

APPENDIX

MARIJUANA IS NOT A HARMLESS HERB

These are SUMMARIES of the scientific studies that demonstrate some of the harmful effects of Marijuana

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4 / 2018

Time to acknowledge the mixed effects of cannabis on health: a summary and critical review of the NASEM 2017 report on the health effects of cannabis and cannabinoids

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21 December 2017 ADDICTION, online

This is a summary and critical review of the National Academies of Sciences, Engineering and Medicine (NASEM) report of the health effects of cannabis. The report stated that effects of cannabis are understudied, and research findings are mixed. It concluded that the under-developed evidence base poses a public health risk and rightly addressed complexities of cannabis research that need to be resolved collaboratively. We support NASEM's urgent call for research, but add that the mixed evidence base cannot be attributed solely to research limitations. Rather, we propose a need to acknowledge the heterogeneity in the effects of cannabis to advance the field.

Introduction

There is a world-wide shift in cannabis policies culminating in lifts in restrictions throughout several countries, as well as US states. This is a striking departure from the prohibitive 'drug-free world' policies proclaimed by the United Nations General Assembly Special Session (UNGASS) on the World Drug Problem in 1998 towards one based more on public health efforts. This call for a 'people-centred' approach to drug policy (via harm reduction policies) brings to bear not only empirical evidence of the therapeutic benefits of cannabis, but also an understanding of its associated health risks.

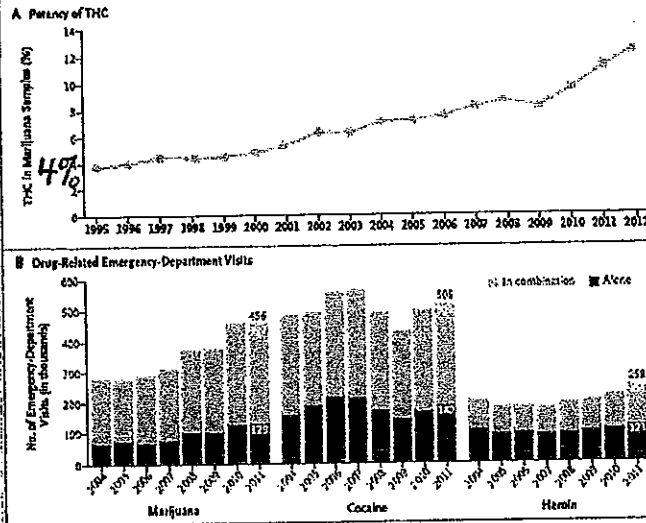
Report overview

Goal and conclusions

The NASEM aimed to provide a comprehensive review regarding the positive and negative health effects of using cannabis and cannabis-derived products and to provide recommendations for a research agenda that could progress the field rapidly 4. Due to time constraints, the report was limited to 11 topics with high public health impact (see Table 1), and primacy was given to systematic reviews published since 2011 and research papers published after the most recent systematic review. Eventually, a total of 10 700 abstracts were considered. The quality of the primary research papers was guided by the Cochrane Quality Assessment 5 and the Newcastle–Ottawa scale 6. Conclusions and recommendations were based subsequently on a categorized weighing of the evidence into conclusive, substantial, moderate, limited and no or insufficient.

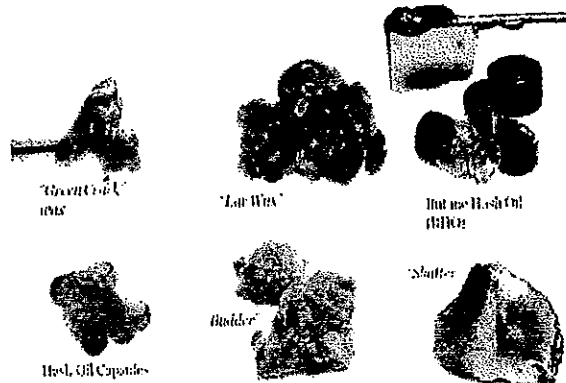
Table 1. Cannabis use-related health effects: conclusions of the National Academies of Sciences, Engineering and Medicine's (NASEM) report compared with the World Health Organization (WHO) report.

Increases over Time in the Potency of Tetrahydrocannabinol (THC) in Marijuana and the Number of Emergency Department Visits Involving Marijuana, Cocaine, or Heroin

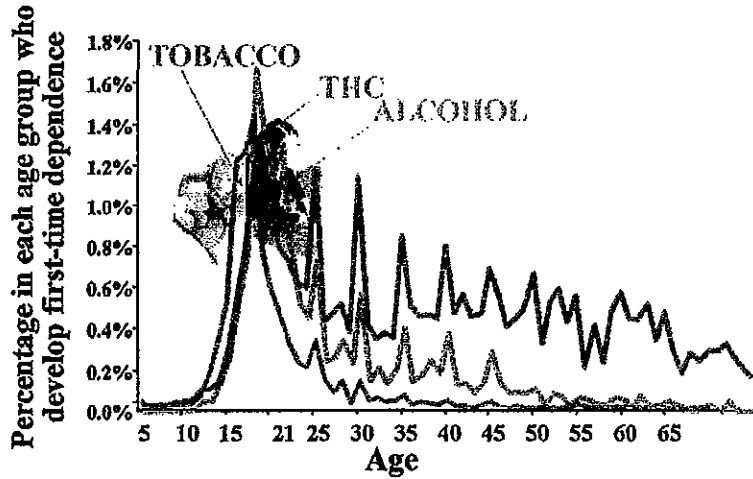


Volkow ND et al., NEJM 370(23), June 5, 2014.

Marijuana is not "just a plant" anymore – derivatives contain up to 98% THC



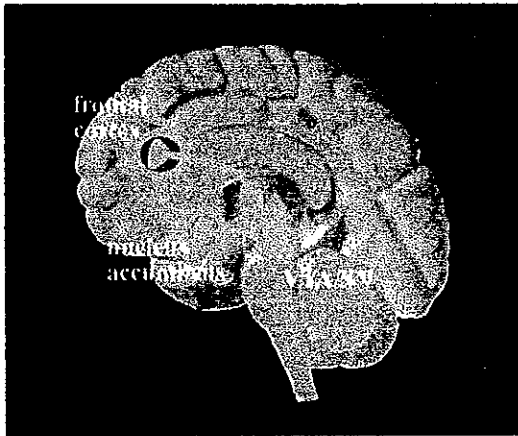
ADDICTION IS A DEVELOPMENTAL DISEASE *it starts in adolescence and childhood*



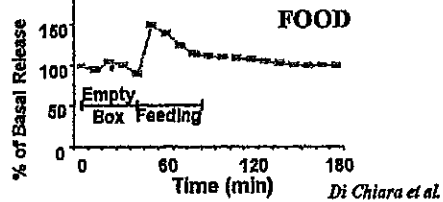
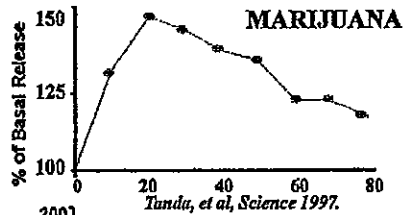
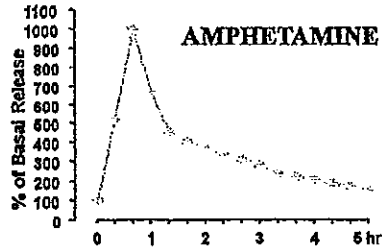
Age at tobacco, at alcohol and at cannabis use dependence as per DSM IV

NIAAA National Epidemiologic Survey on Alcohol and Related Conditions, 2003.

Natural and Drug Reinforcers Increase Dopamine in NAc



...of the brain, the NAc is a key region for processing information about rewards and reinforcement. It is involved in the learning of associations between stimuli and rewards, and in the execution of goal-directed actions. The NAc is also involved in the regulation of dopamine levels, which are important for the reinforcement of behavior.



Cannabis use and other illicit drug use: testing the cannabis gateway hypothesis

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Christchurch School of Medicine and Health Sciences, Christchurch, New Zealand

ABSTRACT

Aim To examine the associations between the frequency of cannabis use and the use of other illicit drugs. **Design** A 25-year longitudinal study of the health, development and adjustment of a birth cohort of 1265 New Zealand children. **Measurements** Annual assessments of the frequency of cannabis use were obtained for the period 14–25 years, together with measures of the use of other illicit drugs from the same time period. **Findings** The frequency of cannabis use was associated significantly with the use of other illicit drugs, other illicit drug abuse/dependence and the use of a diversity of other drugs. This association was found to be particularly strong during adolescence but declined rapidly as age increased. Statistical control for confounding by both fixed and time dynamic factors using random- and fixed-effects regression models reduced the strength of association between frequency of cannabis use and other illicit drug use, but a strong association between frequency of cannabis use and other illicit drug use remained even after control for non-observed and time-dynamic sources of confounding. **Conclusions** Regular or heavy cannabis use was associated with an increased risk of using other illicit drugs, abusing or becoming dependent upon other illicit drugs, and using a wider variety of other illicit drugs. The risks of use, abuse/dependence, and use of a diversity of other drugs declined with increasing age. The findings may support a general causal model such as the cannabis gateway hypothesis, but the actual causal mechanisms underlying such a gateway, and the extent to which these causal mechanisms are direct or indirect, remain unclear.

Keywords Cannabis, fixed-effects models, gateway, illicit drug use, longitudinal study.

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Cannabis use and the risk of developing a psychotic disorder

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We briefly review the evidence that cannabis use in adolescence and young adulthood is a contributory cause of schizophreniform psychoses, by summarising longitudinal studies that: a) have examined relationships between cannabis use and the risk of psychosis or psychotic symptoms; and b) have controlled for potential confounders, such as other forms of drug use and personal characteristics that predict an increased risk of psychosis. There is now reasonable evidence from longitudinal studies that regular cannabis use predicts an increased risk of schizophrenia and of reporting psychotic symptoms. These relationships have persisted after controlling for confounding variables such as personal characteristics and other drug use. The relationships did not seem to be explained by cannabis being used to self-medicate symptoms of psychosis. A contributory causal relationship is biologically plausible because psychotic disorders involve disturbances in the dopamine neurotransmitter system with which the cannabinoid system interacts, as has been shown by animal studies and a human provocation study. We briefly explore the clinical and public health implications of the most plausible hypothesis, that cannabis use precipitates schizophrenia in persons who are vulnerable because of a personal or family history of schizophrenia.

