Cherry Health *Health Promotion Services*

Public Health Concerns Regarding Marijuana Dispensaries Acts Public Act 281, Public Act 282, and Public Act 283

Some Michigan municipalities (Cities, Villages, and Townships) are being approached by individuals looking to establish one or more of the five "facilities" permitted to be licensed in Michigan; i.e. Grower, Processor, Secure Transporter, Provisioning Center, and Safety Compliance Facility. The law states the local municipality must take proactive action to approve the establishment of one or more of these entities. There will be people who will be generous in their accolades to the possible benefits of establishing one or more of these facilities in a given municipality. We are happy to clarify such claims of possible benefits in additional forums. The purpose of this paper, however, is to identify primary Public Health Concerns around the Public Acts with regards to public health and safety.

1) Although the Public Acts are established, no rules have been promulgated. As such, the laws are as the 'foundation' and the rules will form the 'structure' of how the Acts will be implemented in our communities. Without the structure set, it is impossible to know if the best interest for the public will be served, should a municipality opt into the system.

2) When access to a substance increases so does use by youth. Opening a business in a community, even with controls, actually increases the access to the product. This is true for marijuana as well as other drugs. See attachment "*Youth use rate in states that have legalized marijuana outstrip those that have not.*" This graph shows the highest youth rates among those states that have legalized recreational use, followed by those who have legalized for "medical" use, and the lowest youth rates among the states that have not legalized marijuana in any form.

3) With marijuana infused products, i.e. "edibles", available in the general public, the visits to Emergency Departments and calls to poisoning centers increase for children. See attachment, "*Emergency Marijuana-Related Poison Control Calls in CO*".

4) With increased use of marijuana in an area, traffic fatalities and crashes related to marijuana use increase. See attachment "*Colorado's Experience with* de facto *Legalization of Retail Sales after "Medical" Marijuana Expansion post-2009", page 2.* This document shows, while there was a decline in the total number of car crashes, there was an increase in the fatal car crashes with drivers testing positive for marijuana during the same time frame.

5) The THC levels of today can commonly range from 15% to 25%. In the 1970's THC was 1% or less, 1980's THC was 1% to 3.5%. Today's marijuana is, in pragmatic terms, a different drug than 30 years ago or even 10 years ago. The higher intensity of THC is related to increased psychotic episodes, as well as other health complications. If used

heavy by youth, research has shown a lowering of IQ is possible, as well. See attachment, "*Average THC and CBD Levels in the US: 1960-2011*".

6) The health of local businesses is also of concern. The attachment, "*Impact on Businesses and the Workforce*" identifies data indicating an increase in positive drug test results, absenteeism and other concerns for businesses. Local businesses are already expressing difficulties in finding new employees who are able to pass a drug test. With increased accessibility, by establishing marijuana facilities in our community, this problem is expected to be exacerbated.

