

The Legalization of Marijuana in Colorado: *The Impact*

Volume 5
October 2017



Rocky Mountain High Intensity
Drug Trafficking Area
www.rmhidta.org

PREPARED BY:
ROCKY MOUNTAIN HIDTA
STRATEGIC INTELLIGENCE UNIT

Table of Contents

Executive Summary	1
Purpose	1
Introduction.....	7
Purpose	7
The Debate	8
Background.....	8
Preface.....	8
Colorado’s History with Marijuana Legalization	9
Medical Marijuana 2000-2008	9
Medical Marijuana Commercialization and Expansion 2009-Present	10
Recreational Marijuana 2013-Present.....	11
SECTION 1: Impaired Driving and Fatalities.....	13
Some Findings	13
Differences in Data Citations.....	14
Definitions by Rocky Mountain HIDTA	14
Data for Traffic Deaths	15
Total Number of Statewide Traffic Deaths.....	15
Traffic Deaths Related to Marijuana When a <u>Driver</u> Tested Positive for Marijuana	16
Percent of All Traffic Deaths that were Marijuana-Related when a <u>Driver</u> Tested Positive for Marijuana	17
Average Number of Traffic Deaths Related to Marijuana when a <u>Driver</u> Tested Positive for Marijuana	18
Drug Combinations for <u>Drivers</u> who Tested Positive for Marijuana, 2016	18
Traffic Deaths Related to Marijuana When an <u>Operator</u> Tested Positive for Marijuana.....	19
Percent of All Traffic Deaths that were Marijuana-Related when an <u>Operator</u> Tested Positive for Marijuana	20
Average Number of Traffic Deaths Related to Marijuana when an <u>Operator</u> Tested Positive for Marijuana	21
Drug Combinations for <u>Operators</u> who Tested Positive for Marijuana, 2016.....	21
Data for Impaired Driving.....	22
Number of Positive Cannabinoid Screens.....	22
ChemaTox and Colorado Department of Public Health and Environment (Data Combined 2009-2013).....	23
ChemaTox Data Only (2013-May2016).....	23

Colorado State Patrol Number of Drivers Under the Influence of Drugs (DUIDs) 24
 Marijuana as a Percent of All DUI and DUIDs 25
 Denver Police Department Percent of DUIDs Involving Marijuana 26
 Larimer County Sheriff’s Office Percent of DUIDs Involving Marijuana..... 26
 Total Number of Accidents in Colorado 27
 Related Costs 27
 Case Examples 28
 Sources 31

SECTION 2: Youth Marijuana Use..... 33

Some Findings 33
 Surveys NOT Utilized 33
 Healthy Kids Colorado Survey (HKCS) 33
 Current Marijuana Use for High School and Middle School Students in Colorado. 34
 Monitoring the Future (MTF) Study 35
 Centers for Disease Control Youth Risk Behavior Survey (YRBS) 35
 2015 YRBS Participation Map 35
 Use Data 36
 Youth Ages 12 to 17 Years Old..... 36
 Average Past Month Use of Marijuana Youth Ages 12 to 17 Years Old..... 36
 Past Month Marijuana Use Youth Ages 12 to 17 Years Old 36
 Prevalence of Past 30-Day Marijuana Use Youth Ages 12 to 17 Years Old..... 37
 Past Month Usage, 12 to 17 Years Old, 2014/2015..... 38
 Average Past Month Use Youth Ages 12 to 17 Years Old, 2014/2015 39
 Past Month Marijuana Use Youth Ages 12 to 17 Years Old, 2014/2015 39
 Colorado Probation Percent of All Urinalysis Tests Positive for Marijuana
 Youth Ages 10 to 17 Years Old 40
 School Data 41
 Impact on School Violation Numbers 41
 All Drug Violations, 2015-2016 School Year 41
 Drug-Related Suspensions/Expulsions 42
 Percent of Total Referrals to Law Enforcement in Colorado..... 42
 Number of Reported School Dropouts..... 43
 Colorado School Resource Officer Survey 43
 Impact on Marijuana-Related Incidents, 2017..... 44
 Predominant Marijuana Violations, 2017 44
 Student Marijuana Source, 2017..... 45
 School Counselor Survey 45
 Impact on Marijuana-Related Incidents, 2015..... 46
 Predominant Marijuana Violations, 2015 46
 Student Marijuana Source, 2015..... 47
 Case Examples 47

Some Comments from School Resource Officers 49
 Some Comments from School Counselors 51
 Sources.....53