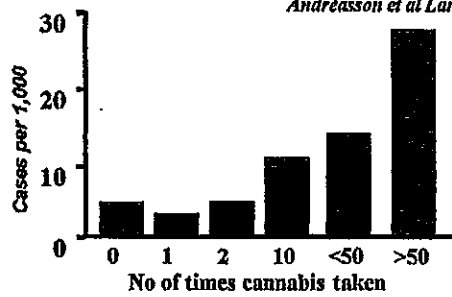
Key words: Cannabis, psychosis, schizophrenia, adolescents, dopamine, educational interventions

(World Psychiatry 2008;7:68-71)

Cannabis-Associated Psychosis

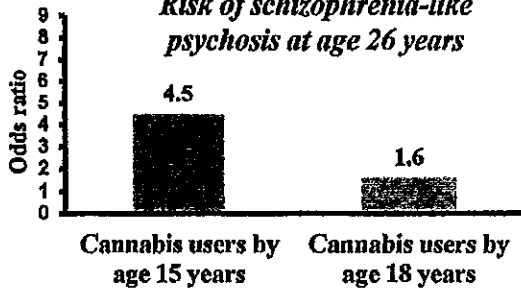
Study of Swedish Conscripts (n=45570)

Andréasson et al *Lancet*, 1987.



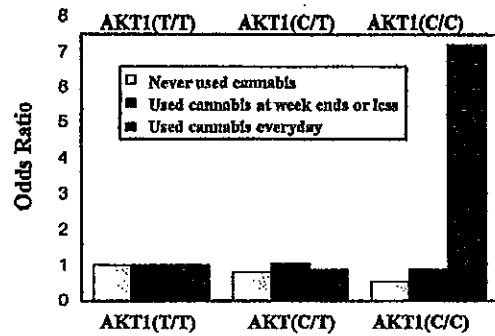
Prospective Dunedin study (n=1037)

Risk of schizophrenia-like psychosis at age 26 years



Arseneault et al *BMJ* 2002

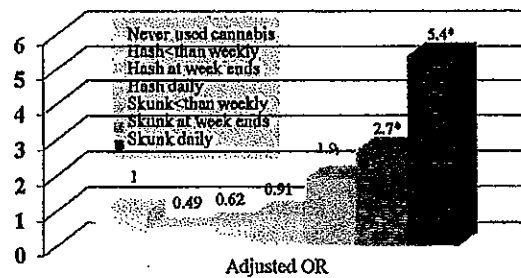
Regular Cannabis Use Increases Schizophrenia Risk in those with AKT1



GXB model: p*=0.014

Di Forti et al, *Biological Psychiatry*, 2012.

Effect of High Potency Cannabis on Risk of Psychosis



Di Forti M et al, *The Lancet* published online February 18, 2015.

Cannabis and psychosis/schizophrenia: human studies

Deepak Cyril D' Souza & Richard Andrew Sewell &
Mohini Ranganathan

Abstract The association between cannabis use and psychosis has long been recognized. Recent advances in knowledge about cannabinoid receptor function have renewed interest in this association. Converging lines of evidence suggest that cannabinoids can produce a full range of transient schizophrenia-like positive, negative, and cognitive symptoms in some healthy individuals. Also clear is that in individuals with an established psychotic disorder, cannabinoids can exacerbate symptoms, trigger relapse, and have negative consequences on the course of the illness. The mechanisms by which cannabinoids produce transient psychotic symptoms, while unclear may involve dopamine, GABA, and glutamate neurotransmission. However, only a very small proportion of the general population exposed to cannabinoids develop a psychotic illness. It is likely that cannabis exposure is a “component cause” that interacts with other factors to “cause” schizophrenia or a psychotic disorder, but is neither necessary nor sufficient to do so alone. Nevertheless, in the absence of known causes of schizophrenia, the role of component causes remains important and warrants further study. Dose, duration of exposure, and the age of first exposure to cannabinoids may be important factors, and genetic factors that interact with cannabinoid exposure to moderate or amplify the risk of a psychotic disorder are beginning to be elucidated. The mechanisms by which exposure to cannabinoids increase the risk for developing a psychotic disorder are unknown. However, novel hypotheses including the role of cannabinoids on neurodevelopmental processes relevant to psychotic disorders are being studied.

Keywords Cannabis · Cannabinoids · THC · Psychosis · Schizophrenia · Cognition

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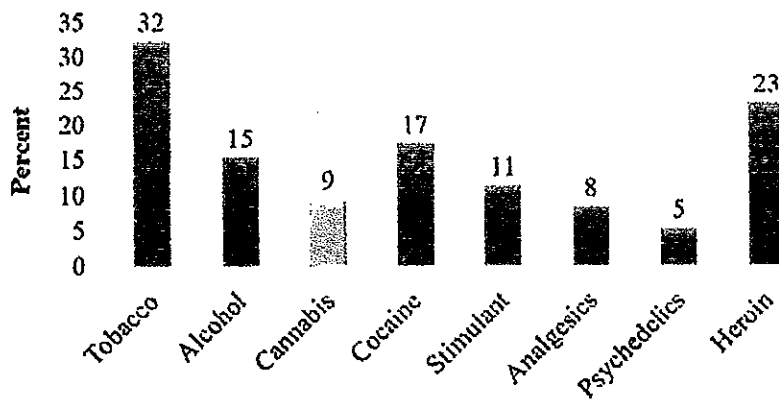
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Long Term Effects of Marijuana

Addiction: About 9% of users may become dependent, 1 in 6 who start use in adolescence, 25-50% of daily users



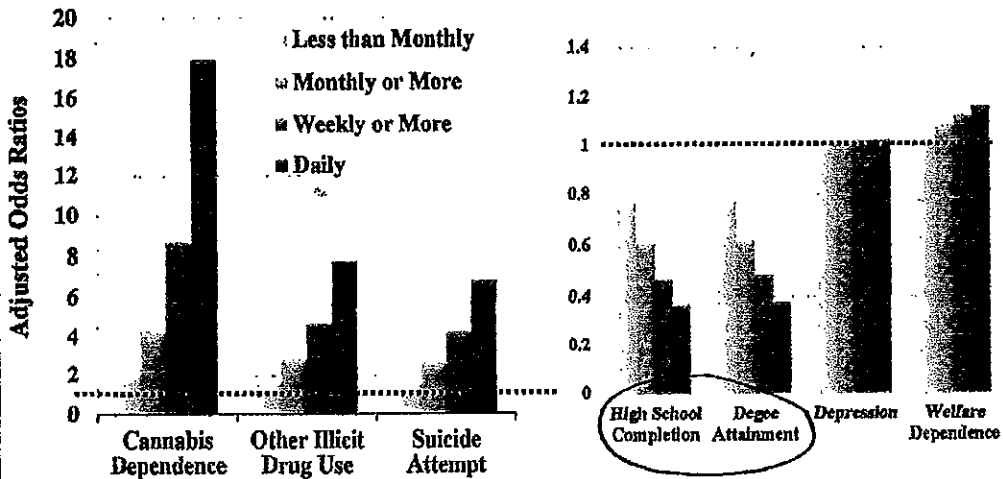
Estimated Prevalence of Dependence Among Users



* Nonmedical Use
Source: Anthony JC et al., 1994

Frequency Of Cannabis Use Before Age 17 Years and Adverse Outcome (30years age) (n=2500-3700)

Consistent and dose-response association were found between frequency of adolescent cannabis use and adverse outcomes



Silins E et al., The Lancet September 2014.

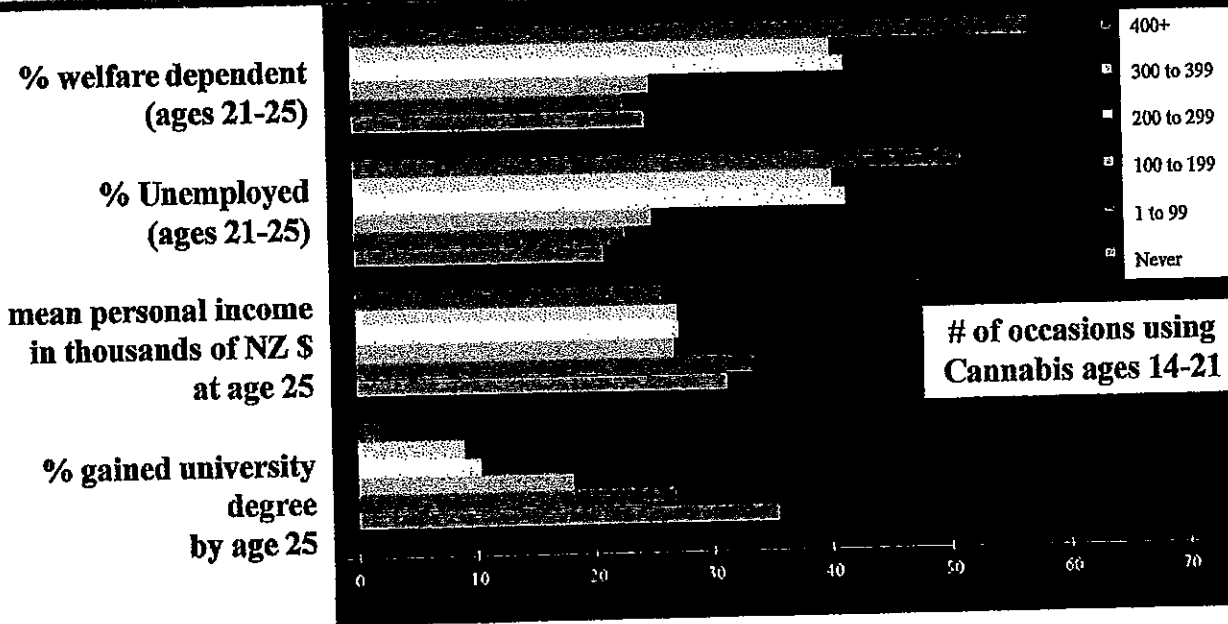
Effect of long-term cannabis use on axonal fibre connectivity