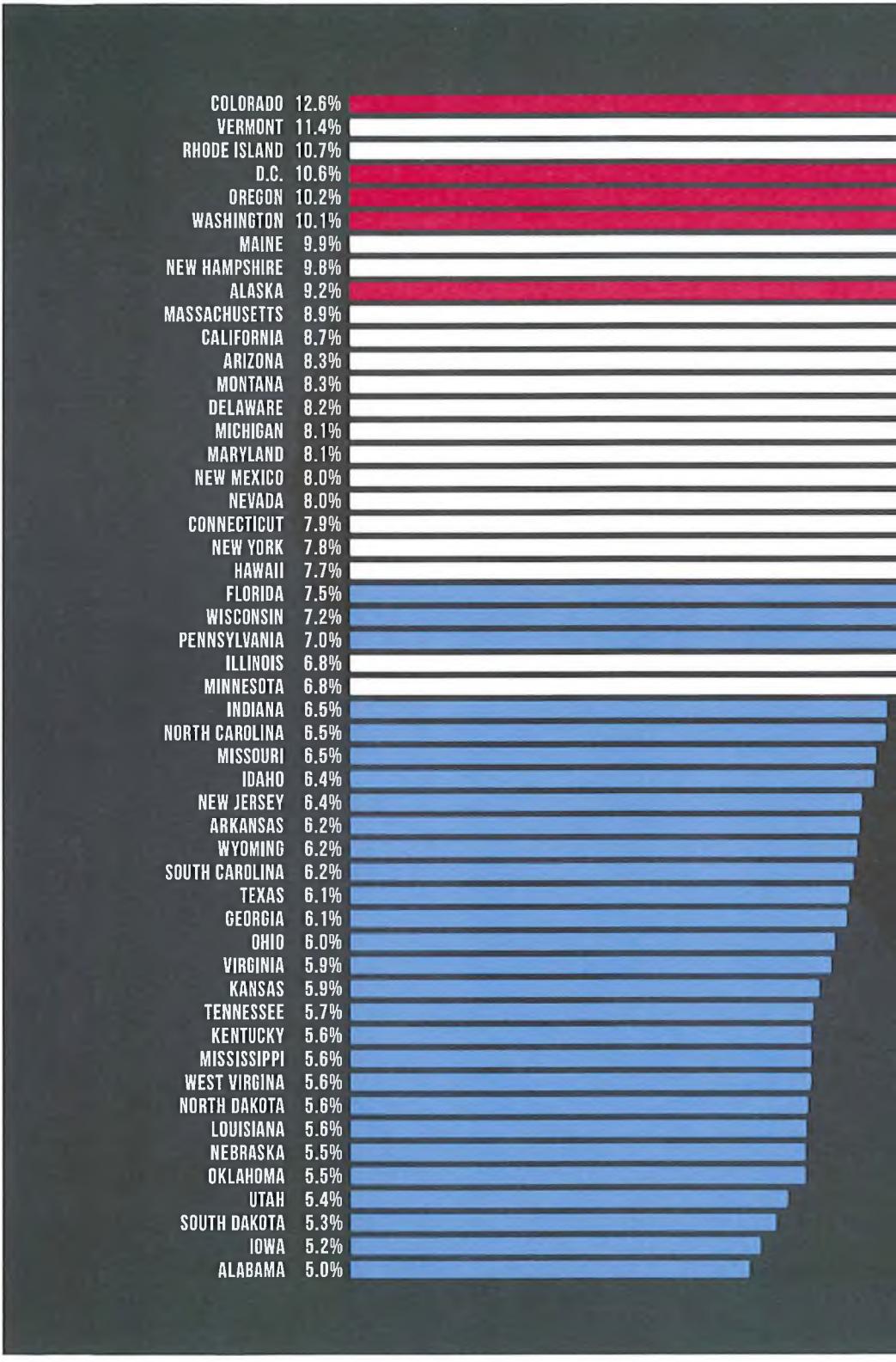
7) With respect to receiving fees and taxes, it is recommended that municipalities balance the increase in funds against the social costs of a drug focused business. For example, for every dollar collected in taxes for tobacco and alcohol, we pay $10 in social costs. We should expect no different with respect to marijuana. One additional unknown around costs is the current federal administration's actions with respect to marijuana. Some have postulated that this administration may come down on local municipalities that promote marijuana – an illegal substance. Caution is recommended in this regard.

8) Other concerns for local municipalities may include negative impacts such as; odors, trash, security concerns, traffic, crime, hydroponic marijuana farms using large amounts of water, electricity, pesticides, fertilizers, as well as other health and safety items.

9) Finally, with legalization expected on the 2018 State-wide ballot, any facility established for 'medical marijuana' will be in position to operate in a legalized market. The ramifications of how this may play out in local communities is an unknown. Looking to experiences in other states, however, tells us – in regard to the health and safety of communities and our children, significant concerns are evident. An assumption that decisions on 'medical marijuana' will be applied to legalized marijuana – should it past the 2018 ballot initiative – is prudent.

As a final point of clarification, municipalities are not required to take any action within any specific time frame. Therefore, if a municipality were leaning in favor of having an ordinance permitting marijuana facilities, they could still choose to wait until the rules have been established, the intent of the Federal Government is clearly defined, and the outcome of the 2018 ballot initiative is known, before taking any action. In other words, the choice of opting into having marijuana facilities in a given municipality can take place anytime in the future. Once established, however, it is very difficult to remove the permissions should the health, challenges for local business and other social costs be deemed too high.

It is important to recognize that many unknown issues still remain regarding the marijuana industry, including effects on businesses and the health implications for our communities. Please consider that, throughout this process, the health and safety of our friends, families, and of course, our children, should not be placed in greater jeopardy.


