



# ASAM

American Society of Addiction Medicine

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## **White Paper on State-Level Proposals to Legalize Marijuana**

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**ASAM Writing Committee to Develop a Response to  
State-Level Proposals to Legalize Marijuana**

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## I. Introduction

Marijuana legalization has been featured widely across the United States in both national and local media. At the same time, increasing rates of marijuana use among youth and adults in the United States have made headlines and the prevalence of substance use disorders associated with marijuana use remains a serious medical issue. In the last decade, the number of state initiatives aimed at changing the legal status of marijuana has dramatically increased, initially focused on legalization of marijuana use for “medical” purposes, but more recently focused on legalization of any marijuana use by adults. Public opinion on marijuana has changed over time with recent increases in support for both “medical” marijuana and legalization.<sup>1 2</sup>

Much of this support has arisen from well designed and effective public relations campaigns. It has been suggested that the public health consequences of the legal substance alcohol are more severe than those arising from marijuana use. In this view the costs and consequences of “prohibition” cause more harm than the use of marijuana and fuel violence in the illicit markets. Support for marijuana legalization based on belief in these arguments is fortified by the promise of tax dollars plentiful enough to banish deficits and/or fuel the expansion of substance abuse prevention and treatment. The current high prevalence of lifetime marijuana use by young people is presented as evidence of failed marijuana control strategies. These opinions converge to promote marijuana legalization.

It is against this backdrop of recent calls for change and current state-level marijuana legalization proposals that in April 2012, the American Society of Addiction Medicine (ASAM), the largest association of physicians specializing in addiction, established a Writing Committee to Develop a Response to State-Level Proposals to Legalize Marijuana for approval by the ASAM Board of Directors. Its intent is to inform ASAM members and other physicians about marijuana legalization and to make available to the public and to public policymakers the judgment of ASAM.

This White Paper extends ASAM’s previous White Paper, The Role of the Physician in “Medical” Marijuana,<sup>3</sup> and its companion Public Policy Statement.<sup>4</sup> These documents reviewed the extensive research on the potential therapeutic uses of marijuana concluding that smoked marijuana is not, and cannot be, a medicine. ASAM recommended that any chemicals in marijuana shown to be effective and recognized as safe for use as treatments for any illness should be made available as standardized and characterized products, approved by the Food and Drug Administration (FDA), and dispensed by professional pharmacies like all other medicines.

ASAM’s concern about possible legalization of marijuana is heightened by the fact that marijuana is the most widely used illegal drug in the United States. Marijuana is the drug used

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<sup>1</sup> Newport, F. (2011, October 17). Record-high 50% of Americans favor legalizing marijuana use. Gallup. Available: <http://www.gallup.com/poll/150149/record-high-americans-favor-legalizing-marijuana.aspx>

<sup>2</sup> Mendes, E. (2010, October 28). New high of 46% of Americans support legalizing marijuana. Gallup. Available: <http://www.gallup.com/poll/144086/New-High-Americans-Support-Legalizing-Marijuana.aspx>

<sup>3</sup> President’s Action Committee on Medical Marijuana of the American Society of Addiction Medicine (ASAM). (2011). The Role of the Physician in “Medical” Marijuana. Chevy Chase, MD: American Society of Addiction Medicine. Available: <http://www.asam.org/advocacy/find-a-policy-statement/view-policy-statement/public-policy-statements/2011/11/28/the-role-of-the-physician-in-medical-marijuana>

<sup>4</sup> American Society of Addiction Medicine (ASAM). (2010). Public Policy Statement on Medical Marijuana. Chevy Chase, MD: American Society of Addiction Medicine. Available: <http://www.asam.org/advocacy/find-a-policy-statement/view-policy-statement/public-policy-statements/2011/12/15/medical-marijuana>

by an estimated 61% of all Americans suffering from a substance use disorder (abuse or dependence) related to drugs other than alcohol.<sup>5</sup>

In order to discuss both the goals and the negative effects of marijuana legalization, a crucial distinction must be made between the terms “legalization” and “decriminalization.” Marijuana decriminalization at the state level generally removes criminal penalties for the possession and use of marijuana while the production and sale of the drug remain illegal. Full legalization, in contrast, embraces the commercialization of production, sale and use of marijuana. As of July 2012, three states will have proposals to legalize marijuana on their November 2012 ballots.

This White Paper does not review general “drug policy;” rather, it assesses the goals and consequences of state-based marijuana legalization and specifically expresses the conclusions of ASAM based on its bedrock commitment to science and to the nation’s public health. As outlined in its recommendations here, ASAM does not support proposals to legalize marijuana anywhere in the United States, including the current state-based legalization proposals which will appear on the November, 2012 ballots.

## II. Background and Significance

Marijuana use has many serious, negative health effects which are of deep concern to the ASAM. Marijuana can lead to tolerance to the effects of delta-9-tetrahydrocannabinol (THC), as well as to addiction.<sup>6 7</sup> Marijuana dependence is the most common type of drug dependence in many parts of the world (including the U.S., Canada, and Australia) after tobacco and alcohol. It is estimated that 9% of people who try marijuana become dependent.<sup>8</sup> Those who begin using the drug in their teens have approximately a one in six risk of developing marijuana dependence.<sup>9</sup> Many marijuana users who try to quit experience withdrawal symptoms that include irritability, anxiety, insomnia, appetite disturbance, and depression.<sup>10</sup> A U.S. study that dissected the National Longitudinal Alcohol Epidemiologic Survey (conducted from 1991 to 1992 with 42,862 participants) and the National Epidemiologic Survey on Alcohol and Related Conditions (conducted from 2001 through 2002 with more than 43,000 participants) found that the number of marijuana users remained roughly unchanged over that period of time while the number of dependent users increased 20%—from 2.2 million to 3 million.<sup>11</sup> This study’s authors speculated that higher potency marijuana may have been a cause of this increase. Additionally, the National Institute on Drug Abuse (NIDA) found that in 1993,

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<sup>5</sup> Substance Abuse and Mental Health Services Administration. (2011). Results from the 2010 National Survey on Drug Use and Health: Summary of National Findings. NSDUH Series H-41, HHS Publication No. (SMA) 11-4658. Rockville, MD: Substance Abuse and Mental Health Services Administration.

<sup>6</sup> Budney, A.J., & Moore, B.A. (2002). Development and Consequences of Cannabis Dependence. *Journal of Clinical Pharmacology*, 42, 28S-38S.

<sup>7</sup> The following two paragraphs on addiction are derived from the following document: Sabet, K. A., Cohen, M. & Thau, S. (in press). Cannabis: A Short Review. Vienna: United Nations.

<sup>8</sup> Anthony, J., Warner, L., & Kessler, R. (1994). Comparative epidemiology of dependence on tobacco, alcohol, controlled substance and inhalants: Basic findings from the National Comorbidity Survey. *Experimental and Clinical Psychopharmacology*, 2(3), 244–268.

<sup>9</sup> Wagner, F.A. & Anthony, J.C. (2002). From first drug use to drug dependence; developmental periods of risk for dependence upon marijuana, cocaine, and alcohol. *Neuropsychopharmacology*, 26, 479-488.

<sup>10</sup> Budney, A. J., Vandrey, R. G., Hughes, J. R., Thostenson, J. D., & Bursac, Z. (2008). Comparison of cannabis and tobacco withdrawal: Severity and contribution to relapse. *Journal of Substance Abuse Treatment*, 35(4), 362-368.

<sup>11</sup> Compton, W., Grant, B., Collier, J., Glantz, M., Stinson, F. Prevalence of Marijuana Use Disorders in the United States: 1991-1992 and 2001-2002. *Journal of the American Medical Association*, 291, 2114-2121.

marijuana use resulted in approximately 7% of all state-funded treatment admissions;<sup>12</sup> by 2009 that number had increased to 18%.<sup>13</sup> In Western and Central Europe, marijuana is a significant public health concern. It has been reported as the primary drug of abuse in 21% of cases in addiction treatment services offered in Western and Central Europe, and 14% of cases in addiction treatment services offered in Eastern and Southeast Europe.<sup>14</sup> Further, among all drug treatment patients ages 15-19, 83% were in treatment for primary marijuana use.<sup>15</sup>

Young people are especially susceptible to marijuana addiction. Research from treatment centers in the U.S. indicates that the earlier marijuana use is initiated, the higher the risk for drug abuse and dependence. In 2009, 12.6% of adults 18 and older who first tried marijuana at age 14 or younger were classified with illicit drug abuse or dependence compared to 2.1% of adults who had first used marijuana at age 18 or older.<sup>16</sup> As noted, the early use of more potent marijuana may be driving the increase of admissions for treatment of marijuana abuse. In 2009, 86% of state-funded treatment admissions of individuals between ages 12 and 17 involved marijuana. Indeed, 70% of all treatment admissions involving children aged 12 to 14 and 72% of admissions of children age 15 to 17 years cited primary marijuana abuse. From 1992 to 2006, rates of admission for children and teens under age 18 for marijuana as the primary substance of abuse increased by 188% while other drugs remained steady.<sup>17 18</sup> Data in the U.S. is corroborated with data from other countries. In the European Union, the percentage of individuals seeking treatment for primary marijuana use increased by 200% from 1999 to 2006 and currently stands at around 30% of all admissions.<sup>19</sup>

Addiction is not the only health problem related to marijuana use of concern to ASAM. While extensive reviews of the other negative health effects of marijuana use can be found in many other publications,<sup>20</sup> ASAM focuses on some key areas:

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<sup>12</sup> Substance Abuse and Mental Health Services Administration. (1998). Treatment Episode Data Set (TEDS): 1993-1998, National Admissions to Substance Abuse Treatment Services. Rockville, MD: Department of Health and Human Services, Office of Applied Sciences. Available:

[http://www.samhsa.gov/data/DASIS/teds98/1998\\_teds\\_rpt.pdf](http://www.samhsa.gov/data/DASIS/teds98/1998_teds_rpt.pdf)

<sup>13</sup> Substance Abuse and Mental Health Services Administration. (2009). Office of Applied Studies. *Treatment Episode Data Set (TEDS): 2009 Discharges from Substance Abuse Treatment Services*, DASIS.