SECTION 3: Adult Marijuana Use 55

Some Findings 55
 Use Data 56
 College Age 18 to 25 Years Old..... 56
 Average Past Month Use of Marijuana College Age 18 to 25 Years Old..... 56
 Past Month Marijuana Use College Age 18 to 25 Years Old 56
 Prevalence of Past 30-Day Marijuana Use College Age 18 to 25 Years Old..... 57
 Past Month Usage, 18 to 25 Years Old, 2014/2015..... 58
 Average Past Month Use College Age 18 to 25 Years Old, 2014/2015 59
 Past Month Marijuana Use College Age 18 to 25 Years Old, 2014/2015 59
 Adults Age 26+ Years Old..... 60
 Average Past Month Use of Marijuana College Ages 26+ Years Old..... 60
 Past Month Marijuana Use Adults Age 26+ Years Old 60
 Prevalence of Past 30-Day Marijuana Use College Adults Age 26+ Years Old 61
 Past Month Usage, 26+ Years Old, 2014/2015..... 62
 Average Past Month Use Adults Ages 26+ Years Old, 2014/2015 63
 Past Month Marijuana Use Adults Ages 26+ Years Old, 2014/2015..... 63
 Colorado Adult Marijuana Use Demographics..... 64
 Case Examples 64
 Sources.....66

SECTION 4: Emergency Department and Hospital Marijuana-Related Admissions 67

Some Findings 67
 Definitions.....68
 Emergency Department Data.....68
 Colorado Department of Public Health and Environment..... 68
 Average Emergency Department Rates Related to Marijuana 69
 Emergency Department Rates Related to Marijuana 70
 Emergency Department Visits Related to Marijuana..... 71
 Hospitalization Data.....72
 Colorado Department of Public Health and Environment..... 72
 Average Hospitalization Rates Related to Marijuana 72
 Hospitalization Rates Related to Marijuana 73
 Average Hospitalizations Related to Marijuana..... 74
 Hospitalizations Related to Marijuana..... 74
 Additional Sources.....75

Children’s Hospital Marijuana Ingestion Among Children Under 9 Years Old.....	75
Cost	75
Case Examples.....	76
Sources.....	80
SECTION 5: Marijuana-Related Exposure	81
Some Findings	81
Definitions.....	81
Data	82
Average Number of Marijuana-Related Exposures, All Ages.....	82
Marijuana-Related Exposures	82
Marijuana-Related Exposures by Age Range	83
Average Percent of All Marijuana-Related Exposures, Children Ages	
0 to 5 Years Old	83
Number of <u>Marijuana Only</u> Exposures Reported	84
Case Examples.....	84
Sources.....	85
SECTION 6: Treatment.....	87
Some Findings	87
Data	87
Treatment with Marijuana as Primary Substance Abuse, All Ages	87
Drug Type for Treatment Admissions, All Ages.....	88
Percent of Marijuana Treatment Admissions by Age Group	89
Marijuana Treatment Admissions Based on Criminal Justice Referrals	90
Comments from Colorado Treatment Providers	90
Case Examples.....	91
Sources.....	92
SECTION 7: Diversion of Colorado Marijuana.....	93
Some Findings	93
Definitions.....	94
Data on Marijuana Investigations	95
RMHIDTA Colorado Task Forces: Marijuana Investigation Seizures.....	95
RMHIDTA Colorado Task Forces: Marijuana Investigative Plant Seizures.....	96
RMHIDTA Colorado Task Forces: Marijuana Investigative Felony Arrests.....	96
Data on Highway Interdictions	97
Average Colorado Marijuana Interdiction Seizures	97
Colorado Marijuana Interdiction Seizures	98
Average Pounds of Colorado Marijuana from Interdiction Seizures.....	98
States to Which Colorado Marijuana Was Destined, 2016.....	99

Top Three Cities for Marijuana Origin 99

Case Examples of Investigations100

Case Examples of Interdictions.....103

Sources.....107

SECTION 8: Diversion by Parcel..... 109

Some Findings109

Data from U.S. Postal Service109

 Average Number of Parcels Containing Marijuana Mailed from Colorado to Another State..... 109

 Parcels Containing Marijuana Mailed from Colorado to Another State..... 110

 Average Pounds of Colorado Marijuana Seized by the U.S. Postal Inspection Service..... 110

 Pounds of Colorado Marijuana Seized by the U.S. Postal Inspection Service 111

 Number of States Destined to Receive Marijuana Mailed from Colorado 111

Private Parcel Companies112

Case Examples.....113

Sources.....115

SECTION 9: Related Data 117

Topics.....117

Some Findings117

Crime118

 Colorado Crime.....118

 City and County of Denver Crime 119

 Crime in Denver..... 120

 Denver Police Department Unlawful Public Display/Consumption of Marijuana..... 120

