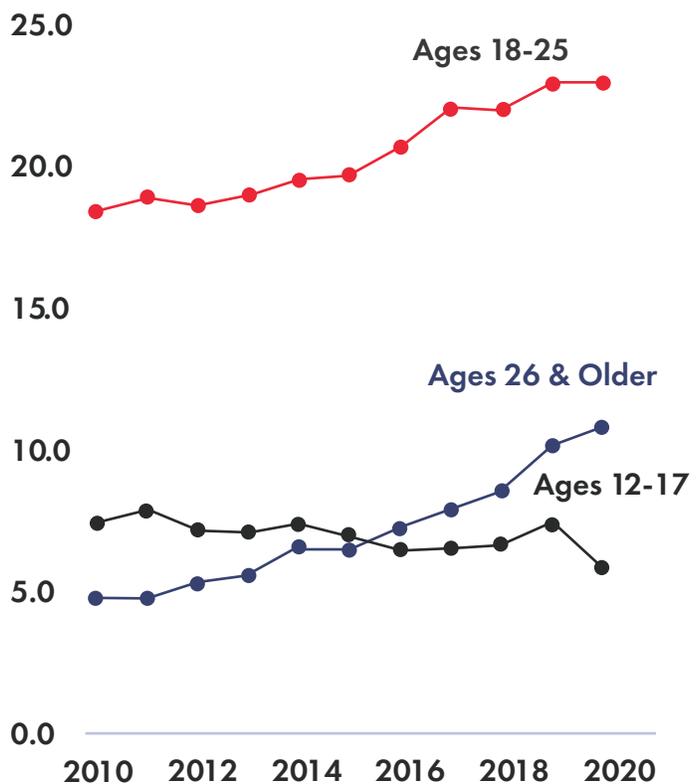
- Prevalence of cannabis use among adolescents (ages 12-17) has stayed relatively stable over the last decade.
- Cannabis-related harms in adolescents are on the rise, but it is unclear whether that is due to legal cannabis laws or not.
- Youth who live in poverty, are racial minorities, and use cannabis monthly are particularly vulnerable to transition from cannabis use to experiencing cannabis-related harms.
- Recent data shows the potential for systemic marginalization in the years following alleged and convicted cannabis possession violations. This includes restrictions on employment, education, housing, etc.

What is the Prevalence of Cannabis Use Among Youth?

As shown in Figure 1, past-month cannabis use among adolescents has stayed relatively stable since 2010. For example, in 2010 about 7% of adolescents used cannabis in the past month compared to about 6% in 2020. However, multi-racial, Black, and American Indian/Alaska Native adolescents are more likely to use cannabis regularly than White adolescents,^{1,2} a result that may be linked to broader existing social inequities and health disparities. Further, there was a notable decrease in use among adolescents in 2020, although it is unclear if that is a product of limited access due to the COVID-19 pandemic.

Figure 1

U.S. Past-Month Use Prevalence



What is the Prevalence of Cannabis-Related Harms Among Youth?

Unfortunately, the rates at which adolescents use cannabis on a daily basis has increased among those who previously used the product on a monthly basis. (See Figure 2). This trend is concerning because daily cannabis use among adolescents is associated with significantly increased risk for later Cannabis Use Disorder (CUD), worse educational outcomes, problematic tobacco use, use of illicit substances, and suicide attempts.³ As defined by Yale Medicine, CUD is the continued use of cannabis despite significant negative impact on one's life and health. The last decade has also witnessed the number of adolescent cannabis-related hospitalizations triple such that approximately 1-4% of all adolescent

1 [Race/ethnicity and marijuana use in the United States: Diminishing differences in the prevalence of use, 2006 to 2015 \(nih.gov\)](#)

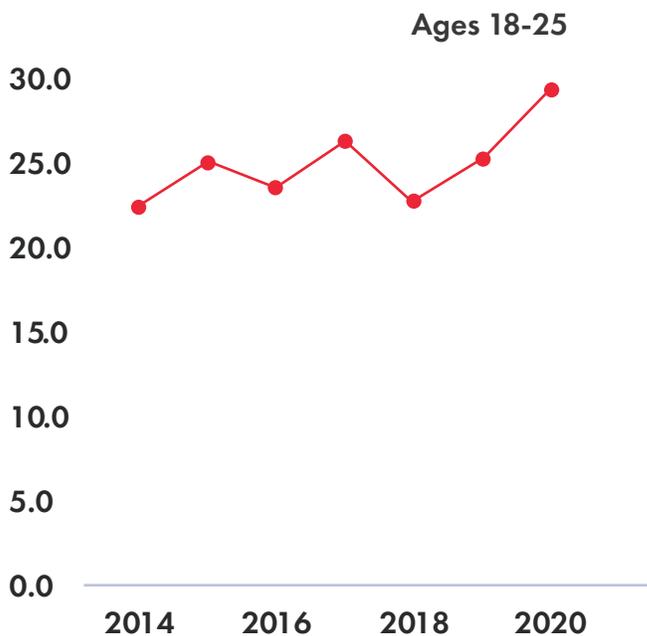
2 [Race/Ethnicity Differences in Trends of Marijuana, Cigarette, and Alcohol Use Among 8th, 10th, and 12th Graders in Washington State, 2004-2016 - PubMed \(nih.gov\)](#)

3 https://espace.curtin.edu.au/bitstream/handle/20.500.11937/7449/204908_132440_adolescentcannabis_Lancet_Psychiatry.pdf?sequence=2

hospitalizations in the U.S. are accounted for by cannabis-related incidents.⁴ The average potency of tetrahydrocannabinol (THC), the principal psychoactive ingredient in cannabis, used by adolescents and adults alike, has also risen considerably in the last few years.⁵ The average potency of tetrahydrocannabinol (THC), the primary intoxicating compound in cannabis, has also risen considerably over the last decade. This is particularly concerning for adolescents who are developmentally vulnerable as higher potency cannabis use has been associated with CUD, psychosis and mood disorders...⁶

Figure 2

% of Adolescents Past-Month Users
Who Use Date



These findings highlight that fewer adolescent are engaging in low-risk cannabis consumption, but more are exhibiting high-risk cannabis use patterns.