COLORADO 12.6%
VERMONT 11.4%
RHODE ISLAND 10.7%
D.C. 10.6%
OREGON 10.2%
WASHINGTON 10.1%
MAINE 9.9%
NEW HAMPSHIRE 9.8%
ALASKA 9.2%
MASSACHUSETTS 8.9%
CALIFORNIA 8.7%
ARIZONA 8.3%
MONTANA 8.3%
DELAWARE 8.2%
MICHIGAN 8.1%
MARYLAND 8.1%
NEW MEXICO 8.0%
NEVADA 8.0%
CONNECTICUT 7.9%
NEW YORK 7.8%
HAWAII 7.7%
FLORIDA 7.5%
WISCONSIN 7.2%
PENNSYLVANIA 7.0%
ILLINOIS 6.8%
MINNESOTA 6.8%
INDIANA 6.5%
NORTH CAROLINA 6.5%
MISSOURI 6.5%
IDAHO 6.4%
NEW JERSEY 6.4%
ARKANSAS 6.2%
WYOMING 6.2%
SOUTH CAROLINA 6.2%
TEXAS 6.1%
GEORGIA 6.1%
OHIO 6.0%
VIRGINIA 5.9%
KANSAS 5.9%
TENNESSEE 5.7%
KENTUCKY 5.6%
MISSISSIPPI 5.6%
WEST VIRGINA 5.6%
NORTH DAKOTA 5.6%
LOUISIANA 5.6%
NEBRASKA 5.5%
OKLAHOMA 5.5%
UTAH 5.4%
SOUTH DAKOTA 5.3%
IOWA 5.2%
ALABAMA 5.0%

Youth use rates in states that have legalized marijuana outstrip those that have not

Last-month use, ages 12-17

- "Recreational" use legalized as of 2014
- "Medical" use legalized as of 2014
- Neither "medical" nor "recreational" use legalized as of 2014

Source: NSDUH state estimates (2013-2014)

COLORADO NOW RANKS #1 IN MARIJUANA USE BY MINORS

The only nationally representative survey looking at drug use prevalence among U.S. households is the National Survey on Drug Use and Health (NSDUH). According to NSDUH—the decades-old gold standard for information on a wide range of substance abuse topics—marijuana use in Colorado and Washington has increased over the past decade.

In contrast, recent headlines claiming that use has not gone up in Colorado derive from an analysis of results from a state study, the Healthy Kids Colorado Survey (HKCS). State studies like HKCS often feed into the Centers for Disease Control Youth Behavior Risk Survey (YRBS). The HKCS, however, has been excluded from the CDC's YRBS survey because of its unreliability, for two reasons.

First, it suffers from serious methodological flaws. It is not a representative sample of Colorado schools, and excludes both the second-most-populous and third-most-populous counties altogether (Jefferson and Douglas Counties, respectively). It also omits schools in El Paso County, home to Colorado Springs, and excludes kids across the state who are not in school (*e.g.*, dropouts). Also, the survey designers decided, without explanation, to set the threshold for statistical significance far higher, meaning that differences that would usually be statistically significant would not appear to be so under the new standard. Thus, the HKCS methodology is so flawed that the CDC does not use it for its YRBS survey.

Second, a deeper dig of the HKCS results reveals distressing news. Youth use has actually risen statewide since legalization according the survey, at about the same rate tobacco use has fallen in that same timeframe. Moreover, this increase since 2013 halted a four-year trend of declining marijuana use—the turning point occurred exactly when the state legalized pot. Nonetheless, most press coverage has glossed over this point.

Additionally, swings in youth use per the HKCS are quite large in some counties where pot shops are prevalent. For

Colorado ranking among 50 states & DC

(REGULAR USE, KIDS 12-17 YRS. OLD)

Retail stores open	2013-2014	1st
Recreational marijuana passes	2012-2013	3rd
	2011-2012	4th
	2010-2011	5th
	2009-2010	4th
Medical marijuana commercialized	2008-2009	1st
	2007-2008	4th
	2006-2007	8th
	2005-2006	14th
	2004-2005	8th
	2003-2004	9th
	2002-2003	10th

Source: NSDUH state estimates

Another serious consequence of legalization is the spike in poison control center calls and hospital/ER visits related to marijuana.

Calls to poison control centers in Washington State surged 68 percent from 2012 (pre-legalization) to 2015, and 109 percent in Colorado over the same timeframe. Even more concerning, calls in Colorado related to children zero to eight years of age rose over 200 percent.

