Implications of Legal Marijuana for Town/Gown Communities:

The Colorado Experience
Linda Cooke, J.D.

City of Boulder, CO
Presiding Judge, Boulder Municipal Court
Abbreviations

- MJ: Marijuana
- MMJ: Medical Marijuana
- RMJ: Recreational Marijuana or Retail Marijuana
- THC: Tetrahydrocannabinol, the principal psychoactive ingredient of MJ
- CBD: Cannabidiol, the principal therapeutic component of cannabis, it is non-psychoactive
Overview

- Marijuana Legalization: A Brief History
- Marijuana Attributes in a Legal Environment
- Legal MJ: A Changing Normative Environment
- Trends in MJ Use, Attitudes when Legal
- Physical Health Concerns
- Overdose/ Accidental Ingestion
- Marijuana & Driving
- Mental Health Impacts
- Additional Implications for Higher Education
- Canadian Low Risk Guidelines
A Brief History of Marijuana Legalization
Legal Status of Marijuana in the U.S.

- **1937**: Federal law makes MJ illegal everywhere
- **1973**: Oregon decriminalizes MJ
  - MJ is still criminalized in ≈ 20 states (risk of jail)
- **1996**: California legalizes medical MJ
  - 38 states have legalized some MMJ use*
- **2009**: Feds – prosecutions in legal MMJ states are a low priority if comply with state law
- **2012**: CO and WA voters legalize marijuana for recreational use; OR, AK, D.C. follow
# Legalization vs. Decriminalization

<table>
<thead>
<tr>
<th>Legalization</th>
<th>Decriminalization</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Intent is to regulate sales</td>
<td>• Intent is to discourage use</td>
</tr>
<tr>
<td>• Intent is to collect taxes</td>
<td>• Intent is to prohibit distribution</td>
</tr>
<tr>
<td>• Intent is to eliminate the black market</td>
<td>• Responds to possession of 1 oz. or less if MJ with</td>
</tr>
<tr>
<td></td>
<td>treatment and/or a low fine – NO JAIL!</td>
</tr>
<tr>
<td>• No legal response to use by adults within legal limits</td>
<td>• Makes MJ enforcement a low priority for police</td>
</tr>
</tbody>
</table>
MJ Legalization in Colorado

- **2000**: Am. 20 legalizes MMJ on a small scale
  - No MMJ dispensaries; MJ grown by patients or caregivers
- **2009**: Caregiver rule overturned; Fed. position softens
  - MMJ patients increase from 6,000 to 41,000
  - Hundreds of unlicensed legal MMJ dispensaries appear
- **2010**: State legislature legalizes MMJ businesses; the era of MJ “commercialization” begins
  - MMJ patients increase to 108,000 by 2012
  - 94% of MMJ patients use MMJ to treat severe pain
- **2012**: Colorado legalizes RMJ effective Jan. 2014; after 1 year there are 322 RMJ stores & 505 MMJ centers
MARIJUANA

“Not your parents’ pot”
## Why People Use Marijuana

<table>
<thead>
<tr>
<th>Cannabis sativa: high THC</th>
<th>Cannabis indica: high CBD</th>
</tr>
</thead>
<tbody>
<tr>
<td>Energizing, stimulating, uplifting, increased sense of wellbeing</td>
<td>Pain reduction/muscle relaxant</td>
</tr>
<tr>
<td>Increased focus, creativity, “cerebral effect”</td>
<td>Seizure reduction</td>
</tr>
<tr>
<td>Allegedly counteracts depression</td>
<td>Anxiety/stress reduction</td>
</tr>
<tr>
<td>Immune system enhancement</td>
<td>Enhances sleep</td>
</tr>
<tr>
<td>Decreases nausea</td>
<td>↑ appetite, ↓ nausea</td>
</tr>
<tr>
<td>Stimulates appetite</td>
<td>Decreases inflammation, immune responses</td>
</tr>
<tr>
<td></td>
<td>↓ intra-ocular pressure</td>
</tr>
<tr>
<td></td>
<td>Lethargy, “laid back,” “body buzz”</td>
</tr>
</tbody>
</table>
What was legalized in CO?