<sup>14</sup> United Nations Office on Drugs and Crime. (2011). The World Drug Report, The Marijuana Market. Vienna: UNODC. Available: [http://www.unodc.org/documents/data-and-analysis/WDR2011/The\\_cannabis\\_market.pdf](http://www.unodc.org/documents/data-and-analysis/WDR2011/The_cannabis_market.pdf)

<sup>15</sup> Ibid.

<sup>16</sup> Center for Substance Abuse Research (2010, October 25). Early marijuana use related to later illicit drug abuse and dependence. *CESAR Fax*, 19(11). Available: <http://www.cesar.umd.edu/cesar/cesarfax/vol19/19-41.pdf>

<sup>17</sup> The National Center on Addiction and Substance Abuse (CASA) at Columbia University. (2008). CASA analysis of the Treatment Episode Data Set (TEDS), 1992-2006 (Concatenated), 2006 [Data file]. Rockville, M.D.: U.S. Department of Health and Human Services, Substance Abuse and Mental Health Services Administration, Office of Applied Studies.

<sup>18</sup> Center on Addiction and Substance Abuse at Columbia University. (2011). Non-medical marijuana: Rite of passage or Russian roulette? New York, NY: CASA Columbia.

<sup>19</sup> Room, R., Fischer, B., Hall, W., Lenton, S. and Reuter, P. (2010). *Marijuana Policy: Moving Beyond Stalemate*, Oxford, UK: Oxford University Press.

<sup>20</sup> See, among others:

Hall, W., & Degenhardt, L. (2009). Adverse health effects of non-medical cannabis use. *The Lancet*, 374(9698), 1383-1391.

Hall, W. & Solowij, N. (1998). Adverse effects of cannabis. *The Lancet*, 352(9140), 1611-1616.

Danovitch, I. (2012). Sorting through the science on marijuana: Facts, fallacies, and implications for legalization. In: Symposium: The Road to Legitimizing Marijuana: What Benefit at What Cost? *McGeorge Law Review*, 43(1), 91-108. California Society of Addiction Medicine. (n.d.) The Adverse Effects of Marijuana (for healthcare professionals). San Francisco, CA: California Society of Addiction Medicine. Available: <http://www.csam-asam.org/adverse-effects-marijuana-healthcare-professionals>

*The brain:* Marijuana intoxication causes short-term effects on the brain related to memory, verbal fluency, attention, learning, perception of time, sensory perception, with variation among chronic and naïve users.<sup>21</sup> There is evidence that chronic marijuana use has varying long-term effects, some of which may not improve over time. Of greatest concern regarding the brain is use of marijuana during adolescence—a time of ongoing brain development. Research evaluating the neurocognitive effects of marijuana provides evidence that heavy marijuana users persistently show decreases in neurocognitive performance<sup>22</sup> and worse neurocognitive effects among individuals who began marijuana use early.<sup>23</sup>

*Mental health:* The National Institute on Drug Abuse (NIDA) summarizes the research that the use of marijuana is associated with “increased rates of anxiety, depression, and schizophrenia. Some of these studies have shown age at first use to be an important risk factor, where early use is a marker of increased vulnerability to later problems...High doses of marijuana can produce an acute psychotic reaction; in addition, use of the drug may trigger the onset or relapse of schizophrenia in vulnerable individuals.”<sup>24</sup> Research indicates an association exists between early marijuana use and the development and worsening of symptoms of schizophrenia.<sup>25</sup>

*Prenatal/perinatal:* Research has yielded contradictory outcomes of prenatal exposure to marijuana, with some studies suggesting no adverse effects but other studies have linked prenatal marijuana exposure to reduction in fetal growth, including birth weight, length, head circumference, and gestational age.<sup>26</sup> Reported long-term effects also vary at different ages and include later deficits in intelligence, depression, and later marijuana use.<sup>27</sup>

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<sup>21</sup> See, among others:

Iversen, L. (2003). Cannabis and the brain. *Brain*, 126(6), 1252-70.

Crean, R. D., Crane, N. A., Mason, B. J. (2011). An evidence-based review of acute and long-term effects of cannabis use on executive cognitive functions. *Journal of Addictive Medicine*, 5(1),1-8.

Jager, G., & Ramsey, N.F. (2008). Long-term consequences of adolescent cannabis exposure on the development of cognition, brain structure and function: An overview of animal and human research. *Current Drug Abuse Reviews*, 1(2), 114-123.

<sup>22</sup> Bolla, K. I., Brown, K., Eldreth, D., Tate, K., & Cadet, J. L. (2002). Dose-related neurocognitive effects of marijuana use. *Neurobiology*, 59(9), 1337-1343.

<sup>23</sup> Gruber, S.A., Sagar, K.A., Dahlgren, M.K., Racine, M., & Lukas, S.E. (2011). Age of onset of marijuana use and executive function. *Psychology of Addictive Behaviors*. [Epub ahead of print]

<sup>24</sup> National Institute on Drug Abuse. (2010, November). *NIDA Facts*. Rockville, MD: U.S. Department of Health & Human Services, National Institutes of Health, National Institute on Drug Abuse. Available:

[http://www.drugabuse.gov/sites/default/files/marijuana\\_0.pdf](http://www.drugabuse.gov/sites/default/files/marijuana_0.pdf)

<sup>25</sup> See, among others:

Zammit, S., et al. (2002). Self-reported cannabis use as a risk factor for schizophrenia in Swedish conscripts of 1969: historical cohort study. *British Medical Journal*, 325, 1199-1201.

Foti, D.J., Kotov, R., Guey, L.T., Bromet, E.J. (2010). Cannabis use and the course of schizophrenia: 10-year follow up after first hospitalization. *The American Journal of Psychiatry*, 167(8), 987-93.

Fergusson, D.M., Horwood, L.J., & Ridder, E.M. (2005). Tests of causal linkages between cannabis use and psychotic symptoms. *Addiction*, 100(3), 354-366.

<sup>26</sup> Gray, T. R., Eiden, R. D., Leonard, K. E., Connors, G. J., Shisler, S., & Huestis, M. A. (2010). Identifying prenatal cannabis exposure and effects of concurrent tobacco exposure on neonatal growth. *Clinical Chemistry*, 56(9), 1442-1450.

Hatch, E. E., & Bracken, M. B. (1986). Effect of marijuana use in pregnancy on fetal growth. *American Journal of Epidemiology*, 124(6), 986-993.

El Marroun, H., Tiemeier, H., Steegers, E. A. P., Jaddoe, V. W. V., Hofman, A., Verhulst, F. C., et al. (2009). Intrauterine cannabis exposure affects fetal growth trajectories: The Generation R Study. *Journal of the American Academy of Child Adolescent Psychiatry*, 48(12), 1173-1181.

<sup>27</sup> Goldschmidt, L., Richardson, G., Willford, J., & Day, N. (2008). Prenatal marijuana exposure and intelligence test performance at age 6. *Journal of the American Academy of Child Adolescent Psychiatry*, 47(3), 254-63.

Gray, K. A., Day, N. L., Leech, S., Richardson, G. A. (2005). Prenatal marijuana exposure: effect on child depressive symptoms at ten years of age. *Neurotoxicology and Teratology*, 27(3), 439-448.

*Respiratory/pulmonary:* The respiratory and pulmonary effects of marijuana use are not fully researched. It is well known that marijuana smoke contains carbon monoxide, tar, and more carcinogens than tobacco smoke.<sup>28</sup> The California's Office of Environmental Health Hazard Assessment added marijuana smoke to its official list of known carcinogens in 2009.<sup>29</sup> Marijuana users generally smoke marijuana cigarettes less often than tobacco cigarettes but they also inhale greater volume and hold the marijuana smoke in for longer periods of time.<sup>30</sup> Marijuana cigarettes can deposit as much as four times the amount of tar to the lungs compared to tobacco cigarettes.<sup>31</sup> Although a recent study suggested that there is limited harm to pulmonary function from occasional marijuana smoking,<sup>32</sup> it is clear that chronic smoking is harmful to the lungs.<sup>33</sup> Research indicates that chronic marijuana smokers are more prone to bullous lung disease than cigarette smoking counterparts and at much younger ages.<sup>34</sup> The lack of available conclusive research on the extensive short- and long-term effects of smoking marijuana may be informed by the history of research on the effects of tobacco which was conducted and collected over many decades.

The serious adverse health effects of marijuana use—including addiction—outlined here are a brief summary, making clear that marijuana use adversely affects both users and their families. ASAM is concerned that much of the current discussion of changes in marijuana policy focuses only on the goals of marijuana “reform” proposals, ignoring the serious adverse health and safety effects of marijuana use. The negative health effects of marijuana must play a significant role in the decision-making process of developing a marijuana policy to promote the public health.

### III. Goals of Marijuana Legalization

Marijuana legalization has been promoted as a public health and safety measure, as a way to decrease drug-related crime, and as a solution to the harms caused by marijuana

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Day, N., Goldschmidt, L., Thomas, C. (2006). Prenatal marijuana exposure contributes to the prediction of marijuana use at age 14. *Addiction*, 101(9), 1313–22.

<sup>28</sup> American Lung Association. (2012). Health hazards of smoking marijuana. Available: <http://www.lung.org/stop-smoking/about-smoking/health-effects/marijuana-smoke.html>

<sup>29</sup> Tomar, R. S., Beaumont, J., & Hsieh, J. C. Y. (2009). Evidence on the Carcinogenicity of Marijuana Smoke. California Environmental Protection Agency. Reproductive and Cancer Hazard Assessment Branch, Office of Environmental Health Hazard Assessment. Available:

[http://oehha.ca.gov/prop65/hazard\\_ident/pdf\\_zip/FinalMJsmokeHID.pdf](http://oehha.ca.gov/prop65/hazard_ident/pdf_zip/FinalMJsmokeHID.pdf); Corresponding slides available:

[http://www.oehha.ca.gov/prop65/public\\_meetings/pdf/cicslides060509.pdf](http://www.oehha.ca.gov/prop65/public_meetings/pdf/cicslides060509.pdf)

<sup>30</sup> Joy, J. E., Watson, Jr., S. J., & Benson, J. A. (Eds). (1999). *Marijuana and medicine: assessing the science base*. Washington, D.C.: National Academy Press.

