Marijuana Reality Check

- Medical Efficacy
- Motives
- Unintended Consequences
- Diversion/Leakage
- Health Effects
- Public Safety Impacts
- Policy Implications
Important Distinctions

The Office of Drug Control Policy supports safe & effective research-based medicines, including qualified cannabis derivatives, for use by health care professionals to treat patients with valid medical need, & that do not compromise Iowans’ health & public safety.

Rigorous research is needed to safely & effectively help those in need without putting others at risk. Cannabis extracts are being isolated for FDA-authorized testing of potential medicines.

Iowa law permits regulated use of non-psychoactive CBD oil to treat intractable epilepsy, similar to a product in FDA clinical trials at Iowa City & other sites. States with “medical” marijuana laws allow broader use for multiple conditions with fewer controls.
Marijuana Laws & Use by Teens by State

States with Relaxed Marijuana Laws
(2014 Governing)

Past Month Use by 12-17 Year Olds
(2012-2013 NSDUH)

(Dark green states: “Medical” marijuana.
Light green states: “Recreational” marijuana too.)
**Other Legal Developments**

- **Buyer’s remorse?** Over 200 communities in California, 180 in Colorado & others elsewhere have enacted local bans on “medical” or “recreational” marijuana sales, & numbers are growing.

- **Federal law enforcement has cracked down in California,** closing up to 600 “medical marijuana” dispensaries for violating federal controlled substance laws or state laws re: nonprofits, caregivers, medical use, etc. Similar raids have been conducted in Colorado.

- **Lawsuits & court challenges are pending regarding jurisdictional authority, workplace rights, etc.**
Scientific Positions on Marijuana

• The FDA has not approved the use of marijuana as medicine, saying “there is currently sound evidence that smoked marijuana is harmful.”

• The Institute of Medicine has declared smoking marijuana is unsafe, & “marijuana is not modern medicine.”

• The National Institute on Drug Abuse reports “marijuana is addictive,” with nearly 4.5 million Americans meeting the clinical criteria for marijuana abuse or dependence.
Health Group Positions on Marijuana


• The American Academy of Pediatrics “opposes marijuana use by children & adolescents…the use of ‘medical’ marijuana outside the regulatory process of the FDA…&…legalization of marijuana.”
Marijuana Health Effects

• Marijuana can: cause or worsen respiratory symptoms; impair short-term memory & motor coordination; slow reaction time; distort perceptions; raise heart rate; disrupt problem solving & learning ability; alter mood, judgment & decision-making; & in some people cause severe anxiety or psychosis.
  2012 National Institute on Drug Abuse, NIH, Drug Facts

• More U.S. citizens met the American Psychiatric Association’s diagnostic criteria for marijuana abuse or dependence than for pain relievers, cocaine, tranquilizers, hallucinogens & heroin combined.
  2011 U.S. Substance Abuse & Mental Health Services Administration, National Survey on Drug Use & Health
Marijuana Health Effects

• Marijuana is addictive. About 9% of users become addicted. That number increases to 1 in 6 among users who start in adolescence, & to 25-50% among those who use marijuana daily. 2014 National Institute on Drug Abuse

• Regular daily users of high-potency marijuana (~16% THC), similar to forms increasingly found in the U.S., are 5 times more likely than non-users to have a psychotic disorder. Weekend users are 3 times as likely to suffer a psychotic episode. 2015 The Lancet Psychiatry, Kings College London

• Preliminary research finds breathing 2\textsuperscript{nd}-hand marijuana smoke could damage your heart & blood vessels as much as 2\textsuperscript{nd}-hand cigarette smoke. 2014 American Heart Association’s Scientific Sessions
Marijuana’s Makeup

• Marijuana contains more than 100 chemicals, known as cannabinoids. Currently, the two main compounds of interest for potential therapeutic use are *tetrahydrocannabinol (THC)* & *cannabidiol (CBD)*, found in varying ratios in the cannabis plant.

• THC is the main psychoactive ingredient. Some THC-based medications are FDA-approved for stimulating appetite & reducing nausea. It may also decrease pain, inflammation & spasticity. THC also leads to mind-altering experiences, impairment, abuse & addiction.