 Boulder Police Department Marijuana Public Consumption Citations 121

 Case Examples..... 121

Revenue124

 Colorado’s Statewide Budget, Fiscal Year 2017..... 124

 Total State Revenue from Marijuana Taxes, Calendar Year 2016 124

 Case Example..... 125

Event Planners’ Views of Denver126

 Negative Meeting Planner Perceptions, 2014..... 126

Homeless128

Suicide Data130

 Average Toxicology of Suicides Among Adolescents Ages 10 to 19 Years Old (With Known Toxicology)130

 Average Toxicology Results by Age Group, 2013-2015131

THC Potency.....132

National Average THC Potency Submitted Cannabis Samples.....	132
National Average THC Potency Submitted Hash Oil Samples.....	133
Alcohol Consumption	134
Colorado Average Consumption of Alcohol	134
Colorado Consumption of Alcohol	134
Medical Marijuana Registry	135
Percent of Medical Marijuana Patients Based on Reporting Conditions, 2016	136
Colorado Licensed Marijuana Businesses as of August 1 st , 2017	137
Business Comparisons, June 2017.....	137
Colorado Business Comparisons, June 2017	137
Demand and Market Size	138
Demand	138
Market Size	138
Marijuana Enforcement Division Reported Sales of Marijuana in Colorado.....	139
2017 Price of Marijuana	139
Local Response to Medical and Recreational Marijuana in Colorado	140
2016 Local Jurisdiction Licensing Status.....	142
Sources.....	143
SECTION 10: Reference Materials	147
Reports and Articles	147
Impaired Driving	147
Youth Marijuana Use.....	151
Adult Marijuana Use	152
Emergency Department and Hospital Marijuana-Related Admissions.....	155
Marijuana-Related Exposure.....	157
Treatment	157
Related Data.....	158
Sources.....	163

Executive Summary

Purpose

Rocky Mountain High Intensity Drug Trafficking Area (RMHIDTA) is tracking the impact of marijuana legalization in the state of Colorado. This report will utilize, whenever possible, a comparison of three different eras in Colorado's legalization history:

- **2006 – 2008:** Medical marijuana pre-commercialization era
- **2009 – Present:** Medical marijuana commercialization and expansion era
- **2013 – Present:** Recreational marijuana era

Rocky Mountain HIDTA will collect and report comparative data in a variety of areas, including but not limited to:

- Impaired driving and fatalities
- Youth marijuana use
- Adult marijuana use
- Emergency room admissions
- Marijuana-related exposure cases
- Diversion of Colorado marijuana

This is the fifth annual report on the impact of legalized marijuana in Colorado. It is divided into ten sections, each providing information on the impact of marijuana legalization. The sections are as follows:

Section 1 – Impaired Driving and Fatalities:

- Marijuana-related traffic deaths when a driver was positive for marijuana more than doubled from **55 deaths** in 2013 to **125 deaths** in 2016.
- Marijuana-related traffic deaths **increased 66 percent** in the four-year average (2013-2016) since Colorado legalized recreational marijuana compared to the four-year average (2009-2012) prior to legalization.
 - During the same time period, all traffic deaths **increased 16 percent**.

- In 2009, Colorado marijuana-related traffic deaths involving drivers testing positive for marijuana represented **9 percent** of all traffic deaths. By 2016, that number has more than doubled to **21 percent**.

Section 2 – Youth Marijuana Use:

- Youth past month marijuana use **increased 12 percent** in the three-year average (2013-2015) since Colorado legalized recreational marijuana compared to the three-year average prior to legalization (2010-2012).
- The latest 2014/2015 results show Colorado youth ranked **#1** in the nation for past month marijuana use, up from **#4** in 2011/2012 and **#14** in 2005/2006.
- Colorado youth past month marijuana use for 2014/2015 was **55 percent higher** than the national average compared to **39 percent higher** in 2011/2012.

Section 3 – Adult Marijuana Use:

- College age past month marijuana use **increased 16 percent** in the three-year average (2013-2015) since Colorado legalized recreational marijuana compared to the three-year average prior to legalization (2010-2012).
- The latest 2014/2015 results show Colorado college-age adults ranked **#2** in the nation for past-month marijuana use, up from **#3** in 2011/2012 and **#8** in 2005/2006.
- Colorado college age past month marijuana use for 2014/2015 was **61 percent higher** than the national average compared to **42 percent higher** in 2011/2012.
- Adult past-month marijuana use **increased 71 percent** in the three-year average (2013-2015) since Colorado legalized recreational marijuana compared to the three-year average prior to legalization (2010-2012).
- The latest 2014/2015 results show Colorado adults ranked **#1** in the nation for past month marijuana use, up from **#7** in 2011/2012 and **#8** in 2005/2006.
- Colorado adult past month marijuana use for 2014/2015 was **124 percent higher** than the national average compared to **51 percent higher** in 2011/2012.