<sup>31</sup> Wu, T.C., Tashkin, D.P., Djahed, B., & Rose, J. E. (1998). Pulmonary hazards of smoking marijuana as compared with tobacco. *New England Journal of Medicine*, 318(6), 347-351.

<sup>32</sup> Pletcher, M. J., Vittinghoff, E., Kalkan, R., Richman, J., Safford, M., Sidney, S., et al. (2012). Association between marijuana exposure and pulmonary function over 20 years. *Journal of the American Medical Association*, 307(2), 173-181.

<sup>33</sup> See, among others:

Tashkin, D. P. (2005). Smoked marijuana as a cause of lung injury. *Monaldi Archives for Chest Disease*, 63(2), 93-100.

Diplock, J. & Plecas, D. (2009). Clearing the Smoke on Cannabis: Respiratory Effects of Cannabis smoking. Ottawa, ON: Canadian Centre on Substance Abuse. Available: <http://www.ccsa.ca/2009%20CCSA%20Documents/ccsa-11797-2009.pdf>

<sup>34</sup> Hii, S.W., Tam, J.D., Thompson, B.R., Naughton, M.T. (2008). Bullous lung disease due to marijuana. *Respirology*, 13(1), 122-127.

criminalization, including incarceration, among others. In particular, those who advocate for the legalization of marijuana commonly argue that marijuana legalization will significantly reduce the illegal trade of marijuana and the crime associated with that illegal trade. They further anticipate that legal marijuana will be a significant source of tax revenue, and it will reduce the high costs related to law enforcement. These claims have not been validated, in part because the full consequences of marijuana legalization remain unknowable; however, there exists valuable, independent, but limited, prospective research on the likely outcomes of state-based marijuana legalization in the U.S.

The RAND Corporation analyzed the prospective effects of legalized marijuana under passage of California's Proposition 19 in 2010 with the continued federal prohibition of marijuana.<sup>35</sup> Researchers concluded that rates of marijuana use in that state would substantially increase. Prohibition of drugs, including marijuana, currently increases the cost of doing business because of the many risks it places on producers and sellers. Under state legalization, the price of marijuana would drop significantly—up to 80%—with the market price for users depending on taxes and regulation. A “gray market” would still exist for non-taxed, unregulated marijuana.<sup>36</sup> The black market potential for marijuana is great, as the United States has learned from tobacco which is smuggled illegally over the Canada-U.S. border. The specific design of state legalization would dramatically impact projected taxes collected and rates of use, including how high a tax is used, differences in taxes and regulation of potency, home cultivation of the drug, advertising, and the development and management of the regulatory system put in place.<sup>37</sup> This would be in conflict with federal law under which marijuana still would be illegal.

Another RAND study concluded that marijuana legalization in California would not significantly reduce Mexican drug trafficking organizations' (DTOs') gross revenue, nor would it significantly reduce drug-related violence in Mexico.<sup>38</sup> Researchers noted that “the only way Prop 19 could importantly cut DTO drug export revenues is if California-produced marijuana is smuggled to other states at prices that outcompete current Mexican supplies”(p. 3).<sup>39</sup> Diverted marijuana from legal production in one state has implications for all others, as it would undercut marijuana prices across the country.<sup>40</sup>

The price elasticity of marijuana under a legalization scheme is complicated because addictive substances do not behave in the market the same way non-addictive substances do. Demand for marijuana changes from a perceived luxury with first-time use to a virtual necessity for those users who have marijuana dependence. For the non-dependent marijuana user,

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<sup>35</sup> Kilmer, B., Caulkins, J. P., Pacula, R. L., MacCoun, R. J., & Reuter, P. H. (2010). *Altered State? Assessing How marijuana Legalization in California Could Influence Marijuana Consumption and Public Budgets*. Santa Monica, CA: RAND Drug Policy Research Center. Available:

[http://www.rand.org/content/dam/rand/pubs/occasional\\_papers/2010/RAND\\_OP315.pdf](http://www.rand.org/content/dam/rand/pubs/occasional_papers/2010/RAND_OP315.pdf)

<sup>36</sup> Ibid.

<sup>37</sup> Caulkins, J. P., Kilmer, B., MacCoun, R. J., Pacula, R. L. & Reuter, P. (2012). Design considerations for legalizing cannabis: Lessons inspired by analysis of California's Proposition 19. *Addiction*. doi: 10.1111/j.1360-0443.2011.03561.x

<sup>38</sup> Kilmer, B., Caulkins, J. P., Bond, B. M., & Reuter, P. H. (2010). *Reducing Drug Trafficking Revenues and Violence in Mexico: Would Legalizing Marijuana in California Help?* Santa Monica, CA: RAND International Programs and Drug Policy Research Center. Available:

[http://www.rand.org/content/dam/rand/pubs/occasional\\_papers/2010/RAND\\_OP325.pdf](http://www.rand.org/content/dam/rand/pubs/occasional_papers/2010/RAND_OP325.pdf)

<sup>39</sup> Ibid.

<sup>40</sup> Caulkins, J. P., & Bond, B. M. (2012). Marijuana price gradients: Implications for exports and export-generated tax revenue for California after legalization. *Journal of Drug Issues*, 42(1), 28-45.

demand is sensitive to changes in price.<sup>41 42</sup> Marketing to customers has potential under both legalization and decriminalization scenarios to drive up the market. Should the legalization of commercial sales of marijuana be accompanied by legalization of advertising of commercially sold marijuana, the evidence that tobacco cigarette advertising increases consumption<sup>43</sup> suggests that the same effect on demand may be true for marijuana. Levels of exposure to cigarette advertising impact adolescent smoking behaviors, with high exposure to cigarette advertising increasing the likelihood of smoking.<sup>44</sup> There is also evidence that alcohol advertising increases alcohol consumption, and separately, that bans against advertising alcohol have varying effects on reducing use.<sup>45</sup>

ASAM recognizes that while the studies of prospective marijuana legalization described here relate specifically to California, the findings are likely applicable to other states, should legalization initiatives pass and be implemented. If marijuana were legalized in any state, there would likely be changes—both expected and unexpected—in price, taxes, and marketing within that state and in surrounding states.

In addition to collecting revenues, state-based marijuana legalization initiatives seek to mitigate the harmful effects of current criminal justice sanctions related to marijuana, as there is a widely held perception that the public health harms of criminal justice interventions are greater than their benefits. The United States has one of the highest rates of incarceration in the world, with 7.2 million people under supervision of the criminal justice system,<sup>46</sup> of which a 5.5 million people are on probation and parole.<sup>47</sup> In a sample of male arrestees from ten sites in the U.S., more than half tested positive for illicit drugs at the time of arrest, ranging from 64-81%,<sup>48</sup> demonstrating the ongoing connection between crime and drug use. Drug use often continues after release and is tied to high rates of recidivism while under community supervision. Marijuana was the most common drug identified among offenders with 36-56% testing positive.<sup>49</sup> In terms of the role of marijuana sale in incarceration, the majority of individuals in state and federal prison for marijuana offenses are neither “unambiguously low-level” nor are they “kingpins” in the drug trade.<sup>50</sup> Further study confirmed that an estimated 0.5% of all incarcerated individuals served time for their marijuana use; the vast majority of individuals

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<sup>41</sup> Jacobson, M. (2004). Baby booms and drug busts: trends in youth drug use in the United States, 1975-2000. *Quarterly Journal of Economics*, 119(4), 1,481-1,512.

<sup>42</sup> Williams, J. (2004). The effects of price and policy on marijuana use: What can be learned from the Australian experience? *Health Economics*, 13(2), 123-137.

<sup>43</sup> Tye, J. B., Warner, K. E., & Glantz, S. A.. (1987). Tobacco advertising and consumption: Evidence of a causal relationship. *Journal of Public Health Policy* 8(4), 492-508.

<sup>44</sup> Botvin, G. J., Goldberg, C. J., Botvin, E. M., & Dusenbury, L. (1993). Smoking behavior of adolescents exposed to cigarette advertising. *Public Health Reports*, 108(2), 214-224.

<sup>45</sup> Saffer, H. (2002). Alcohol advertising and youth. *Journal of Studies on Alcohol, Suppl.* 14(2), 173-181.

<sup>46</sup> Bureau of Justice Statistics. (2012). Key facts at a glance. Washington, DC: Office of Justice Programs, Bureau of Justice Statistics. Available: <http://bjs.ojp.usdoj.gov/content/glance/corr2.cfm>

<sup>47</sup> Bonczar, T. P., & Glaze, L. E. (2011, November 21). Probation and Parole in the United States, 2010. Washington, DC: U.S. Department of Justice, Office of Justice Programs, Bureau of Justice Statistics. Available: <http://bjs.ojp.usdoj.gov/content/pub/pdf/ppus10.pdf>

<sup>48</sup> Office of National Drug Control Policy. (2012). ADAM II: 2011 Annual Report, Arrestee Drug Abuse Monitoring Program. Washington, DC: Office of National Drug Control Policy. Available:

[http://www.whitehouse.gov/sites/default/files/email-files/adam\\_ii\\_2011\\_annual\\_rpt\\_web\\_version\\_corrected.pdf](http://www.whitehouse.gov/sites/default/files/email-files/adam_ii_2011_annual_rpt_web_version_corrected.pdf)

<sup>49</sup> Center for Substance Abuse Research. (2012, May 21). Marijuana most commonly detected drug among male arrestees tested by ADAM II in ten U.S. sites. *CESAR Fax*, 21(20). Available: <http://www.cesar.umd.edu/cesar/cesarfax/vol21/21-20.pdf>

<sup>50</sup> Sevigny, E., & Caulkins, J. P. (2004). Kingpins or mules? An analysis of drug offenders incarcerated in federal and state prisons. *Criminology and Public Policy*, 3(3):401–434.

incarcerated for marijuana possession were involved in distribution.<sup>51</sup> Similarly, analysis by the National Center on Addiction and Substance Abuse at Columbia University (CASA) showed that only 2% of all incarcerated persons in the nation's prisons and jails were incarcerated due to a marijuana charge as the controlling offense.<sup>52</sup> Controlling offenses of marijuana possession accounted for 1.1% of all incarcerated persons while 0.9% of all inmates were incarcerated for marijuana possession as their only offense.

