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**Medical Marijuana: A Status Report**

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**Executive Summary**

The use of marijuana for medical purposes is currently prohibited by the federal government in the United States. For the past two decades, however, medical marijuana advocates have supported its legalization for health purposes. Medical marijuana is now legal under state law in sixteen states and the District of Columbia, and ten other states, including Massachusetts, are considering legalization.

To better understand the issues raised by Massachusetts' potential legalization of medical marijuana, this report examines existing medical marijuana laws in the United States. The analysis provides three main conclusions. First, existing medical marijuana programs vary widely regarding limits on supply, possession, eligible medical conditions, tax revenues, and the like. Second, no evidence suggests that legalization of medical marijuana causes increased use for non-medicinal purposes. Third, the revenue available from taxation of medical marijuana, while modest, is plausibly sufficient to cover the costs of operating a medical marijuana program.

## **I. Introduction**

On August 3<sup>rd</sup>, 2011, the nonprofit group Massachusetts Patient Advocacy Alliance filed a petition with the Massachusetts Attorney General's office to legalize the medicinal use of marijuana under Massachusetts law.<sup>1</sup> If supporters obtain the required number of signatures, and the Legislature approves the initiative for placement on the ballot, voters will consider the issue in November, 2012.

This initiative raises important and interesting issues for the voters of Massachusetts. These include the impact that medical marijuana might have on patients, on non-medical use of marijuana, on costs for state and local governments, on new issues for law enforcement, and on interactions with the federal government, which currently prohibits medical marijuana.

This report summarizes existing information about medical marijuana in the United States, including medical, legal, and economic issues. No aspect of medical marijuana is entirely objective, so others may offer different assessments of particular points. The goal here, however, is to outline the available information and highlight the facts that are least controversial. These should form the core of any discussion of medical marijuana in Massachusetts.

The remainder of the report proceeds as follows. Section II provides a brief history of the use of marijuana to treat medical conditions. Section III documents the history of medical marijuana policy in the United States. Section IV discusses the medical marijuana programs in the sixteen states and the District of Columbia that had legalized as of September, 2011. Section V addresses the impact of medical marijuana laws on the non-medicinal use of marijuana. Section VI considers the implications for state budgets of medical marijuana programs.

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<sup>1</sup> The official proponent on the initiative petition is Rasky Baerlein Strategic Communications.

## II. The Use of Marijuana as Medicine

Marijuana is a plant that grows in most countries around the world. The plant contains a number of compounds with psychoactive and other effects. The single most important of these is delta-9-tetrahydrocannabinol, known as THC. Marijuana can be consumed in various fashions, including smoking and ingestion. Marijuana has been consumed by humans for at least the past six thousand years; archeological reports indicate that marijuana was consumed in China in the Neolithic period, around 4000 BC.<sup>2</sup>

The idea that marijuana can be used to treat medical conditions appears to have arisen in China around 2737 BC, where the emperor Shen Nung described the therapeutic use of marijuana in his book of medicinal herbs.<sup>3</sup> Soon after, marijuana began to be cultivated for medicinal use and recreational purposes, with use spreading into India. While working in India in 1839, British physician William O'Shaughnessey described the analgesic, antiemetic, appetite stimulant, muscle relaxant and anticonvulsant properties of marijuana. O'Shaughnessey's publication led to the use of marijuana for ailments including seizures and diarrhea in Great Britain.<sup>4</sup> By 1854, marijuana was listed in the United States Dispensatory and in the British Pharmacopeia.<sup>5</sup> The view that marijuana is effective medication nevertheless remains controversial

In general, research by medical professionals and other scientists finds significant evidence that marijuana is effective treatment for a broad range of conditions. For example, a meta-analysis of peer-reviewed articles published in PubMed through the year 2005 suggested that marijuana and other cannabinoid compounds are effective treatment for nausea and vomiting caused by cancer chemotherapy,

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<sup>2</sup> McKim WA. 2000. *Drugs and Behavior. An introduction to behavioral pharmacology*, 4<sup>th</sup> edition. Prentice-Hall, Upper Saddle River, p.400

<sup>3</sup> Li HL. 1974. An archeological and historical account of cannabis in China. *Economic Botany* 28, 437-448

<sup>4</sup> O'Shaughnessey W. 1838-1840. On the preparation of Indian hemp or gunjah (*Cannabis indica*): their effects on the animal system in health and their utility in the treatment of tetanus and other convulsive diseases. *Transactions of Medical and Physical Society of Bengal*, 421-461

<sup>5</sup> Robson, P. 2001. Therapeutic aspects of cannabis and cannabinoids. *British Journal of Psychiatry*, 178, 107-115

loss of appetite, pain, multiple sclerosis, spinal cord injuries, Tourette's syndrome, epilepsy, and glaucoma.<sup>6</sup>

At the same time, the position of the federal government is more skeptical; in particular, it draws a strong distinction between using smoked marijuana as medicine versus using compounds found in marijuana, such as THC. NIDA's web site, for example, says the following:

The potential medicinal properties of marijuana have been the subject of substantive research and heated debate. And while marijuana is not an FDA approved medicine, 14 states and the District of Columbia have currently legalized its medical use. Scientists have confirmed that the cannabis plant contains active ingredients with therapeutic potential for relieving pain, controlling nausea, stimulating appetite, and decreasing ocular pressure. As a result, a 1999 Institute of Medicine report concluded that further research on cannabinoid drugs and safe delivery systems was warranted.

Marijuana itself is an unlikely medication candidate for several reasons: (1) it is an unpurified plant containing numerous chemicals with unknown health effects; (2) it is typically consumed by smoking further contributing to potential adverse effects; and (3) its cognitive impairing effects may limit its utility. The promise lies instead in designing tailored medications, developed from marijuana's active components, for specific conditions or symptoms with improved risk/benefit profiles. Scientists are actively engaged in this pursuit and hope to bring to market a new generation of safe and effective medications that avoid the adverse effects of smoked marijuana.<sup>7</sup>

This position does not definitely rule out medical marijuana at some future date, but it raises serious doubt the federal government will approve medical marijuana in the near future.

Arbitrating between these conflicting views is beyond the scope of this report. The one indisputable fact is that numerous patients believe that marijuana is effective in treating their conditions or relieving their symptoms.

### **III. Marijuana Policy in the United States**

This section provides a brief history of marijuana laws in the United States, setting aside the issue of medical marijuana. We address state prohibitions, federal prohibition, and state decriminalization laws. Section IV discusses medical marijuana laws.

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<sup>6</sup> Amar MB, 2006. Cannabinoids in medicine: A review of their therapeutic potential. *Journal of Ethnopharmacology*. 105, 1-25

<sup>7</sup> "NIDA: Marijuana, An Update from the National Institute on Drug Abuse". [www.nida.nih.gov](http://www.nida.nih.gov), February 2011.