<table>
<thead>
<tr>
<th>The marijuana of the 70s</th>
<th>Today’s marijuana</th>
</tr>
</thead>
<tbody>
<tr>
<td><img src="image1.png" alt="Image of marijuana joint" /></td>
<td><img src="image2.png" alt="Image of marijuana concentrate" /></td>
</tr>
</tbody>
</table>
MJ: THC Content Has Increased Dramatically

% THC in MJ Seized by Law Enforcement

Source: U. of Mississippi Potency Monitoring Project (MJ seized by law enforcement)
MJ Preparations in Legal States

- **Marijuana**
  - 18.7% avg. THC content; top shelf strains to 30%
  - Dried flowering tops and leaves of the plant

- **Hashish**
  - THC content 2%-20%
  - Dried and compressed resin secreted from plant

- **Hash oil**
  - THC content 15%-50%
  - Oil-based extract of hashish
  - Now often used in vaping
MJ Preparations in Legal States

- **Hash Oil Extracts**
  - THC content 50-75%+
  - THC extracted from MJ plant matter by butane, CO₂

- **Include Wax (or Earwax)**
  - Like hash oil but with a waxy consistency

- **Include Shatter**
  - THC content up to 90%
  - Semi-transparent, yellow or amber, thin substance that “shatters” when a piece is broken off
MJ Consumption in Legal States

- **Smoking**
  - Joints, bowls, bongs
- **Vaping**
  - I.e., e-cigarettes filled with hash oil, not liquid nicotine
- **Dabbing**
  - A dab of wax or shatter is placed on a heated surface, vaporizing the concentrate which is then inhaled
Edibles, “infused” products
- Baked goods, candies, drinks, etc.

Tinctures
- Liquid concentrate that can be dropped on or under the tongue, or in food or drink
MARIJUANA

Changing Normative Environment
From MMJ to RMJ

- MMJ creates a new “norm”
- If MMJ is successful, RMJ is not so scary
Design of Marijuana Operations Can Influence Social Norms, Behaviors

Would you rather your marijuana retailer look like this?

Or like this?

Design of Marijuana Operations Can Influence Social Norms, Behaviors
Number & Density of MJ Outlets will Influence Social Norms
Number & Density of MJ Outlets will Influence Social Norms
Features of MJ outlets will Influence Social Norms
MJ Advertising & Promotion will Subtly Influence Social Norms

Medical Marijuana ads in California
Even public education campaigns influence social norms
MJ FACTS: CO. AD CAMPAIGN

GOOD TO KNOW

Marijuana in Colorado

Whether you choose to use or not,
YOU MIGHT NOT KNOW
AS MUCH AS YOU THOUGHT.

Be educated. Be responsible.
IMPACTS ON YOUTH

GOOD TO KNOW

For those underage,
IT'S JUST NOT OKAY.
THEIR BRAINS ARE STILL GROWING,
SO KEEP IT AWAY.

Retail marijuana use is unsafe for anyone under 21.
LIMITING YOUTH ACCESS

GOOD TO KNOW

WITH THOSE UNDER 21, be aware, IT'S ILLEGAL TO GIVE OR SHARE

Help protect youth and prevent underage marijuana use.
MARIJUANA ENFORCEMENT
MARIJUANA ENFORCEMENT

PUBLIC SPACE IS NOT THE PLACE.

GOOD TO KNOW
Be educated. Be responsible.
MJ is unlawful outside CO
An individual can’t possess more than 1 oz. of useable MJ (2 oz. for MMJ, ¼ oz. for non-residents)
Restrictions on Quantity

- Each individual can grow no more than 6 plants: 3 mature, 3 immature
- Some jurisdictions restrict the number of plants per household: Boulder – 6; Denver – 12
- An individual can’t sell marijuana to a friend
Not a law, but good practice

Store it right:
LOCKED UP,
OUT OF REACH
and OUT OF SIGHT.

GOOD TO KNOW
Be educated. Be responsible.
MARIJUANA

Trends in Use, Attitudes
ADULT USE IN COLORADO
Adult (18+) MJ Use: Colorado vs. National Average

Source: NSDUH 2013
Current Adult MJ Users in CO

Source: Influential Factors in Healthy Living Survey 2014
USE BY ADOLESCENTS IN CO
- Past 30 day use:
  - Denver metro: 26.2%
  - Colorado: 19.7%
  - National: 15.6%

- Note that there are at least 213 RMJ and MMJ outlets in the Denver metro area.