• CBD is a non-psychoactive ingredient that may be useful in reducing pain & inflammation, controlling epileptic seizures, & possibly even treating psychosis & addictions.
Other Names for Marijuana/Cannabis

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<thead>
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<td>Buds</td>
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Marijuana & Health

• Average marijuana THC potency rose to 11.8% in 2014, up from 3.75% in 1995. THC potency was less than 1% in 1972.

   December 15, 2014 University of Mississippi Marijuana Project

• Some new marijuana concentrates (e.g., hash oils, waxes & edibles) reportedly contain THC levels in excess of 80%.

   2014 U.S. Department of Justice, Drug Enforcement Administration, National Drug Threat Assessment Summary
Marijuana’s Increasing Potency
U.S. Seizures, Concentration of THC by % of Weight

*Many newer concentrates reportedly contain THC levels of 50-90%. Examples: Hash Oil, Marijuana Wax, Marijuana-Infused Edibles.

National Institute on Drug Abuse & U.S. Drug Enforcement Administration
Marijuana Concentrates

Hash Oil (aka: honey oil or 7:10)

Chemically extracted from cannabis plant with solvent. Produces amber or brown colored viscous liquid. One or two drops = one “joint.” Often used in vape devices. THC estimate: 40-80%.

Wax (aka: budder, crumble, earwax)

Created by whipping hash oil during THC extraction. Results in a consistency similar to earwax. “Dabbing” is inhaling vapor from wax on a heated surface. THC estimate: 50-80%.
Marijuana Concentrates

Shatter

Yellow or amber colored thin & brittle cake made in multiple steps that involve a pressure vacuum. THC estimate: May exceed 80-90%.

Edibles

Delayed effects of marijuana-infused foods (e.g., brownies, suckers, peanut butter, gummy chews, drinks, etc.) on unsuspecting users—particularly children drawn to product packaging—can lead to psychotic episodes & other dangers. THC estimate: 50% or higher.
Marijuana Concentrates

Vaping

Many users of marijuana concentrates prefer smokeless, odorless e-cigarette or vape device delivery systems. “Vaping” is fast-acting & easy to conceal, a concern in schools & among youth generally.

BHO Labs (Butane Honey Oil labs)

THC extraction labs (aka BHO labs, due to the use of butane for hash/honey oil extraction) are on the rise... in Iowa too. One byproduct is more lab-related explosions, fires & personal injuries.
Marijuana Concentrates

Regular daily users of high-potency marijuana (~16% THC), similar to forms increasingly found in the U.S., are 5 times more likely than non-users to have a psychotic disorder. Weekend users are 3 times as likely to suffer a psychotic episode.

2015 The Lancet Psychiatry, Kings College London
Current Youth Marijuana Use
Past 30 Days: U.S. vs. Iowa

5.98% of all Iowans 12+ & 4% of Iowa teens are current marijuana users.

54% of Iowa 11th graders say marijuana would be easy or very easy for peers to get in their neighborhood or community.

2014 Monitoring the Future Survey & 2014 Iowa Youth Survey (available data)
Drugs of Choice: Iowa Youth
Primary Substance for 5,026 Juveniles in Treatment

IDPH Treatment Admissions, 2014
Drugs of Choice: Iowa Adults
Primary Substance by 46,891 Adults in Treatment

- Alcohol: 53.7%
- Marijuana: 23.0%
- Meth: 14.0%
- Other: 7.2%
- Cocaine: 2.1%

IDPH Treatment Admissions, 2013
Drugs of Choice: All Iowans
Primary Substance of Choice by Iowans in Treatment

IDPH Treatment Admissions, 2014
Marijuana: Perceived Risk & Use by Iowa 11th Graders

- **Current (Past 30-Days) Use**
  - 2005: 13%
  - 2008: 13%
  - 2010: 12%
  - 2012: 11%
  - 2014: 11%

- **Perceived Great or Moderate Risk**
  - 2005: 70%
  - 2008: 66%
  - 2010: 61%
  - 2012: 57%
  - 2014: 57%

*2014 Iowa Youth Survey*
Iowans’ *Current* Marijuana Use

Most Iowans are not *current* marijuana users (past 30 days).