Arrests for marijuana possession account for 45.8% of all drug-related arrests,<sup>53</sup> totaling 750,000 arrests in 2010. Based on the number of people serving time for marijuana offenses compared to the number of sellers, researchers have concluded that, despite the many arrests for possession, “marijuana toughness” is low in the U.S.<sup>54</sup> The likelihood that at present, marijuana sellers will spend time incarcerated is very low compared to sellers of other illicit drugs such as cocaine and heroin; therefore, “easing up on toughness” of marijuana laws would not substantially reduce incarceration rates and its substantial costs, though it is unclear what would be the full impact of marijuana legalization on this population.<sup>55</sup> Removing criminal penalties for marijuana possession (i.e. marijuana decriminalization) could substantially reduce the large number of marijuana possession arrests depending upon laws regarding limitations on possession, use, transportation, etc. Likewise, under marijuana legalization, marijuana possession arrests would likely plummet in those states; however, under both circumstances, other marijuana-related arrests would still be made (see **IV. Negative Consequences of Marijuana Legalization**).

#### **IV. Negative Consequences of Marijuana Legalization**

Any state considering changing the legal status of marijuana should consider the negative health consequences of such changes, as well as the benefits of maintaining the criminalization of marijuana sale and use.

Advocates for marijuana legalization often promote as a reason to legalize marijuana the fact that the costs of alcohol and tobacco far outweigh those of marijuana. ASAM recognizes that at present, legal drugs like alcohol and tobacco are more widely used and cause substantial—and significantly more, in many cases—harm than marijuana and in some cases, more harm than all of the illegal drugs combined. The nonmedical<sup>56</sup> use of prescription drugs is now the fastest growing drug problem in the United States.<sup>57 58</sup> These legal drugs provide

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<sup>51</sup> Caulkins, J.P. & Sevigny, E. (2005). How many people does the U.S. incarcerate for drug use, and who are they? *Contemporary Drug Problems*, 32(3):405–428.

<sup>52</sup> National Center on Addiction and Substance Abuse at Columbia University. (2010). *Behind Bars II: Substance Abuse and America's Prison Population*. New York, NY: CASA Columbia. Available: <http://www.casacolumbia.org/articlefiles/575-report2010behindbars2.pdf>

<sup>53</sup> Federal Bureau of Investigation. (2011). *Crime in the United States, 2010. Uniform Crime Reports*. U.S. Department of Justice, Federal Bureau of Investigation, Criminal Justice Information Services Division. Available: <http://www.fbi.gov/about-us/cjis/ucr/crime-in-the-u.s/2010/crime-in-the-u.s.-2010/persons-arrested>

<sup>54</sup> Caulkins, J.P. & Reuter, P. (2010). How drug enforcement affects drug prices. In: M. Tonry (E.d.), *Crime and Justice: A Review of Research, Volume 39* (213–72). Chicago, IL: University of Chicago Press.

<sup>55</sup> Ibid.

<sup>56</sup> “Nonmedical use of prescription drugs” refers to use of a drug without a prescription and/or misuse of a drug such as overuse or abuse. All “nonmedical” drug use includes use of any illegal drugs.

<sup>57</sup> Maxwell, J. C. (2011). The prescription drug epidemic in the United States: A perfect storm. *Drug and Alcohol Review*, 30(3), 264-270.

<sup>58</sup> Centers for Disease Control and Prevention. (2012, January 13). CDC grand rounds: Prescription drug overdoses – a US epidemic. *Morbidity and Mortality Weekly Report*, 61(1), 10-13. Available: <http://www.cdc.gov/mmwr/preview/mmwrhtml/mm6101a3.htm>

evidence that drug use itself—not its illegality—is a national public health threat. Legal drugs currently wreak havoc on public health, producing substantial financial and health burdens. The White House Office of National Drug Control Policy (ONDCP) affirmed that, “The healthcare and criminal justice costs associated with alcohol and tobacco far surpass the tax revenue they generate, and little of the taxes collected on these substances is contributed to the offset of their substantial social and health costs.”(p.23)<sup>59</sup> The annual social cost in the US of alcohol is estimated at between \$185<sup>60</sup> and \$235 billion<sup>61</sup> and for tobacco at \$200 billion.<sup>62</sup> Those costs vastly exceed the value of US tax revenue from the sale of these two substances (\$14 billion for alcohol<sup>63</sup> and \$25 billion for tobacco<sup>64</sup>). The same would likely be true for legal marijuana. The College on Problems of Drugs and Dependence (CPDD) acknowledges, “At present levels of use, the health costs [illegal drugs] impose on users and on society are dwarfed...by those attributable to tobacco (nicotine) and alcohol. The health costs of illicit drugs might well approach or exceed those of tobacco and alcohol if their legal status were changed and their use increased sharply.”(p. 2).<sup>65</sup>

Revenues from taxes on alcohol and tobacco currently do not approach the costs of prevention and treatment. It is also unclear how significant would be the cost of setting up a regulatory scheme for legal marijuana. Although a possible goal of state-based marijuana legalization could be to increase funding for addiction prevention and treatment through taxation of commercial activities associated with legalized marijuana, such an outcome is far from likely to be achieved as can be seen from the use of tax revenue from legal alcohol and tobacco; moreover, the negative health effects of increased marijuana use (as outlined in **II. Background and Significance**) would substantially escalate.

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<sup>59</sup> Office of National Drug Control Policy. (2011). *National Drug Control Strategy 2011*. Washington, DC: Office of National Drug Control Policy. Available: <http://www.whitehouse.gov/sites/default/files/ondcp/ndcs2011.pdf>

<sup>60</sup> Harwood, H. (2000). *Updating Estimates of the Economic Costs of Alcohol Abuse in the United States: Estimates, Update Methods and Data*. Report prepared by The Lewin Group for the National Institute on Alcohol Abuse and Alcoholism.

<sup>61</sup> Rehm, J., Mathers, C., Popova, S., Thavorncharoensap, M., Teerawattananon, Y., & Patra, J. (2009). Global burden of disease and injury and economic cost attributable to alcohol use and alcohol-use disorders. *Lancet*, 373, 2223–2233.

<sup>62</sup> Centers for Disease Control and Prevention. (2011). Tobacco Use: Targeting the Nation’s Leading Cause of Death, At a Glance 2011. Available: <http://www.cdc.gov/nccdphp/publications/aag/osh.htm>

<sup>63</sup> Statement from ONDCP Director R. Gil Kerlikowske: Why Marijuana Legalization Would Compromise Public Health and Public Safety, Annotated Remarks. Delivered at the California Police Chiefs Association Conference, San Jose, CA, March 4, 2010. Available: [http://www.whitehouse.gov/sites/default/files/ondcp/issues-content/directors\\_cal\\_chiefs\\_remarks.pdf](http://www.whitehouse.gov/sites/default/files/ondcp/issues-content/directors_cal_chiefs_remarks.pdf); Tax Policy Center. (2010). Alcohol tax revenue: State and local alcohol beverage tax revenue, selected years, 1977-2008. Urban Institute and Brookings Institution. Retrieved November 15, 2011 from <http://www.taxpolicycenter.org/taxfacts/displayafact.cfm?DocID=399&Topic2id=90&Topic3id=92>

<sup>64</sup> Statement from ONDCP Director R. Gil Kerlikowske: Why Marijuana Legalization Would Compromise Public Health and Public Safety, Annotated Remarks. Delivered at the California Police Chiefs Association Conference, San Jose, CA, March 4, 2010. Available: [http://www.whitehouse.gov/sites/default/files/ondcp/issues-content/directors\\_cal\\_chiefs\\_remarks.pdf](http://www.whitehouse.gov/sites/default/files/ondcp/issues-content/directors_cal_chiefs_remarks.pdf); Talley, L. A., (2002, January 10). Federal Excise Taxes on Tobacco Products: Rates and Revenues. CRS Report for Congress. Available: <http://www.policyarchive.org/handle/10207/bitstreams/3314.pdf>; Saul, S. (2008, August 30). Government gets hooked on tobacco tax billions. *New York Times*, p. WK3. Available: <http://www.nytimes.com/2008/08/31/weekinreview/31saul.html?em>; Campaign for Tobacco Free Kids. Toll of tobacco in the United States of America, See “smoking-caused costs” on p. 2: <http://www.tobaccofreekids.org/research/factsheets/pdf/0072.pdf>

Tax Policy Center. (2010). Tobacco tax revenue: State and local tobacco tax revenue, selected years, 1977-2008. Urban Institute and Brookings Institution. Retrieved November 15, 2011 from <http://www.taxpolicycenter.org/taxfacts/displayafact.cfm?DocID=403&Topic2id=90&Topic3id=92>

<sup>65</sup> College on Problems of Drug Dependence. (1997). Statement on National Drug Policy. Philadelphia, PA: College on Problems of Drug Dependence. Available: <http://www.cpdd.vcu.edu/Media/FactSheets/national.pdf>

There is great uncertainty of anticipated federal government involvement in enforcing federal marijuana laws should marijuana be legalized at the state level. Nationally, there are an estimated 2.7 million alcohol-related arrests each year<sup>66</sup> compared to 750,000 annual marijuana possession arrests.<sup>67</sup> If marijuana use increased, as can be expected under legalization, it is likely that there would be an increase in the number of arrests at the state level for marijuana-related incidents such as public use violations, violations in laws regulating age limits, and marijuana-related arrests for driving under the influence (DUI).