4 <https://www.sciencedirect.com/science/article/abs/pii/S1054139X21003852>

5 [Prevalence and modes of cannabis use among youth in Canada, England, and the US, 2017 to 2019 - ScienceDirect](#)

6 [Cannabis Use, Cannabis Use Disorder, and Comorbid Psychiatric Illness: A Narrative Review - PubMed \(nih.gov\)](#)

As with adults, youth cannabis use does not perfectly equate to measurable harm but growing evidence does suggest that cannabis use among youth is more likely to result in overall negative health and social outcomes.^{7,8} Cannabis use can be attributed to negative physical, mental, and social outcomes, referred to in this paper as cannabis-related harms. While cannabis use generally increases the risk of cannabis-related harms,⁹ multiple factors increase the risk of experiencing negative academic, vocational, mental health, cognitive, and substance misuse outcomes later in life. Risk factors include the age of first cannabis use, frequency of use, and potency of tetrahydrocannabinol (THC).

Young people are particularly vulnerable to cannabis-related harms because critical development in physical, neurocognitive, and psychosocial health occurs during adolescence (ages 12–17) and young adulthood (18–25). Cannabis use during these developmental stages, particularly when used regularly or early on in adolescence, may impair memory and decision making, which negatively affect long-term academic and career outcomes.¹⁰ Although the exact reasons why cannabis use substantially and negatively impacts youth outcomes is not yet fully understood, growing evidence suggests that youth use can alter the development of brain regions that control key cognitive functions that are critical to healthy decision-making.¹¹ Recent estimates suggest that a greater proportion of adolescents in the population meet criteria for CUD than do those 26 and older.¹² This equates to over 1.2 million adolescents who have CUD in the U.S.

Based on this evidence, there is general agreement among scientists that youth cannabis use (unless indicated to treat specific medical conditions substantiated by evidence) increases risks of harm to a greater extent than any potential benefits.

7 [Young-adult compared to adolescent onset of regular cannabis use: A 20-year prospective cohort study of later consequences - PubMed \(nih.gov\)](#)

8 [Association of Cannabis Use in Adolescence and Risk of Depression, Anxiety, and Suicidality in Young Adulthood: A Systematic Review and Meta-analysis - PubMed \(nih.gov\)](#)

9 [Effects of Cannabis Use on Human Behavior, Including Cognition, Motivation, and Psychosis: A Review - PubMed \(nih.gov\)](#)

10 [Associations Between Marijuana Use Trajectories and Educational and Occupational Success in Young Adulthood - PubMed \(nih.gov\)](#)

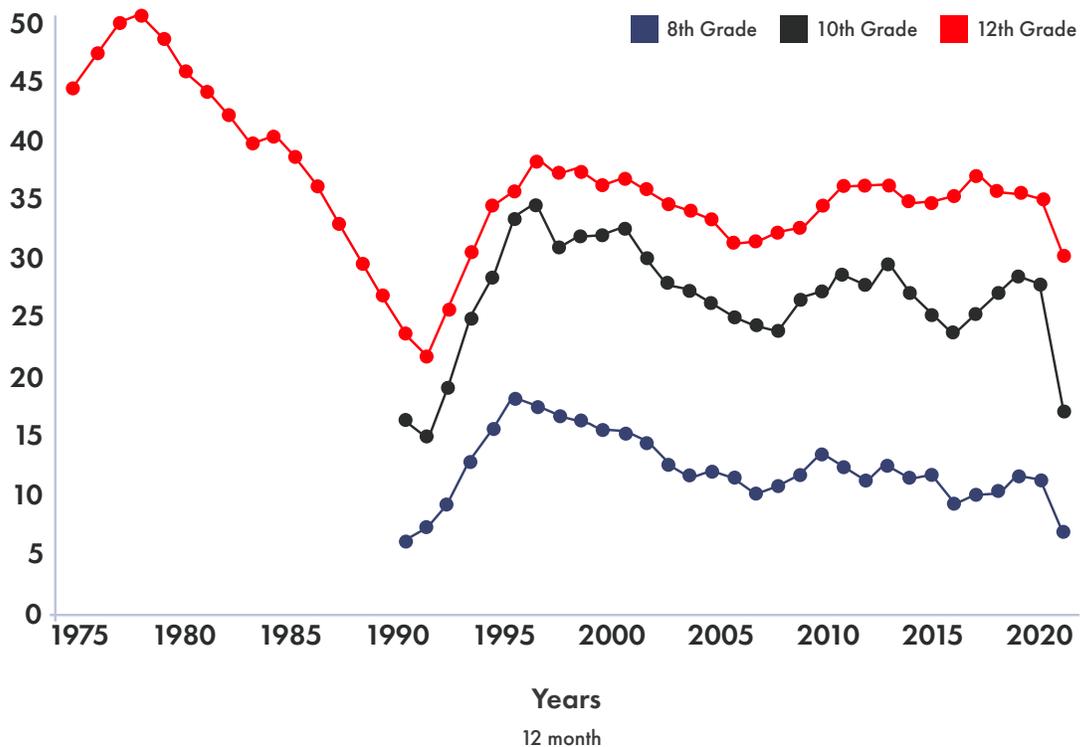
11 [Adverse Effects of Cannabis on Adolescent Brain Development: A Longitudinal Study \(nih.gov\)](#)

12 <https://www.samhsa.gov/data/report/2020-nsduh-detailed-tables>

What are the Impacts of Cannabis Legalization on Youth Cannabis Use Prevalence and Cannabis-Related Harms?