**Iowa 6th, 8th & 11th graders currently using marijuana.**

- Use: 4%
- Do Not Use: 96%

**Iowans 12 & older currently using marijuana.**

- Use: 5.98%
- Do Not Use: 94.02%

2014 Iowa Youth Survey & 2012-2013 National Survey on Drug Use & Health
Iowa College Students Risking Aid Due to Drug Conviction

Eligible for Aid

99.996%

*DQ .004%
Of 3,697 total prison admissions:
• 160 (4.3%) were for marijuana trafficking,
• 13 (0.35%) were for 3\textsuperscript{rd} or subsequent marijuana possession,
• 1 (0.03%) was for 2\textsuperscript{nd} or subsequent marijuana possession, and
• None (0%) was for 1\textsuperscript{st}-time marijuana possession.

IDOC, 2014
Iowa’s Workplace
Positive Drug Tests Reported 2002-2011

- Marijuana: 62.8%–59.0%
- Meth: 22.9%–15.8%
- Opiates: 9.7%–12.8%
- Cocaine: 9.7%–8.9%
- Other: NA–3.5%

IDPH, 2014
Iowa Marijuana ER Visits
Marijuana Use as Causal or Contributing Factor

Marijuana impairs/worsens respiratory systems, heart rate, coordination, judgment, memory, problem-solving & mood. It contributes to auto crashes & can cause severe anxiety & psychosis.

IDPH, 2013
Iowa Drug-Impaired Driving
2014 Non-Alcohol Evaluations by Drug Recognition Experts

IDPS, 2014
Iowa Drug-Related Traffic Fatalities
Types of Drugs Detected in Persons Killed in Crashes

Poly-drug use & drugs mixed with alcohol were detected in some cases. Alcohol alone was detected in 94 other crash victims.

IDPS & IDOT, 2014
“Medical” Marijuana: Case Studies
Users

• A majority of card holders in “medical” marijuana states with data cite pain as their primary illness (vs. cancer, glaucoma, HIV/AIDS & other debilitating conditions.):
  ➢ 65% in Oregon 2012 Oregon Health Authority
  ➢ 71% in Arizona 2012 Arizona Department of Health Services
  ➢ 94% in Colorado 2014 Colorado Department of Health & Environment

• The average age of “medical” marijuana card holders tends to be under 45 years:
  ➢ 41 in Colorado 2012 Colorado Department of Health & Environment
  ➢ 40 in Arizona 2012 Arizona Department of Health Services
  ➢ 32 in California 2011 Journal of Drug Policy Analysis

• 75-80% of “medical” marijuana users seen as patients say marijuana did not ease their pain. 2014 Colorado Springs Dr. Ken Finn, MD
“Medical” Marijuana: Case Studies
Diversion (Leakage)

- 85% of all “medical” marijuana users in Colorado were registered by 50 physicians, or less than 3% of licensed doctors. 1 physician registered 10% of all users.
  2011 Nussbaum, Boyer & Kondrad-MDs/Colorado Department of Public Health & Environment

- In Oregon, 9 physicians accounted for half of all “medical” marijuana users. One doctor helped 4,180 users in a year, or more than 11/day.
  2012 The Oregonian

- 74% of Denver teens in substance abuse treatment say they used someone else’s “medical” marijuana.