Currently, marijuana is the most common drug involved in drugged driving—a significant cause of highway crashes, injury, and death.<sup>68</sup> New research from meta-analyses shows that marijuana use doubles the risk of a crash;<sup>69</sup> <sup>70</sup> habitual marijuana use is associated with increased risk of crash injury.<sup>71</sup> Among all fatally injured drivers in the U.S. in 2009 for which drug test results were available, 8.6% were positive for marijuana.<sup>72</sup> A study of fatally injured drivers in Washington State showed that 12% were positive for marijuana.<sup>73</sup> A study of seriously injured drivers in Maryland showed that 26.9% were positive for marijuana; 50% of drivers under age 21 were positive for marijuana.<sup>74</sup> Increases in rates of drugged driving due to marijuana would raise the costs resulting from crashes, injuries, and lost lives. Thus, decreases in highway safety constitute an easy-to-predict negative consequence of the legalization of marijuana use by adults.

Advocates of marijuana legalization commonly support the use of an age limit of 21 for marijuana use, production, and sales, similar to standards for alcohol. Rates of youth drug use instruct youth prevention needs. The relationship between “perceived harm” from use of a drug and rates of drug use has been well established by public health researchers. A recent report by the United States Senate Caucus on International Narcotics Control, released in June 2012, expressed serious concern over recent increases in national rates of marijuana use, particularly noting more favorable attitudes of youth regarding marijuana use.<sup>75</sup> The Monitoring the Future (MTF) study from the University of Michigan importantly has shown an inverse relationship

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<sup>66</sup> Office of National Drug Control Policy. (2011). Marijuana Legalization. Fact Sheet. Washington, DC: Author. Available: [http://www.whitehouse.gov/sites/default/files/ondcp/Fact\\_Sheets/marijuana\\_legalization\\_fact\\_sheet\\_3-3-11.pdf](http://www.whitehouse.gov/sites/default/files/ondcp/Fact_Sheets/marijuana_legalization_fact_sheet_3-3-11.pdf)

<sup>67</sup> Federal Bureau of Investigation. (2011). Crime in the United States, 2010. Arrests. Uniform Crime Reports. Washington, DC: Author. Available: <http://www.fbi.gov/about-us/cjis/ucr/crime-in-the-u.s/2010/crime-in-the-u.s.-2010/persons-arrested>

<sup>68</sup> DuPont, R.L., Logan, B.K., Shea C.L., Talpins, S.K., Walsh, J.M., & Voas, R.B. (2011). Drugged Driving: A White Paper. Institute for Behavior and Health Drugged Driving Committee. Rockville, MD: National Institute on Drug Abuse. Available: [http://www.whitehouse.gov/sites/default/files/ondcp/issues-content/drugged-driving/nida\\_dd\\_paper.pdf](http://www.whitehouse.gov/sites/default/files/ondcp/issues-content/drugged-driving/nida_dd_paper.pdf)

<sup>69</sup> Li, M., Brandy, J. E., DiMaggio, C. J., Lusardi, A. R., Tzong, K. Y., Li, G. (2012). Marijuana use and motor vehicle crash. *Epidemiological Reviews*, 175(2), 89-90.

<sup>70</sup> Ashbridge, M. & Cartwright, J. L. (2012). Acute cannabis consumption and motor vehicle collision risk: Systematic review of observational studies and meta-analysis. *British Medical Journal*, 344, 344:e536 doi: 10.1136/bmj.e536

<sup>71</sup> Blows, S., Ivers, R.Q., Connor, J., Ameratunga, S., Woodward, M., & Norton, R. (2005). Marijuana use and car crash injury. *Addiction*, 100(5), 605-611.

<sup>72</sup> Compton, R., & Berning, A. (2009). Results of the 2007 National Roadside Survey of Alcohol and Drug Use by Drivers. *Traffic Safety Facts*. DOT HS 811 175. Washington, DC: National Highway Traffic Safety Administration.

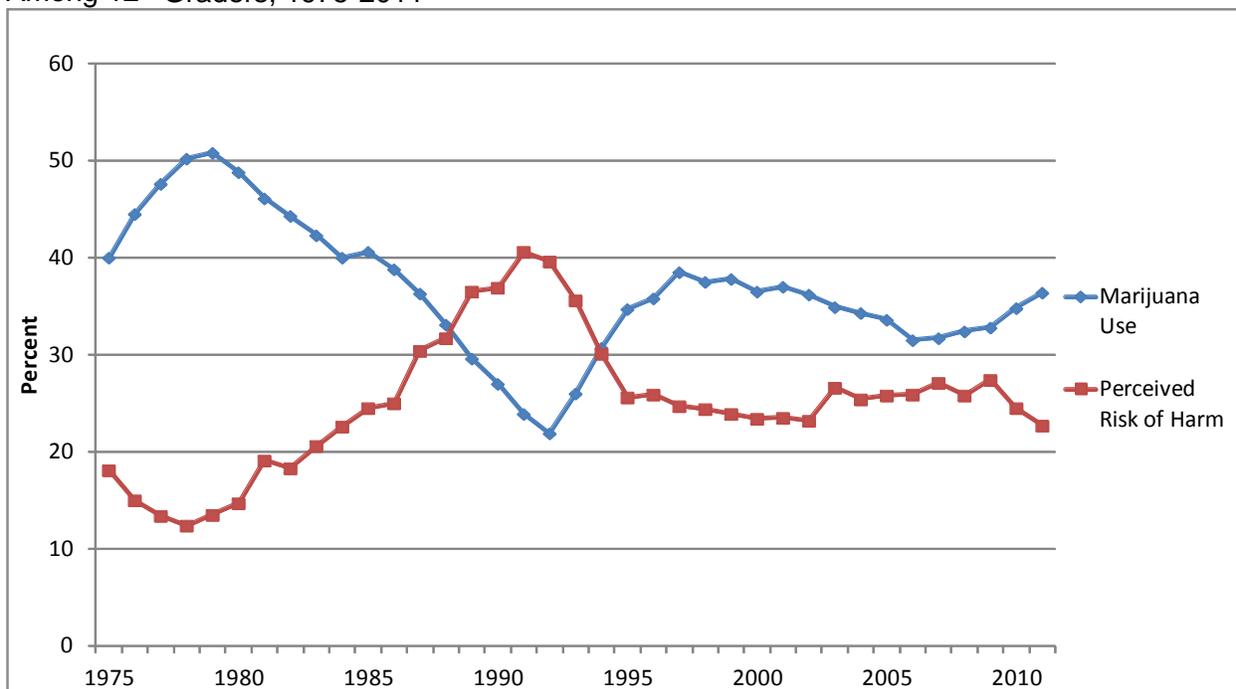
<sup>73</sup> Schwilke, E.W., Sampaio dos Santos, M.I., & Logan, B.K. (2006). Changing patterns of drug and alcohol use in fatally injured drivers in Washington State. *Journal of Forensic Sciences*, 51(5), 1191-1198.

<sup>74</sup> Walsh, M., Flegel, R., Atkins, R., Cangianelli, L.A., Cooper, C., Welsh, C., Kerns, T.J. (2005). Drug and alcohol use among drivers admitted to a Level-1 Trauma Center. *Accident Analysis and Prevention*, 37(5), 894-901.

<sup>75</sup> United States Senate Caucus on International Narcotics Control. (2012). Reducing the U.S. Demand for Illegal Drugs: A Report by the United States Senate Caucus on International Narcotics Control. Washington, DC: 112<sup>th</sup> Congress, 2<sup>nd</sup> Session.

between the perception of risk of harm from use of a drug and the rate of the use of that drug.<sup>76</sup> This study has shown consistently over decades that when the perception of harm from marijuana use was high, marijuana use was low and when the perception of harm from marijuana use was low, the use was high (See Figure 1). After a decline in marijuana use among 8<sup>th</sup>, 10<sup>th</sup> and 12<sup>th</sup> graders in the U.S., marijuana use increased over the past four years, with significant increases seen from 2009 to 2010 for lifetime, past year, past 30 day, and daily use across all grades<sup>77</sup> and continued increases among 10<sup>th</sup> and 12<sup>th</sup> graders in 2011.<sup>78</sup> Daily marijuana use, defined as use on 20 or more occasions in the past month, increased from 2010 to 2011 for all grades, with a statistically significant increase from 2007.<sup>79</sup> In 2011, daily marijuana use among 12<sup>th</sup> graders reached a 30-year high of 6.6% or 1 in 15.<sup>80</sup> (It is important to note that the MTF study does not capture the attitudes and drug using behaviors of school-aged persons who have dropped out of school or have been expelled.)

Figure 1. Past Year Marijuana Use and Perceived Risk of Harm of Occasional Marijuana Use Among 12<sup>th</sup> Graders, 1975-2011



<sup>a</sup> Source: Monitoring the Future Study, [www.monitoringthefuture.org](http://www.monitoringthefuture.org).

