Public Policy Statement on Cannabis

Background

Cannabis is a plant that has been used for its intoxicating effects for at least a century in the United States and for longer in other cultures. It also has a long history of use around the world for purported medical benefits. More than 100 different cannabinoids have been identified in cannabis. The primary intoxicating cannabinoid in cannabis is delta-9-tetrahydrocannabinol (THC). The cannabinoid cannabidiol (CBD) has received increasing public attention in recent years; preliminary findings suggest that CBD may be a useful treatment for several medical conditions and it is not reported to be associated with intoxication or addiction, unlike THC.[1] In this document, the term "cannabis" is used to describe the plant-based products. When the document refers specifically to individual cannabinoids, they are identified as such.

Between 2001-2002 and 2012-2013, the prevalence of past-year cannabis use by U.S. adults increased from 4.1% to 9.5%, respectively, and the prevalence of cannabis use disorder (CUD) nearly doubled.[2] Adults and adolescents increasingly view cannabis use as harmless. A 2019 Pew Research Center survey revealed two-thirds of American adults support cannabis legalization, which reflects a steady increase over the past decade.[3] However, between 9.3% and 30.6% of American adults who use cannabis have CUD as measured in the largest recent national surveys. Specifically, 9.3% of past-year adult cannabis users met DSM-IV criteria for CUD based on the 2017 National Survey on Drug Use and Health (NSDUH).[4] 2012-2013 data from the National Epidemiologic Survey on Alcohol and Related Conditions (NESARC) showed that 30.6% of past-year cannabis users had DSM-IV CUD.[2] Among U.S. lifetime cannabis users (current or past users), 19.5% met criteria for DSM-5 CUD, of whom 23% were symptomatically severe (with ⩾6 criteria). Thus, CUD in cannabis users is not rare and can be serious.[5, 6]

In contrast to adult use, adolescent use of cannabis in recent years has remained relatively stable, but the percentage of 8th and 10th grade students who use cannabis on a daily basis increased significantly from 2017 to 2019.[7] The type of cannabis product used may also be evolving in this group. Research has identified a significant increase in cannabis vaping among U.S. middle and high school students.[8] A survey of 8th, 10th, and 12th graders revealed 24% reported lifetime use of cannabis concentrates, and 72% of all lifetime cannabis users had used concentrates.[9]

Cannabis use has been shown to be associated with cognitive decline, impaired educational or occupational attainment, risk of other substance use disorders, and poor quality of life.[10] It has also been shown to be associated with impaired driving and fatal vehicle crashes, cannabis-related emergency room visits, psychosis, and psychiatric comorbidity.[11] CUD has been associated with disability[11] and strongly and consistently associated with other substance use and mental

disorders.[10] Use of high potency cannabis has been associated with increased frequency of use, cannabis use-related problems, and increased likelihood of anxiety disorder.[12]

Since California voters passed Proposition 215 in 1996 to become the first state to legalize cannabis used for medical purposes, the national conversation about the harms and potential benefits of cannabis use, as well as the most appropriate legal status and regulatory structure to govern its use, has intensified. As of this writing, cannabis remains a Schedule 1 drug under the federal Controlled Substances Act (CSA), indicating the federal government's position that it has no currently accepted medical use and has a high potential for abuse. Despite its federal status and lack of sufficient research evidence supporting medical benefits, as of 2019, 33 states and the District of Columbia have legalized comprehensive, publicly available medical cannabis programs, and 13 additional states allow the use of "low THC, high cannabidiol (CBD)" products for medical reasons in limited situations.[13] Further, voters or legislative bodies in 11 states and the District of Columbia voted to pass measures to legalize cannabis used for non-medical purposes.[14] Critics of the current CSA scheduling of cannabis argue that it discourages clinical research and Food and Drug Administration (FDA) oversight. Critics also argue that the current schedule discourages regulation of cannabis for non-medical purposes; such regulation could promote public health and reduce cannabis-related harm.