Source: HKCS 2013 & Monitoring the Future 2013
Changes in perception of harm from regular MJ smoking (12th graders)

Source: Monitoring the Future 2014 (National Data)
Average Past Month MJ Use Age 18 to 25

Source: SAMHSA.gov, NSDUH, 2006-2013
# National College Student Marijuana Data

<table>
<thead>
<tr>
<th>Reported Number of Times College Students Used Marijuana - 2014 ACHA NCHA</th>
<th>Total %</th>
</tr>
</thead>
<tbody>
<tr>
<td>Never Used in Last 30 Days</td>
<td>61.0</td>
</tr>
<tr>
<td>Used, But Not in Last 30 Days</td>
<td>20.7</td>
</tr>
<tr>
<td>Used 1-9 Days</td>
<td>11.7</td>
</tr>
<tr>
<td>Used 10-29 Days</td>
<td>4.1</td>
</tr>
<tr>
<td>Used all 30 Days</td>
<td>2.6</td>
</tr>
<tr>
<td>Any Use Within Last 30 Days</td>
<td>18.4</td>
</tr>
</tbody>
</table>
MARIJUANA

Physical Health Concerns
Marijuana & Brain Development in Adolescents (age 14-18)

- Chronic MJ use during adolescence may result in average decrease in IQ of 8 points
- Deficits may include impaired learning, memory, executive functions, and verbal fluency
- Deficits may not be fully reversible even with abstinence by age 22
Heavy marijuana use in puberty and mid-adolescence may have effects on brain structure and function that are different, more significant, and longer lasting than does use in adulthood:

- Cognitive deficiencies
- Development of neuropsychiatric disorders
- Likelihood of other substance use/abuse
- Likelihood of cannabis dependence
Cardiovascular/Cerebrovascular Effects of Marijuana

- **Cardiovascular**
  - Increased chest pain
  - Heart attack
  - Irregular heart beats
  - Weakened heart muscle

- **Cerebrovascular**
  - Mini-strokes
  - Stroke

- These events are occurring in young persons with no other risk factors
- Heart attack rate increases 4.8x in 1st hour after MJ use
- 4.2x increase in mortality rate in MJ users compared with nonusers following heart attack
Respiratory Effects

- Cannabis/smoke contains many times more tar, carbon monoxide, and other toxic chemicals than tobacco
- Effects include cough, chronic bronchitis, lung infections, obstructed airways
Other Physical Effects

- Immune system abnormalities
  - Both positive and negative
- Decreased testosterone, resulting in:
  - Testicular shrinkage
  - Breast enlargement ("man boobs")
  - Loss of interest in sex
  - Erectile dysfunction
  - Loss of muscle mass
Marijuana-Associated Adverse Health Outcomes

- Chronic marijuana use/abuse is associated with:
  - Tobacco use
  - Alcohol use and abuse
  - Illicit drug abuse
  - Other risk taking behaviors
    - Drunk driving
    - Sexual activity
- Difficult to separate out cause and effect
  - Marijuana use may not cause other adverse health behaviors but, instead, be part of a larger, risk-taking behavioral lifestyle
  - Nonetheless, marijuana use may be a marker for other behaviors of concern: a “red flag”
Is Marijuana Addictive?
Dependence/Addiction
Lifetime Risk among Users

- Nicotine - 32%
- Heroin - 23%
- Cocaine - 17%
- Alcohol - 15%
- Stimulants - 11%
- Cannabis - 9%

- Cannabis - 9%, but . . .
  - 17% for those who initiate in adolescence
  - More frequent cannabis use results in greater risk of dependence
    - 20%-30% among those who have used at least 5 times
    - 25%-50% among those who report near daily or daily use
# Cannabis Withdrawal Syndrome

<table>
<thead>
<tr>
<th>Common Symptoms</th>
<th>Less Common Symptoms</th>
</tr>
</thead>
<tbody>
<tr>
<td>Anxiety/nervousness and restlessness</td>
<td>Chills or sweating</td>
</tr>
<tr>
<td>Irritability, anger, aggression</td>
<td>Shakiness</td>
</tr>
<tr>
<td>Decreased appetite and weight loss</td>
<td>Stomach pain/physical discomfort</td>
</tr>
<tr>
<td>Sleep difficulties including strange dreams</td>
<td>Depressed mood</td>
</tr>
<tr>
<td>Cannabis craving</td>
<td></td>
</tr>
</tbody>
</table>
Cannabis Withdrawal Syndrome

- The severity of cannabis withdrawal symptoms are comparable to those of tobacco withdrawal
  - Primarily emotional and behavioral rather than physical
  - P.S.: This is bad news rather than good news
Denver Metro Hospital Discharge Diagnoses: MJ Use Disorder

*2014 data extrapolated from Jan-Jun data
So How Dangerous is Marijuana?