Similarly, hospitalizations related to marijuana in Colorado have increased over 70 percent since legalization, an average of over 30 percent per year. Emergency room visits also spiked, especially for out-of-state visitors. Out-of-state visits to the emergency room for marijuana-related symptoms accounted for 78 of every 10,000 emergency room visits in 2012, compared to 163 for every 10,000 visits in 2014—an increase of 109 percent. Among Colorado residents, the number of marijuana-related visits was 70 for every 10,000 in 2012 compared to 101 for every 10,000 in 2014, a 44 percent increase.

EMERGENCY MARIJUANA-RELATED POISON CONTROL CALLS IN CO

	Increase post-legalization (2012-2015):	Avg. annual chg. 2008-2015:
ALL AGES	108%	22%
AGES 0-8	206%	43%

Source: Rocky Mountain Poison and Drug Center

Colorado's Experience with *de facto* Legalization of Retail Sales after "Medical" Marijuana Expansion post-2009

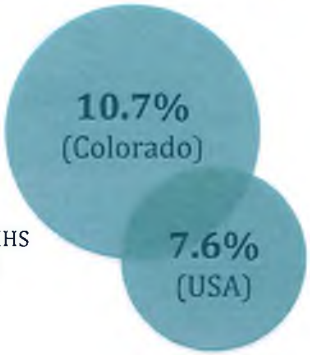
» 2006-2012: Medical MJ cardholders rose from **1,000** to over **108,000**

» Licensed dispensaries rose from **zero** to **532**

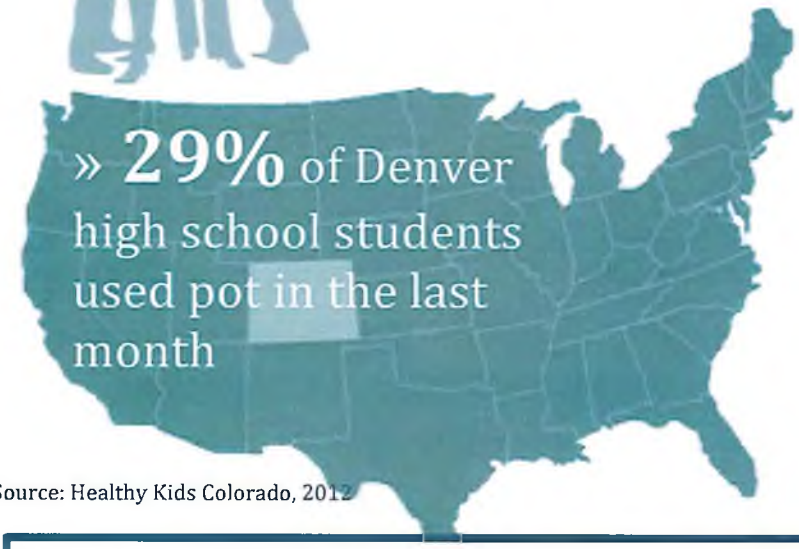
MJ Use Among Colorado Teens…

» **Fifth** highest in the nation

» **50%** above the national average

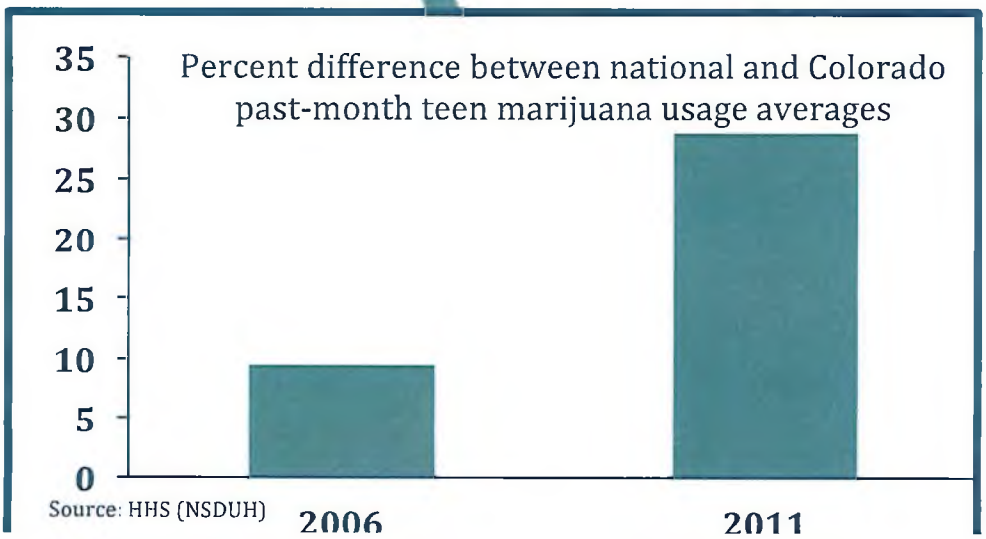


Source: HHS (NSDUH)