Andrew Zalesky Nadia Solowij Murat Yücel Dan I. Lubman Michael Takagifan H. Harding Valentina Lorenzetti Ruopeng Wang Karissa Searle Christos Pantelis ... Show more
Brain, Volume 135, Issue 7, 1 July 2012, Pages 2245–2255,

Abstract

Cannabis use typically begins during adolescence and early adulthood, a period when cannabinoid receptors are still abundant in white matter pathways across the brain. However, few studies to date have explored the impact of regular cannabis use on white matter structure, with no previous studies examining its impact on axonal connectivity. The aim of this study was to examine axonal fibre pathways across the brain for evidence of microstructural alterations associated with long-term cannabis use and to test whether age of regular cannabis use is associated with severity of any microstructural change. To this end, diffusion-weighted magnetic resonance imaging and brain connectivity mapping techniques were performed in 59 cannabis users with longstanding histories of heavy use and 33 matched controls. Axonal connectivity was found to be impaired in the right fimbria of the hippocampus (fornix), splenium of the corpus callosum and commissural fibres. Radial and axial diffusivity in these pathways were associated with the age at which regular cannabis use commenced. Our findings indicate long-term cannabis use is hazardous to the white matter of the developing brain. Delaying the age at which regular use begins may minimize the severity of microstructural impairment.

Cannabis Use and Later Life Outcomes Are Dose Dependent



Source: Fergusson and Boden. Addiction, 103, pp. 969-976, 2008.

**Adolescent Brain Cognitive Development
National Longitudinal Study**

NIDA, NIAAA, NCI, NICHD, NIMHD, NIMH, NINDS, OBSSR

*Ten year longitudinal study of 10,000 children from
age 10 to 20 years to assess effects of drugs on
individual brain development trajectories*



WHY MUST WE HURRY?

THIS IS A 10 YEAR STUDY STARTED 2017.

THIS IS WHAT WE SHOULD WAIT FOR.

Rory Wells, Esq.

April 22, 2018

Senior Legal Advisor NJ-RAMP

Former Assistant Prosecutor/Community Relations Officer

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**Assembly Oversight, Reform and Federal Relations Committee Hearing
at Rowan University**

Thank you, Mr. Chairman for continuing to hold these hearings and inviting testimony from different positions on this very important issue. I want to acknowledge the Caucus Members and our host Rowan University.

I do not believe anyone will dispute that the decision to legalize and commercialize marijuana in the state will increase its use among our citizenry. This is of course the desire and expectation of those retailers and marijuana advocates for several reasons but clearly a primary reason is the anticipated revenue and profits that would be expected. Any for profit business wants to increase sales and takes steps to do so regularly.

The fact that we would be increasing the amount of drugs used, abused and experimented with in our state makes this vote a "legacy" vote. This is a vote that will have consequences for generations, long after the money is absorbed.

NJ-RAMP has taken a position against corporate marijuana not just because of how we feel about the issue but because the early science and data supports our position. We believe the offsetting costs and negative consequences are becoming clearer every day in those states that chose to allow commercial sales in their communities.

Some key points to observe from three states and the Washington DC:

- In Washington State in 2017 of the 424 violations among licensed marijuana businesses 288 violations pertained to selling marijuana to minors and 136 violations were for allowing minors access to a restricted area (Washington State Liquor and Cannabis Board [WSLCB], 2017).
- Washington, DC, saw public consumption and distribution arrests nearly triple between the years 2015 and 2016. A disproportionate number of those marijuana related arrests occurred among African-Americans (Moyer, 2017; District of Columbia Metropolitan Police Department [DCMPD], 2016).
- Colorado marijuana arrests for young African-American and Hispanic youth have increased since legalization (Colorado Department of Public Safety [CDPS], 2016).
- In Anchorage, school suspensions for marijuana use and possession increased more than 141% from 2015 (when legalization was implemented) to 2017 (Wohlforth, 2018).

If we do this, as a community no one should be under any false pretenses about the negative consequences that will follow. It is one of my biggest challenges towards those who advocate for this drug. They paint a picture that is all positive never acknowledging any negatives. If and when those negative consequences are realized, we must all be ready to defend and take responsibility for the position we took.

I hope the citizens of New Jersey and our leaders reject this course of action.

Thank you

"Youth Rite of Passage – Impact of Marijuana Legalization"

Presented by: Alysa Fornarotto-Regenye, MSW, LCADC, SAC, SSW

Presented to: Assembly Oversight, Reform and Federal Relations Committee On: Saturday, April 21, 2018

I have worked in the addictions field for 25 years, both in prevention education as well as counseling; I am a Licensed Clinical Alcohol and Drug Counselor, I am a mother of two children and I work in a school setting.

For the future of our youth, young citizens of New Jersey need you - our legislature, to role model for them a careful and cautious decision-making process, which reflects good sound judgement based on the consideration of all alternatives.

There is a saying, "A smart man learns from his own mistakes, but a wise man learns from others." On behalf of the Association of Student Assistance Professionals of New Jersey (ASAP-NJ), the "Youth Rite of Passage - Impact of Marijuana Legalization Statewide Collaborative," and educators across the state of New Jersey who value happy, healthy, and achieving youth, we ask you to please use caution and explore all possible ramifications of legalizing marijuana.

Adolescent Addiction rests upon the conscience of policy makers across the United States and now in New Jersey. CDC states marijuana users are three (3) times more likely to become Addicted to Heroin.

The latest research indicates a connection between the cannabinoid receptors and opioid/opiate receptors in the brain. According to Dr. Amir Levine, a neuroscientist of Columbia Univ. Dept of Psychiatry, NYC, adolescent brains in particular, are primed for addiction due to the loosened gene expression.

Medical Journalist, Dr. Muiris Houston states "Kids are six (6) times more likely to use pot simply because of a parental attitude of indifference." Those who smoked weed heavily as teens, showed mental decline even after they quit using the drug—and had, on average, an 8-point drop in their IQ scores. That is significant, an 8-point loss could push a person of average intelligence into the lower third of testers. Even those who started smoking pot after age 18, showed some decline.

According to Dr. Muiris Houston, published in the journal Lancet Psychiatry, "Teen Marijuana Use: Is This A Price We're Willing To Pay?" Teenagers who are daily users of marijuana are

- 60% less likely to complete high school or obtain a university degree;***
- Seven (7) times more likely to attempt suicide; and***
- Eight (8) times more likely to use other drugs."***

Research indicates marijuana's cannabinoids activate the same CB1 Receptor System as opiates like, oxycontin, morphine, heroin, etc. This triggers a dopamine release in the mesolimbic reward system. In an editorial by Merete Nordentoft, professor of psychiatry at the University of Copenhagen in Denmark, notes: "Cannabis use in adolescence has also been associated with increased risk of psychosis in adulthood."2016

Citizens of Colorado were tricked by Big Marijuana, just like many generations were tricked by Big Tobacco, New Jersey must avoid those same devastating mistakes, of which have taken a toll on human collateral in Colorado through significant increases in homelessness, psychosis, crime, ER visits, even teens high on pot in schools skyrocketed. Please check out two YOUTUBE videos "Weed Documentary (2016) - High School: Marijuana in an American Public High School," as well as, "Marijuana X Documentary FULL DIRECTOR's CUT."

It is impossible to Leave youth out of the equation on legalization? We all know that legalizing marijuana goes beyond an adult choosing to use an addictive, mind-altering drug. It is about aggressive marketing, lowering the public's perception of harm, especially youth's perception of harm, since they look to adults to model healthy behaviors, and we all know that leads youth to a broader "Rite of Passage" with legalizing marijuana.

Since Colorado legalized marijuana, from cannabis lollipops to pot tarts, gummy bears to reefer's cups, to vaping concentrated forms THC with 99% purity; Colorado is #1 in the nation for first time use of marijuana among youth; and, more than 50% higher than the national average; with more minority youth being arrested for pot in Colorado compared to before legalization.

According to a poll by FDU in New Jersey, legalization is Not supported by the majority of NJ residents.

Please, consider the societal and public health costs to our communities, which will be much greater than the gain from any tax revenue; let your conscience speak to your heart.

What we do need is:

1. *We need to revisit Senate #2031 for more school SACs, previously sponsored by Senator Van Drew, Senator Singer and Senator Stack on April 18, 2016.*
2. *Parents need more rights and leverage to get their adolescents into proper residential treatment.*
3. *REVERSE Active Consent Statute, under Chapter 364 from 2002 to Passive Consent*
4. *Need for advanced high quality addiction treatment for adolescents and adults in every.*

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4/21/2018

Good morning Assemblymen & Woman of the State of New Jersey,

My name is Brandon Chewey. I am a 32 year old person in recovery from an 11 year opioid disorder and I am a successful, thriving New Jersey Marijuana Patient. Thank you for your taking the time to review my testimony. I will only be discussing topics in which I have personal experience in essence of time.

I began my opioid addiction at the age of 16 after receiving Percocet from my Doctor for a sports-related injury. (I did not achieve successful, lasting, sobriety until I was 27 years old, 11 years later.) I was attending Ocean Township High School in Monmouth County, New Jersey from which I graduated at 17, still taking opioids on the weekends in 2003.

My story and progression of my addiction is not much different than many people who fall victim to opioid disorder. It starts with a pill and turned into heroin shortly after. I was young, 18 years old when my addiction took off. I did not know what opioids were or the detox symptoms associated with them. **(This is why we must instill detailed education into our school systems regarding substance abuse.)** My first time detoxing I was 18 years old, attempting to come off of Oxy Contin, cold turkey. I did it, screaming & kicking as my poor mother watched, hopeless, not knowing what to do.