- Overall, it’s less dangerous than alcohol, but ...
  - Use in early adolescence may pose significant health risks
  - Daily or near daily use is risky
  - Use of high THC potency MJ is risky
  - Risky to use if psychotic vulnerability exists
  - It’s not as benign as most young adults and MJ activists would like to believe
MARIJUANA

Overdose & Accidental Ingestion
But First, a Word About

EDIBLES
Edibles Are Different!

Approximate THC While Blood Concentrations after Smoked vs. Oral Administration

THC Levels in Whole Blood – Smoked vs. Oral

(Courtesy of Sarah Uhrfer, Chematox, Boulder CO)
Edibles

- Users expect effects experienced with inhaled THC, BUT . . .
  - Onset of effects is delayed for edibles
  - Effect of edibles is stronger than people realize
  - Edibles create a longer high than expected
  - THC with no CBD can cause extreme paranoia
  - Edibles are attractive to naive users, tourists
MMJ in Colorado has looked like candy, baked goods, and soda pop or other beverages. (New regulations are helping, but won’t eliminate the problem.)

This has resulted in multiple cases of accidental ingestion of marijuana by children, unsuspecting adults, and pets.
In CO, there was no standardization of THC content in MMJ edibles.

Further, there were no instructions on use.

The results:
Rocky Mtn Poison & Drug Center
MJ Exposure Calls

<table>
<thead>
<tr>
<th>Year</th>
<th>Marijuana Exposures</th>
<th>Other Drug Exposures</th>
<th>Medical Marijuana Exposures</th>
<th>Medical Marijuana Commercialized</th>
<th>Retail Marijuana Legalized</th>
</tr>
</thead>
<tbody>
<tr>
<td>2001</td>
<td>34</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2002</td>
<td>48</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2003</td>
<td>56</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2004</td>
<td>43</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2005</td>
<td>42</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2006</td>
<td>20</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2007</td>
<td>38</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2008</td>
<td>25</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2009</td>
<td>26</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2010</td>
<td>42</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2011</td>
<td>46</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2012</td>
<td>49</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2013</td>
<td>39</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2014</td>
<td>70</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Rates of Hospitalization & Emergency Dept. Visits w. Possible MJ Exposures: Children up to 9 yoa
Rates of Hospitalization & Emergency Dept. Visits w. Possible MJ Exposures: Patients 9 years & older

<table>
<thead>
<tr>
<th>Year</th>
<th>Hospitalizations</th>
<th>Emergency Department Visits</th>
</tr>
</thead>
<tbody>
<tr>
<td>2000</td>
<td>NA</td>
<td>N(^b)=63</td>
</tr>
<tr>
<td>2001-2009</td>
<td>NA</td>
<td>N=528</td>
</tr>
<tr>
<td>2010-2013</td>
<td>N=820</td>
<td>N=441</td>
</tr>
<tr>
<td>Jan-Jun 2014</td>
<td>N=290</td>
<td>N=68</td>
</tr>
</tbody>
</table>

* Represents statistically significant difference.
Veterinarian cases of MJ ingestions by pets has grown from roughly two cases a month to one every other day.
“Marijuana Doesn’t Kill”: 3 CO deaths tied to recreational marijuana overdose
MARIJUANA & DRIVING
Study: Fatal Car Crashes Involving Marijuana Use Tripled in the U.S. Between 1999 and 2010

Alcohol contribution to fatal crashes held steady 1999-2010

Source: Columbia University’s Mailman School of Public Health
February 4, 2014
Marijuana’s Effect on Driving

- 2012 meta-analysis: acute cannabis consumption significantly increases risk of motor vehicle accidents (odds ratio 1.92)

- Study of airplane pilot performance showed impairment in all variables 24 hours after smoking 1 THC cigarette, although pilots reported no awareness of impaired performance

THC + ALCOHOL

- Both CNS Depressants
- Additive, possible synergistic effect
  - Additive: $1 + 1 = 2$
  - Synergistic: $1 + 1 = 5$
- Very low levels of both can cause major impairment
  - $0.035$ BAC + low doses of THC $\approx 0.09 - 0.14$ BAC level of impairment

(Courtesy of Sarah Uhrfer, Chematox, Boulder CO)
Marijuana & Mental Health Impacts
Psychosis

- Psychosis – Loss of touch with reality, including:
  - Hallucinations
  - Delusions
  - Paranoia
  - Catatonia
  - Thought disorders

- Psychosis may be seen with:
  - Schizophrenia
  - Bipolar disorder
  - Depression
  - Various medical conditions
  - Other psychiatric conditions
  - Independent of other conditions
# Marijuana and Psychosis