- 34% of 12th grade marijuana users in “medical” marijuana states say one of their sources is another person’s “medical” marijuana.
  2013 Monitoring the Future Survey/University of Michigan
“Medical” Marijuana: Case Studies
Drug Endangered Children

- States that decriminalized marijuana saw a 30+% increase in the call rate to poison centers for children requiring medical intervention between 2005 & 2011, while call rates did not change in other states. 2014 Annals of Emergency Medicine

- The average number of Colorado marijuana-related exposures for young children 0-5 was 4.75/year from 2006-2009, but rose 268% to 17.5/year from 2010-2013. 2014 Rocky Mountain Poison & Drug Center

- There’s been a spike in the number of Colorado children treated for accidentally consuming marijuana-laced foods & beverages. May 2013 Journal of the American Medical Association Pediatrics
“Medical” Marijuana: Case Studies
Impairment & Injury

• While total traffic fatalities in Colorado decreased 14.8% from 2007-2012, traffic fatalities involving operators testing positive for marijuana during the same period increased 100%.
  2011 National Highway Transportation Safety Administration & 2012 Rocky Mountain HIDTA

• A six-state study showed the prevalence of marijuana detected in fatally injured drivers increased from 16.6% in 1999 to 28.3% in 2010.
  2014 American Journal of Epidemiology, Columbia University

• Colorado marijuana-related hospitalizations increased 82% from 2008 to 2013.
  2014 Colorado Hospital Association
“Medical” Marijuana: Case Studies

Use/Abuse

• 80% of “medical” marijuana states report increased usage among youths age 12-17 vs. 5 years earlier. 2012 Cerda, M., Drug & Alcohol Dependence

• Residents of “medical” marijuana states had abuse / dependence rates almost twice that of other states. 2011 Wall, M., Annals of Epidemiology

• Colorado & Washington State had the 2nd & 3rd highest marijuana use rates among persons 12 & older (12.7% & 12.28% respectively vs. 7.4% for the U.S. & 5.98% in Iowa). This happened under “medical” marijuana laws, & a year before full-scale legalization. 2012-2013 National Survey on Drug Use & Health

• The top 20 states (& DC) for current marijuana use among teens all have approved “medical” marijuana. 2012-2013 National Survey on Drug Use & Health
Current Youth Marijuana Use Rates

Teens in “Medical” vs. Non-”Medical” Marijuana States


2012-2013 National Survey on Drug Use & Health
“Medical” Marijuana: Case Studies
Youth Learning Potential

• The top 9 states for marijuana use in high school were all “medical” marijuana states, with an average use rate of 1/4 students (vs. a national rate of 1/5 & an 1/9 Iowa rate).
  2014 Centers for Disease Control, 2013 Colorado Youth Risk Behavior Survey & 2012 Iowa Youth Survey

• Drug-related student suspensions & expulsions increased 32% in Colorado schools from 2008/2009-2012/2013.
  2014 Colorado Department of Education

• School resource officers, counselors, nurses, staff & officials with Colorado schools report an increase in marijuana-related incidents in middle & high schools.  November 2013 Denver Post
“Medical” Marijuana: Case Studies

**Diversion**

- From 2006-2008 Colorado reported 1,000-4,800 “medical” marijuana card holders and no known dispensaries. From 2009 to now, more than 108,000 card holders buy from 532 licensed dispensaries. [2014 Rocky Mountain HIDTA]

- Denver has 204 dispensaries, roughly 3 times the number of Starbucks & McDonalds combined. [2012 CBS 60 Minutes]

- Highway interdiction seizures of Colorado marijuana destined for 40 other states, including Iowa, increased 397% from 2008-2013. [2014 El Paso Intelligence Center]

- Iowa’s Crime Lab reports 26 cases of marijuana oils/waxes & edibles in December 2014-January 2015, & estimates 10% of all recent marijuana submissions are these newer types. [January 2015 Iowa Department of Public Safety, Division of Criminal Investigation]
Source of Marijuana Seized in Iowa
2014 Iowa State Patrol Significant Highway Interdictions

*Colorado 46%
*California 33%
*Arizona 8%
*Oregon 8%
*Washington 4%

*All 24 from States with “Medical” or “Recreational” Marijuana Laws

IDPS, 2014
“Recreational” Marijuana: Case Studies

• “2 deaths connected with edible marijuana products have Colorado lawmakers scrambling to toughen regulations & experts warning of bizarre behavior as consumers eat powerful pot-infused foods.” May 8, 2014 USA Today