Source: Healthy Kids Colorado, 2012

» If Denver were a **state**, it would have the **highest** public high school past-month use rates in the **country**



» 29% above national average in 2011

» 9% above national average in 2006

74% of Denver-area teens in **treatment** said they used **somebody else's** medical marijuana an average of **50 times**

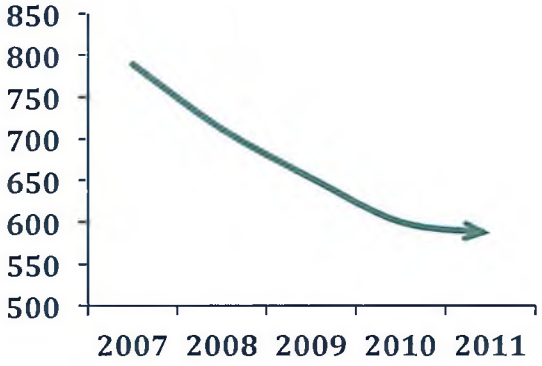
Source: Salomonsen-Sautel et al., 2012

MJ-related ER visits for **children under five** rose by **200%** between 2006 and 2012

Source: Thurstone, 2013

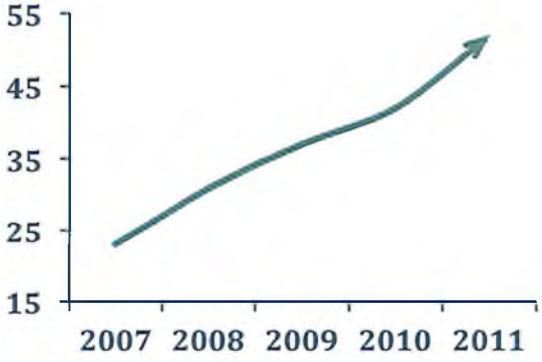
Traffic fatalities involving drugged drivers rose from **7.1%** in 2008 to **13%** in 2011

While the **total** number of car crashes **declined** between 2007 and 2011....



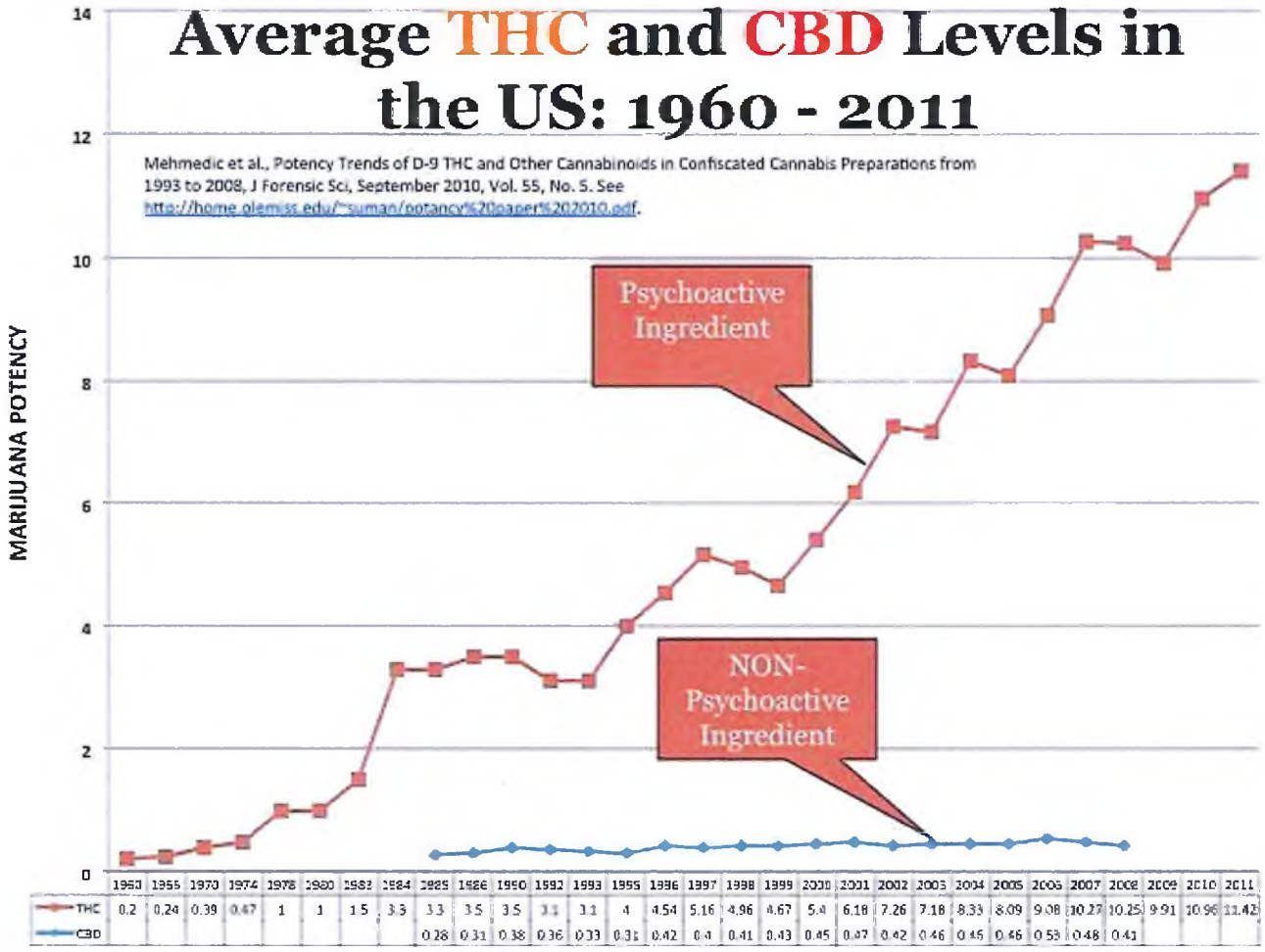
...the number of fatal car crashers with **drivers testing positive for MJ** rose sharply during those same years.

