PLENARY PANEL
THE INTERSECTION OF MENTAL HEALTH AND MARIJUANA LEGALIZATION

Time: Friday, April 27, 3:15-4:15p

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INTERSECTION OF MENTAL HEALTH AND MJ LEGALIZATION

NOTHING TO DISCLOSE
NATIONAL TRENDS IN MJ USE

MJ use more than doubled between 2001-2013 (Hasin et al AJP 2016)

- > 111 million Americans have tried
- > 22 million are current users
- 2014–2.4 tried for first time
- 2015-2.5 % (>6 million) met criteria for CUD but only 10% received treatment

UNPRECEDENTED “MEDICALIZATION” PRIOR TO RECREATIONAL LEGALIZATION

• Legalization of an addictive substance (e.g. tobacco, alcohol) increases access, prevalence and frequency of use

• “Medicalization” prior to recreational legalization is unprecedented

Rx opioids are "medical" but not legal for recreational use
WHAT’S REALLY GOING ON HERE?

• > 50% of states + DC have legalized cannabis for medical conditions and/or recreational retail sale

• 9 states + Washington DC have legalized recreational use; in all cases medical legalization preceded recreational legalization

• De-criminalization, legalization, and ‘medicalization’ contributes to low perceived risk and acceptability, which may predict higher use in the future

There is no current scientific evidence that MJ is in any way beneficial for the treatment of any psychiatric disorder. In contrast, current evidence supports, at minimum, a strong association of cannabis use with onset of psychiatric disorders. Adolescents are particularly vulnerable to harm, given the effects of cannabis on neurological development. “

APA ,2013
LESSONS LEARNED FROM THE COLORADO EXPERIENCE

Medical MJ legalized

2000-2007
2000 patients

Pre-commercialization

Ogden Memo

Legislation Dispensaries as “caregivers”

Amendment 64 legal to possess 1 oz

Retail Sale Recreational MJ 1/14

2009-2014 ---500 new medical MJ licenses per month ---mostly for “pain”

Commercialization

2000 patients

$68 M

$130M

$193M

$230M

Total revenue

THERE'S A DIFFERENCE BETWEEN "CANNA-BUISINESS" AND CANNABIS-BASED MEDICINE
EDIBLE MARIJUANA
STEALTH VAPING

Stealth PUFFiT vaporizer mimics asthma inhaler (review)
More Addictive?

- 1/11 adults and 1/6 adolescents who experiment progress to dependence
- We don’t know what the ratio is with > THC potency
- 33% of MJ users in Colorado are daily/multiple x daily users

Greater Risk of Psychosis?

- Risk of psychosis is attributable to THC-active ingredient
- Regular MJ use in adolescents quadruples risk of psychosis
- Even in those without genetic vulnerability to schizophrenia > THC potency > risk psychosis

(Large et al 2011; DiForti et al., 2009; D’Souza, 2004, 2009)
Trends in Use

- Medical MJ legislation has not increase adolescent use (Hasin 2016)
- ¼ of HS seniors and young adults report past month use (Ryan-Ibarra 2015; Hasin, 2016)
- 40% of HS seniors reporting past month use also report using > 14 days/month
- Increase in proportion of HS seniors using => 10 days/month (Washington).
- Differences between “opt in” v “opt out” municipalities (Maxwell and Mendelson J Addict Med Feb. 2016; Hasin 2016)


Maxwell and Mendelson J Addict Med 2016

Public Health Impact of MJ Legislation in Colorado

2011-2013

• HOSPITALIZATIONS -- MJ–related
  Increased 67%

• ED VISITS: 1% of all ED visits MJ – related

• RM Poison Center – MJ related calls increased 79%

• MVAs- MJ related fatalities inc. 44%

• Substance treatment admissions have decreased

2012-2014

MJ-RELATED CRIME

○ Arrests for sale and possession
  • Adults --- Decreased by 46% (51% Whites; 33% Hispanics; 25% African-Americans) Arrest rate for AA was almost triple that of Whites in 2014
  • Adolescents-- increased (White -8%; Hispanic +30% African American+58%)

○ Other MJ Crime
  • Industry–related burglaries (63%)
  • Interdiction inc. > 50%
  • DUI-increased from 33% to 73% of all DUls 2012-2014
Effects of MJ
Brain Development and Neurocognitive

Fetal Development

Pre-natal MJ exposure
- Fetal brain “miswiring”

Tortoriello et al 2014

6 x increase in MJ use among women of childbearing age nationally

INFANCY LATENCY PRE-TEEN

Inadvertent ingestion by infants-12 year olds resulted in 17 hospital admissions 2009-2011

NONE prior to 2009

Pediatric MJ Exposures in a Medical MJ State Wang et al JAMA 2013

ADULTS

• Impulse, motor control
• decision-making
• verbal fluency
• Short term memory
• Sustained attention
• Response time
• psychosis
• Inc. stroke

Wilkinson 2015 NAS, 2017

Persistent neurocognitive deficits, Reduction IQ 6-8 points comparable to environmental lead exposure

• 4x risk of psychosis
• 2x risk depression, anxiety disorders in young adulthood

Increases risk of addiction to drugs tried later (5x AUD)

Reproductive --Deleterious effects on development female reproductive system; sperm motility
If there was a neurotoxin in the air or the water that at least 50% of our kids were being exposed to

... and 1/6 of these, exposed at levels associated with significant reductions in IQ, learning problems, academic underachievement, and persistent neurocognitive deficits

WON’T WE BE ALL OVER THAT?

6-8 point reduction in IQ associated with regular adolescent MJ use comparable to 7.4 point reduction associated with environmental lead exposure (10 mg/dc) Meier et al 2012; Canfield et al 1996
IMPLICATIONS FOR PUBLIC POLICY, RESEARCH, CLINICAL PRACTICE

POLICY

- Improve and standardize data collection and surveillance methods to accurately assess the public health impact legalization
- Industry restrictions
  - Potency limits
  - Positive overstatements about the benefits, medicinal properties, risk minimization
  - Marketing targeting minors
  - Packaging of edibles
  - Eliminate Incentives that encourage increased frequency of use

RESEARCH

- Therapeutic benefits and risks
- Relationship between increased potency on psychosis, neurocognitive, addiction potential
- Impact on treatment populations
THANK YOU FOR YOUR ATTENTION

Questions?
Comments?
Discussion?