Section 4 – Emergency Department and Hospital Marijuana-Related Admissions:

- The yearly rate of emergency department visits related to marijuana **increased 35 percent** after the legalization of recreational marijuana (2011-2012 vs. 2013-2015).
- Number of hospitalizations related to marijuana:
 - 2011 – **6,305**
 - 2012 – **6,715**
 - 2013 – **8,272**
 - 2014 – **11,439**
 - Jan-Sept 2015 – **10,901**
- The yearly number of marijuana-related hospitalizations **increased 72 percent** after the legalization of recreational marijuana (2009-2012 vs. 2013-2015).

Section 5 – Marijuana-Related Exposure:

- Marijuana-related exposures **increased 139 percent** in the four-year average (2013-2016) since Colorado legalized recreational marijuana compared to the four-year average (2009-2012) prior to legalization.
- Marijuana-Only exposures more than doubled (**increased 210 percent**) in the four-year average (2013-2016) since Colorado legalized recreational marijuana compared to the four-year average (2009-2012) prior to legalization.

Section 6 – Treatment:

- Marijuana treatment data from Colorado in years 2006 – 2016 does not appear to demonstrate a definitive trend. Colorado averages **6,683** treatment admissions annually for marijuana abuse.
- Over the last ten years, the top four drugs involved in treatment admissions were alcohol (average **13,551**), marijuana (average **6,712**), methamphetamine (average **5,578**), and heroin (average **3,024**).

Section 7 – Diversion of Colorado Marijuana:

- In 2016, RMHIDTA Colorado drug task forces completed **163 investigations** of individuals or organizations involved in illegally selling Colorado marijuana both in and out of state.
 - These cases led to:
 - **252** felony arrests
 - **7,116 (3.5 tons)** pounds of marijuana seized
 - **47,108** marijuana plants seized
 - **2,111** marijuana edibles seized
 - **232** pounds of concentrate seized
 - **29** different states to which marijuana was destined
- Highway interdiction seizures of Colorado marijuana **increased 43 percent** in the four-year average (2013-2016) since Colorado legalized recreational marijuana compared to the four-year average (2009-2012) prior to legalization.
- Of the **346** highway interdiction seizures in 2016, there were **36 different states** destined to receive marijuana from Colorado.
 - The most common destinations identified were Illinois, Missouri, Texas, Kansas and Florida.

Section 8 – Diversion by Parcel:

- Seizures of Colorado marijuana in the U.S. mail has **increased 844 percent** from an average of 52 parcels (2009-2012) to 491 parcels (2013-2016) in the four-year average that recreational marijuana has been legal.
- Seizures of Colorado marijuana in the U.S. mail has **increased 914 percent** from an average of 97 pounds (2009-2012) to 984 pounds (2013-2016) in the four-year average that recreational marijuana has been legal.

Section 9 – Related Data:

- Crime in Denver **increased 6 percent** from 2014 to 2016 and crime in Colorado **increased 11 percent** from 2013 to 2016.
- Colorado annual tax revenue from the sale of recreational and medical marijuana was **0.8 percent** of Colorado’s total statewide budget (FY 2016).
- As of June 2017, there were **491 retail marijuana stores** in the state of Colorado compared to **392 Starbucks** and **208 McDonald’s**.
- **66 percent** of local jurisdictions have banned medical and recreational marijuana businesses.

Section 10 – Reference Materials:

This section lists various studies and reports regarding marijuana.

THERE IS MUCH MORE DATA IN EACH OF THE TEN SECTIONS. THIS PUBLICATION MAY BE FOUND ON THE ROCKY MOUNTAIN HIDTA WEBSITE; GO TO WWW.RMHIDTA.ORG AND SELECT REPORTS.

THIS PAGE INTENTIONALLY LEFT BLANK

Introduction

Purpose

The purpose of this annual report is to document the impact of the legalization of marijuana for medical and recreational use in Colorado. Colorado serves as an experimental lab for the nation to determine the impact of legalizing marijuana. This is an important opportunity to gather and examine meaningful data and identify trends. Citizens and policymakers nationwide may want to delay any decisions on this important issue until there is sufficient and accurate data to make informed decisions.