Cannabis Used for Medical Purposes

In 2013-2014, 9.8% of U.S. adults who used cannabis in the past year reported doing so for medical purposes, and 21.2% of adults who reported using cannabis for medical purposes resided in states that had not legalized cannabis use for such purposes.[15] Over 75% of those who use cannabis for medical purposes also report using it for non-medical purposes.[16]

States have approved various indications for cannabis use, despite a lack of sufficient scientific evidence for its effectiveness as a medicine for many of these indications. A 2017 review by the National Academies of Sciences, Engineering, and Medicine found conclusive or substantial evidence that cannabinoids are effective in only three conditions: chemotherapy-induced nausea and vomiting, multiple sclerosis-related spasticity, and chronic pain.[17] According to a Cochrane review, the effectiveness of cannabis-based medicines for neuropathic pain was small and may be outweighed by potential harms.[18] A systematic review of 43 randomized controlled trials found that cannabis-based medicine might be effective for chronic pain based on limited evidence, primarily for neuropathic pain, and that, due to small effect sizes, the clinical significance is uncertain.[19]

Although some states include mental health disorders as indications for cannabis for medical purposes, cannabis use may be particularly harmful to populations with or at risk for mental health disorders. A 2019 meta-analysis of 83 studies reported scarce evidence that cannabis or any type or formulation of medicinal cannabinoids improve depressive disorders, anxiety disorders, attention-deficit hyperactivity disorder, Tourette syndrome, post-traumatic stress disorder (PTSD), or psychosis.[20] In 2019 the American Psychiatric Association stated that "there is no current scientific evidence that cannabis is in any way beneficial for the treatment of any psychiatric disorder. Current evidence supports, at minimum, a strong association of cannabis use with the onset of psychiatric disorders."[21] Cannabis has been shown to contribute to risk factors for the onset and symptom severity of substance-induced psychosis and bipolar disorder as well

as the onset of depression and anxiety disorders; there is preliminary evidence that ongoing cannabis use in persons with a history of trauma increases the odds of developing PTSD.[22]

A widely publicized study found lower opioid overdose rates in states that legalized cannabis use for medical purposes compared with other states through 2010.[23] This led some states to include opioid use disorder (OUD) as a possible indication for cannabis used for medical purposes.[24] However, a subsequent analysis extended through 2017 and using similar methods with additional controls found the opposite association.[25] Studies of individuals show an association between cannabis use and increased rates of non-medical opioid use and OUD.[26] There is no current evidence that cannabis is effective for the treatment of OUD.[27] Further, due to its mechanism of action, cannabis would not be expected to reduce opioid overdose rates, unlike the existing FDA-approved medications for OUD. There has been a preliminary finding of an effect of CBD in reducing opioid cue-induced craving,[28] but this requires further research to assess the clinical significance.

Cannabis use during pregnancy has increased in recent years including an increase of 41,000 U.S. pregnant persons who used cannabis daily or near daily between 2015 and 2017.[29, 30, 31] There is a paucity of well-designed studies on the effect of prenatal cannabis exposure and the results have been mixed.[32] There is a growing body of research on the role of the endocannabinoid system in brain development. A study of dispensaries in Colorado found that nearly 70% recommended cannabis products to manage nausea in the first trimester despite lack of evidence and the possibility of harms.[33] Even in states where cannabis use is legal, state laws may deem substance use, including cannabis use, during pregnancy to be *ipso facto* proof of child abuse and require reporting independent of clinical judgment, with potential harms to mother and child that outweigh any benefit of reporting.

Although there is not consensus about the types of pulmonary disease caused by cannabis smoking or the extent of smoking necessary to produce pulmonary disease, the American Lung Association states, "Smoking marijuana clearly damages the human lung."[34] The American Heart Association's Scientific Statement "Medical Marijuana, Recreational Cannabis, and Cardiovascular Health" warns that smoking cannabis has been associated with both cardiovascular and cerebrovascular events.[35]

To date, the FDA has approved synthetic cannabinoid medications only for the treatment of chemotherapy-associated nausea and vomiting (dronabinol, a synthetic THC, and nabilone, a synthetic substance similar to THC) and loss of appetite and weight loss in HIV/AIDS (dronabinol). A prescription CBD formulation derived from cannabis has been approved by the FDA for the treatment of seizures associated with Lennox-Gastaut syndrome, Dravet syndrome, or tuberous sclerosis. Given the growing numbers of people using cannabis for medical purposes under state-authorized programs outside of FDA purview, the Federation of State Medical Boards has produced "Model Guidelines for the Recommendation of Marijuana in Patient Care."[36]