LEGALIZATION IMPACTS ON YOUTH PREVALENCE OF CANNABIS USE. State legalization of cannabis has *not*, on average impacted the prevalence of cannabis use among adolescents. In other words, states with medical and/or adult use laws are not seeing larger increases in adolescent use relative to states where use remains illegal.¹³

Marijuana: Trends in 12 Month Prevalence of Use in 8th, 10th and 12th Grade



Source: Monitoring the Future¹⁴

LEGALIZATION IMPACTS ON YOUTH CANNABIS-RELATED HARMS. Unfortunately, a growing number of studies suggest that state legalized cannabis increases youth cannabis-related harms such as CUD, cannabis-related hospitalizations, and driving under the influence of cannabis.¹⁵

13 <http://monitoringthefuture.org/data/21data.htm>

14 [Medical marijuana laws and driving under the influence of marijuana and alcohol - PubMed \(nih.gov\)](#).

15 [The Effect of Age of Initiation of Cannabis Use on Psychosis, Depression, and Anxiety among Youth under 25 Years - PubMed \(nih.gov\)](#)



One potential reason is that cannabis legalization may lead to an increase in cannabis-related harms, not increased use. This could be the result of an evolution in consumer choice, and the availability of higher potency products in a regulated market (e.g. concentrates). Such products increase the risks for CUD, psychosis, and mental health.¹⁶

While the body of evidence for cannabis-related harms surrounding legalization is growing, it is challenging to identify *specific* legal provisions (laws and regulations) that may help or exacerbate cannabis-related harms in youth. This research is pivotal for future states seeking to enact legalization in a fashion that protects youth. Further, as the federal government begins to design a national strategy for cannabis legalization, this research may help replace heterogenous laws with consistent policies that contribute to healthy outcomes.

Co-occurring Cannabis and Mental Health Risks and Opportunities

While it is unclear whether mental illness could be caused by cannabis use, the presence of the ailment may be a contributing factor to increased cannabis use. Data shows that depressive episodes in adolescents and adults have increased by 52 and 63 percent, respectively, over the past 15 years. This likely suggests that mental health and cannabis use are related. This relationship is especially important to note as the nation is recovering from a pandemic, during which time mental health needs and cannabis use has risen. In the years ahead, there will be a critical need for mental health and CUD screenings, as well as novel treatment options.

¹⁶ [The Effect of Age of Initiation of Cannabis Use on Psychosis, Depression, and Anxiety among Youth under 25 Years - PubMed \(nih.gov\)](#)

Policy Lever 1: Cannabis Use Prevention for Adolescents

Section Highlights

- A broad array of effective and affordable approaches exists for preventing future cannabis use and reducing existing patterns of cannabis use.
- Effective prevention programs fundamentally shift perceived norms surrounding cannabis use, enhance important psychosocial skills, integrate community-wide efforts, or engage in all of the above.
- Effective prevention programs potentially can save state governments as much as \$38 in care costs for every \$1 spent by simultaneously reducing cannabis, alcohol, tobacco, opioid, and other substance use.
- “Whole Person” prevention frameworks emphasize the development of broad-skill development, using afterschool programs and integrated prevention programs as a foundation. The wholistic nature of the approach is more likely to yield improved youth use prevention outcomes.

Prevention Approaches

Cannabis prevention approaches are designed to provide services that result in fewer first-time cannabis users, as well as fewer individuals who transition to using cannabis regularly. Prevention approaches are generally considered to provide the greatest impact on long-term population health and economic savings by redirecting youth away from early substance use that decreases the odds of future substance use disorders, lower employment and educational attainment, and co-occurring mental health issues. Despite the clear benefits of cannabis prevention approaches, their success is contingent on providing a broad range of services that are carefully planned, well-funded, and integrated. A number of instructive programs exist to address youth substance use abuse.^{17, 18}

KEY DEFINITIONS. The below sections reference several related but unique terms that can be clarified with definitions. We are defining *afterschool programs* simply as funded programs that provide supervision to school-age children in the hours after school ends. When we reference *afterschool and school-based prevention programs*, we are specifically referencing prevention programs that are implemented within the context of an afterschool program or during the school day.

AFTERSCHOOL AND SCHOOL-BASED PREVENTION PROGRAMS. Afterschool programs are attended by over 10 million youth who are commonly from underrepresented groups¹⁹. Although not all afterschool programs incorporate prevention programs, the proportion that do continues to increase. Many afterschool and school-based prevention programs aim to enhance a broad range of life skills such as social-emotional learning, self-control, and adaptive coping skills which can increase academic achievement, positive social behaviors, and reduce problem behaviors^{20,21,22}. Many of these skills serve as protective factors against future substance use among adolescents. Afterschool programs can also help provide structure for vulnerable adolescents that may not otherwise have parental supervisions immediately after school. Such programs may, as a result, help to reduce risk factors of future cannabis use and other substance use among adolescents. After school programs also provide a clear point of contact where prevention and other important resources can be directed. Moreover, afterschool programs are attended more commonly by those from underrepresented groups who also tend to be at higher risk to begin to use cannabis in the first place. Together, these factors suggest that afterschool programs can help to serve as a foundation for a “whole-person” approach to cannabis prevention. Such an approach begins with targeting fundamental skills for success in life and increasing prevention

17 <https://asklistenlearn.org/>

18 <https://www.sadd.org/>

19 <http://www.afterschoolalliance.org/documents/AA3PM-2014/National-AA3PM-2014-Fact-Sheet.pdf>

20 https://www.eccnetwork.net/sites/default/files/media/file/Durlak_A_meta-analysisof_after_school.pdf