<table>
<thead>
<tr>
<th></th>
<th>1st psychotic episode group</th>
<th>Control group (no psychotic episode)</th>
</tr>
</thead>
<tbody>
<tr>
<td>No MJ use</td>
<td>33%</td>
<td>37%</td>
</tr>
<tr>
<td><strong>Lifetime MJ use</strong></td>
<td>67%</td>
<td>63%</td>
</tr>
<tr>
<td>Used &lt; 1x weekly</td>
<td>17%</td>
<td>35%</td>
</tr>
<tr>
<td>Used on weekends</td>
<td>20%</td>
<td>17%</td>
</tr>
<tr>
<td>Used daily</td>
<td>30%</td>
<td>11%</td>
</tr>
<tr>
<td>MJ use began ≤ 15 yoa</td>
<td>42%</td>
<td>48%</td>
</tr>
<tr>
<td>MJ use began &gt; 15 yoa</td>
<td>24%</td>
<td>14%</td>
</tr>
<tr>
<td>Used low-THC cannabis</td>
<td>14%</td>
<td>44%</td>
</tr>
<tr>
<td>Use high-THC cannabis</td>
<td>53%</td>
<td>19%</td>
</tr>
</tbody>
</table>

DiForti et al., Proportion of patients in south London with first-episode psychosis attributable to use of high potency cannabis: a case-control study, The Lancet Psychiatry, February 16, 2015
# U.K. Study Findings

<table>
<thead>
<tr>
<th>MJ Use Pattern</th>
<th>Likelihood of Psychotic Disorder (vs. non users)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Began use &lt; 15 yoa</td>
<td>1.5 times more likely</td>
</tr>
<tr>
<td>Daily MJ user</td>
<td>3 times more likely</td>
</tr>
<tr>
<td>High-THC MJ* use: weekends</td>
<td>3 times more likely</td>
</tr>
<tr>
<td>High-THC MJ* use: daily</td>
<td>5 times more likely</td>
</tr>
<tr>
<td>Assuming causation:</td>
<td>19.3% of psychotic disorders attributable to daily MJ use</td>
</tr>
<tr>
<td></td>
<td>24.0% of psychotic disorders attributable to high-THC MJ use</td>
</tr>
</tbody>
</table>

*High-THC Marijuana: mean of 16.2% THC; median of 15.0% THC*
Adolescent MJ Use & Increase in Risk of Psychosis

Association between Adolescent Cannabis Use and Schizophreniform Disorder Based on COMT Genotype

- % with Schizophreniform Disorder at Age 26
- Adolescent Cannabis Use
- No Adolescent Cannabis Use

COMT Genotype

http://iv.iiarjournals.org/content/29/1/129.short
New research suggests MJ causes manic symptoms in those with bipolar disorder

- MJ use is associated with a 3-fold increase in the risk for the new onset of manic symptoms

- MJ use may worsen the severity and/or duration of manic phases for people with bipolar disorder

- This underscores the importance of discouraging MJ use among those with bipolar disorder

Marwaha, Cannabis use and mania symptoms: A systemic review and meta-analysis, Journal of Affective Disorders, September 24, 2014
Marijuana and Schizophrenia

- MJ use is associated with an increased risk of developing schizophrenia
  - To a degree consistent with a causal relationship
  - One study: 13% of schizophrenia cases could be averted if marijuana use was prevented

- Risk factors include:
  - Genetic predisposition to schizophrenia/psychosis
  - Early marijuana use, especially before age 15
  - Frequent, heavy, and/or high-THC marijuana use

- MJ use worsens positive symptoms of schizophrenia, including hallucinations & delusions
Marijuana and Other Mental Illness

• Regular, and in particular, heavy (quantity or potency or both) cannabis use may be linked to:
  • depression
  • suicidal thoughts/suicide attempts
  • anxiety disorder
  • panic attacks
What does this mean for our college students?