Accessed 09/14/2011

The first U.S. laws that addressed marijuana were state laws that prohibited the sale of marijuana for non-medicinal purposes. Before advent of these laws, marijuana was a legal product under state and federal law.<sup>8</sup> By 1937, however, every state had enacted laws that restricted marijuana in some way, generally prohibiting sale or possession as part of each state's Uniform Drug Law.<sup>9</sup>

The first federal prohibition of marijuana came in 1937, when Congress passed the Marijuana Tax Act.<sup>10</sup> The law was nominally a revenue measure; it imposed an elevated excise tax on marijuana growers, importers, and manufacturers. In practice, all parties realized that the Act was meant to prohibit marijuana because the tax rates were prohibitive. In 1969 the US Supreme Court deemed the Marijuana Tax Act unconstitutional.<sup>11</sup> In response, Congress repealed the law and passed the Controlled Substances Act of 1970 which led to the classification of marijuana as a Schedule I controlled substance. Schedule I substances are defined as having a high potential for abuse, no current accepted use as a medical treatment, and lacking accepted safe use under medical supervision.<sup>12</sup>

Since 1970, the major changes in marijuana policy have occurred at the state rather than the federal level. Since 1973, fourteen states have adopted "decriminalization" laws that legalize the possession of small amounts of marijuana under state law without changing the state penalties against production and sale. The decriminalization laws have no effect on the status of marijuana under federal law.

#### **Section IV: Medical Marijuana Laws**

This section addresses the history and structure of the state medical marijuana laws that have been adopted over the past several decades, along with the federal response to these state laws.

California was the first state to legalize medical marijuana, and by September, 2011, sixteen

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<sup>8</sup> The Harrison Narcotic Act of 1914, which prohibited a broad range of drugs under federal law, did not include marijuana.

<sup>9</sup> Bonnie, Richard J. and Charles H. Whitebread (1970), "The Forbidden Fruit and the Tree of Knowledge: An Inquiry into the Legal History of American Marijuana Prohibition," *Virginia Law Review*, **56**(6), 971-1203.

<sup>10</sup> ["Full Text of the Marihuana Tax Act as passed in 1937". Schaffer Library of Drug Policy.](#) Retrieved 09-09-2011

<sup>11</sup> ["Timothy Leary v. US, Supreme Court of the United States, 1969". Druglibrary.org.](#) Accessed 09-09-2011

<sup>12</sup> Controlled Substance Act. <http://www.deadiversion.usdoj.gov/21cfr/21usc/index.html> Accessed 09-09-2011

states in total plus the District of Columbia had legalized (see Table 1). In addition, ten additional states have legislation pending that would legalize medicinal marijuana: Alabama, Connecticut, Idaho, Illinois, Massachusetts, New Hampshire, New York, North Carolina, Ohio, and Pennsylvania.

Each state has chosen a set of medical conditions for which marijuana may be prescribed. Most of these conditions relate to loss of appetite (e.g. AIDS) or severe pain (e.g. cancer). The use of marijuana to alleviate such conditions has been reported in the medical literature. Table 2 includes the list of approved medical conditions for each state.<sup>13</sup>

With the legalization of medicinal marijuana, each state has developed a Medical Marijuana Program (MMP). In most states, the Department of Public Health or an equivalent department has control over program design, implementation, and surveillance. All states use their MMP to establish the legality of medical marijuana; to protect enrolled patients from federal prosecution; to provide information regarding program eligibility, enrollment fees and forms; and to keep track of enrolled patients. For all states except California, patient enrollment in an MMP is mandatory (Table 3). Patients must fill out an application, submit a written physician's notification indicating that they may benefit from marijuana, and pay an application fee. Once the application is processed and the patient is enrolled, the patient receives an ID card that allows purchase of marijuana from a dispensary. The role of physicians in all sixteen states is limited to signing a form that certifies the patient may benefit from medical marijuana.

Table 4 presents the limits in each state on the amount of marijuana allowed per patient. Most states allow patients to buy and grow their own marijuana. Many states allow marijuana dispensaries to grow and produce marijuana for patients enrolled in an MMP. However, Hawaii prohibits the sale of marijuana and only allows for patients to grow their own. New Jersey, on the other hand, does not allow patients to grow marijuana but instead requires patients to obtain marijuana from a licensed dispensary (Table 5).

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<sup>13</sup> A recent analysis of California data finds that the conditions for which patients most often seek medical marijuana are chronic pain, mental health, or insomnia. The study also find that many patients use marijuana as a substitute for prescription drugs. See Nunberg, Helen, Beau Kilmer, Rosalie Liccardo Pacula, and James R. Burgdorf (2011), "An Analysis of Applicants Presenting to a Medical Marijuana Specialty Practice in California," *Journal of Drug Policy Analysis*, 4(1), 1-16.

Most state MMPs do not regulate the supply of marijuana. None of the states that allows patients to grow their own marijuana provides patients with information about finding marijuana seeds. Some states, like California and Colorado, do not have state-wide stipulations about marijuana dispensaries in their medical marijuana laws and instead allow each county to establish its own regulations. Other states, like Washington and Nevada, do not provide any information regarding dispensaries or sources of marijuana. Nonetheless, New Jersey, Rhode Island, and Maine have included provisions within their medical marijuana laws for state-licensed non-profit marijuana dispensaries (Table 5). These dispensaries may grow their own marijuana and produce marijuana products for patients. These states have a limited number of dispensaries that must keep record of their patients and marijuana goods produced as well as generate reports to the state's department of public health or equivalent. State licensed marijuana dispensaries are subject to state inspection and regulation.

The state laws that have legalized medical marijuana do not affect the legal status of marijuana under federal law.<sup>14</sup> Under the Controlled Substances Act of 1970, marijuana is a Schedule I drug, which means it is regarded as having a high potential for abuse and having no valid medical uses. Thus, under federal law, marijuana cannot be prescribed for any medical condition.

Federal law is ordinarily viewed as superseding state laws. Under this interpretation, the federal government retains the right to enforce its ban on marijuana, for any purpose, even in states where such use is legal for medical purposes. Pursuant to this perspective, the federal government has at times conducted raids of marijuana growers, sellers, and dispensaries ever since California established the first medical marijuana law in 1996. In 2005, the constitutionality of federal interference with medical marijuana use reached the US Supreme Court, which ruled that patients who used marijuana may be prosecuted for violating federal laws even if their states allow medical marijuana.