Prior to 18 years old, my addiction had never controlled my life or become "full blown". I was a regular, marijuana user from the age of 14+. I was arrested and put on probation for Distribution of an Ounce of marijuana, to a friend when I was just 18 years old. This is when my addiction took off.

After this arrest, I was given PTI (Pre-Trial Intervention) & given a Probation Officer to report to. I was still 18 years old when sentenced and scared to death. I remember the day I quit smoking cannabis, because I was put on probation & I did not want to fail my probation drug tests. This seemed to be no problem in the beginning. Yes, few minor discomforts (detox) effects after 4 years of daily cannabis use, but nothing more than a caffeine headache.

I was passing my drug tests on probation as I had stopped using cannabis, however, my opioid addiction picked up from weekends to 4-5x a week, visiting probation for urinalysis bi-weekly, I was passing the drug tests as I was able to remain clean for 72 hours in early addiction... this did not last long.

What I could not stop was the pills that turned into heroin shortly after probation had started. I soon found out I could not leave my weekend pill habit alone. I was using opioids on the weekends for over 2 years at this point. I thought I could quit the pills for probation & to better my college schoolwork but I wasn't educated on addiction & the many treatments available. **(It took me over 2 dozen rehabilitation facilities to find my path.)**

I did not want to tell my probation officer that I was addicted to drugs & needed rehab, because I would have been violated from probation. **(That is among the biggest barriers we have with recovery, people**

are afraid to come forward about their addiction for fear of persecution or discrimination by officers or for sake of reputation in their own neighborhood, hence the need to normalize cannabis as a successful treatment for substance abuse disorder. No one should be afraid to admit they need help, not for fear of incarceration or label as we do too often today. People should feel welcomed to tell parole/probation officers & their families the want/need for addiction therapy, not be afraid.)

I spent the next 9 years of my adult life fighting my opioid disorder, in and out of over 24 rehab facilities, both state-mandated as well as privately funded visits & a collective of 5 years of incarceration amongst my multiple stays at Monmouth County Correctional Institute. I am currently approaching my 6th year free from heroin addiction. The first two years of my recovery, I spent 100% drug free. I didn't get sober by luck, I had to put the work into it. I had to want a better way of life.

It took many times of trial and error to find the regiment to best suit my condition. I relapsed about 50x in my life, have been homeless and almost died multiple times from an 11 year opioid disorder. I am blessed and among the small percent to achieve successful, lasting recovery from opioid disorder. For this I am so grateful. Not many people can go through these struggles and still want more out of life, it gets easy to give up when caught in the grasp of addiction with no family, money or support.

I was 2 years sober and uncomfortable in my own skin. Doctors Diagnosed me with Chronic PTSD, obtained from the lifestyle & jail cells accustomed to the life of a person suffering addiction.

My entry into our judicial system as a young drug offender continues to rule my life today, I am still labeled a criminal, my future & life as a person in recovery are not free. As a man who

I am sober from heroin today, the hardest task I have ever achieved. Now sober I have a new fear... returning to jail when I am truly innocent and for Marijuana that I am prescribed. I can't take addictive pills for my PTSD like Xanax and Klonopin, readily available by doctors if I were to chose so, however, I know my body & benzodiazapenes (Xanax) send me back to heroin. Yes, I am a grateful recovering addict, who is also a New Jersey Medical Marijuana Patient. I maintain my recovery as marijuana aids in my Chronic PTSD Diagnosis and does not deter my mindset from my goals, determination, nor focus to succeed like heroin did.

Those that dispute my regiment of Recovery due to my prescribed medicine, (cannabis) I say this... Recovery is not only abstinence from mood & mind altering drugs but a change in mindset. How one views and lives life with structure without their drug of choice is how one obtains and maintains sobriety. Adding marijuana to my equation allowed me to stop taking 6 unnecessary psychological medications to treat my chronic PTSD. I now take a multi-vitamin, fish-oil and cannabis under times of extreme anxiety or sleepless nights. The more cannabis is normalized the less is will be desired. Look at cigarette use... it is rapidly declining amongst all ages...why? Education.

I am a professional when it comes to relapsing, so now that I am in recovery I do the best to prevent myself from going there again. I learned a great deal from my final rehab program. It was 12 months long. Straight & Narrow in Paterson, NJ was not a great experience and only offers 12 step programs for recovery as do ALL rehabs in New Jersey. (Twelve step recovery is successful for many, this

is why rehabs have unanimously adopted the 12 steps as their curriculum. Both state & private facilities RELY on 12-step education. **(12 step education works, But not for everyone. As of right now, every facility that we send our kids to for rehab teaches the 12 steps. If you're a leader, a person that thinks for yourself it is very hard to accustom yourself with another groups beliefs. When I began my medical marijuana regiment, I was excommunicated by many of the 12-step community but I still implement a few of their steps into my own regiment of recovery.)**

Cannabis allows for the person new to recovery, slow down the impulsive, never-ending flow of thoughts and emotions that have been numbed for years by the opioid. These thoughts cause extreme anxiety, Panic, Insomnia, nausea and paranoia. In early recovery, these thoughts can often lead to impulsive actions... The first impulsive action for a person with a drug addiction is to relapse.

Individuals relapse early in recovery and seek out there drugs. This happens because they cannot handle the pressures associated with acclimating to society, parole, employment, social gatherings... etc. The odds are already stacked ever so highly against our addicted and children continue to die from this epidemic. Since New Jersey expanded its Medical Marijuana Program to accept PTSD, I have worked with both Veterans & 23 year old heroin addicts who have become opioid free after near opioid death. For so long we have practiced backward principles.

I am not ignorant to the long list of changes that will come to our society with legalization. I am aware that legalization of Cannabis has a domino effect on almost every part of our social & economic infrastructure. I can appreciate the hearings the assembly is having because we do need to take the time to ensure we instill proper legalization. At this moment I believe the Assembly is aware that New Jersey facilities are ill equipped to go recreational. Our medical patients would suffer due to a lack of medicine.

Our ATC's (Alternative Treatment Facilities) can't keep up with our medical patients demand. The prices on medical cannabis in NJ are 3x that of legalized states, causing an influx of black market cannabis to the Tri-State area. I believe it is imperative, as a citizen of the state of New Jersey, I have served my debt to society. I have paid the thousands of dollars in fines for my crimes (only arrested & convicted for drug crimes, never stole or hurt a person or property), paid for my lawyers to fight my drug arrests with my "student loan" money. I'm 32 years old, I have overcome an extreme opioid disorder, I have learned to live with my PTSD. I work with others, teaching recovery & volunteering as a first responder to administer Narcaan in the City of Asbury Park, yet, I can't obtain employment a salary to meet my skillset in business, because of my Felonies for cannabis possession & possession with intent to distribute.

I have been offered 11 jobs & counting since my recovery from addiction yet I am slandered as a felon for my past suffering as an addict. (11 salary jobs that could have offered an excellent

quality of life & met my skillset.) Each one of these 11 jobs I was given the job by the boss after explaining to him/her in full, my "criminal" background. Each of these 11 employers (I hold e-mails as record) offered me employment. After I accepted, each one of these companies had received word from their legal team that I had multiple arrests for cannabis possession on my record, I was told each time, "I am a liability to the company. I can't be involved with sale deals of 5-6 figures having a background like mine, you're a liability." I have settled on freelance web-design, career consulting & bartending at this current time however my passion lies in Cannabis Cultivation.

Many believe allowing a home-grow provision would enable a larger black market. That could not be further from the truth. We are the Garden State, New Jersey. After I became a cannabis patient in NJ I took a trip to California to study plant science as employment was slim in New Jersey & I always had a passion for cultivation.

I studied for a brief 7 months under a Master-Grower of over 22 years experience in Sacramento, California. I am a licensed Cannabis Farmer in the state of California & this is when I jumped into cannabis advocacy with all my heart. Cannabis had just began treating me ailments as I had just become accustomed to the regiment of Cannabis, work, exercise, diet, hobby & therapy. Growing cannabis became my therapy. I was seeing a therapist at the time to vent my feelings adapting to recovery in California, away from home & I could not wait to get back to working on my plants. It is a hobby that you can get lost in. This is where I have to go against the mainstream beliefs.

I'm a realist. I'm aware there is large pushback against home-growing & legalization all together, however, it is necessary to legalize cannabis to embrace basic evolution. Not just anyone can grow cannabis. It will NOT begin a massive black-market. It takes a very good amount of knowledge to grow cannabis. If allowed to grow, patients/citizens would have to do extensive research. Its not as easy as putting a seed in the dirt. There are many factors when growing GOOD "Top Shelf" Cannabis. I did not successfully grow "top shelf" cannabis until my last month living in California. Prior to that, trial and error. I wasted time growing bad cannabis but learned a skill, hobby & passion that could very well intrigue me to move out of New Jersey, the home I've grown to love. The Garden State.

Our black market is currently being flooded with cannabis from Oregon and California etc. I propose that New Jersey Citizens gain control of this cannabis "black-market" and make it legal. When people no longer have to worry about law enforcement, so many social, racial & economic disparities disappear.