Cannabis Used for Non-Medical Purposes

Surveys to assess motives for use of cannabis for non-medical purposes report that positive effects, expanded awareness, and social cohesion are often sought.[37, 38] In contrast, respondents who report use of cannabis to relieve negative affect states may be using cannabis to relieve withdrawal symptoms.[39] Adult cannabis use has increased over the past two decades.[5] At the same time, the potency of cannabis has increased and manufactured products (concentrates,

extracts, edibles, oils, tinctures, and topicals) have proliferated. The concentration of THC in commonly cultivated marijuana plants has increased three-fold between 1995 and 2014 (from 4% to 12% respectively),[40] while THC concentrations in cannabis sold in dispensaries averages between 17.7% and 23.2%.[41] Concentrated products have reported concentrations up to 75.9% THC,[42] and are advertised to be as high as 100% THC.[43] Manufactured cannabis products are a significant and rapidly growing share of the U.S. market. In 2016, manufactured products represented about one-third of revenues from cannabis used for non-medical purposes in Colorado and Washington.[44] Increased potency of cannabis raises health concerns because cannabis potency has been associated with more adverse reactions, particularly cannabis-induced psychosis.[45]

Cannabis use by youth and young adults has been associated with harms extending beyond those reported in adults. For example, there is evidence that those who initiate cannabis use at an earlier age and use more frequently are more likely to develop CUD. A 2019 U.S. Surgeon General's Advisory on Marijuana Use and the Developing Brain similarly notes that the risks for addiction and other negative consequences increase with the THC concentration in cannabis used and with younger ages of initiation.[46] Frequent use of cannabis from adolescence into adulthood is also associated with significant declines in IQ.[47] In addition, a recent review on cannabis use and cognition reports that evidence suggests early, frequent and continuous use of high-potency cannabis is correlated with increased risk of developing potentially severe and persistent executive function impairments.[48] Finally, the proliferation of edible cannabis products increases the risk of unintentional overdose and accidental ingestion by children.

In anticipation of the legalization of cannabis use in Canada, an updated Lower–Risk Cannabis Use Guidelines (LRCUG) was published in the American Journal of Public Health in 2017 for distribution to Canadian governmental authorities.[49] The first of the ten recommendations notes that "the most effective way to avoid any risks of cannabis use is to abstain from use." Listed below are six abridged findings that meet the criteria for an evidence grade rating of "substantial" based on the results of well–designed studies, which include randomized controlled trials in humans as well as animals.

- "The later cannabis use is initiated, the lower the risks will be for adverse effects on the user's general health and welfare throughout later life."
- "High THC-content products are generally associated with higher risks for ... acute and chronic mental and behavioral problem outcomes."
- "Regular inhalation of combusted cannabis adversely affects respiratory health outcomes."
- "Frequent or intensive (e.g., daily or near-daily) cannabis use is strongly associated with higher risks of experiencing adverse health and social outcomes related to cannabis use."
- "Driving while impaired from cannabis is associated with an increased risk of involvement in motor-vehicle accidents."
- There are some populations at probable higher risk for cannabis-related adverse effects who should refrain from using cannabis, including those with predisposition for, or a first-degree family history of, psychosis or substance use disorders, as well as pregnant women (primarily to avoid adverse effects on the fetus or newborn).

Our nation's historically punitive approach to cannabis possession and use has caused harms related to arrest and incarceration, which disproportionately impact low-income communities and persons of color, contributing to racial injustice. Decriminalization of cannabis possession and use could reduce these harms and disparities. Most states that have decriminalized possession retain civil fines

that can be especially burdensome to the poor. Typically, escalating civil fines, and/or criminal penalties remain in place when the quantity of cannabis exceeds certain thresholds, or upon repeat offenses. Decriminalization can also include eliminating civil fines in favor of warnings or referrals for clinical evaluation, education or treatment, which stops short of full "legalization" of possession and use (note that the phrase "cannabis legalization" typically includes legalization of production, marketing and sale).[50] Proponents of legalizing cannabis production, marketing and sale seek to reduce harms associated with illegal market control of these activities including the impact of violent criminal organizations and cannabis products of unknown composition and safety.

However, there are concerns regarding commercial models of legalization. The history of major multinational corporations using aggressive marketing strategies to increase and sustain tobacco and alcohol use illustrates the risks of corporate domination of a legalized cannabis market.[51] A 2015 Rand corporation report observed that "the marketing and lobbying muscle of a for-profit industry is likely to influence the future trajectory of marijuana policy. . . There is danger of regulatory capture, with regulators drifting over time toward more industry-friendly postures."[52,53] (Regulatory capture describes a state in which regulated entities have more influence over the regulatory process than what the public interest requires.[54]). Another outcome of commercial legalization may be increased use resulting from reductions in price. Commercial cannabis legalization has produced a price collapse in states that have legalized it, including Colorado, Oregon and Washington.[55] Research has shown that demand for cannabis is responsive to changes in its monetary price, although the responsiveness of demand varies by type of user (light, casual, regular or heavy).[56]