As a comparison, cigarette use among high school students has continued to decline since the mid to late 1990s while marijuana use remained steady until its recent upswing since

<sup>76</sup> Johnston, L. D., O'Malley, P. M., Bachman, J. G., & Schulenberg, J. E. (2012). Monitoring the Future, National Results on Adolescent Drug Use: Overview of Key Findings, 2011. Ann Arbor, MI: Institute for Social Research, The University of Michigan. Available: <http://monitoringthefuture.org/pubs/monographs/mtf-overview2011.pdf>

<sup>77</sup> Meyer, P. (2010). Marijuana use rising; Ecstasy use beginning to rise; alcohol use declining among U.S. teens. Record Update, Office of the Vice President for Communications. University of Michigan, institute for Social Research. Available: <http://www.ur.umich.edu/update/archives/101215/mtfdrugs15>

<sup>78</sup> Johnston, L. D., O'Malley, P. M., Bachman, J. G., Schulenberg, J. E. (2012). Monitoring the Future: National Results on Adolescent Drug Use, Overview of Key Findings, 2011. Ann Arbor, MI: Institute for Social Research, The University of Michigan. Available: <http://monitoringthefuture.org/pubs/monographs/mtf-overview2011.pdf>

<sup>79</sup> Meyer, P. (2011). Marijuana use up among U.S. teens; alcohol use this historic lows. Record Update, Office of the Vice President for Communications. University of Michigan, Institute for Social Research. Available: <http://www.ur.umich.edu/update/archives/111215/mtfmain>

<sup>80</sup> Ibid.

the mid 2000s. Rates of past month marijuana use exceeded those of past month cigarette use across all grades: 7.2% vs. 6.1% of 8<sup>th</sup> graders, 17.6% vs. 11.8% of 10<sup>th</sup> graders, and 22.6% vs. 18.7% of 12<sup>th</sup> graders, used marijuana vs. cigarettes, respectively. Research has also indicated an association between early marijuana use and later illicit drug use,<sup>81</sup> as well as later tobacco use and nicotine dependence.<sup>82</sup>

The American Academy of Pediatrics (AAP) suggests that based on the experiences of alcohol and tobacco, “legalization of marijuana would have a negative effect on youth”(p. e636).<sup>83</sup> The AAP predicts that if marijuana were legalized, perceived risk of harm would likely decrease in conjunction with increases in use.<sup>84</sup> ASAM concurs with the AAP that legalization would have the unintended consequences of decreasing the perceived harm associated with marijuana use and thus, would be associated with increases in rates of marijuana use. The legalization of marijuana would produce serious public health harms, including increased marijuana use, among youth.

The Senate Caucus on International Narcotics Control noted that along with changes in marijuana use rates and corresponding changing attitudes about marijuana use, legal changes have been made at the state level regarding the status of marijuana, stating that “the increasing trend in marijuana production in states with permissive medical marijuana laws cannot be ignored given the considerable danger domestic cultivation poses to changing attitudes among American youth.”(p. 14)<sup>85</sup> And yet, when considering alternatives to the federal scheduling of cannabis under the Controlled Substances Act (CSA), the Senate Caucus stated, “We believe focusing resources on alternative medicine development through an approved Federal Drug Administration (FDA) process, rather than the legalization of marijuana, is the best route to explore.”(p. 15)<sup>86</sup>

The College on Problems of Drugs and Dependence (CPDD), in its public policy statement on drug policy, makes the point that that rates of consumption of a drug in a population correlate directly with availability: “The more available a drug of abuse, the more people use it, the more is consumed by the user, and the higher is the number of users who encounter problems caused by heavy use. Therefore, legal controls (including but not necessarily limited to prohibitions) that restrict availability are effective means of reducing consumption, reducing drug-induced problems, and discouraging initial use by children and adolescents.”(p.2)<sup>87</sup>

A 2008 publication from the Marijuana Policy Project (MPP), an organization that seeks to legalize marijuana, suggested that “medical” marijuana laws do not increase teen marijuana

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<sup>81</sup> Swift, W., Coffey, C., Degenhardt, L., Carlin, J. B., Romaniuk, H., & Patton, G. C. (2011). Cannabis and progression to other substance use in young adults: Findings from a 13-year prospective population-based study. *Journal of Epidemiology and Community Health*. doi:10.1136/jech.2010.129056

<sup>82</sup> Patton, G. C., Coffey, C., Carlin, J. B., Sawyer, S. M., & Lynskey, M. (2005). Reverse gateways? Frequent cannabis use as a predictor of tobacco initiation and nicotine dependence. *Addiction*, 100(10), 1518-1525.

<sup>83</sup> Joffe, A., Yancy, S., American Academy of Pediatrics Committee on Substance Abuse, and Committee on Adolescence. (2004). Legalization of marijuana: Potential impact on youth. *Pediatrics*, 113, e632-e638. Available: <http://pediatrics.aappublications.org/content/113/6/e632.full>

<sup>84</sup> Ibid.

<sup>85</sup> United States Senate Caucus on International Narcotics Control. (2012). Reducing the U.S. Demand for Illegal Drugs: A Report by the United States Senate Caucus on International Narcotics Control. Washington, DC: 112<sup>th</sup> Congress, 2<sup>nd</sup> Session.

<sup>86</sup> Ibid.

<sup>87</sup> College on Problems of Drug Dependence. (1997). Statement on National Drug Policy. Philadelphia, PA: College on Problems of Drug Dependence. Available: <http://www.cpdd.vcu.edu/Media/FactSheets/national.pdf>

use, showing that rates of teen marijuana use in the years of law passage in the mid to late 1990s were higher than those in the mid 2000s<sup>88</sup> but analysis has shown that from 2002 to 2008, rates of marijuana use among adolescents in “medical” marijuana states were higher than youth in states without those laws.<sup>89</sup> Although research is unclear as to why rates of marijuana use were different among youth in these states, it does not follow that making marijuana more accessible at the state level would reduce marijuana use among youth. ASAM has stated that it clearly “opposes any changes in law and regulation that would lead to a sudden significant increase in the availability of any dependence-producing drug (outside of a medically-prescribed setting for therapeutic indications)”(p.3).<sup>90</sup> The availability of marijuana would surely increase under state-based legalization and a substantial marijuana industry would emerge under legalization, as has begun to happen with the legalization of “medical” marijuana.

Many in support of marijuana legalization disregard concerns about the potential increases in the availability of marijuana and/or increases in marijuana use should such laws be passed. The negative health effects of marijuana use often are overlooked or unknown. However, a clear-cut negative health consequence of legalization of marijuana sale and use would be an increase in the number of persons, including youth, in need of treatment services for cannabinoid or marijuana addiction. ASAM, as an organization devoted to the science of addiction medicine, is particularly concerned about this potential rise in population-level addiction rates.

## V. International Context

Those in favor of legalizing marijuana in the United States sometimes turn to the experiences of other nations with less restrictive approaches to drug policy, particularly the Netherlands and Portugal, to inform their cause. As noted, no country has legalized marijuana use and sale. In the Netherlands, the use, possession, and sale of marijuana all remain illegal. The laws which would typically ban marijuana “coffee shops” (where marijuana is sold) and marijuana users within these shops are not enforced is a policy of “toleration.” Historically, Dutch coffee shops have been permitted to sell marijuana under simple, but strict conditions such as without advertisement, in limited amounts (5 grams) per person each day, only to adults age 18 and older, and without “cause of nuisance.”<sup>91</sup> The marijuana sold in these shops has been and continues to be illegally grown and/or imported.

The potency (i.e. concentrations of delta-9-tetrahydrocannabinol, THC) of marijuana and hashish sold in coffee shops has significantly increased over time.<sup>92</sup> As a result of increases in international drug tourism and drug trade, commercialization of the marijuana industry, and

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<sup>88</sup> O’Keefe, K., Earleywine, M., Mirken, B., & Hurst, Z. (2008). Marijuana Use by Young People: The Impact of State Medical Marijuana Laws. Washington, DC: Marijuana Policy Project. Available:

<http://www.mpp.org/assets/pdfs/library/Teen-Use-FINAL.pdf>

<sup>89</sup> Wall, M. M., Poh, E., Cerda, M., Keyes, K., Galea, S., & Hasin, D. S. (2011). Adolescent marijuana use from 2002 to 2008: Higher in states with medical marijuana laws, cause still unclear, *Annals of Epidemiology*, 21(9), 714-716,

<sup>90</sup> American Society of Addiction Medicine. (1994). Public Policy Statement on National Drug Policy. Chevy Chase, MD: American Society of Addiction Medicine. Available:

<sup>91</sup> Government of the Netherlands. (n.d.). Alcohol and drugs: Drugs. Available:

<http://www.government.nl/issues/alcohol-and-drugs/drugs>

<sup>92</sup> Pijlman, F. T., Rigter, S. M., Hoek, J., Goldschmidt, H. M., & Niesink, R. J. (2005). Strong increase in total delta-THC in cannabis preparations sold in Dutch coffee shops. *Addiction Biology*, 10(2), 171-180. Available:

<http://ukcia.org/research/IncreaseInTHCInCoffeeShops.pdf>

stronger links to organized crime,<sup>93</sup> the drug policy of the Netherlands is now changing. The Dutch government states that in order “to combat the nuisance and crime associated with coffee shops and the trade in drugs,” “coffee shops must become smaller and easier to control.”<sup>94</sup> *De facto* decriminalization has and will remain intact for all “soft” drugs, including marijuana and hashish in the Netherlands; however, marijuana with THC content of 15% or more is now considered a “hard” drug and is banned from sale. Coffee shops are no longer public; they are private clubs with limited membership for persons 18 and older who can prove they are residents of the Netherlands and they must be located at a distance from any schools. These and related changes are currently underway and will all be in place by January 1, 2013.

In recent years, Portugal has been promoted as an example of a successful drug decriminalization scheme.<sup>95</sup> Portugal has decriminalized the use and possession of a 10-day supply of any illicit drug, including marijuana, changing it from a criminal offense to an administrative one. Like the Netherlands, all drug sales and manufacturing—including marijuana—remain illegal in Portugal and are met with criminal sanctions. The implementation of decriminalization for drug possession changed the way in which drug users are handled in Portugal. Rather than being subject to arrest, drug users are summoned by the police to their local district’s Commission for the Dissuasion of Drug Abuse (CDT), three-member groups in charge of evaluating and ruling on the drug possession offense. CDTs dispense administrative punishments for most drug users, some of which are suspended if treatment is obtained, though there is no monitoring mechanism to ensure treatment participation or completion. The large majority of CDT cases involve only marijuana. There is limited evidence to identify the effects of Portugal’s drug policy changes, and particularly to separate the effects of decriminalization from other changes recently made and the relevance of these changes for any other country, including the United States.<sup>96</sup>

Most recently, there is a proposal in Uruguay for the government to sell limited amounts of marijuana to its citizens.<sup>97</sup> The future of this proposed law is murky. Moreover, if passed, Uruguay may be censured and/or penalized by the United Nations International Narcotics Control Board (INCB) for violating the United Nations Single Convention of 1961.<sup>98</sup>

ASAM encourages the rigorous study and evaluation of various drug policies and programs, including those outside the U.S., to inform future strategies that focus on promoting the public health.