Home cultivation should be allowed for medical patients only until we can educate & expand the facilities in the garden state to facilitate the entire population of NJ in my professional opinion. If facilities wish to help people to grow as they already are so be it. Until we have sufficient facilities to take care of our medical patients, patients NEED the rights to grow the medicine that works for them. (Black Market prices in NJ are already in competition with those coming in from California & Massachusetts. Black Market cannabis dealers WILL GO OUT OF BUSINESS if individuals are allowed to grow, start co-op programs, sell their cannabis to the dispensaries, allowing the community to work together. The patients can grow their own medicine and grow new strains that may not be available in some areas to cater to the medical community. (When I

There are over 1,000 cannabis strains that produce medical buds, both of CBD & THC. New Jersey carries around 65 different cannabis strains total at our ATC's, out of the 1000+ variations of the medicine. This is insufficient for a medical program with such vast, life saving potential. The only strong arguments I hear regarding the opposition to cannabis is the problem with testing for impaired drivers & the appeal to children. **(As of now we can not test for pills just like cannabis to check for impaired driving, however they are still prescribed by the masses & this doesn't prevent people from obtaining medicine.)**

In other states, cannabis has been normalized. Citizens are allowed to grow these plants and they are NOT easy to grow. They spark passion hobby and are extremely therapeutic. I am a New Jersey . I am forced to cut this short in essence of time. I do not want to move out of my state to pursue my passion, hobby & career in cultivation. Cannabis has already save my life. Now I am hoping my gift in cannabis cultivation can provide me a job. I can't work at dispensaries as a felon. With my NJMMP card I can grow the strain "Cookies & Cream" not available in NJ. I learned to grow in Sacramento, CA & it is the strain that BEST works for PTSD & insomnia\IBS issues. It is high in CBD, Mediocre in THC & high in CBG. These compounds are non-lethal. I found passion and hobby in recovery growing cannabis and medicating with it. I have so much to teach people & help suffering addicts, however, I am not allowed to grow this medicine or create my cbd infusions for fear of jail. I have research proving individuals released from state prison & given a system of structure including cannabis dosing increases the chances that the individual will not engage in illegal or violent behavior. I would enjoy discussing it with anyone. This testimony does not do my research justice. I wish I could have prepared more but in essence of time I must leave to attend the hearing.

People with NJMMP cards are evading the dispensaries and buying cannabis on the black-market because it is cheaper. In other states, patients can grow their medicine and recreational users must go to the dispensary since it is not a living necessity for them to have.

The longer we "prohibit" as a society, we discriminate & further segregate our social classes. As a man who has paid his debts to society, found recovery from an 11 year heroin addiction, went back to school after jail, stopped using all pharmaceutical drugs, started working with people in the community to stop opioid disorder I have seen a lot. I have been on probation, drug court & over 24 rehab facilities. I do not say this with pride, however, I am proud to be alive as many who suffer like I once did are not.

This testimonial has not done my research justice, in essence of time I must end and leave for the hearing. I look forward to sharing with everyone, attached is my contact information. Anyone & Everyone, please, feel free to call me regarding opioid disorder & the success I've had in treating establishing treatment regiments of CBD & Cannabis that have proven to sustain LASTING recovery for individuals who have held addictions for over 20+ years. I have associated now that are over 16 months opiate free for the first time in his 44 years on this earth. I have seen the miracles of cannabis occur. I have seen the cancer cells deplete after someone stops taking the pills and switch to cannabis. The research proves the study. Change is imminent for a successful evolution of our society as well as the social justice well overdue for the people over New Jersey. Thank you for your time.

Regards,

Brandon P. Chewey

220 4th Ave. #3 Asbury Park, NJ 07712

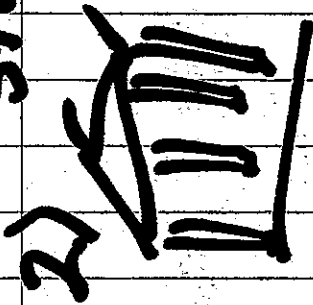
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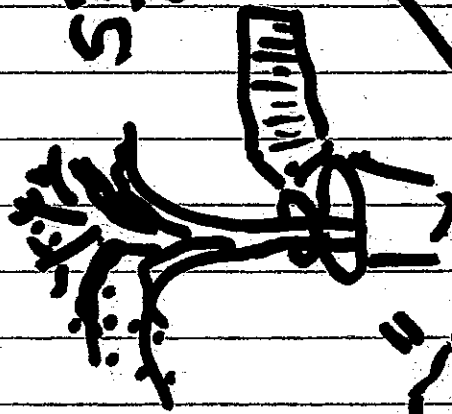
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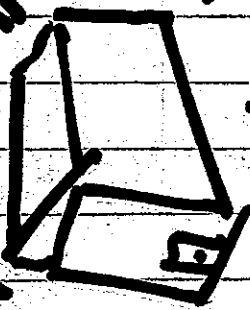
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April 21, 2018

VIA EMAIL TO OLSAIDEAOF@NJLEG.ORG

The Assembly, Oversight, Reform and Federal Relations Committee
State House Annex
PO Box 068
Trenton, New Jersey 08625-0068
Attn: Sophie Love

Re: Public Comment on the impact of prospective marijuana legislation

This comment is submitted on behalf of two clients, Steven Kadonsky and Genny Barbour, both of whom respectfully submit that any proposed marijuana reform legislation include retroactive application or corrective provisions.

First, I raise the concerns of Mr. Kadonsky who respectfully submits that any marijuana reform be coupled with corrective provisions similar to California's recreational law #64 which provides relief for prisoners and convicted persons for violations that would either not exist today or would be lesser offenses. Under California's recreational law #64, individuals may petition the sentencing court for dismissal, conviction sealing, or sentence commuting for marijuana related offenses, and any petition properly submitted is presumed valid and granted absent opposition or a shift in the burden of proof. The marijuana reform in states such as Colorado, Nevada and Oregon also provide similar relief.

Corrective and retroactive application of any marijuana reform law is important. If New Jersey wishes to remove the stigma from the substance, it should also do the same for the people that the past laws have affected. Failure to provide any corrective measures in potential marijuana reform will perpetuate adverse effects to certain individuals' housing, employment, access to lending and finances including student loans and business grants, as well as various licenses, professional or otherwise.

Failure to provide corrective measures in any marijuana reform may also have the unintended consequence of perpetuating racial and economic injustices from application of past marijuana laws which have disproportionately impacted minorities despite similar usage rates as compared to their white counterparts. Indeed, it is unethical and almost impossible to address the war on drugs without recognizing some of the unfortunate effects it has had. Mr. Kadonsky submits that any reform must be explicitly deemed corrective or ameliorative which is not only sensible, but also reflects the current will of the people of New Jersey.

With regard to Ms. Genny Barbour, a disabled teenager suffering from epilepsy and autism which forces her to experience daily seizures, explicitly deeming any reform legislation corrective will provide some closure and symbolic relief to the disparate treatment she has endured. Genny is a registered patient under the Compassionate Use Act and has been effectively controlling her seizures through marijuana use for some years now. Unfortunately, marijuana, despite being the only medicine that could provide some relief from seizures and allow her to concentrate at school, is inaccessible during school because of its Schedule 1 designation under the Controlled Dangerous Substances Act and therefore violative of the Drug Free School Zones Act. Consequently, Genny has been singled out and treated differently as compared to her disabled classmates who all have access to their medication throughout the school day. The irreconcilable nature of the Compassionate Use Act, the Controlled Dangerous Substances Act, and the Drug Free School Zones Act has created educational barriers for students like Genny; forcing the parents to decide between their child's safety and educational development.

Because the Drug Free School Zones Act prohibits application and possession of Schedule 1 substances, Genny effectively was not provided the same educational opportunities available to her classmates since she could not receive her mid-day marijuana dose and consequently could only attend a half day of school or, in the alternative, risk seizures that could result in death.

While protecting children and their developing minds from potentially dangerous substances is clearly a noble initiative, we should also consider those children who have been affected by the conflicting marijuana laws of the state. New Jersey Bill A4587 provided some limited relief to Genny and others similarly situated by allowing a parent to administer child's medical marijuana, but the Bill assumed parent availability and still treats students requiring medical marijuana differently; students like Genny, a member of multiple protected classes, whose education has been trampled on.

New Jersey has the ability to cure this unintended negative consequence by designating any marijuana reform as curative. Genny cannot get back the education time already lost, but failure to designate any new legislation as corrective to the irreconcilable discrepancies in the current marijuana laws would be tantamount to support of the Genny's unequal treatment.

Again, the education and development of children is appropriately at the forefront of the marijuana debate, so it is only appropriate that we also consider those children already harmed by the current laws.

Respectfully submitted,



Joseph L. Linares

FACT

factual approaches to cannabis trade

Recently, NJ-Ramp has begun a campaign to combat recreational cannabis legalization in New Jersey. Their campaign mimics *Reefer Madness* style propaganda during which fear mongering and falsehood promulgation were commonplace. **NJ-Ramp** is doing a disservice to New Jersey citizens by obscuring reality.

Cannabis legalization isn't a panacea-like answer to all of the woes and issues of our society, but it is a necessary step to achieve our unified goal of a fair & just judicial system. While we want legally regulated recreational cannabis, we want the policy to be discussed and implemented in a fair manner.

Here are the facts.

FACT

COST-BENEFIT (3-5)

- INTRO
- LAW ENFORCEMENT COSTS

CANNABIS & CHILD SAFETY (5-9)

- INTRO
- WHAT ABOUT DECRIMINALIZATION?
- SUMMARY

HOW HAVE OTHER STATES HANDLED THESE CONCERNS? (9-12)

- THE WASHINGTON STATE STORY
- WHAT ABOUT COLORADO?

IS CANNABIS A GATEWAY DRUG? (12-14)

- OVERVIEW
- THE OPIOID EPIDEMIC

CRIME (14-17)

- A FAIR & JUST JUDICIAL SYSTEM
- BY CRIMINALIZING CANNABIS, YOU GIVE CANNABIS CONTROL TO THE CRIMINALS.
- DRUG ABUSE & CRIME CORRELATE WITH SOCIOECONOMIC CONDITIONS & TRAUMATIC EVENTS: DRUGS ARE A SYMPTOM

REALITY (18)

SOURCES (19-20)

FACT

COST-BENEFIT

Many individuals and groups wary about cannabis legalization are concerned about the potential costs to society. NJ-RAMP, a coalition that lists this very concern as one of their tenets, claims that any revenue gained by legalized cannabis is outweighed by the societal costs attributed to legalization. They relate this to alcohol and tobacco, where the costs easily far outweigh the benefits [1] [2].