Raids of medical marijuana dispensaries initially decreased after President Obama took office in 2009. Attorney General Eric Holder issued a statement in February, 2009 stating that the raids would stop

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<sup>14</sup> See Mikos, Robert A. (2011), "A Critical Appraisal of the Department of Justice's New Approach to Medical Marijuana," *Stanford Policy Law Review*, **22**(2), 633-669.

since marijuana dispensaries were not the Drug Enforcement Administration's priority. In October 2009 U.S. Deputy Attorney General David Ogden issued the "Ogden memo" indicating that patients and caregivers or dispensaries that were abiding by state laws would not be targets of federal prosecutions.<sup>15</sup>

In June, 2011, however, U.S. Deputy Attorney General James Cole issued another memo to provide guidance regarding the Ogden memo. He explained that several jurisdictions had enacted laws that allow for large-scale, privately operated, industrial marijuana cultivation centers. Cole wrote, "Some of these planned facilities have revenue projections of millions of dollars based on cultivation of tens of thousands of cannabis plants. The Ogden memo never intended to shield such activities from federal prosecution, even where those activities comply with state laws. Persons involved in this business are in violation of the Controlled Substances Act."<sup>16</sup> Moreover, U.S. Attorney General Eric Holder issued a statement in October 2010 regarding a legislation initiative in California. In his statement, Holder stated that the Federal government would vigorously enforce federal law against anyone carrying, growing or selling marijuana if voters passed California's Proposition 19.<sup>17</sup>

Since the Ogden memo, only a few medical marijuana dispensaries have been raided in states with MMPs. These raids were led by the Drug Enforcement Administration, which runs them without the participation of state or local authorities. The states that have experienced federal raids do not regulate medical marijuana dispensaries (Table 6). Taking this issue into consideration, New Jersey decided to delay implementation of its MMP until the state had decided how to approach the distribution of marijuana in a manner that will make the state accountable for medical marijuana products. It took the state about one year to address the supply issue, and the decision involved the state Attorney General, lawmakers, the Department of Health, and Governor Christie. The state decided to allow eight marijuana dispensaries as the only legal venue for patients to obtain marijuana. Since the approval of this decision in July 19, 2011 New Jersey has moved onto the initial phase of the MMP implementation.<sup>18</sup>

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<sup>15</sup> <http://blogs.usdoj.gov/blog/archives/192> Accessed July 2011

<sup>16</sup> <http://www.scribd.com/doc/59363477/James-Cole-Memo-Regarding-Medical-Marijuana> Accessed July 2011

<sup>17</sup> <http://www.nytimes.com/2010/10/16/us/16pot.html> Accessed 09-05-2011

<sup>18</sup> [http://www.state.nj.us/health/med\\_marijuana.shtml](http://www.state.nj.us/health/med_marijuana.shtml) Accessed August 2011

## Section V: The Effects of Medical Marijuana Laws on Non-Medicinal Use

One question about medical marijuana laws is whether adoption leads to increased non-medical use. Data that would allow a precise assessment do not exist, but we can provide a rough assessment based on the existing, albeit imperfect, data on teen marijuana use.<sup>19</sup>

Figures 1-8 present data for the eight states that provided observations in years before and after adoption of a medical marijuana law.<sup>20 21</sup> These data show that reported marijuana use rates fluctuate, but they do not consistently increase or decrease after advent of medical marijuana laws.<sup>22</sup>

Figures 9-12 make this point even more starkly by displaying marijuana use rates for a number of states that have not adopted medical marijuana laws.<sup>23</sup> Use rates fluctuate about as much in these states as in the medical marijuana states, and the overall pattern is consistent across all states, as seen in Figure 13. These results mirror those in O’Keefe and Earleywine’s analysis (2011), which examined data through 2007.<sup>24</sup> Thus while a definitive analysis is not available, the evidence that does exist provides no indication that medical marijuana laws increase non-medical use.<sup>25</sup>

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<sup>19</sup> *Monitoring the Future*, an annual survey of high school students, contains state-by-state data, but these are not publicly available and can only be obtained through a lengthy grant-application process.

<sup>20</sup> For the seven states other than California, the data are from the Youth Risk Behavior Surveillance System (YRBSS). California does not participate in the YRBSS, but data are available from the Biennial California Student Survey.

<sup>21</sup> Only three states (DC, DE, and NJ) had a lag of over one year between enactment of a medical marijuana law and implementation of the program. These states enacted the laws in 2010 but have not yet established programs. Interestingly, these states have proposed the most comprehensive and regulated programs.

<sup>22</sup> The YRBSS does not have data for all 50 states. AZ, DC, DE, and NJ established MM laws during 2010 and 2011, dates after the last survey so there is no post-law data available. Not all states have data collected every two years. For example, NM only has data from 1991, 2005, 2007, 2009.

<sup>23</sup> For the “control” states, we chose 4 states that had the most continuous data. Two of the states have a pending legislation for Medical Marijuana, while the two others do not.

<sup>24</sup> Karen O’Keefe and Mitchel Earleywine, “Marijuana use by young people: The impact of state medical marijuana laws.” <http://www.mpp.org> Accessed 08/10/2011

<sup>25</sup> The impact of medical marijuana could differ in Massachusetts relative to other states. For example, use rates for marijuana are higher in Massachusetts than elsewhere (see <http://oas.samhsa.gov/2k9State/WebOnlyTables/US.pdf> and <http://oas.samhsa.gov/2k9State/WebOnlyTables/MA.pdf>), and this might interact with adoption of a medical marijuana law. It is not obvious, however, that a high existing use rate implies a bigger impact of legalizing medical marijuana; the high current rate might simply indicate that many of those who would use medical marijuana legally are already using despite the law.

## Section VI: Budgetary Issues

One implication of legalizing medical marijuana is that taxes can be levied on sales. A different implication is that legalizing states need expenditures to adopt and operate their MMPs. The information available on these budgetary implications of legalizing medical marijuana is scant, but we provide a broad-brush assessment.

Table 7 summarizes the status of taxation of medical marijuana in states that currently have medical marijuana laws. No state has implemented general taxation yet, so precise information on the amount of tax revenue that can be collected is not available. A few states, like California and Colorado, have produced estimates of their expected revenue from medical marijuana, but these kinds of projections are subject to significant uncertainty.

An upper bound on the tax revenue from medical marijuana is the tax revenue likely to accrue from full legalization of marijuana; the portion of the demand for marijuana that would be accommodated by an MMP would be less, perhaps substantially less, than the overall market. According to Miron and Waldock (2010), the amount of tax revenue that Massachusetts could collect from full marijuana legalization is roughly \$62 million per year.<sup>26</sup> Thus, if medical marijuana constitutes 10% of the overall demand, the revenue from legalizing just medical marijuana might be roughly \$6 million per year.

On the expenditure side, no state has yet published official data on the costs of implementing its MMP. Examination of Tables 1-6, however, suggests that the bureaucratic apparatus necessary to operate an MMP is potentially modest. States can, and some do, impose significant regulation of dispensaries and registries, but this is not a necessity and in some states does not occur. Even where such significant regulation does exist, the total cost is plausibly less than the revenue from taxation. New Jersey estimates, for example, the implementation and operation of its MMP will cost approximately \$2.5 million per year.<sup>27</sup>

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<sup>26</sup> See Miron and Waldock (2010), "The Budgetary Impact of Ending Drug Prohibition," Washington, DC: The Cato Institute. This estimate assumes that the federal government and all other states simultaneously legalize marijuana.

<sup>27</sup> See [http://www.state.nj.us/health/documents/medical\\_marijuana\\_proposal.pdf](http://www.state.nj.us/health/documents/medical_marijuana_proposal.pdf).

## **VII. Conclusions**

This report has assessed the current landscape regarding medical marijuana in the United States, with a view toward informing Massachusetts voters in advance of a 2012 ballot initiative that would legalize medical marijuana in the state. The report does not provide a conclusion about whether legalization is desirable; it instead provides information that voters may find useful in forming their own views about medical marijuana.