Non-commercial models of legalization have been proposed to reduce the harms of the illegal market while minimizing potential harms of commercialization, including the risk of regulatory capture and other practices that may increase hazardous use and use by minors.[57,58,59] Non-commercial models of legalization may include limiting manufacturing and distribution to non-profits, benefit corporations, small cooperatives, buyers' clubs, public authorities, and/or home cultivation. The state store model for alcohol sales in 17 U.S. states has been reported to significantly reduce alcohol-related harm and sales to youth.[60] Four Canadian provinces limit cannabis sales to state stores.[61] Governments may avoid cannabis commercialization through a state monopoly over production and distribution as in Uruguay.[62] Similarly, there are state alcohol monopolies in Nordic countries and state tobacco monopolies in various countries. To avoid intrinsic conflicts of interest, the managing government agency should be charged to minimize individual consumption by the public.[63]

Evidence-informed substance use prevention and treatment interventions can avert or delay the initiation of cannabis use, stop the progression from use to harmful use or addiction, and reduce cannabis use-related negative health, social, and economic impacts. Research has identified several robust risk[64] and protective[65] factors predictive of substance use that are amenable to prevention interventions. Evidence-informed resources exist for educators[66] and clinicians[67] to help prevent adolescent cannabis use. An evidence-based approach to treatment can mitigate CUD-related harm.

Recommendations:

The American Society of Addiction Medicine (ASAM) recommends:

A. Cannabis and Related Products Used for Medical Purposes

1. Cannabis used for medical purposes should be rescheduled from Schedule 1 of the Controlled Substances Act (CSA) to promote more clinical research and FDA oversight typical of other medications.
2. Cannabis and cannabis-derived products recommended for medical indications should be subject to FDA review and approval to ensure their safety and effectiveness.
3. Healthcare professionals who recommend non-FDA-approved cannabis products under the authority of state-level medical cannabis programs should be required to complete specific training with an emphasis on risk mitigation and the prevention, diagnosis, and management of cannabis use disorder and other substance use disorders. Such training should be evidence-based and be informed by high standards of medical professionalism.
4. Healthcare professionals who recommend or write permits for non-FDA approved cannabis should do so only within the context of a *bone fide* patient-clinician relationship that includes appropriate patient evaluation, creation of a medical record and follow-up visits to assess the results of use and amend the treatment plan as needed. The same amount of caution exercised when any other controlled substance is prescribed should be applied when cannabis is recommended by a healthcare professional for a medical use. Clinicians should be prepared to discontinue treatment with cannabis if it is not effective or causes harm.
5. Healthcare professionals should only recommend non-FDA-approved cannabis if there is evidence that the potential benefits outweigh the potential harms. Healthcare professionals should avoid recommending cannabis to pregnant persons, and should recommend cannabis with great caution, if at all, to those with substance use disorders or psychiatric disorders, or to children and adolescents. Healthcare professionals should screen all patients for cannabis and other substance use disorders and refer to treatment as appropriate before recommending cannabis to be used for medical purposes.
6. Healthcare professionals should not recommend cannabis use for the treatment of OUD.
7. Regulation of cannabis use for medical purposes should be overseen by departments of health. Indications for cannabis used to treat medical or mental health conditions should not be specified by legislatures or public referenda.

8. Non-FDA-approved cannabis recommended by clinicians should be reported to Prescription Drug Monitoring Programs (PDMPs). Healthcare professionals who recommend cannabis should check the PDMP prior to making a recommendation.
9. Potency of non-FDA approved cannabis should be determined and clearly displayed on the label. Healthcare professionals should consider the ratio of CBD to THC with respect to the indication and minimize potential adverse effects.
10. Healthcare professionals should discourage combustion or vaporization of cannabis as a drug delivery method.
11. Federal legislation and regulation should encourage scientific and clinical research on cannabis and its compounds, expand sources of research-grade cannabis, and facilitate the development of FDA-approved medications derived from cannabis such as CBD or other cannabis compounds. Research needs for cannabis to be used for medical purposes include basic outcomes studies for well-defined conditions using well-defined medical cannabis products.