NJ Annual Healthcare Costs Directly Caused by Smoking	\$4.06 bil
NJ Medicaid Costs Caused by Smoking	\$1.17 bil
Residents' State & Federal Tax Burden From Smoking-Caused Gov't Expenditures	\$870/household
NJ Total Costs of Underage Drinking	\$1.6 bil

NJ-RAMP references a report discussing the incidence of ER visits among kids in Colorado. However, the referenced report states that:

"...one Colorado emergency room's admissions alone due to pot use alone may cost the state hundreds of thousands of dollars."

FACT

This statement seems to be conjecture; we didn't find any support for this in the literature. Citations are traditionally used to acknowledge the ideas of others and support the credibility of writing. Using a citation to falsely support your own opinion is generally frowned upon.

Cannabis use is not associated with any costly diseases such as lung cancer or hepatitis. No death has ever been attributed solely to cannabis. On the contrary, cannabis is associated with a substantial reduction in premature deaths [3]. Furthermore, the cannabis industry brought in **\$745 million** in tax revenue for 2017 [4]. In New Jersey, the potential tax revenue from legalized cannabis is estimated to be approximately **\$300 million**. [5]. Thus, there is a strong argument that legalized cannabis is economically a net positive.

LAW ENFORCEMENT COSTS

New Jersey spends more than **\$143 million** per year to enforce our marijuana possession laws. Imagine if these funds could be diverted to more pressing issues? Washington State spent over **\$200 million** on marijuana enforcement between 2000 and 2010. By no longer arresting and prosecuting possession and other low-level cannabis offenses (due to legalization), Washington is saving millions of dollars each year [15].

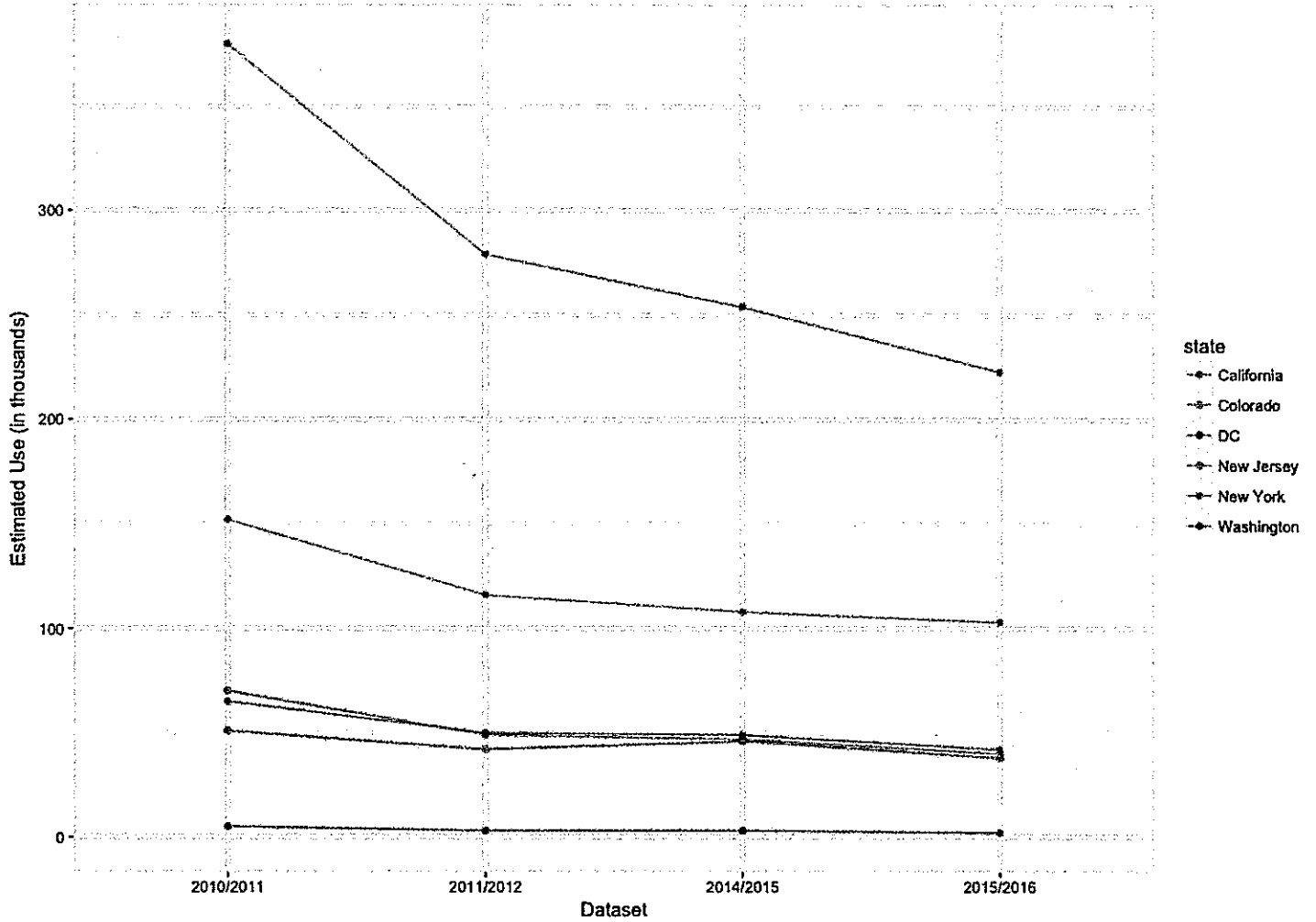
CANNABIS & CHILD SAFETY

Concerns about cannabis legalization and the safety of our children and teens are not unwarranted. The safety of our children is of paramount importance. While it is easy to pick and choose statistics to frame an argument, especially with a sensitive topic such as child safety, a more rigorous analysis is necessary to successfully separate the signal from the noise.

We gathered the data below from the **Substance Abuse and Mental Health Services Administration** (SAMHSA). The data are based on national surveys on drug use and health and the values are statistically-supported estimates created by **SAMHSA** [6]. We chose to use six states with varying cannabis laws.

FACT

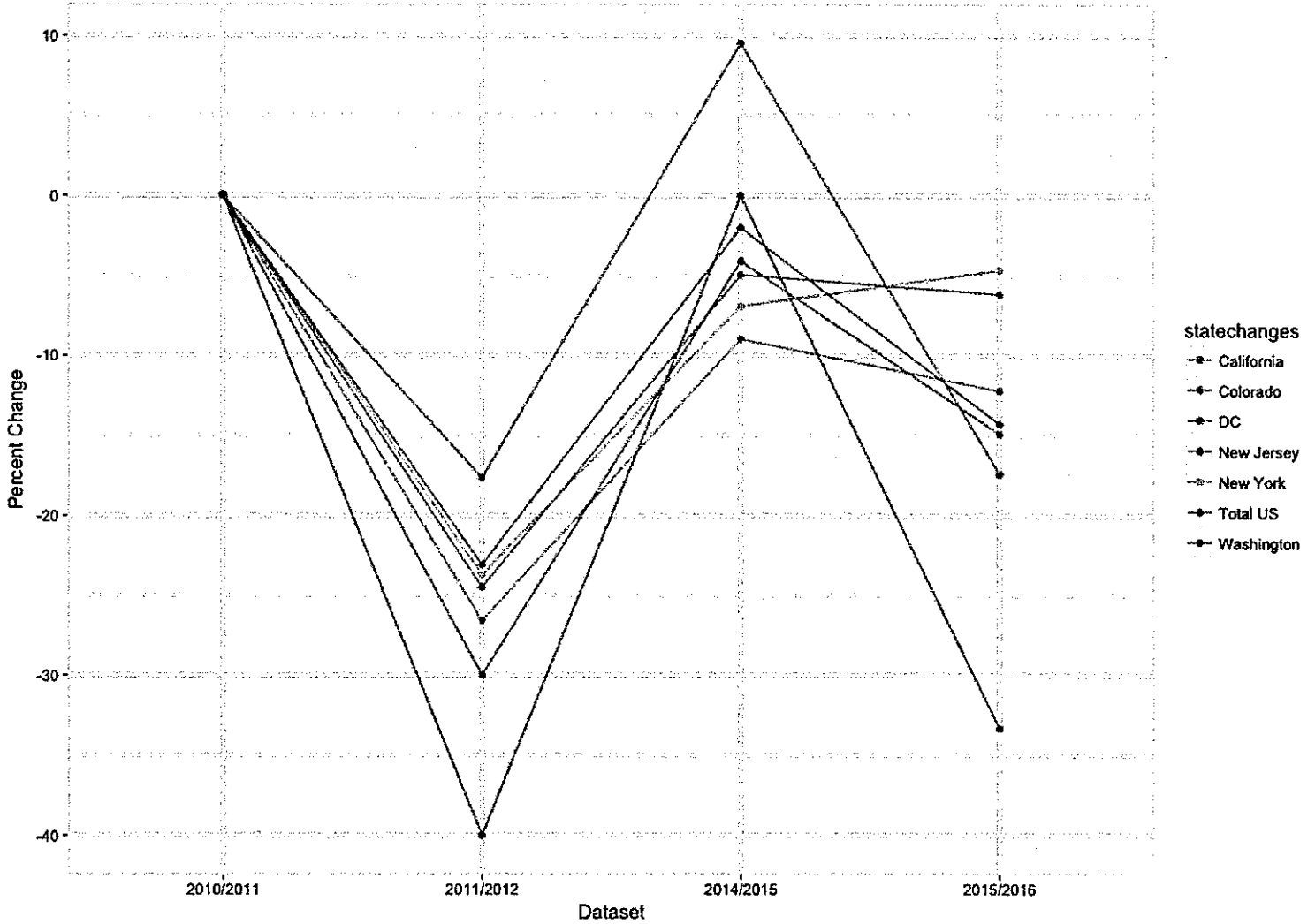
Marijuana Use in the Past Month (Ages 12-17)



Interestingly, "cannabis use in the past month" for 12-17 year olds seems to follow a decreasing trend independent of a state's particular cannabis policies. Below, we graphed the *percentage change* of "cannabis use in the past month" for 12-17 year olds for each **SAMHSA** dataset.