Source: The American College Health Association.
Charts by Riley Griffin/The Huffington Post
Additional Implications for Colleges & Universities
State vs. Federal Law

- MJ may be legal but the Drug Free Schools & Communities Act is still in effect
  - So universities still don’t allow it on campus
  - And most won’t accept MJ research $$

- *MJ may be legal but MJ convictions can cause loss of Federal Student Financial Aid*

- Even so, MJ is the 2\textsuperscript{nd} most abused substance on campuses, after alcohol
Top 10 Endorsed Marijuana Consequences (National College Students)

- Eating (e.g., too much)
- Sleep problems
- Productivity, apathy, motivation issues, or boredom
- Cognitive abilities, attention, or concentration problems
- Memory problems
- Problems with lungs or coughing
- Feeling antisocial or experiencing social awkwardness
- Other physical difficulties: feeling dizzy, sick, uncoordinated, etc.
- Not getting things done
- Spending too much money

Jason Kilmer, University of Washington
Learning Outcomes

Summary of Effects on Learning

- Marijuana intoxication interferes with memory for materials presented while intoxicated
  - Students who go to class high are not getting their money’s worth
- Adverse impact on learning and memory can last for days or weeks after acute effects wear off
  - Unclear if memory deficits may persist after months of abstinence
  - Daily marijuana use may result in suboptimal intellectual functioning all of the time
  - Regular/heavy users cannot stop MJ use 1-2 days before exams and expect to have normal memory
Other Impacts for Students

- Students 18-20 YOA may seek to get a MMJ card so that they can use MJ legally
- Students who live on campus may consume nearby in their parked cars, which is illegal public consumption
- Heightened scrutiny when traveling out of state: at airport, on highways (plates, stickers)
Impacts for Higher Ed Resources

- Requests to live off campus so that 18-20 YOA students can use their MMJ
- Increased Student Conduct violations and/or local law violations
- Increased need for MJ treatment
  - Screen using CUDIT if possible
  - Options include MET models, perhaps based on BASICS, ASTP
- Also . . .
Young Adult MJ Use & Mental Health

- 25% of college students being treated for mental illness also abuse cannabis

- This cohort suffered significant functional impairment, a greater likelihood of medical leave (as compared to peers who used MJ but did not have a mental illness)

- Nearly half the students with bipolar disorder also had cannabis use disorder

Prevention/Intervention Challenges

• “It’s just pot!” – implications of medical marijuana and decriminalization
  • Decreased risk
    • Less dangerous than alcohol
    • Entirely benign
  • Increased peer approval
  • Decreased parental disapproval
• Marijuana industry
Prevention/Intervention
Recommendations

• **Harm reduction: “Later and Less”**
  • Later initiation of use
  • Lower amount and frequency
    • Address regular, frequent, daily, heavy use

• **Legitimate education instead of “scare” tactics**
  • No “Reefer Madness”
  • But there are real risks and significant adverse repercussions

• **Opportunistic interventions**
  • SBIRT and similar “real-time” interventions
Prevention/Intervention Recommendations

- **Risk education (targeted)**
  - Those at risk for serious adverse repercussions
    - Early, frequent, heavy use
    - Psychosis/other psychiatric disorders

- **Risk education (general)**
  - Driving
  - Learning & neuro-psychological impairment
  - Addiction
    - Especially early, frequent, heavy use

- **Parent-based interventions**
  - Parents still matter in college

- **Prosocial engagement and active mentoring**

- **Social norms**
  - Debate over efficacy, especially as percentage of users increases

- **Screening**
  - Marker/red flag to be used for screening for other adverse AOD and risk behaviors
Canadian Lower Risk Use Guidelines
• Simplest way to avoid risk is to abstain, but those who use should recognize that risks may be affected by patterns of use and individual circumstances.

• Risks of dependence and other key problems is higher for those who initiate use early, so recommend delaying use until late adolescence (e.g., 16+ years) or better yet early adulthood (e.g., 18+ years).

• Frequent use (i.e., daily or near-daily use) should be avoided as it is associated with the most severe problems.
Frequent users who can’t control their use should cease using, with professional help if needed

Users should (in order of priority): (1) avoid smoking cannabis with tobacco, (2) avoid deep inhalation or breath-holding, (3) use vaporizers instead of joints, blunts, or bongs

Use of high potency cannabis products may lead to more intense impairment and/or acute problems like psychosis
Users should not drive for 3 – 4 hours after use; longer if larger doses are used or the effects of acute impairment persist.

The possibility of cannabis-related problems is elevated in the following groups, who should consider abstaining:

- Pregnant women
- Middle-aged or older men with cardiovascular problems
- Individuals with a history of psychosis or a 1st degree relative with a history of psychosis
The Bottom Line:

Later and Less
Legal Marijuana: Questions?
Resources

- [http://www2.cde.state.co.us/artemis/hemonos/he1282m332015internet/he1282m332015internet01.pdf](http://www2.cde.state.co.us/artemis/hemonos/he1282m332015internet/he1282m332015internet01.pdf) (CO Dept. of Public Health Report)