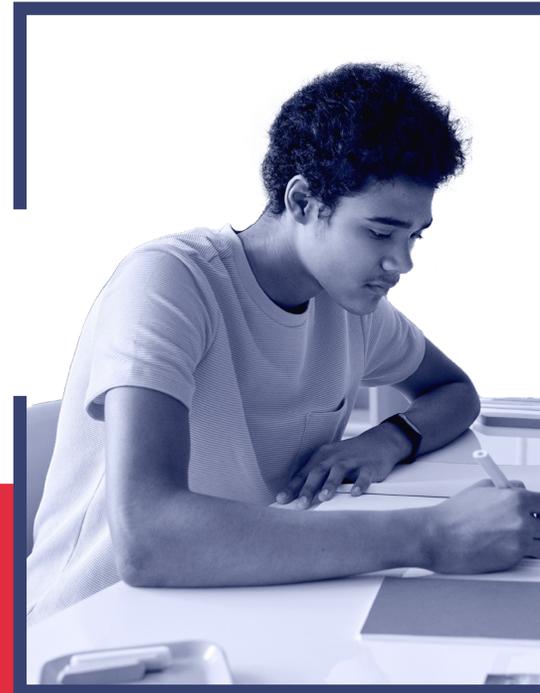
21 <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC2840398/>

22 <https://link.springer.com/content/pdf/10.1007/s10464-010-9300-6.pdf>

approaches to address more specific skill deficits and risk factors. In turn, this approach may decrease the odds of future substance use.²³

Prevention programs implemented through afterschool programs are often led by a teacher or staff member. Activities used to improve social-emotional skills include group discussions, group activities, role-playing, board games, video lessons, modeling, and student workbooks. School-based and afterschool programs tend to be administered over many sessions during the school year. The “LifeSkills Training (LST)©” approach is one such program, which has been validated with elementary, middle, and high-school students.²⁴ The “Project Towards No Drug Abuse (Project TND)” program has been found to be an effective prevention approach for cannabis and other substances among high school students.²⁵ Other validated afterschool and school-based programs focus on addressing mental health issues in youth as an indirect means of preventing future or existing substance use patterns. For example, “Preventure” is administered by licensed psychologists across a pair of 90-minute workshops that include emotional reflection exercises, goal setting, and breaking down personal, emotionally challenging experiences using validated CBT techniques.²⁶ Afterschool and school-based programs that implement skills training components tend to be effective prevention methods and have boasted favorable savings in care costs relative to costs of implementation.

Some evidence suggests that afterschool programs might have a particularly important role in youth prevention. For example, a recent review of school-based cannabis prevention programs found that administering more sessions and having staff other than teachers deliver the intervention in an interactive manner—an approach conducive to afterschool programs—resulted in more effective prevention of cannabis use.²⁷ Moreover, a recent study by RAND concluded that, despite considerable societal savings for every dollar spent on school-based prevention programs, the primary downside to



23 https://www.sciencedirect.com/science/article/pii/S1054139X07001048?casa_token=OlzZisQnblQAAAAA:-gOE3UilHqdfKqiW2gSvMW2nCBYuY0_AyCFJl9Og-C3_gDneQ87GX59BvSg_F6FChJl0348ZSHx8

24 [Life Skills Training: Empirical Findings and Future Directions \(link.springer.com\)](#)

25 [Project Towards No Drug Abuse: A Review of the Findings and Future Directions \(claremont.edu\)](#)

26 [Brief, personality-targeted coping skills interventions and survival as a non-drug user over a 2-year period during adolescence - PubMed \(nih.gov\)](#)

27 [A meta-analytic review of school-based prevention for cannabis use - Database of Abstracts of Reviews of Effects \(DARE\): Quality-assessed Reviews - NCBI Bookshelf \(nih.gov\)](#)

administering prevention programming during the school day is that it directly competes with important academic activities, unlike afterschool programs.²⁸ Afterschool programs also are conducive to providing “warm handoffs” to services and coordinating with parents—both important contributions to broader social health outcomes. It is important that afterschool programs and their partners carefully collaborate and work together to ensure that services are truly integrated, and their potential combined effectiveness maximized.²⁹ This integration should be inclusive of parents and adults with whom individuals have an inherent or cultivated pre-existing relationship. These individuals could be trained on how best to address discussing cannabis use with underage individuals. Therefore, state and federal funding for research and implementation efforts designed to enhance afterschool programs would be particularly well-placed.

BRIEF COUNSELING AND MONITORING APPROACHES. An increasingly common and promising prevention approach provides one or two intervention sessions that includes a counselor using motivational interviewing techniques to inspire youth to create and commit to adaptive goals, providing feedback on cannabis use patterns relative to peers, and prompting youth to consider the future benefits of avoiding or reducing substance use. These interventions are designed to provide customized one-on-one support from counselors to youth to address misperceptions and norms regarding cannabis use and to provide initial skills training to help youth pursue healthy, substance-free activities.³⁰ One of the more promising of these approaches is the “Teen Marijuana Checkup,” which has been used in Colorado, Washington, and multiple other states as a widespread prevention tool. The program can be described as an in-school, voluntary participatory and intervention program wherein teens may “take stock” of his/her use.

COMMUNITY-BASED APPROACHES. Community-wide initiatives generally leverage coalitions of community organizations, clinicians, parents, and schools to plan and implement multiple prevention efforts.³¹ Community-based approaches require organizing funding and other resources and assessing the effectiveness of prevention efforts. They typically integrate school-based, afterschool, and parent involvement programs with community-wide practices or policy changes. Many community-based approaches and afterschool programs incorporate a Positive Youth Development (PYD) framework, a strength-based approach to care, empowering and supporting young people to envision and meet their potential.³² In general, however, community-based programs focus on integrating resources amongst a broad array of community stakeholders.