FACT

Marijuana Use in the Past Month (Ages 12-17)



Again, you can easily see that all of the states follow the same general trend irrespective of their particular cannabis policies. In Colorado, slightly more than **9%** of teens age 12-17 used cannabis monthly in 2015 and 2016. This is a statistically significant drop from the prior period and is the *lowest rate* of monthly cannabis use in the state since 2007 and 2008 [7].

FACT

WHAT ABOUT DECRIMINALIZATION?

Interestingly, the only state that had a positive percentage change between 2015 and 2016 is New York, where cannabis is **decriminalized**. While more sophisticated analysis is necessary to conclude its validity, this is an interesting correlation that should be further explored; especially by **Senator Ronald Rice of Essex, NJ** and other supporters of **NJ RAMP**—the anti-legalization coalition discussed earlier—who have recently been arguing for decriminalization [8]. With common sense it is easy to understand that decriminalization can be particularly dangerous because it:

- increases the availability of cannabis and cannabis-based products without the regulation and safety precautions awarded by fully legalized cannabis. This is especially dangerous for children.
- forces people interested in consuming cannabis to continue to resort to illegal drug dealers, which strains our law enforcement.
- nullifies the ability for taxation.

SUMMARY OF CANNABIS & CHILD SAFETY

As seen in the graphs above, the **WSIPP** report, and other studies; cannabis legalization has not been associated with higher rates of underage use. However, a large concern is the unintentional ingestion of cannabis by children. Some studies have established a link between cannabis legalization and pediatric emergency department visits due

FACT

to the unintentional ingestion of cannabis. While this could be due to these cases being better reported, it is extremely essential that child safety be a top priority. These findings bolster the importance of proper education and regulation of cannabis, a drug which has been historically stigmatized under prohibition.

HOW HAVE OTHER STATES HANDLED THESE CONCERNS?

THE WASHINGTON STATE STORY.

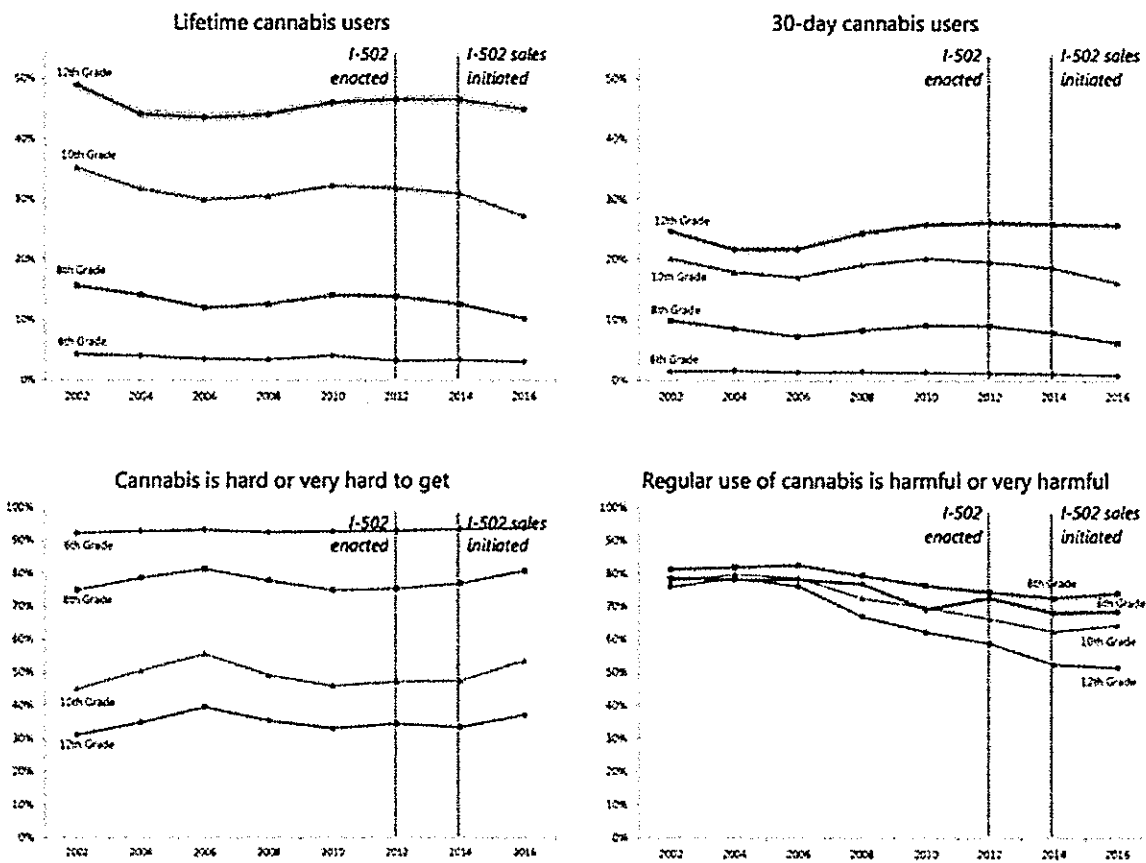
Washington State, where cannabis is legal for adults, has these *exact* same concerns. Under **Initiative 502**, the Washington law that legalizes cannabis, the **Washington State Institute for Public Policy** is required to conduct periodic cost-benefit analyses of legalization on issues ranging from drugged-driving to prenatal use of cannabis. After three years of legal sales the data are beginning to roll in. We present a summary of their findings, all of which are fully supported by data [9]:

- Cannabis use in grades 6, 8, 10, & 12 has remained stable or fallen slightly since cannabis legalization.
- State-wide cannabis use has increased among adults, whereas alcohol and cigarette use has remained stable or slightly decreased.

FACT

- The number of cannabis-abuse admissions funded by the state fell from **7,843** to **6,142**.
- **6,277** full-time jobs created (wages totaling **\$286 million**) by the cannabis industry.

Exhibit 7
Washington Healthy Youth Survey, Selected Cannabis Items by Grade

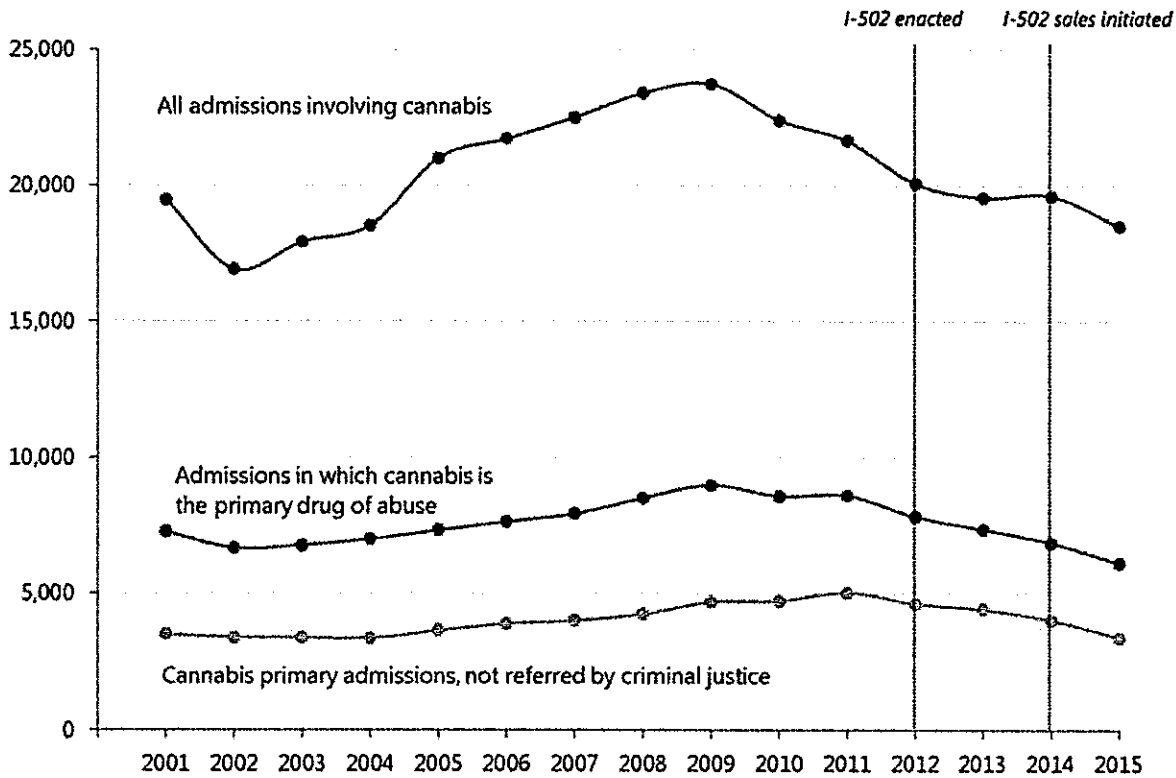


Source:
Washington Health Youth Survey, Census Data Set.
Note:
Shaded regions represent 95% confidence intervals.

FACT

Exhibit 9

State Trends in Treatment Admissions for Cannabis Abuse (TARGET), Annually 2001-2015



It's not just "big marijuana business" that benefits from legalized cannabis. The cannabis industry creates full-time jobs in a variety of different areas including retail, distribution, cultivation, education, public health, and public policy.

WHAT ABOUT COLORADO?

In Colorado, the **Marijuana Policy Group (MPG)** found that the cannabis industry:

- is a stronger economic driver than **90%** of other industries active in Colorado.

FACT

- created **18,005** full-time jobs with an all time low unemployment rate of 2.3% [10]
- added **\$2.4 billion** to the state's economy.
- a 10% sales tax & a 15% excise tax go to supporting education in Colorado instead of illicit criminal organizations.