B. Cannabis and Related Products Used for Non-Medical Purposes

1. Public health efforts through evidence-based prevention programs should be strengthened to discourage people from using cannabis products due to their known potential harms. Given the particular risks to children and adolescents, cannabis products should not be distributed to anyone under the age of 21.
2. Cannabis use and possession should be decriminalized, and civil fines and fees should be eliminated whenever possible. A range of non-mandatory civil penalties to enforce restrictions such as age, place of use, quantity limits and others may be needed, however. Contingencies such as referral for clinical assessment or educational activities are preferred as alternatives to civil penalties. There should be no mandatory minimum penalties, which disproportionately punish people of limited means.
3. States should not use cannabis laws with criminal or civil penalties for possession or use to disproportionately penalize certain members of the population who use cannabis (e.g., people with limited means). States should offer automatic expungement for past minor cannabis-related convictions, so that hundreds of thousands of people — disproportionately people of color — do not remain marginalized for prior offenses.
4. The CSA should be amended so that – as long as states and tribes comply with substantial public health protections – its provisions no longer apply to any person acting in compliance with state or tribal laws relating to the manufacture, production, possession, distribution, dispensation, administration, or delivery of cannabis for non-medical purposes.
5. States or jurisdictions that decide to legalize cannabis production, distribution and sale should use models other than commercialization, such as limiting production, marketing and sale to nonprofits, benefit corporations, small co-ops, buyers' clubs, home cultivation or a public authority.

6. States or jurisdictions that decide to legalize cannabis production, distribution or sale should only do so within a strong public health-based regulatory framework that minimizes the harms related to legalization. These should include best public health practices established for tobacco control, and components which have been identified as important for minimizing harmful use of tobacco or alcohol. Among these are: [51, 60]
    a. Departments of health as lead agencies with a mandate to protect the public by minimizing all use,
    b. Restrict advertising in print and digital media with a youth audience,
    c. An independent advisory board with a strict conflict of interest policy,
    d. Mandatory merchant education and unannounced compliance checks,
    e. Protected local control over smoking and vaping restrictions, with local ability to prohibit cannabis licenses,
    f. Licensee liability with escalating fines and the possibility of permanent license revocation for violations,
    g. Prohibition of combustible or vaporized cannabis use wherever tobacco smoking or vaping is prohibited,
    h. Prohibition of mail order or electronic sales,
    i. Prohibition of product placement and misleading marketing with government health authority approval of packaging and warning labels,
    j. Prohibition of additives or residual chemicals that are toxic or injurious to health, that impart flavor, or create the impression of a health or energy benefit (e.g. vitamins, caffeine),
    k. Standardized plain packaging,
    l. Messaging on health risks that are aimed at the general public, with health warnings on advertising, promotion, and sponsorship covering a significant portion of the principle display area,
    m. Health warnings against use by persons under age 21 or pregnant persons,
    n. Regularly updated pricing and taxation policies effective to deter consumption,
    o. Quality standards determined by governmental health departments with testing by independent labs.

7. Health messages should warn against cannabis use by persons with a history of mental illness or substance use disorder, as well as persons who are pregnant, and should warn about the risk of impaired driving.
8. Given the correlation between cannabis potency and adverse reactions, particularly cannabis-induced psychosis, potency should be limited.
9. A substantial proportion of cannabis tax revenue should be earmarked to fund prevention and mitigation of cannabis-related harm, and substance use disorder prevention and treatment programs, including public awareness campaigns about the risks of cannabis use, including cannabis use disorder. Cannabis-generated revenue should also be used for enforcement of laws and regulations. Use of

cannabis tax revenue for other purposes may create inappropriate incentives to maximize cannabis sales and revenue, despite negative public health consequences.

10. Healthcare professionals should be trained to identify unhealthy cannabis use and use disorder, raise awareness in patients to motivate change, and refer for treatment when cannabis use disorder is identified.
11. Women who are pregnant or contemplating pregnancy should be encouraged to avoid or discontinue cannabis use. Cannabis use during lactation and breastfeeding should also be discouraged as there are insufficient data to evaluate its effect on infants.[68]
12. Excluding emergency circumstances, pregnant women should have a choice whether or not to provide consent for cannabis testing including during labor and delivery. Clinicians should explain state statute and local child welfare reporting requirements as part of the consent process.[69]
13. Future research should include studies on the potential relative harms of various drug delivery systems and potency levels, patterns of cannabis use, prevalence of cannabis-related harm, impairment and motor vehicle crashes, and the effectiveness of prevention and control programs.

Adopted by the ASAM Board of Directors October 10, 2020, reaffirmed on December 12, 2024 through December 12, 2025, reaffirmed on September 14, 2025 through December 12, 2030.

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