• Legalization led to a 356% 1-year rise (356-1,650) in Pueblo County’s homeless shelter population as of March 2014. 2014 Pueblo County Colorado Sheriff Kirk Taylor

• 3 elementary girls were cited for drug possession on school grounds in Colorado Springs. 1 girl said she brought marijuana from home because “it’s legal & cool.” 2014 KRDO-TV
“Recreational” Marijuana: Case Studies

• Highway interdiction seizures of Colorado marijuana destined for 40 other states, including Iowa, increased 397% from 2008-2013. 2014 El Paso Intelligence Center

• “Visitors account for 44% of ‘recreational’ marijuana sales in the Denver area. In the mountains & other vacation spots, visitors to Colorado account for 90% of ‘recreational’ dispensary traffic. Heavy users consume marijuana much more often, & more intensely, than other consumers.”
  July 9, 2014, Colorado Department of Revenue Market Study

• “7 months after Colorado legalized ‘recreational’ pot, the state has an unexpected problem. It needs to grow more.”
  August 12, 2014, KUSA-TV
“Recreational” Marijuana: Case Studies

• “This was a bad idea…wait a couple of years.”
  Colorado Governor John Hickenlooper on CNBC 1-23-15

• “It’s not worth it…the criminals are still selling on the black market…we have plenty of cartel activity in Colorado, and plenty of illegal activity that has not decreased at all.”
  Colorado Attorney General Cynthia Coffman in US News 2-23-15

• “Global cannabis use seemed to have decreased. However, in the U.S. the lower perceived risk of cannabis use has led to an increase in its use.”
  June 26, 2014, UN Office on Drugs & Crime
“Medical” Marijuana: Alternatives

- Research shows a few orally-administered synthetic medicines containing the cannabis plant’s principal psychoactive compound tetrahydrocannabinol (THC) do have therapeutic potential to relieve pain, control nausea, stimulate appetite & decrease ocular pressure. Smoking or ingesting crude marijuana is not required.

- Dronabinol (Marinol) & Nabilone (Cesamet) are FDA-approved & legally available as prescription pills.
“Medical” Marijuana: Alternatives

- The FDA is considering a mouth spray (Sativex) with 2 cannabinoids extracted from the cannabis plant.

- An oral liquid (Epidiolex) containing non-psychoactive Cannabidiol (CBD), extracted from the cannabis plant, is an FDA orphan drug under study to treat seizures, & available for patient testing, including at University of Iowa Hospitals & Clinics.

- Iowa & 10 other states now permit limited use of CBD solutions by patients with severe medical needs.
“Medical” Marijuana: Alternatives

• Many other FDA-approved medicines, currently available in dose-specific forms that do not involve marijuana, are prescribed & dispensed regularly by health care professionals as safe & effective treatments.

• Research continues on cannabinoids, & other substances, to determine if they may be formulated similar to other medicines for medical use (e.g., morphine from opium, aspirin from tree bark, penicillin from moldy bread, etc.).

• Stay tuned…
U.S. Marijuana Policy Continuum


<2006 All Illegal

1996 California Approves “Medical”

2012 Colorado Approves “Recreation”

2014 Utah Approves “CBD Oil”

Changing Attitudes: Quest for therapy, financial incentives, social justice & privacy concerns, social media/internet, research, etc.?

Public safety?
Recent Marijuana Research News

**U.S. Government Awards University of Mississippi $69 Million to Grow and Analyze Marijuana**

**Colorado Marijuana Study Finds Legal Weed Contains Potent THC Levels**

**Marijuana Extract for Children With Epilepsy Is Questioned**

As more states move to legalize cannabidiol, early research shows the substance failed help some patients and even worsened others
Drug Prevention Info To Go…

• Drug use is a preventable behavior, & drug addiction is a treatable disease. Key influencers do make a difference.

• Teens who learn about drug dangers through ongoing dialogue at home are up to 50% less likely to ever use them.

• A frequent reason cited by drug free teens for deciding to not use drugs is the fear of disappointing their parents.
Share the News & Stay Safe!

Iowa Office of Drug Control Policy
www.iowa.Gov/ODCP