Overall, this claim that *the costs to society outweigh the revenue* is an over-generalization that relies upon many different variables. It is very difficult to accurately collect, organize, and analyze these data. When making a decision regarding legalization a rational approach to cannabis policy, as well as drug policy in general, is needed. The Washington State report discussed above is possibly the most current credible source for discussing the costs and benefits of cannabis legalization. Quantitatively, they have concluded that the costs **do not** outweigh the benefits.

IS CANNABIS A GATEWAY DRUG?

There exists a major flaw in the argument that cannabis is a gateway drug. The simple correlation that many people use cannabis before using "harder" drugs does not prove that "cannabis use leads to the use of harder drugs." Cannabis is the most widely used illicit drug so it is predictably the first illicit drug most people encounter. Likewise, underage smoking and alcohol use typically precede cannabis use.

FACT

There is simply no conclusive evidence that the drug effects of cannabis are causally linked to the subsequent abuse of other illicit drugs. Correlation does not equal causation. A very recent study by the **National Institute on Drug Abuse** concludes that:

"...the majority of people who use marijuana do not go on to use other, 'harder' substances...Alcohol and nicotine also prime the brain for a heightened response to other drugs and are, like marijuana, also typically used before a person progresses to other, more harmful substances [11]."

Even **DARE** and the federal government have abandoned their argument for the "gateway drug" theory. So why is **NJ-RAMP** using an unproven claim to support their agenda. This is propagandist fear-mongering and it will not be tolerated.

One thing that anti-legalization proponents often fail to consider is the use of synthetic cannabis products (K2 Spice) that are 30 times more dangerous than cannabis. This is an interesting twist on the "gateway drug" theory because it has been postulated that not cannabis use, but cannabis criminalization itself leads many to turn to synthetic cannabinoids [12].

FACT

THE OPIOID EPIDEMIC

This is in addition to the many anecdotes of people using cannabis as an alternative to prescription painkillers, and it has been estimated that over **2 million Americans** are addicted to prescription painkillers.

Some states are even experimenting with using cannabis as a treatment for opioid addiction. However, it is difficult to compete with the medical opioid industry estimated to be valued at **\$1.96 billion** [4].

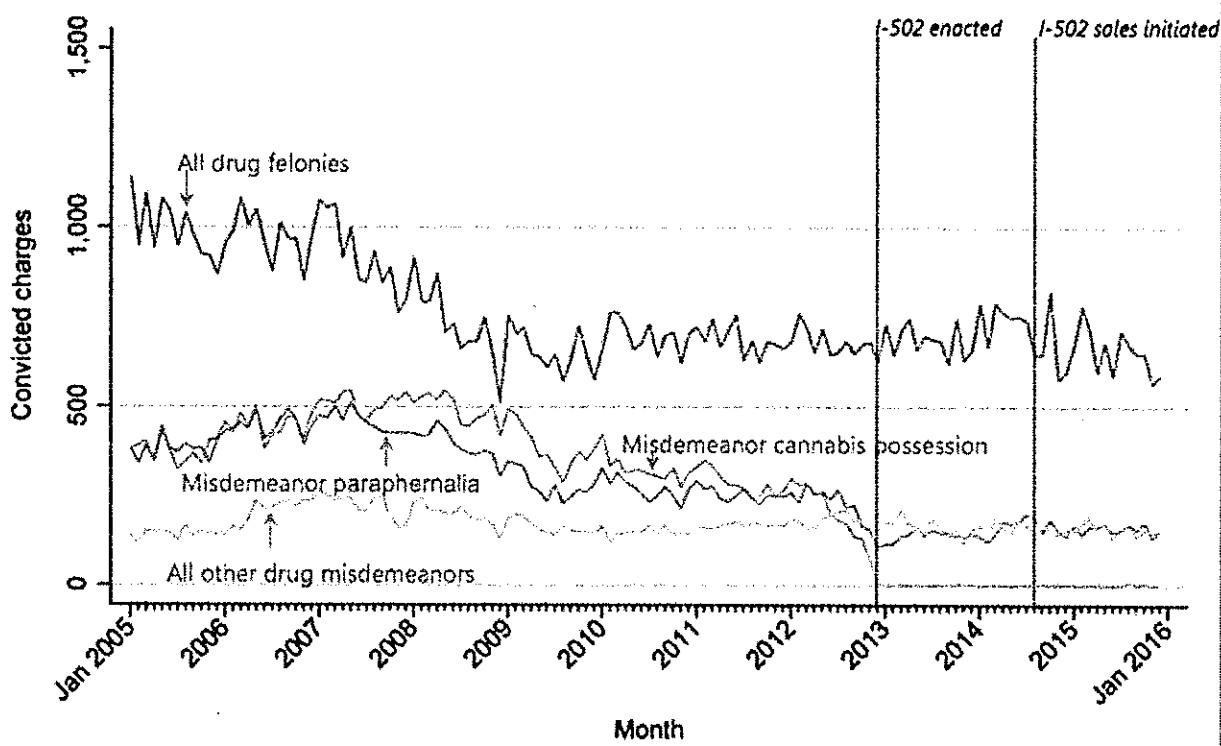
CRIME

A FAIR & JUST JUDICIAL SYSTEM

Crime & marijuana have a torrid past due to prohibition which allows criminal enterprises to fill the supply gap. From people of color being incarcerated at a disproportionate rate to fostering the growth of Mexican Drug cartels, prohibition failed in preventing access to cannabis while also adding accessory issues [13] [14]. Nationally, **653,249** people were arrested for a marijuana law violation in 2016, **89%** of which were for possession only. Looking at the relationship between cannabis and crime we see a reduction in crimes correlated with legalization and no increase in vehicle fatality rates [15] [16].

FACT

Exhibit 14
Adult Convicted Charge Counts



In Colorado, marijuana arrests fell by nearly half from 2012 to 2014. Marijuana possession charges in Washington state fell by a more dramatic 98 percent between 2012 and 2013. Alaska, Oregon and D.C. show similar declines.

Without the criminalization of cannabis, government regulations are able to effectively take hold, lessening the burden on the judicial branch. Unfortunately in Colorado, while the amount of adults arrested for cannabis-related crimes has decreased, for all racial groups, people of color are still arrested at a disproportional rate. **The Drug Policy Alliance** states:

FACT

"...while legalization substantially reduces the total number of blacks and Latinos arrested for cannabis offenses, it does not eliminate the forces that contributed to the disparity in the first place. "

Cannabis legalization isn't a panacea-like answer to all of the woes and issues of our society, but it is a necessary step to achieve our unified goal of a fair & just judicial system.

BY CRIMINALIZING CANNABIS, YOU GIVE CANNABIS CONTROL TO THE CRIMINALS.

As a simple market principal *demand creates supply*, regardless of legality. This has been shown through alcohol prohibition during which, as a parallel to the drug barons of today, organized crime capitalized on the void while prohibition proceeded to fail for the same reasons that cannabis prohibition is falling today [17] [18] [19].

However, the fact that our current law is ineffective isn't a solely sufficient reason to repeal it. Instead, we need to combine our knowledge of prohibition with knowledge of cannabis itself. Regulation is the best option to safely tackle both crime and drug abuse [20] [21].

FACT

With legal cannabis sales burgeoning across the United States, legalized & regulated cannabis is doing what the prohibition was never able to accomplish: damaging the Mexican Drug cartels [22]. With United States Border agents seizing **2.5 million pounds** in 2011 down to **1.9 million pounds** in 2014, Drug Cartels are losing their control of the illicit drug [22]. Their loss of a presence smuggling cannabis also came to a precipitous drop in violence along The United States - Mexico border [23].

DRUG ABUSE & CRIME CORRELATE WITH SOCIOECONOMIC CONDITIONS & TRAUMATIC EVENTS: DRUGS ARE A SYMPTOM
Anecdotally, crime & drug use seem to go hand in hand. As stated earlier, correlation does not mean causation, and underneath the statistics lies a deeper issue. Pervasive through every demographic in the United States, drug use & crime correlate heavily with socioeconomic status [24] [25]. Even in mice, when stability is a constant, there is no drive for mice to use drugs [26]. Also, traumatic events during childhood & adolescence present a double-digit increase in the likelihood of drug abuse [27]. Drug abuse is a systemic issue that stems from socioeconomic causes external to the drugs themselves, and addressing this through prohibition does not serve to address the root cause of drug abuse.

REALITY

FACT

Facts & figures can be manipulated in any direction to paint any picture. You can find studies showing a world in which schools and social programs are funded by legal recreational cannabis while others claim societal harm. The picture is obfuscated from decades of misinformation & propaganda leaving all of us confused about cannabis.

What we do know is that our current system is broken and unusable. Cannabis does not cause death nor is it a gateway drug. Drug abuse is primarily a health—not criminal—issue.

We do know that cannabis prohibition is ineffective and leads to an overworked judicial system. Cannabis prohibition disproportionately affects minority groups and allows for the degradation of Mexico by providing fiscal support to Mexican cartels.

There is a better way to handle cannabis. A way that is fair & equitable in which we value regulation, education, and safety. Society has suffered too long from misinformation & prohibition. Let's move forward using a fact-based approach.

SOURCES

FACT

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ADDITIONAL APPENDIX MATERIALS
SUBMITTED TO THE
ASSEMBLY OVERSIGHT, REFORM AND FEDERAL RELATIONS
COMMITTEE

for the
April 21, 2018 Meeting

Submitted by J. Calvin Chatlos, MD, representing New Jersey Responsible Approaches to Marijuana Policy (NJ RAMP):

“Marijuana Is Not A Harmless Herb: Summaries of the scientific studies that demonstrate some of the effects of Marijuana,” various journal articles and abstracts from *Society for the Study of Addiction* (main source), *American Academy of Addiction Psychiatry*, and *Elsevier*.

Submitted by Bruce Holvenstot, representing New Jersey CannaBusiness Association:

Malcolm Ritter, “Studies link legal marijuana with fewer opioid prescriptions,” *Burlington County Times*, April 3, 2018.