As with any issue like medical marijuana, many aspects of the question could benefit from additional research or information. Continued observation of existing medical marijuana states, for example, might provide a more accurate assessment of whether medicalization affects non-medical use. Detailed analyses of sales and tax records from existing medical marijuana states can potentially pin down the revenue implications of medicalizing marijuana. And specific budget information from recent state adoptions (e.g., the one currently taking place in New Jersey) could inform Massachusetts about the likely adoption costs here. Nevertheless, policy decisions occur in real time, and the absence of definitive information does not mean the status quo is necessarily desirable. The medical benefits of marijuana to patients, for example, might be greater than existing information indicates.

Our analysis indicates that existing medical marijuana programs in the United States vary widely in parameters such as the limits on supply, the eligible medical conditions, and the amounts that may be possessed by medical marijuana patients. We find no evidence that adoption of medical marijuana laws has increased marijuana use for non-medical purposes. And we provide rough calculations suggesting that the revenue from taxation of medical marijuana would plausibly be sufficient to cover the costs of operating a medical marijuana program. These findings do not determine the overall wisdom of legalizing medical marijuana, but they should help focus discussion as Massachusetts voters consider this issue.

**Table 1: States that have implemented Medical Marijuana laws**

<b>State</b>	<b>Year</b>
Alaska	1998
Arizona	2010
California	1996
Colorado	2000
DC	2010
Delaware	2011
Hawaii	2000
Maine	1999
Michigan	2008
Montana	2004
Nevada	2000
New Jersey	2010
New Mexico	2007
Oregon	1998
Rhode Island	2004
Vermont	2006
Washington	1998

**Table 2: Medical conditions approved for the use of Medical Marijuana by state**

<b>State</b>	<b>Applicable Conditions</b>
Alaska	Cachexia, cancer, chronic pain, epilepsy and other disorders characterized by seizures, glaucoma, HIV or AIDS, multiple sclerosis and other disorders characterized by muscle spasticity, and nausea.
Arizona	Cancer, glaucoma, HIV/AIDS, Hepatitis C, ALS, Crohn's disease, Alzheimer's disease, cachexia or wasting syndrome, severe and chronic pain, severe nausea, seizures (including epilepsy), severe or persistent muscle spasms (including multiple sclerosis).
California	AIDS, anorexia, arthritis, cachexia, cancer, chronic pain, glaucoma, migraine, persistent muscle spasms, including spasms associated with multiple sclerosis, seizures, including seizures associated with epilepsy, severe nausea; Other chronic or persistent medical symptoms.
Colorado	Cancer, glaucoma, HIV/AIDS positive, cachexia; severe pain; severe nausea; seizures, including those that are characteristic of epilepsy; or persistent muscle spasms, including those that are characteristic of multiple sclerosis.
DC	HIV, AIDS, glaucoma, multiple sclerosis, cancer, other conditions that are chronic, long-lasting, debilitating, or that interfere with the basic functions of life, serious medical conditions for which the use of medical marijuana is beneficial, patients undergoing treatments such as chemotherapy and radiotherapy.
Delaware	HIV/AIDS, decompensated cirrhosis, ALS, Alzheimer's disease, post-traumatic stress disorder; or a medical condition that produces wasting syndrome, severe debilitating pain that has not responded to other treatments for more than three months or for which other treatments produced serious side effects, severe nausea, seizures, or severe and persistent muscle spasms.
Hawaii	Cancer, glaucoma, positive status for HIV/AIDS; A chronic or debilitating disease or medical condition or its treatment that produces cachexia or wasting syndrome, severe pain, severe nausea, seizures, including those characteristic of epilepsy, or severe and persistent muscle spasms, including those characteristic of multiple sclerosis or Crohn's disease.
Maine	cancer, glaucoma, HIV, acquired immune deficiency syndrome, hepatitis C, amyotrophic lateral sclerosis, Crohn's disease, Alzheimer's, nail-patella syndrome, chronic intractable pain, cachexia or wasting syndrome, severe nausea, seizures (epilepsy), severe and persistent muscle spasms, and multiple sclerosis.
Michigan	cancer, glaucoma, HIV, AIDS, hepatitis C, amyotrophic lateral sclerosis, Crohn's disease, agitation of Alzheimer's disease, nail patella, cachexia or wasting syndrome, severe and chronic pain, severe nausea, seizures, epilepsy, muscle spasms, and multiple sclerosis.
Montana	cancer, glaucoma, HIV, AIDS, hepatitis C, amyotrophic lateral sclerosis, Crohn's disease, agitation of Alzheimer's disease, nail patella, cachexia or wasting syndrome, severe and chronic pain, severe nausea, seizures, epilepsy, muscle spasms, and multiple sclerosis.
Nevada	AIDS; cancer; glaucoma; and any medical condition or treatment to a medical condition that produces cachexia, persistent muscle spasms or seizures, severe nausea or pain.
New Jersey	epilepsy, intractable skeletal muscular spasticity, glaucoma; severe or chronic pain, severe nausea or vomiting, cachexia, or wasting syndrome resulting from HIV/AIDS or cancer; amyotrophic lateral sclerosis (Lou Gehrig's Disease), multiple sclerosis, terminal cancer, muscular dystrophy, or inflammatory bowel disease, including Crohn's disease; terminal illness, if the physician has determined a prognosis of less than 12 months of life.
New Mexico	severe chronic pain, painful peripheral neuropathy, intractable nausea/vomiting, severe anorexia/cachexia, hepatitis C infection, Crohn's disease, Post-Traumatic Stress Disorder,

	ALS (Lou Gehrig's disease), cancer, glaucoma, multiple sclerosis, damage to the nervous tissue of the spinal cord with intractable spasticity, epilepsy, HIV/AIDS, and hospice patients.
Oregon	Cancer, glaucoma, positive status for HIV/AIDS, or treatment for these conditions; A medical condition or treatment for a medical condition that produces cachexia, severe pain, severe nausea, seizures, including seizures caused by epilepsy, or persistent muscle spasms, including spasms caused by multiple sclerosis
Rhode Island	Cancer, glaucoma, positive status for HIV/AIDS, Hepatitis C, or the treatment of these conditions; A chronic or debilitating disease or medical condition or its treatment that produces cachexia or wasting syndrome; severe, debilitating, chronic pain; severe nausea; seizures, including but not limited to, those characteristic of epilepsy; or severe and persistent muscle spasms, including but not limited to, those characteristic of multiple sclerosis or Crohn's disease; or agitation of Alzheimer's Disease
Vermont	Cancer, AIDS, positive status for HIV, multiple sclerosis, or the treatment of these conditions if the disease or the treatment results in severe, persistent, and intractable symptoms; or a disease, medical condition, or its treatment that is chronic, debilitating and produces severe, persistent, and one or more of the following intractable symptoms: cachexia or wasting syndrome, severe pain or nausea or seizures.
Washington	Cachexia; cancer; HIV or AIDS; epilepsy; glaucoma; intractable pain (defined as pain unrelieved by standard treatment or medications); chronic renal failure, and multiple sclerosis. Other conditions are subject to approval by the Washington Board of Health.