28 [What Are the True Benefits of School-Based Drug Prevention Programs? | RAND](#)

29 [Understanding “comprehensive afterschool” in the American Rescue Plan \(afterschoolalliance.org\)](#)

30 [Preventing Marijuana Use Among Youth \(samhsa.gov\)](#)

31 [The Oxford Handbook of Crime Prevention - Hardcover - Brandon C. Welsh; David P. Farrington - Oxford University Press \(oup.com\)](#)

32 [Positive Youth Development \(youth.gov\)](#)

One of the most effective community-based programs for preventing youth cannabis and other substance use is the PROSPER program (PROmoting School-community-university Partnerships to Enhance Resilience). PROSPER implemented a broad range of school and family-based services in 28 communities in two states. It includes 1) groups of community members connected with schools and led by a PROSPER project manager, (2) prevention coordinators who interface with public research universities, and (3) university researchers in each state. Starting with 6th grade students, PROSPER has been shown to reduce the proportion of youth who ever use cannabis by age 19, the frequency of cannabis use among youth already using, and the use of cigarettes, alcohol, and several forms of illicit substances.³³ Although the effects of PROSPER and similar approaches are not large in scale (e.g., about 9% reduction in youth risk of ever using cannabis between 6th grade and 19 years old), they are cost effective. PROSPER is estimated to save \$38 in health costs for every \$1,³⁴ suggesting community-based approaches are prudent from both health and economic perspectives.

DIGITAL INTERVENTIONS. Digital interventions show promise to 1) strengthen community-based approaches, 2) further the scope and generality of the prevention approaches to youth experience, and 3) improve the cost-benefit ratios of prevention efforts. For example, greater use of digital software can and should be leveraged to organize and plan community-wide initiatives and to collect data on program implementation and substance use outcomes. Moreover, digital approaches can be used to deliver customized and automated digital interventions for youth outside of school and to integrate such approaches with other structured or semi-structured settings, such as afterschool programs. Digital interventions could reduce the costs of implementing many prevention approaches by replacing live clinicians with equally effective automated digital interventions and by increasing the efficiency and speed of communication, measurement, and implementation of community-wide prevention services.

A DIGITAL COMMUNITY. Like most prevention efforts, effective cannabis youth prevention approaches require considerable initial financial and community investment. Attempting prevention efforts in isolation from other community-based efforts can contribute to a lack of buy-in from government officials, due to reduced program effectiveness and health cost savings.

To address these issues, there is an increasing push from researchers to develop and examine the effectiveness and efficiency of digital prevention frameworks that integrate individualized interventions, school-based programs, and community-based programs into a single platform that connects stakeholders, resources, and youth to consolidate prevention efforts.³⁵ However, there is currently insufficient research and implementation funding at state and federal levels to escalate these efforts. The federal

33 [PROSPER Delivery of Universal Preventive Interventions with Young Adolescents: Long-term Effects on Emerging Adult Substance Misuse and Associated Risk Behaviors \(nih.gov\)](#)

34 [Life skills training: preventing substance misuse by enhancing individual and social competence - PubMed \(nih.gov\)](#)

35 [On the use of digital technologies to reduce the public health impacts of cannabis legalization in Canada \(link.springer.com\)](#)



government is uniquely positioned to fund such efforts considering that, if such programs were to be funded by cannabis tax revenue alone, states without active markets would be left behind.

Public Education Campaigns

To date, significantly more is known about what not to do when designing cannabis public education campaigns than what to do. Several studies have shown that public messaging that focuses only on harms associated with cannabis use or that pushes abstinence-only messaging not only fails to improve educational or cannabis use outcomes but also may backfire by producing too much reactivity among youth.³⁶

The most successful public education campaign to date is the “Good to Know” program that originated in Colorado, which provides evidence-based educational statements about laws and potential health effects of cannabis use in a judgement-free fashion. A research study found that the campaign not only increased awareness, but significantly increased perceptions of risk associated with CUD, driving under the influence of cannabis, and negative cognitive outcomes associated with cannabis use.³⁷ Although this study did not use a control group, which makes the true effectiveness of the campaign difficult to determine, the “Good to Know” program has been shown to reduce perceptions of risk associated with cannabis use, which, in turn, tend to relate to healthier cannabis use patterns in the future.³⁸

Public education campaigns should also seek to address adjacent issues, such as youth access to cannabis. While it is important to ensure that underage individuals do not gain access to cannabis, it

36 [A Rebuttal-Based Social Norms-Tailored Cannabis Intervention for At-Risk Adolescents | SpringerLink](#)

37 [MJ_RMEP_FinalMJReport17.pdf \(colorado.gov\)](#)

38 [MJ_RMEP_FinalMJReport17.pdf \(colorado.gov\)](#)

is important to highlight other sources of access, including family and friends. A comprehensive, yet targeted, approach to public education of this issue should include the individual and societal effects of providing the provision of cannabis to underage individuals.

This approach should consider moving beyond the traditional method of communicating, such as messages to include training on age verification for dispensary workers and other service providers in the industry.

Moving forward, there is a desperate need for more funding and research focused on examining how different public messaging campaign components influence cannabis use, instead of only relying on risk perceptions, attitudes, and awareness. If effective at reducing use, such an approach could be both scalable and cost-effective for prevention.