## VI. 2012 State-Level Marijuana Legalization Proposals

Colorado, Washington, and Oregon will each have proposals on their November, 2012 ballots proposals to legalize marijuana. Colorado’s Amendment 64, known as the Regulate

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<sup>93</sup> Government of the Netherlands. (n.d.). Alcohol and drugs: Drugs. Available: <http://www.government.nl/issues/alcohol-and-drugs/drugs>

<sup>94</sup> Ibid.

<sup>95</sup> Greenwald, G. (2009). *Drug Decriminalization in Portugal: Lessons for Creating Fair and Successful Drug Policies*. Washington, DC: The CATO Institute.

<sup>96</sup> Office of National Drug Control Policy. (2010, August). *Drug decriminalization in Portugal: Challenges and limitations*. Washington, DC: Office of National Drug Control Policy. Available: [http://www.whitehouse.gov/sites/default/files/ondcp/Fact\\_Sheets/portugal\\_fact\\_sheet\\_8-25-10.pdf](http://www.whitehouse.gov/sites/default/files/ondcp/Fact_Sheets/portugal_fact_sheet_8-25-10.pdf)

<sup>97</sup> Moffet, M., & Kaplan, E. (2012, June 22). Uruguay considers selling marijuana. *Wall Street Journal*, p. A12. Available: <http://online.wsj.com/article/SB10001424052702304898704577480764220930718.html>

<sup>98</sup> United Nations International Narcotics Drug Control Board. (1972). *United Nations Single Convention of 1961 (as amended by the 1972 Protocol)*. Available: [http://www.incb.org/incb/convention\\_1961.html](http://www.incb.org/incb/convention_1961.html)

Marijuana Like Alcohol Act, if passed, would legalize the possession, use, display, purchase and transport of limited amounts of marijuana by persons age 21 and older.<sup>99</sup> Persons of age also could legally possess, process, and transport a limited number of marijuana plants for personal use. The state would be required to provide regulation and oversight of the marijuana industry through licensure of cultivation, manufacturing, and testing facilities and retail stores. Further, the state would develop requirements for security of marijuana establishments for prevention of sale and distribution to minors, and for health and safety of employees that cultivate and manufacture marijuana. The general assembly would enact an excise tax on wholesale sales of marijuana, with the first \$40 million in revenue raised annually to be credited to the public school and capital construction fund. Driving under the influence of marijuana and selling, distributing, or transporting marijuana to minors would remain illegal.

The Washington State Initiative Measure No. 502 (I-502)<sup>100</sup> has been promoted predominately throughout the state by New Approach Washington. The organization asserts that I-502, if passed, “would license and regulate marijuana production, distribution, and possession for persons over twenty-one; remove state-law criminal and civil penalties for activities that it authorizes; tax marijuana sales; and earmark marijuana-related revenues. This measure would remove state-law prohibitions against producing, processing, and selling marijuana, subject to licensing and regulation by the liquor control board; allow limited possession of marijuana by persons aged twenty-one and over; and impose 25% excise taxes on wholesale and retail sales of marijuana, earmarking revenue for purposes that include substance-abuse prevention, research, education, and healthcare. Laws prohibiting driving under the influence would be amended to include maximum thresholds for THC blood concentration.”<sup>101</sup> New Approach Washington estimates the state would collect a tax revenue of one half billion dollars and would designate an estimated \$350 million collected in revenue to expanding state spending on drug education, prevention and treatment.<sup>102</sup>

Measure 80, the Oregon Cannabis Tax Act, if passed, would create the Oregon Cannabis Commission (OCC) to regulate the sale and cultivation of marijuana for persons age 21 and older.<sup>103</sup> The OCC would provide licensure to individuals for the cultivation and processing of marijuana for sale through retail stores run by the OCC. The cultivation and possession of marijuana for personal use by persons age 21 and older would not require license or registration. The OCC would, with the State Board of Pharmacy, establish psychoactive concentrations of cannabinoids and set standards, conduct testing, grade potency and oversee labeling of contents. The OCC and Board of Pharmacy would also accredit research facilities to conduct research on marijuana, including specifically the harms of marijuana use and marijuana-related impairment, and research on the development of impairment standards for drivers. The Act does not specify expected revenue, but proponents estimate that it will generate over \$140 million annually in taxes.<sup>104</sup>

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<sup>99</sup> Yes on 64: Campaign to Regulate Marijuana Like Alcohol. (2012). Amendment 64: The Regulate Marijuana Like Alcohol Act of 2012. Available: <http://www.regulatemarijuana.org/s/regulate-marijuana-alcohol-act-2012>

<sup>100</sup> New Approach Washington. (2011). Initiative Measure No. 502. Available: <http://newapproachwa.org/sites/newapproachwa.org/files/I-502%20bookmarked.pdf>

<sup>101</sup> New Approach Washington. (n.d.). Yes on I-502, Initiative. Available: <http://newapproachwa.org/content/initiative>

<sup>102</sup> New Approach Washington. (2012, March 30). Yes on I-502: A New Approach to Marijuana. Factsheet, Overview of the Key Features of I-502. Available: <http://www.newapproachwa.org/sites/newapproachwa.org/files/I-502%20Factsheet%20-%20Key%20Features%20-%20033012.pdf>

<sup>103</sup> The Oregon Cannabis Tax Act. Available: <http://cannabistaxact.org/downloads/octa2012-text.pdf>

<sup>104</sup> Measure 80 – The Oregon Cannabis Tax Act. (2012). About the legislation. Available: <http://octa2012.org/about-the-legislation/>

It is important to note that revenue estimates for the state proposals have not been substantiated by independent economists. Many marijuana advocates employ tax revenue methodology that is, in the words of the Co-Director of RAND's Drug Policy Research Center, "based on a series of assumptions that are in some instances subject to tremendous uncertainty and in other cases not valid."<sup>105</sup>

The passage of any of these three marijuana legalization proposals would permit at the state level everything from personal possession, to personal and commercial cultivation, to retail and wholesale distribution, tax collection, and commercial processing of marijuana.<sup>106</sup> Marijuana is not fully legal anywhere in the world.<sup>107</sup> Because no model for legalization exists in practice, the full effects of marijuana legalization are unpredictable. As CPDD states, "Any changes in national drug policy should be based on scientific evidence, and -- difficult though it is -- research should attempt to evaluate the effects of any policy changes." (p. 3)<sup>108</sup>

## VII. Conclusions

In order to think clearly about proposals to change the legal status of marijuana at the state level, it is important first to consider the current public health consequences of marijuana use and then to consider the health consequences of significantly increased marijuana use which would be created by expanded availability and commercialization under marijuana legalization.

While entering the current debate over state initiatives to legalize marijuana, ASAM is focusing on the scientific evidence of the potential for a major, multi-dimensional negative impact of escalated use of marijuana on the nation's public health and public safety that would result from legalization. ASAM has a well-earned and long-established reputation of approaching drug policy issues from its unique position as the leading organization of physicians and experts in addiction with knowledge of the risks associated with the use of substances with high abuse potential. ASAM physicians have informed drug policy generally, and marijuana policy specifically, for decades based on its thoughtful, evidence-based approach.

The ASAM Public Policy Statement on National Drug Policy, first adopted by the ASAM Board of Directors in 1994, asserts, "ASAM opposes any changes in law and regulation that would lead to a sudden significant increase in the availability of any dependence-producing drug (outside of a medically-prescribed setting for therapeutic indications). Any changes should be gradual and carefully monitored."(p.3)<sup>109</sup> The marijuana legalization initiatives in Colorado, Washington, and Oregon would significantly increase marijuana use by lowering its costs and by making this widely abused drug more available and more acceptable. Given the significant

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<sup>105</sup> Pacula, R. (2009). *Legalizing Marijuana: Issues to Consider Before Reforming California State Law*. Santa Monica, CA: RAND Corporation. Available: [http://www.rand.org/pubs/testimonies/2009/RAND\\_CT334.pdf](http://www.rand.org/pubs/testimonies/2009/RAND_CT334.pdf)

<sup>106</sup> Heinze College Policy Workshop. (2012, Spring). 2012 State-Level Marijuana Legalization Initiatives: A Comparative Analysis. Carnegie Mellon University, Heinz College.

<sup>107</sup> As discussed, this is not to say there is not considerable variation in marijuana policy worldwide. For a discussion of marijuana policy, see Sabet, K. A., Cohen, M. & Thau, S. (in press). *Cannabis: A short review*. Vienna: United Nations.

<sup>108</sup> College on Problems of Drug Dependence. (1997). *Statement on National Drug Policy*. Philadelphia, PA: College on Problems of Drug Dependence. Available: <http://www.cpdd.vcu.edu/Media/FactSheets/national.pdf>

<sup>109</sup> American Society of Addiction Medicine. (2005). *Public Policy on National Drug Policy*. Chevy Chase, MD: American Society of Addiction Medicine. Available: <http://www.asam.org/docs/public-policy-statements/1national-drug-policy-4-94.pdf>

adverse health consequences of marijuana use, and in particular, its addiction potential, it is not in the interest of public health to make marijuana more widely available and more acceptable.

ASAM's views on marijuana are well-established<sup>110</sup> and are based on the science that cannabinoids are potent psychoactive drugs which are associated with addiction. Cannabinoids act on specific receptors in the brain and reinforcement derives from stimulation of those receptors. Reward circuitry in the brain experiences increased activity involving the neurotransmitter dopamine in response to human exposure to a variety of drugs associated with addiction, including nicotine, opioids, stimulants, and cannabinoids. The psychoactive effects of increased activity by cannabinoid receptor agonists are not all pleasant or salutary.<sup>111</sup> The use of marijuana is associated with increased activation of reward circuitry and related circuitry due to the reality that marijuana contains many psychoactive cannabinoid compounds.<sup>112</sup> In fact, the use of marijuana would not be pleasurable to some persons and repeated use would not be reinforcing were it not for the reward-stimulating cannabinoids in the marijuana plant. Marijuana is not a safe and harmless substance and its use is not health-promoting (though as acknowledged by ASAM, the use of some cannabinoids prepared in a standardized manner in well-tested pharmaceutical products can alleviate specific diseases and distress in specific patients and is supportable<sup>113</sup>). ASAM policy on marijuana is based on the scientific fact that marijuana is a drug with distinct effects on the brain and behavior and the fact that addiction to cannabinoids and to marijuana is a significant health problem.