**Table 3: State-run Medical Marijuana Programs and Program Registration Fees**

State	State-run Program Registration	Patient Registration Fee
Alaska	Mandatory, confidential state-run registry. Caregivers must register and care for one patient at a time.	State issued ID card \$25, \$20 renewal
Arizona	Mandatory	\$150. Administered by dept. health services
California	Voluntary For fiscal yr. 2010/11: 9, 449 registered patients and 741 caregivers. Total cards issued to date 53,378	\$66 non Medi-Cal \$33 Medi-Cal, plus additional county fees (varies by location)
Colorado	Voluntary. Patients under 18 may register, too. As of May 2011, 127,444 registered patients,	\$90
Hawaii	Mandatory. Confidential state-run registry. Registry required to ID. Minors may apply, too.	\$25
Maine	Mandatory	\$100 \$75 with Medicaid Card Caregivers pay \$300/patient (not reimbursed by patient) if the caregiver is growing marijuana for his/her patient.
Michigan	Mandatory. As of Jan. 2011, 80,829 registered patients.	\$100 new/renewal, \$25 Medicaid
Montana	Mandatory. As of June 2011, the state had 4,438 registered providers, 30,036 patients, and 365 physicians.	\$25 new, \$10 renewal. Caregivers (providers) pay \$50 application fee and \$10 cardholder renewal fee. Providers or Marijuana-infused products provider may have up to 3 patients.
Nevada	Mandatory	\$50 application fee. \$150 registration fee
New Jersey	Mandatory	\$200 for 2 yrs. or \$20 for patients who qualify for federal assistance. Medicare doesn't cover marijuana.
New Mexico	Mandatory for patients, caregivers, and providers	No enrollment fee. \$30 annual fee for license to patients to grow and produce their own MM.
Oregon	Mandatory 39,774 patients enrolled as of April 2011	\$100 new and renewal. \$20 if enrolled in Oregon Health plan
Rhode Island	Mandatory	\$75 or \$10 if on Medicaid
Vermont	Mandatory	\$50
Washington	none	none

Note: In order to register within the Medical Marijuana Program, each state require a written recommendation by a physician stating that the patient may benefit from marijuana given the patient's medical condition. As of September 2011, DC and DE have not established a Medical Marijuana program.

**Table 4: Limits on marijuana possession or cultivation by state**

<b>State</b>	<b>Possession/ Cultivation limit (patient or caregiver)</b>
Alaska	Patient or primary caregiver may have 1 oz. and/or 6 plants, only 3 mature
Arizona	Patient or primary caregiver may have 2.5 oz. in a 14-day period. If the patient lives more than 25 miles from the nearest dispensary, the patient or caregiver may cultivate up to 12 marijuana plants in an enclosed, locked facility.
California	Patient or primary caregiver may have up to 8 oz. or 6 mature plants and 12 immature. However, patient may obtain more if recommended by physician.
Colorado	Patient or a primary caregiver who has been issued a Medical Marijuana Registry identification card may possess no more than 2 oz. of a usable form of marijuana and not more than 6 marijuana plants, with 3 or fewer being mature
Delaware	Up to 6 oz. A registered compassion center may not dispense more than 3 ounces of marijuana to a registered qualifying patient in any fourteen-day period, and a patient may register with only one compassion center.
Hawaii	"Adequate supply," shall not exceed 3 mature marijuana plants, 4 immature marijuana plants, and 1 ounce of usable marijuana per each mature plant
Maine	1.25 oz., 6 plants, only 3 mature
Michigan	Up to 2.5 oz. and 12 plants
Montana	1 oz., 6 plants
Nevada	1 oz., 3 mature plants and 4 immature
New Jersey	The maximum amount for a 30-day period is two ounces.
New Mexico	6 oz., 4 mature plants and 12 seedlings
Oregon	Need ID. 24 oz., 6 mature plants, 12 seedlings
Rhode Island	2.5 oz., 12 plants
Vermont	2 oz., 3 mature plants, 7 immature plants
Washington	24 oz. and 15 plants in a 60 day period.

Note: As of September 2011, DC has not established a limit on Medical Marijuana possession.

**Table 5: Sources of Medical Marijuana and available dispensaries per state**

State	Source of marijuana	Dispensaries
Alaska	Patient may grow it or receive it from medical marijuana caregiver. Caregiver may grow it. Dispensing coops are allowed.	Dispensaries not authorized by state
Arizona	From dispensary or grown at patient's or caregiver's home.	Nonprofit. The number of dispensaries will not exceed 10% of pharmacies in the state (cap at 124). In May 2011 dispensary applications were suspended because Gov. Brewer filed a federal lawsuit challenging legality of Medical Marijuana Program in the state.
California	"Dispensaries, growing collectives, etc., are licensed through local city or county business ordinances and the regulatory authority lies with the State Attorney General's Office."-CA Medical Marijuana Program. Cooperatives may obtain marijuana for its members.	Dispensaries should be nonprofit, cooperatives, or collectives. Individual dispensaries that provide marijuana for a cash donation are illegal because they are not assuming responsibility for patients. Many of these dispensaries are for profit. As of May 2011, the state had over 1600 dispensaries.
Colorado	"The Colorado Medical Marijuana amendment, statutes and regulations are silent on the issue of dispensaries. While the Registry is aware that a number of such businesses have been established across the state, we do not have a formal relationship with them." Info provided by state.	According to Huffington Post, by August 2011 the state had 717 dispensaries, 271 marijuana-infused product manufacturers and 1,071 grow facilities -- in total earning the state \$7.34 million in fees.
Hawaii	"Hawaii law does not authorize any person or entity to sell or dispense marijuana... Hawaii law authorizes the medical use of marijuana, it does not authorize the distribution of marijuana (Dispensaries) other than the transfer from a qualifying patient's primary caregiver to the qualifying patient."	The state does not allow the sale of marijuana, therefore the Medical Marijuana law does not allow for dispensaries.
Maine	Dispensaries may grow their own plants. ID cards issued to patients allows them to grow their own plants	The law also stipulates provision for nonprofit dispensaries. Only 8 dispensaries, one per public health district.
Michigan	"The MMMP is not a resource for the growing process and does not have information to give to patients." –Michigan Medical Marijuana Program  No info on source of marijuana.	2 or more registered caregivers may open a dispensary. Each district has its own rules for dispensaries. They don't need a license but city of Ypsilanti has issued 5 licenses. The legality of dispensaries is still debated among lawmakers.
Montana	Patients are responsible for growing and obtaining their own marijuana from a caregiver free of charge. Marijuana must	In July 2011, the state ordered the shutdown of 5,000 dispensaries. It seems the state will not allow the sale of marijuana.