Policy Lever 2: Equitable Youth-Centric Regulations

Section Highlights

- State medical cannabis laws differ on the minimum age for purchasing cannabis, but all states with adult use laws set the minimum age to 21 and require that retail dispensaries check IDs.
- There is considerable variability across states regarding consequences of underage purchasing and selling, but very few states incorporate CUD or mental health screening in the context of underage violations.
- More evidence than not suggests that non-White youth are more likely to experience cannabis allegations relative to their white peers, which likely further marginalizes these groups by increasing risks of criminal justice involvement in the future.

for potential CUD and mental health disorders and connect youth to prevention and treatment programs, as well as notify parents of violators. The recently approved Cannabis Regulatory Enforcement Assistance and Marketplace Modernization (CREAMM) Act offers an instructive path to ensuring enforcement of cannabis laws do not harm equity outcomes for underaged minorities. This approach should be empowered by federal cannabis regulation. Formalized efforts to implement “warm hand-offs” from law enforcement to health screening, prevention, or treatment personnel could both target disproportionate cannabis use and harms experienced by marginalized populations and enhance large-scale youth prevention efforts. Importantly, policymakers would have to consider additional punitive, yet temporary penalties for repeat offenders.

Like almost all topics surrounding youth cannabis use and prevention, there is a real need for more research on how age-specific provisions of legal cannabis laws affect youth cannabis use and cannabis-related harms. The legal cannabis market increases the availability of high-potency products, which have been associated with an increased risk of psychosis and CUD for some. However, unlike the tobacco and alcohol industries, there remains a pervasive illicit cannabis market that can easily provide youth with access to cannabis. Cannabis purchased illicitly is more likely to contain contaminants, including other illicit substances relative to products available in a regulated market. Therefore, increased vigilance of legal sales of high-potency products may best balance reducing risks of youth cannabis-related harms.

Marketing and Advertising

Most U.S. states with legal cannabis laws have restricted cannabis advertising; however, restrictions vary widely. Reducing youth exposure to advertising would likely be effective, as growing evidence suggests that greater youth awareness and brand recall of ads corresponds with more frequent cannabis use.⁴⁴

Unfortunately, current restrictions on advertising cannabis in legal cannabis states are challenging to enforce due to overly broad language. For example, many states have specified that retailers cannot make “untrue” or “scientifically” false claims, which is challenging to enforce due to the lack of scientific research and consensus on what patterns of cannabis use are harmful. Moreover, although a growing number of studies point to cannabis advertisements as a contributor to elevated cannabis use among youth,⁴⁵ it is unclear which aspects of advertisements are most harmful and whether those who see cannabis advertisements are more likely to use cannabis in the first place.

44 [Cannabis advertising, promotion and branding: Differences in consumer exposure between ‘legal’ and ‘illegal’ markets in Canada and the US - PubMed \(nih.gov\)](#)

45 [Active cannabis marketing and adolescent past-year cannabis use - PubMed \(nih.gov\)](#)

Policy Lever 3: Data Infrastructure, Taxes, Funding Solutions

Section Highlights

- The taxation “sweet spot” that deters consumption but does not encourage substitution with an illicit market is still unknown.
- Funding youth use prevention and intervention programs can yield cost-savings for governments; thus, a significant portion of tax revenue should be allocated to these efforts.
- Using community-based organizations as infrastructure for referrals is likely the best use of tax funding, as it eases accessibility burdens and maximizes resources.
- Federal funding should prioritize identifying sources that can be allocated to states for these efforts, following models of opioid responses.
- Augment existing local, state, and federal dollars to utilize large, timely surveys that capture patterns and trends associated with adolescent cannabis use and related harms.

Data Infrastructure

At present, there are no publicly available data sets that provide data on adolescent cannabis use on a state-by-state basis. There are also no available data sets that assess cannabis-related risks and harms such as CUD, driving under the influence, high-concentrate cannabis use, and use of cannabis to cope with negative emotions.

Two-Prong Approach

Taxing regulated substances, such as cannabis, can help prevent or reduce youth substance use in two notable ways. First, increasing the sale price of cannabis or other regulated substances can strongly influence purchasing decisions. Second, tax revenue can be used to fund prevention of youth cannabis use, cannabis use during pregnancy, driving under the influence of cannabis, and other harmful activities. These two functions of taxation have been considered successful policy levers for helping to address public harms associated with other substances, such as tobacco, but the relative impacts of such policies in the context of legal cannabis regulations appears more nuanced and complex.

The Role of Cannabis Taxes in Funding Prevention

The taxation of cannabis provides a new and robust funding stream for local and state governments. As of May 2021, the 10 states with active adult use cannabis markets reported close to \$8 billion dollars in combined cannabis tax revenue.⁴⁶ While each state allocates this revenue differently, almost all states with adult use markets allocate a portion of cannabis tax revenue to public health efforts, whether these be through the domains of public health or public education.⁴⁷ This funding is generally provided to programs that promote prevention (e.g., public education campaigns and early interventions) or offer substance use disorder treatment services. Generally, increased funding for any public health efforts represents a victory. However, evidence-based prevention and treatment programs that reduce barriers in access and cost and target broad psychological well-being must be prioritized. Examples from Colorado and California are instructive.

46 [Marijuana Tax Revenue in States that Regulate Marijuana for Adult Use \(mpp.org\)](#)

47 [Marijuana Taxes \(urban.org\)](#)

Success Story - Colorado School-Based Referrals

Since 2019, Colorado's Department of Education has distributed \$11.9M of cannabis tax revenue annually to the School Health Professional Grant program.⁴⁸ Its goals are to increase the presence of school health professionals in elementary and secondary schools, provide substance abuse and behavioral health care, implement substance abuse prevention education, and provide evidence-based resources to school staff, students, and families. Further the grant aims to reduce barriers for at-risk students by providing access to community-based organizations providing treatment and counseling.⁴⁹

School districts, charter schools, and educational services agencies receive funding for three years, with priority to applicants with demonstrated high need. Grants made in 2017 and 2019 supported the placement of 40 nurses, 102 counselors, 69 social workers, and 18 psychologists across the state.⁵⁰ The 2017 awards resulted in over 25,000 students being referred to services or support for substance abuse or behavioral health needs, resulting in over 80,000 individual encounters. This amount reflects an estimated 16% of total students within the funded districts.⁵¹

School health professionals and school-based health programs are increasingly being recognized as the default health system for children. Moreover, they are being acknowledged as appropriate avenues for substance use intervention hand-offs and partners to other community organizations, where resources can be carefully organized, integrated, and maximized by co-located services and expanding care. The takeaway of Colorado's School Health Professionals Grant is that cannabis tax revenue distribution effectively created a new or improved referral pathway for school districts to community partners.