Source: CO Dept of Transportation



SAM Smart Approaches to Marijuana
a project of the policy solutions lab

www.learnaboutsam.org


Average THC and CBD Levels in the US: 1960 - 2011
Mehmedic et al., Potency Trends of D-9 THC and Other Cannabinoids in Confiscated Cannabis Preparations from 1993 to 2008, J Forensic Sci, September 2010, Vol. 55, No. 5. See http://home.olemiss.edu/~suman/potency%20paper%202010.pdf.
MARIJUANA POTENCY
Psychoactive Ingredient
NON-Psychoactive Ingredient
0
2
4
6
8
10
12
14
1960 1965 1970 1974 1978 1980 1982 1984 1985 1986 1990 1992 1993 1995 1996 1997 1998 1999 2000 2001 2002 2003 2004 2005 2006 2007 2008 2009 2010 2011
THC 0.2 0.24 0.39 0.47 1 1 1.5 3.3 3.3 3.5 3.5 3.1 3.1 4 4.54 5.16 4.96 4.67 5.4 6.18 7.26 7.18 8.33 8.09 9.08 10.27 10.25 9.91 10.96 11.42
CBD 0.28 0.31 0.38 0.36 0.33 0.31 0.42 0.4 0.41 0.43 0.45 0.47 0.42 0.46 0.45 0.46 0.53 0.48 0.41