	be produced/grown in MT. Law prohibits its sale. Only seeds may be purchased. Senate bill 423 effective 07/11.	
Nevada	No info on source. Patients may grow it.	The state doesn't provide info on dispensaries.
New Jersey	Patients are not allowed to grow their own marijuana. Must be purchased from ATC.	Maximum of 6 dispensaries in the state. The alternative treatment centers (ATC) that obtain license must be nonprofit. ATCs may grow and produce MM.
New Mexico	Patients may grow their own once they are registered and have a license or can be obtained from licensed producers	As of Dec. 2010, 25 nonprofit producers.
Oregon	Patients may grow their own marijuana.	By proposal on 2010 ballot, the state would create nonprofit regulatory dispensaries that will have to pay licensing fees. Proposal didn't pass. No info on dispensaries.
Rhode Island	The state allows for Compassion centers, which may acquire, possess, cultivate, manufacture, deliver, transfer, transport, supply, or dispense marijuana, or related supplies and educational materials, to registered qualifying patients and their registered primary caregivers.	3 licensed Compassion centers.
Vermont	Patients grow their own.	As of June 2011, the state passed a bill that allows for 4 nonprofit licensed dispensaries to operate in the state.
Washington	The law allows for patients to grow their own marijuana. Buying or selling marijuana is illegal.	There are dispensaries but not approved or licensed by state.

Note: As of September 2011, DC and DE have not established a Medical Marijuana Program.

**Table 6: Federal raids of medical marijuana dispensaries during the Obama presidency**

State	Date	Number of dispensaries raided
CA- West Hollywood	03/ 2011	2, 1 arrest
	06/2011	Several, no arrests
	From 08/2009- 01/2011	About 12 people have pending cases for excessive possession of marijuana
CO	08/2009	2
MI	06/2011	1
MT	03/2011	26 dispensaries in 13 cities. Feds had probable cause of large scale trafficking. Selling marijuana is illegal in MT.
NV- Las Vegas	09/2010	10
	01/2011	About 15 people have pending cases for excessive possession of marijuana
WA-Spokane	04/2011	5

**Table 7: States that have imposed taxation on the sale of medical marijuana**

State	Medical Marijuana Sales Tax Status	Expected Tax Revenues per year
Arizona	As of January 2011, state will impose 6.6% sales tax on all medical marijuana and related products with an added 2-3% for large cities.	\$15-20 million <sup>28</sup>
California	On February 2011, the State Board of Equalization announced that the sales from medical marijuana are not exempt from sales tax.	\$58-120 million <sup>29</sup>
Colorado	Active	In Denver, the state collected \$2.2 million in 2010. No information found for the entire state. <sup>30</sup>
Maine	In April 2010, the state agreed to collect 5% sales tax on medical marijuana	\$100,000 <sup>31</sup>
Montana	On January 2011, the state imposed a 10% tax on marijuana growers.	No estimate provided <sup>32</sup>
Nevada	The state has a proposed measure to tax MM but the measure will not appear on 2012 ballot. The future of the measure remains uncertain.	No estimate provided <sup>33</sup>
Oregon	As of February 2011 the state has an initiative to collect sales tax	\$140 million <sup>34</sup>
Rhode Island	Active, 6% sales tax	\$802,000 expected in 2012 <sup>35</sup>
Vermont	As of July 2011, the state will collect sales tax on marijuana	No estimate provided <sup>36</sup>
Washington	As of June 2011, state has initiative to tax marijuana	No estimate provided <sup>37</sup>

<sup>28</sup> <http://www.minyanville.com/dailyfeed/arizona-approves-sales-tax-for/> Accessed 07/10/2011

<sup>29</sup> [http://latimesblogs.latimes.com/money\\_co/2011/02/state-to-collect-sales-tax-on-marijuana.html](http://latimesblogs.latimes.com/money_co/2011/02/state-to-collect-sales-tax-on-marijuana.html) Accessed 07/10/2011

<sup>30</sup> [http://www.denverpost.com/ci\\_13804046](http://www.denverpost.com/ci_13804046) Accessed 07/11/2011

<sup>31</sup> <http://www.mpbn.net/Home/tabid/36/ctl/ViewItem/mid/3478/ItemId/11746/Default.aspx> Accessed 07/10/2011

<sup>32</sup> <http://www.cannabisnews.org/united-states-cannabis-news/2nd-major-medical-marijuana-bill-introduced/> Accessed 07/11/2011

<sup>33</sup> [http://ballotpedia.org/wiki/index.php/Nevada\\_Marijuana\\_Initiative\\_%282012%29](http://ballotpedia.org/wiki/index.php/Nevada_Marijuana_Initiative_%282012%29)

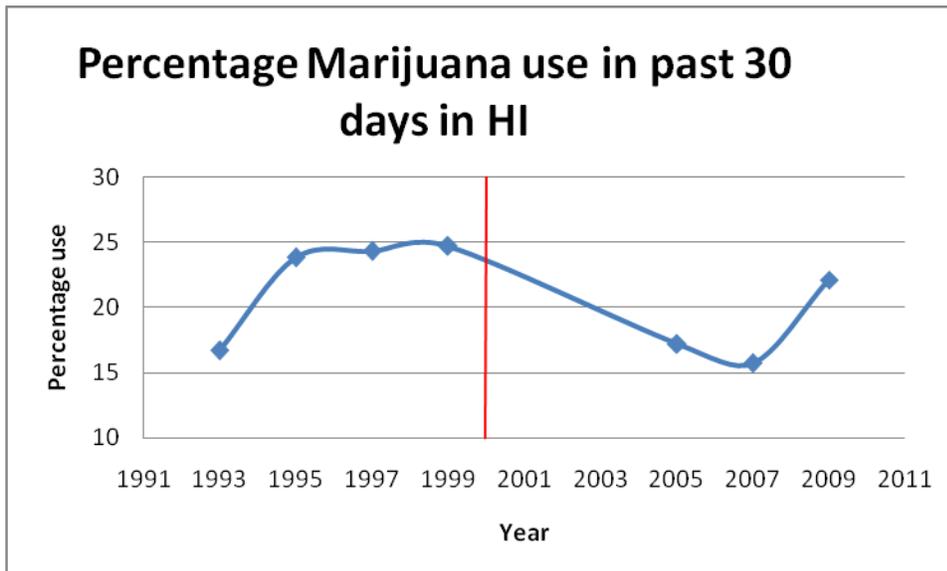
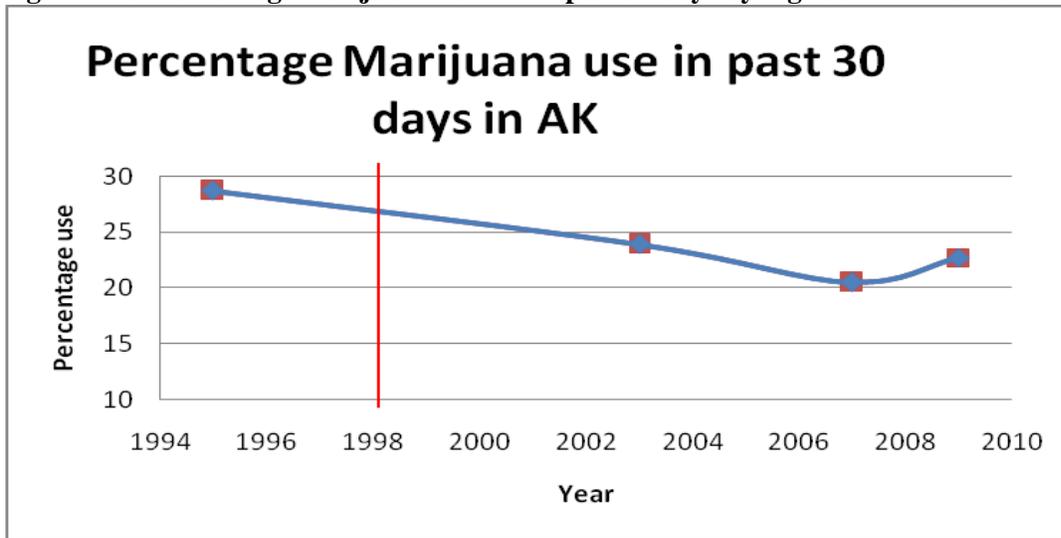
<sup>34</sup> <http://www.cannabistaxact.org/> Accessed 08/10/2011