DENVER'S AFTERSCHOOL GRANT PROGRAM

The city of Denver approved a special sales tax to fund the Marijuana Policy Office, which supports regulation, enforcement, education, and public health programs. The special tax is currently at 5.5%, and, in 2018, \$3.7 million was made available for education and prevention services. The Office of Children's Affairs (OCA) had previously established a competitive grant process for out-of-school time programs, funded through marijuana and other taxes to support youth development programs that help build social and emotional skills. The funds are encouraged to support youth in neighborhoods with limited opportunities identified by the Child Well-Being Index. \$1.5 million was also set aside for the Denver After-school Alliance to support programs and train program staff. Currently, more than 100 afterschool programs are funded through the competitive grant process.

48 [Marijuana Tax Revenue and Education \(cde.state.co.us\)](https://cde.state.co.us/marijuana-tax-revenue-and-education)

49 [School Health Professional Grant Program \(SHPG\) \(cde.state.co.us\)](https://cde.state.co.us/school-health-professional-grant-program)

50 [2019-2020 School Health Professional Grant Legislative Report \(cde.state.co.us\)](https://cde.state.co.us/2019-2020-school-health-professional-grant-legislative-report)

51 [2019-2020 School Health Professional Grant Legislative Report \(cde.state.co.us\)](https://cde.state.co.us/2019-2020-school-health-professional-grant-legislative-report)

Promising Approach - California's Youth-Centric Community Infrastructure

California has taken a unique approach to allocating cannabis tax revenue by providing 60 percent of net revenue from cannabis to community-based organizations, diversifying the way interventions are delivered. The 2016 law legalizing adult use established the Youth Education Prevention, Early Intervention and Treatment Account, which has provided the Department of Health Care Services over \$100M between 2019 and 2021, to be granted to community-based organizations to support prevention and intervention.⁵²

The Elevate Youth California program has a central focus on marginalized and disproportionately at-risk populations.⁵³ The grant program has three funding tracks that build on the existing substance use prevention framework and promote leadership skills and activism among youth.

Many community-based organizations that focus on youth, including Elevate Youth grantees, follow the Positive Youth Development (PYD) framework, a strength-based approach to care, empowering and supporting young people to envision and meet their potential.⁵⁴ The theoretical basis for PYD is research showing that motivational interviewing and socio-emotional strategies are effective in preventing and intervening on substance use.⁵⁵

Although PYD alone is simply a framework that inherently supports prevention concepts, research suggests that coupling PYD with evidence-based prevention efforts can produce durable effects. A study carried out in an urban afterschool program found that youth were significantly more likely to perceive



52 \$21.5M in 2019, \$29.7M in 2020, and \$61.62M in 2021.

53 [ELEVATE YOUTH CALIFORNIA: SUPPORTING CAPACITY BUILDING FOR COMMUNITY ORGANIZATIONS \(shfcenter.org\)](https://shfcenter.org)

54 [Positive Youth Development \(youth.gov\)](https://youth.gov)

55 [What is positive youth development and how might it reduce substance use and violence? A systematic review and synthesis of theoretical literature \(ncbi.nlm.nih.gov\)](https://ncbi.nlm.nih.gov)

drugs as harmful upon program exit and exhibited lower increases in substance use one year after the program's completion.⁵⁶

Cost Benefit of Funding Prevention

The overall cost of substance misuse in the United States, which the National Institute on Drug Abuse estimates at \$600 billion annually,⁵⁷ dwarfs the cost of prevention programs. Effective prevention programs have the potential to reduce these societal costs. One of the most validated community prevention programs for cannabis carried out in school or community-based settings, Project Towards No Drugs, is associated with cost savings of \$3.80 per dollar spent, respectively.⁵⁸

Despite such favorable cost-benefit estimates, the costs for planning, implementing, evaluating, and improving such programs are front-loaded and typically require highly skilled and motivated teaching staff and community stakeholders. Thus, additional research establishing cost benefits, as well as identifying more effective and easily administrable approaches for preventing youth cannabis use, would be helpful in generating additional support for prevention efforts.

Current Federal Funding for Youth Cannabis Prevention

Most federal funding for youth cannabis and substance use prevention is derived from the National Institute on Drug Abuse (NIDA) and the Substance Abuse Mental Health Services Administration (SAMHSA), which serve to advance research and translation of research to practice, respectively.^{59, 60} Although proposed 2022 budgets include a 37 percent increase for NIDA research grants and a 63 percent increase for SAMHSA prevention and treatment activities,^{61, 62} the amount of cannabis-specific research or implementation funding for youth-prevention to be allocated by either agency is unknown.