The ASAM Public Policy Statement on Marijuana, first adopted in 1987 and since revised, asserts that, "Marijuana dependent persons, like other drug dependent people, should be offered treatment rather than punishment for their illness. Treatment of marijuana dependence should be part of the plan for rehabilitation of any person convicted of a drug-related offense, including driving under the influence of alcohol and/or drugs, who is found to be marijuana dependent."(p. 1)<sup>114</sup> This statement makes no reference to supporting the legalization of marijuana use, sale, or distribution but rather, it encourages the treatment of individuals suffering marijuana dependence. Of course, not all persons who use marijuana experience clinical marijuana dependence or addiction; however, the frequency of marijuana addiction among regular users of marijuana is comparable to the frequency of regular users of

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<sup>110</sup> Ibid.

<sup>111</sup> See, among others, references on the effects of synthetic cannabinoids:

Hoyte, C.O., Jacob, J., Monte, A.A., Al-Jumaan, M., Bronstein, A.C., & Heard, K.J. (2012). A characterization of synthetic cannabinoid exposures reported to the National Poison Data System in 2010. *Annals of Emergency Medicine*. [e-pub ahead of print].

Hurst, D., Loeffler, G., & McLay, R. (2011). Psychosis associated with synthetic cannabinoid agonists: A case series. [Letter to the editor]. *American Journal of Psychiatry*, 168(10), 1119-1119.

Seely, K.A., Lappoint, J., Moran, J.H., & Fattore, L. (2012). Spice drugs are more than harmless herbal blends: A review of the pharmacology and toxicology of synthetic cannabinoids. *Progress in Neuro-psychopharmacology and Biological Psychiatry* [e-pub ahead of print].

Mir, A., Obafemi, A., Young, A., & Kane, C. (2011). Myocardial infarction associated with use of the synthetic cannabinoid K2. *Pediatrics*, 128(6), e1622-e1627.

Forrester, M. B., Kleinschmidt, K., Schwartz, E., & Young, A. Synthetic cannabinoid exposures reported to Texas poison centers. *Journal of Addictive Diseases*, 30(4), 351-358.

<sup>112</sup> Welch, S. P. (2009). The pharmacology of cannabinoids. In D. A. Fiellin, S. C. Miller & R. Saitz. (Eds.) *Principles of Addiction Medicine* (pp. 193-214). Philadelphia, PA: Lippincott Williams & Wilkins.

<sup>113</sup> President's Action Committee on Medical Marijuana of the American Society of Addiction Medicine (ASAM). (2011). The Role of the Physician in "Medical" Marijuana. Chevy Chase, MD: American Society of Addiction Medicine. Available: <http://www.asam.org/advocacy/find-a-policy-statement/view-policy-statement/public-policy-statements/2011/11/28/the-role-of-the-physician-in-medical-marijuana>

<sup>114</sup> American Society of Addiction Medicine. (2006). Public Policy on Marijuana. Chevy Chase, MD: American Society of Addiction Medicine. Available: <http://www.asam.org/docs/public-policy-statements/1marijuana-5-062.pdf?sfvrsn=0>

sedative-hypnotic pharmaceuticals and alcohol who develop addiction and is greater than the frequency of regular users of psychostimulant pharmaceuticals who develop addiction.<sup>115</sup>

In reviewing the significant role the criminal justice system plays in reducing marijuana use, ASAM recognizes that an improved link is needed between the systems of criminal justice and health care with the additional goals of reducing criminal recidivism and reducing incarceration. Given the fact that the large majority of arrests for marijuana are made at the state level, ASAM emphasizes that states have the power and the incentive to improve their individual state drug policies in the interest of the health and the well-being of their residents. Programs that have successfully improved the link between the criminal justice system and health care, including Drug Courts<sup>116</sup> and HOPE Probation,<sup>117</sup> and conversely, California's Proposition 36 (which has fallen short of achieving the outcomes envisioned by many of its original supporters),<sup>118</sup> each provide useful (and cautionary) lessons for states.

## VIII. Recommendations

ASAM opposes proposals to legalize marijuana anywhere in the United States, including the current state-based legalization proposals which will appear on the November 2012 ballots. The analyses on the possible outcomes—both intended and unintended—of the state-based marijuana legalization proposals in Colorado, Washington and Oregon suggest that risks are unacceptable. No modification of these proposals would make them acceptable.

ASAM asserts that the anticipated public health costs of marijuana legalization are significant and are not sufficiently appreciated by the general public or by public policymakers. Physicians and other health professionals must become more aware of the anticipated undesirable outcomes of marijuana legalization and encourage public education on these facts. ASAM's conclusion that marijuana legalization would not be in the interest of public health is based on the following:

- Marijuana use is neither safe nor harmless. Marijuana contains psychoactive cannabinoids which produce a sense of pleasure in many users and a sense of discomfort and even paranoid thoughts in other users. Cannabinoids interact with brain circuits in comparable ways to opioids, cocaine and other addictive drugs.
- Substance use disorders resulting from marijuana use are a serious and widespread health problem.

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<sup>115</sup> Anthony, J.C., & Helzer, J.E. (1991). Syndromes of drug abuse and dependence. In: L.N. Robins and D.A. Regier (Eds.), *Psychiatric Disorders in America* (pp. 116-154). New York: Free Press.

<sup>116</sup> Marlowe, D. B., (2010, December). Need to Know: Research Update on Adult Drug Courts. Alexandria, VA: National Association of Drug Court Professionals. Available: [http://www.nadcp.org/sites/default/files/nadcp/Research%20Update%20on%20Adult%20Drug%20Courts%20-%20NADCP\\_1.pdf](http://www.nadcp.org/sites/default/files/nadcp/Research%20Update%20on%20Adult%20Drug%20Courts%20-%20NADCP_1.pdf)

<sup>117</sup> Hawken, A. & Kleiman, M. (2009). Managing Drug Involved Probationers With Swift and Certain Sanctions: Evaluating Hawaii's HOPE. Washington, DC: National Institute of Justice, Office of Justice Programs, U.S. Department of Justice.

<sup>118</sup> Hawken, A. (2010) Behavioral triage: A new model for identifying and treating substance-abusing offenders. *Journal of Drug Policy Analysis*, 3(1),1-5.

Urada, D, & Longshore, D. (2007). SACPA offenders. In Evaluation of the Substance Abuse and Crime Prevention Act: Final report. California Department of Alcohol and Drug Programs. Sacramento.

Hawken, A. (2010). Behavioral triage: A new model for identifying and treating substance-abusing offenders. *Journal of Drug Policy Analysis*, 3(1), 1-5.

- Marijuana use is associated with adverse health consequences, including damage to specific organs and tissues and impairments in behavioral and neurological functioning. Among these are acute impairments in the performance of complex tasks such as driving a motor vehicle.
- Marijuana-related crashes, deaths and injuries are currently a major highway safety threat in the United States.
- Legalization of marijuana would likely lead the general public and, in particular, young people, to view marijuana as less harmful than it is now viewed. Decreases in “perceived harm” associated with marijuana use would result in increased rates of marijuana use and increased rates of marijuana-related substance use disorders, including addiction.
- Marijuana use is associated with increased rates and worsening symptoms of psychosis. Population-wide increases in availability of and access to high-potency marijuana would be associated with increased rates of marijuana use and could result in increased rates of psychotic illnesses.
- Increased incidence and prevalence of marijuana-related substance use disorders, including marijuana addiction, would lead to increased demand for treatment services. Today treatment systems are inadequate for meeting the current treatment needs in our nation.
- Revenues projected to be generated from taxation of legal marijuana would be far lower than the costs associated with increased marijuana use and would be unlikely to be targeted to these needs, as tobacco and alcohol revenues are not targeted to the health costs of the use of these drugs.

In summary, ASAM recommends against the approval of state initiatives to legalize marijuana. ASAM strongly supports efforts to improve state policies to reduce the use of marijuana and other illegal drugs as well as the nonmedical use of prescription drugs. Further, specifically focusing on state proposals to legalize marijuana, ASAM recommends:

- 1) That physicians lead efforts to oppose legislative or ballot initiatives that would result in the legalization of marijuana production, distribution, marketing, possession and use by the general public, and that all physicians incorporate screening and intervention for risky substance use including marijuana use as well as diagnosis, treatment and disease management for addiction into their routine medical practice;
- 2) That public education campaigns be undertaken to inform the public that addiction associated with cannabinoids is a significant public health threat, and that marijuana is not a safe product to use, especially, but not only, by smoking;
- 3) That parents be informed that the marijuana their children are exposed to today is of much higher potency than the marijuana that was widely available in the 1960s through the 1980s, and that the potential for the development of addiction and for the development and progression of psychotic conditions are enhanced when high-potency

marijuana products are used by adolescents because of the unique vulnerability of the adolescent brain;

- 4) That when cases of marijuana-related substance use disorders are identified and the diagnosis confirmed by professional assessment, carefully monitored treatment to establish abstinence be offered to afflicted persons and such treatment and insurance coverage for it be readily available;
- 5) That drugged driving associated with marijuana use be subject to additional epidemiological research and research on the treatment needs of drivers. Increased efforts are needed to prevent its occurrence which should include substantial legal consequences at the level of the consequences for drunk driving;
- 6) That, given the significant role the criminal justice system plays in discouraging marijuana use, states promote programs that enhance linkages between the criminal justice system and the addiction treatment system, using models such as Drug Courts and HOPE Probation.

*Adopted by the ASAM Board of Directors July 25, 2012.*

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