<sup>35</sup> <http://rhodeislandcriminaldefenseattorney.blogspot.com/2011/03/ri-medical-marijuana-sales-to-boost.html>

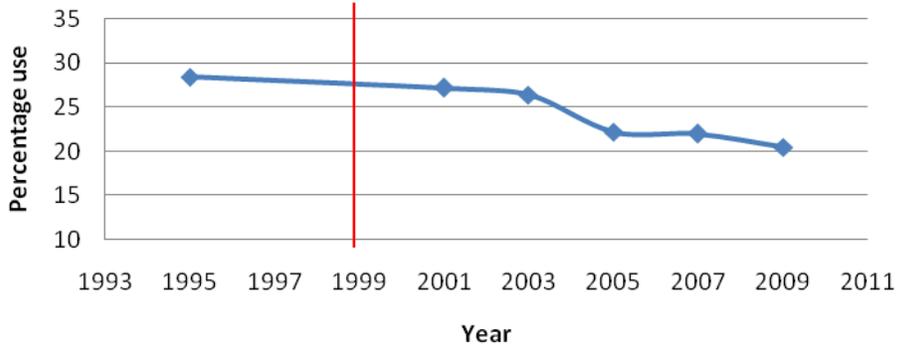
<sup>36</sup> <http://vtdigger.org/2011/06/22/vermont-law-permits-sale-of-medical-marijuana/> Accessed 08/05/2011

<sup>37</sup> <http://tacomacross.org/forum/7-articles/73-washington-wants-to-collect-medical-marijuana-sale>

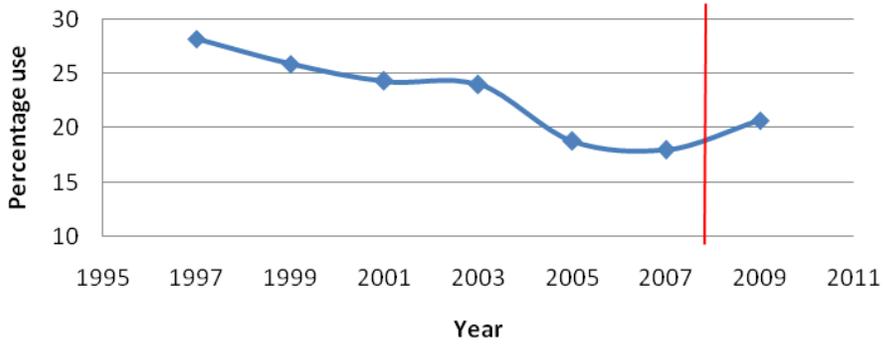
Figures 1-8: Percentage marijuana use in the past 30 days by high school students in Alaska



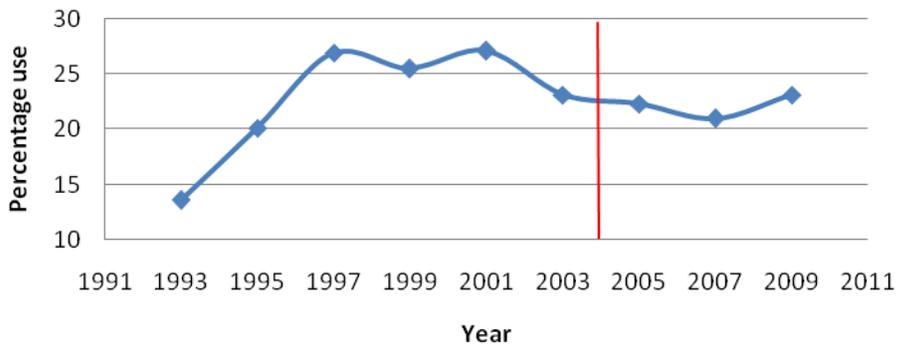
### Percentage Marijuana use in past 30 days in ME



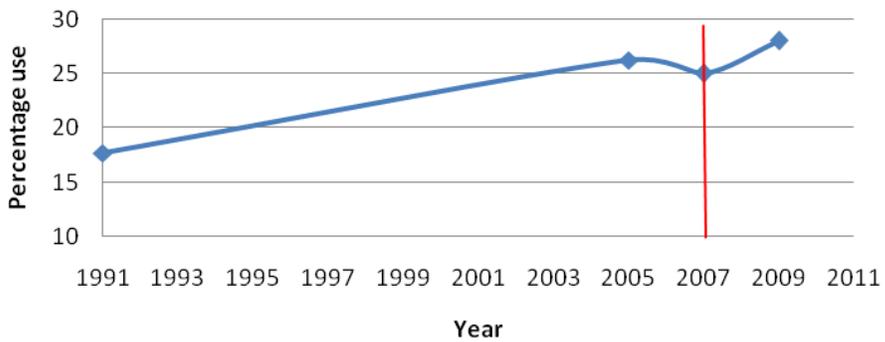
### Percentage Marijuana use in past 30 days in MI



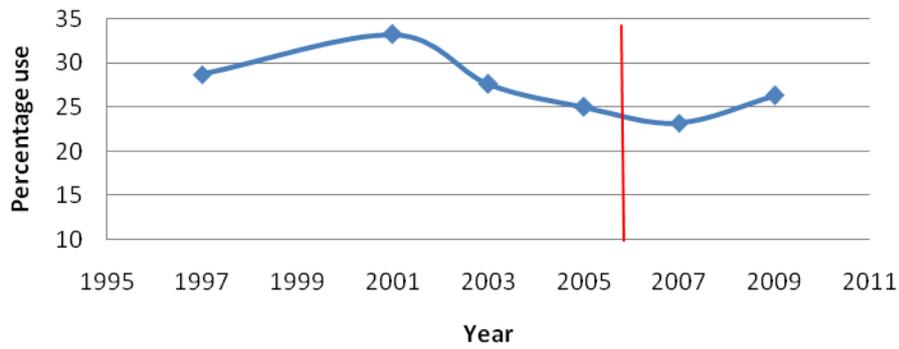
### Percentage Marijuana use in past 30 days in MT