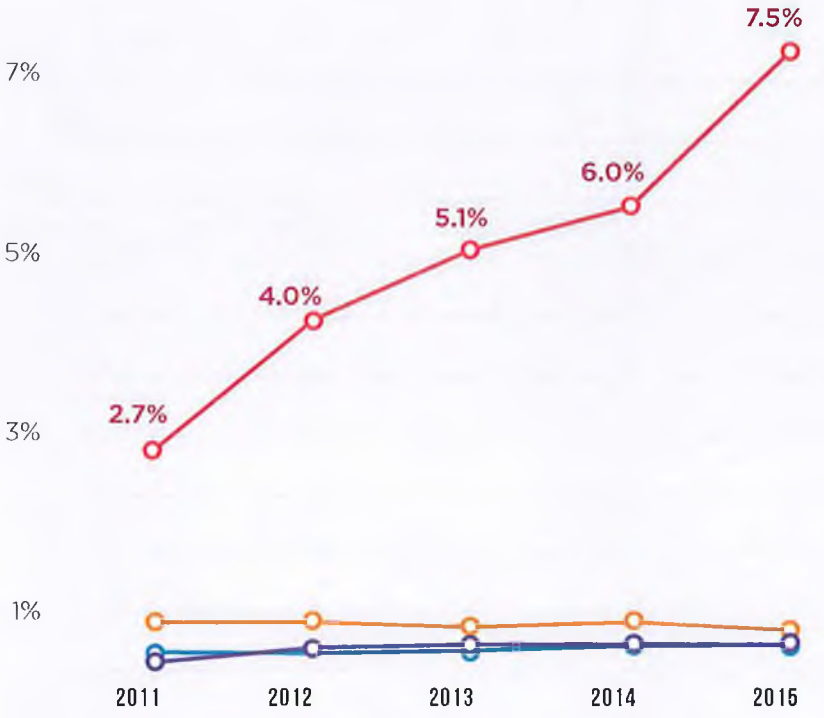
IMPACT ON BUSINESSES AND THE WORKFORCE

Marijuana legalization also involves significant downsides to existing businesses. As marijuana use has increased in states that have legalized its use, so has use by employees, both on and off the job. Large businesses in Colorado now state that after legalization they have had to hire out-of-state residents in order to find employees that can pass a pre-employment drug screen.

The CEO of large Colorado construction company GE Johnson has said that his company "has encountered so many job candidates who have failed pre-employment drug tests because of their THC use that it is actively recruiting construction workers from other states." And the owner of Colorado Springs construction company Avalanche Roofing & Exteriors told *The New York Times* that in Colorado, "to find a roofer or a painter that can pass a drug test is unheard-of."

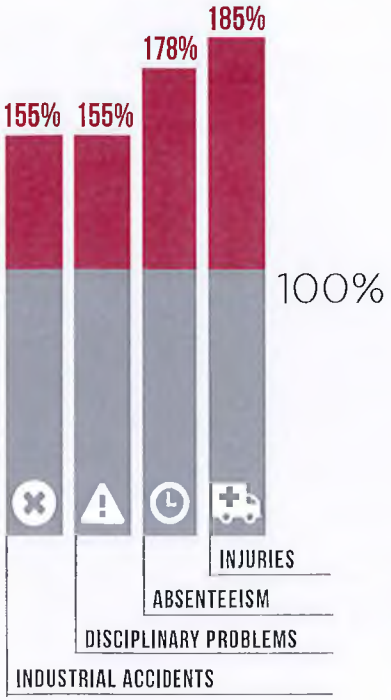
The data from major drug testing firm Quest Diagnostics, which analyzes the results millions of workplace drug tests each year, recently reported a 47% spike in the rate of positive

POSITIVE WORKPLACE ORAL DRUG TEST RESULTS



	MARIJUANA	OPIATES	COCAINE/ METABOLITE	AMPHETAMINE
AVG ANNUAL CHG 2011-15	29.1%	-5.3%	2.9%	22.3%
% CHANGE 2011-15	177.8%	-19.6%	12.2%	124.0%

Source: Quest Diagnostics, 2015 data from over 900k tests from Jan to Dec 2015.

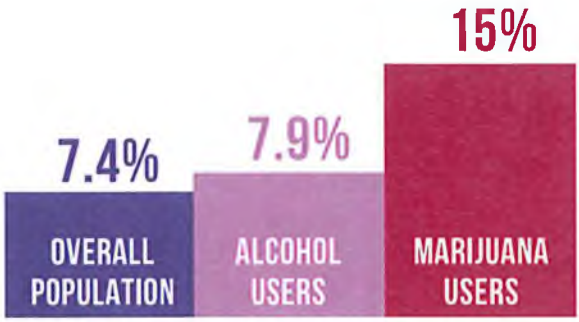


Source: Zwerling et al.

Accidents, injuries, absenteeism, and disciplinary problems among pot users all increase costs for employers

PERCENTAGE OF PEOPLE WHO MISSED WORK DURING THE PAST 30 DAYS "BECAUSE [THEY] JUST DIDN'T WANT TO BE THERE"

oral marijuana test results in U.S. workplaces from 2013 to 2015 — and more detailed data shows an incredible 178% rise in that rate from 2011 to 2015. The same study also indicates that after years of declining drug use in the workplace, the percentage of employees in the combined U.S. workforce testing positive for drugs has steadily risen over the last three years to a reach 10-year high.



Source: NSDUH tables