56 [Impact of a Positive Youth Development Program in Urban After-School Settings on the Prevention of Adolescent Substance Use \(sciencedirect.com\)](https://www.ncbi.nlm.nih.gov/pubmed/25311111)

57 [Principles of Drug Addiction Treatment: A Research-Based Guide \(Third Edition\) Is drug addiction treatment worth its cost? \(drugabuse.gov\)](https://www.drugabuse.gov/publications/principles-drug-addiction-treatment)

58 [Substance Abuse Prevention Dollars and Cents: A Cost-Benefit Analysis \(samhsa.gov\)](https://www.samhsa.gov/prevention/cost-benefit-analysis)

59 [Who We Are \(samhsa.gov\)](https://www.samhsa.gov/about)

60 [About NIDA \(drugabuse.gov\)](https://www.drugabuse.gov/about-nida)

61 [Substance Abuse and Mental Health Services Administration \(samhsa.gov\)](https://www.samhsa.gov/about)

62 [Fiscal Year 2022 Budget Information - Congressional Justification for National Institute on Drug Abuse | National Institute on Drug Abuse \(drugabuse.gov\)](https://www.drugabuse.gov/publications/fiscal-year-2022-budget-information)

Other federal agencies provide funding for cannabis research or program implementation on occasion but have been infrequent to date.

A Call for Federal Funding

In 1992 Congress reauthorized the SAMHSA noncompetitive block grant for substance abuse prevention and treatment (SAPT). This block grant helps states provide treatment services for substance abuse for all ages and implement programs targeted at youth for alcohol, drugs and tobacco. Each year, SAMHSA allocates approximately \$1.8B to states, based on a needs-based formula.⁶³ The statute requires states to spend at least 20% of SAPT funding on prevention efforts. These funds make up an average 62 percent of state primary prevention budgets and up to 75 percent in some states.⁶⁴

States may spend SAPT prevention funds on cannabis use prevention, as there is no minimum spending requirement for alcohol, tobacco, or any specific drug. However, with such limited funding and much higher mortality associated with other substances, states cannot be expected to sufficiently address youth cannabis use with SAPT funding. Even with supplemental funding from the American Rescue Plan,⁶⁵ federal prevention funding is insufficient to address increases in youth cannabis use and CUD.

Prevention efforts would benefit from a dedicated revenue stream, as exists for opioids. In 2016, the 21st Century Cures Act authorized SAMHSA to allocate \$1B to states through an Opioid State Targeted Response grant (STR). Funds are explicitly reserved for evidence-based opioid use disorder (OUD) treatment and prevention.⁶⁶ The program's successes include the following:

- Heroin use decreased by 66% (from 30% at intake to 10% at 6-month follow up).
- Pain reliever misuse decreased by 83% (from 16% at intake to 3% at 6-month follow-up).
- The average number of days of use of heroin went from 21 days in the 30 days prior to intake to 15 days in the 30 days prior to 6-month follow up.⁶⁷

63 [Substance Abuse and Mental Health Block Grants \(samhsa.gov\)](https://www.samhsa.gov)

64 [Substance Abuse Prevention and Treatment \(SAPT\) Block Grant \(nasadad.org\)](https://www.nasadad.org)

65 [HHS Announces \\$3 Billion in American Rescue Plan Funding for SAMHSA Block Grants to Address Addiction, Mental Health Crisis \(hhs.gov\)](https://www.hhs.gov)

66 [PUBLIC LAW 114-255-DEC. 13, 2016 \(congress.gov\)](https://www.congress.gov)

67 [2020 Report to Congress On the State Opioid Response Grants \(samhsa.gov\)](https://www.samhsa.gov)

The Opioid State Targeted Response grants have given states the necessary resources, materials, and technical assistance to achieve impactful results. Moreover, some states have allocated STR funding to youth programs. California, for example, uses this funding to provide grants to community-based organizations with the intent of creating an infrastructure of prevention and treatment services grounded in evidence-based practices and PYD principles.⁶⁸

Because addressing opioid misuse is such an important priority at all levels of government, a dedicated federal funding stream to cannabis prevention, much like STR, could ensure that states' youth cannabis prevention efforts do not remain on the back burner. As seen in California, such an approach can help to ensure funds reach community-based programs and improve access to treatment.

Another benefit of programs like STR is that they generate a body of data that helps to identify effective prevention programming. With no national evaluation of cannabis prevention and treatment programs to date, SAMHSA could help to fill this void through a dedicated funding stream with rigorous program and state-level evaluation requirements.

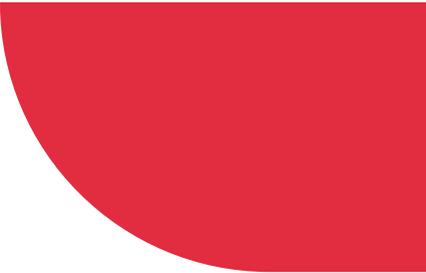
68 [YOR California \(work.cibhs.org\)](http://work.cibhs.org)

Summary of Recommendations

Based on the evidence and findings presented in this white paper, we recommend the following actions:

- Implement a systematic adolescent cannabis use survey to evaluate and direct policy efforts on adolescent prevention. The survey should include a specific set of cannabis-centered questions to serve an additional purpose to the existing surveys conducted by Monitoring the Future and the National Survey on Drug Use and Health (NSDUH).
- Increase youth access to evidence-based treatments for CUD that focus on skills development and goal setting.
- Allocate a substantial portion of cannabis tax revenues towards funding of afterschool programs, school-based and afterschool prevention programs, digital interventions, counseling, and community prevention programs.
- Prioritize referral to prevention and treatment, restricting exposure to advertisements, and limiting access to high-potency products over penalizing underage use.
- Set cannabis taxation levels appropriately to limit consumption and fund treatment and prevention efforts, without driving purchasers to the illicit market.

- Allocate a significant portion of state cannabis tax revenue to youth treatment and prevention, particularly school-based and digital interventions, as well as afterschool programs and positive youth development programs.
- Create dedicated federal funding for youth cannabis use prevention and CUD treatment, to be allocated by SAMHSA to schools and community-based organizations.
- Require rigorous evaluation of funded treatment and prevention programs to identify effective interventions.
- Encourage states to enforce minimum age laws as it relates to cannabis. States should also implement mandatory training on types of products that can be available in a regulated market and their associated mental health risks.



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