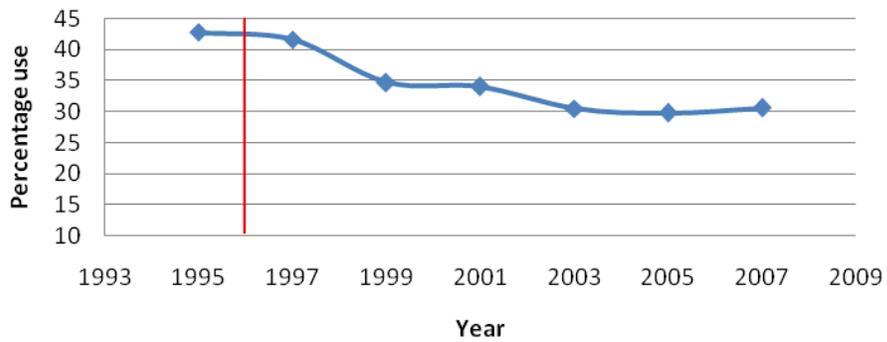
### Percentage Marijuana use in past 30 days in NM



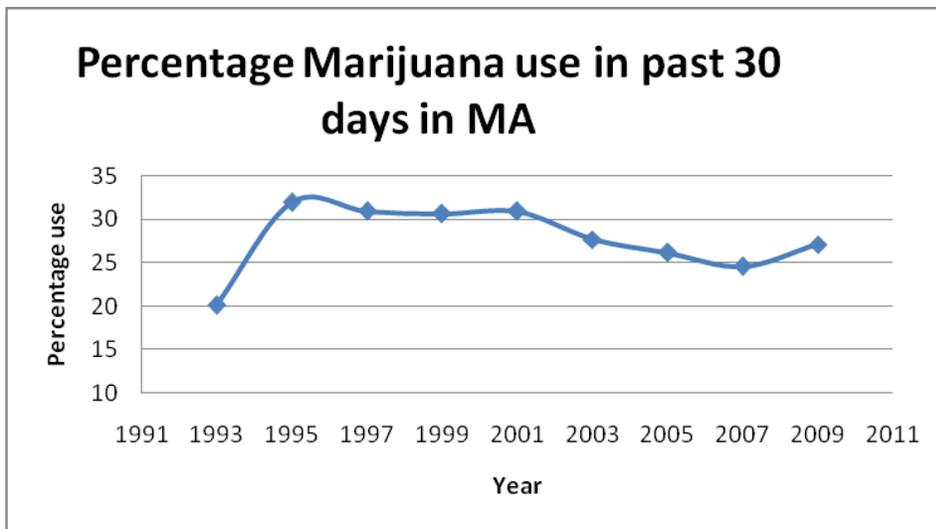
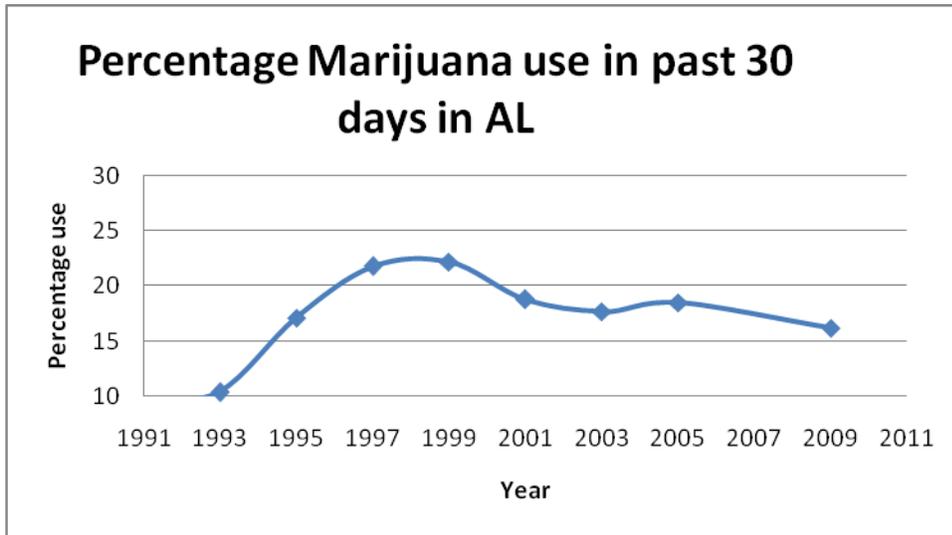
### Percentage Marijuana use in past 30 days in RI



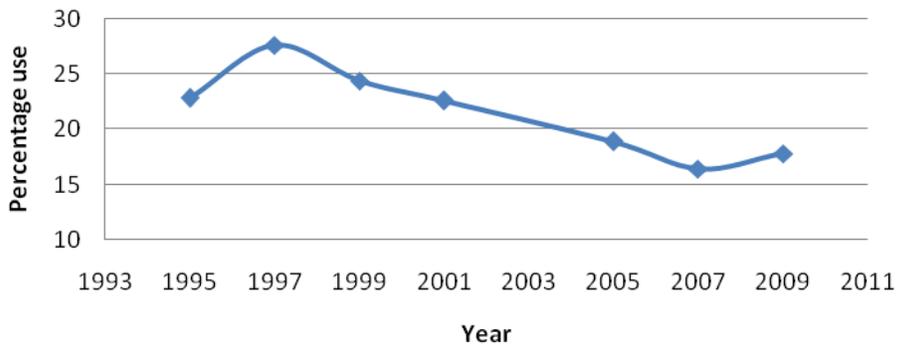
### Percentage Marijuana use among 11th graders in CA



**Figures 9-12: Percentage of marijuana use among high school students in states that do not have a Medical Marijuana law.**



### Percentage Marijuana use in past 30 days in AR



### Percentage Marijuana use in past 30 days in SC

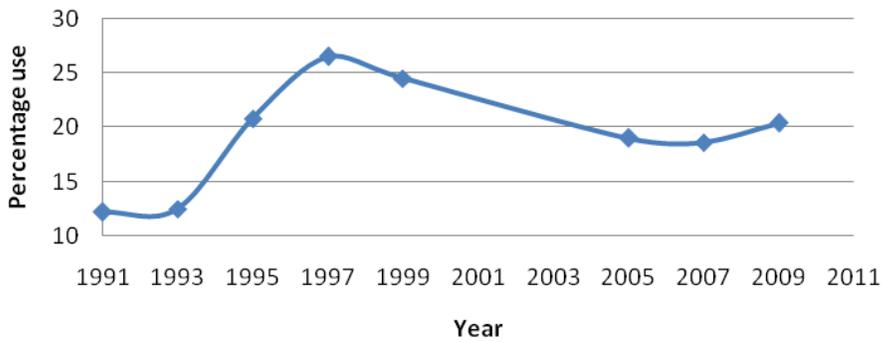


Figure 13: Percentage of marijuana use among youth in the US. Data obtained from YRBSS