The Debate

There is an ongoing debate in this country concerning the impact of legalizing marijuana. Those in favor argue that the benefits of removing prohibition far outweigh the potential negative consequences. Some of the cited benefits include:

- Eliminate arrests for possession and sale, resulting in fewer people with criminal records and a reduction in the prison population
- Free up law enforcement resources to target more serious and violent criminals
- Reduce traffic fatalities since users will switch from alcohol to marijuana, which does not impair driving to the same degree
- No increase in use, even among youth, because of strict regulations
- Added revenue generated through taxation
- Eliminate the black market

Those opposed to legalizing marijuana argue that the potential benefits of lifting prohibition pale in comparison to the adverse consequences. Some of the cited consequences include:

- Increase in marijuana use among youth and young adults
- Increase in marijuana-impaired driving fatalities
- Rise in number of marijuana-addicted users in treatment
- Diversion of marijuana

- Adverse impact and cost of the physical and mental health damage caused by marijuana use
- The economic cost to society will far outweigh any potential revenue generated

Background

As of 2016, a number of states have enacted varying degrees of legalized marijuana by permitting medical marijuana and eight permitting recreational marijuana. In 2010, legislation was passed in Colorado that included the licensing of medical marijuana centers (dispensaries), cultivation operations, and manufacturing of marijuana edibles for medical purposes. In November 2012, Colorado voters legalized recreational marijuana allowing individuals to use and possess an ounce of marijuana and grow up to six plants. The amendment also permits licensing marijuana retail stores, cultivation operations, marijuana edible manufacturers, and testing facilities. Washington voters passed a similar measure in 2012.

Preface

It is important to note that, for purposes of the debate on legalizing marijuana in Colorado, there are three distinct timeframes to consider: the early medical marijuana era (2000-2008), the medical marijuana commercialization era (2009 – current) and the recreational marijuana era (2013 – current).

- **2000 – 2008:** In November 2000, Colorado voters passed Amendment 20 which permitted a qualifying patient, and/or caregiver of a patient, to possess up to 2 ounces of marijuana and grow 6 marijuana plants for medical purposes. During that time there were between 1,000 and 4,800 medical marijuana cardholders and no known dispensaries operating in the state.
- **2009 – Current:** Beginning in 2009 due to a number of events, marijuana became *de facto* legalized through the commercialization of the medical marijuana industry. By the end of 2012, there were over 100,000 medical marijuana cardholders and 500 licensed dispensaries operating in Colorado. There were also licensed cultivation operations and edible manufacturers.

- **2013 – Current:** In November 2012, Colorado voters passed Constitutional Amendment 64 which legalized marijuana for recreational purposes for anyone over the age of 21. The amendment also allowed for licensed marijuana retail stores, cultivation operations and edible manufacturers. Retail marijuana businesses became operational January 1, 2014.

Colorado's History with Marijuana Legalization

Medical Marijuana 2000 – 2008

In November 2000, Colorado voters passed Amendment 20 which permitted a qualifying patient and/or caregiver of a patient to possess up to 2 ounces of marijuana and grow 6 marijuana plants for medical purposes. Amendment 20 provided identification cards for individuals with a doctor's recommendation to use marijuana for a debilitating medical condition. The system was managed by the Colorado Department of Public Health and Environment (CDPHE), which issued identification cards to patients based on a doctor's recommendation. The department began accepting applications from patients in June 2001.

From 2001 – 2008, there were only 5,993 patient applications received and only 55 percent of those designated a primary caregiver. During that time, the average was three patients per caregiver and there were no known retail stores selling medical marijuana (dispensaries). Dispensaries were not an issue because CDPHE regulations limited a caregiver to no more than five patients.

In late 2007, a Denver district judge ruled that CDPHE violated the state's open meeting requirement when it set a five-patient-to-one-caregiver ratio and overturned the rule. That opened the door for caregivers to claim an unlimited number of patients for whom they were providing and growing marijuana. Although this decision expanded the parameters, very few initially began operating medical marijuana commercial operations (dispensaries) in fear of prosecution, particularly from the federal government.

The judge's ruling, and caregivers expanding their patient base, created significant problems for local prosecutors seeking a conviction for marijuana distribution by caregivers. Many jurisdictions ceased or limited filing those types of cases.

Medical Marijuana Commercialization and Expansion 2009 – Present

The dynamics surrounding medical marijuana in Colorado began to change substantially after the Denver judge's ruling in late 2007, as well as several incidents beginning in early 2009. All of these combined factors played a role in the explosion of the medical marijuana industry and number of patients:

At a press conference in Santa Ana, California on February 25, 2009, U.S. Attorney General Eric Holder was asked whether raids in California on medical marijuana dispensaries would continue. He responded "No" and referenced the President's campaign promise related to medical marijuana. In mid-March 2009, the U.S. Attorney General clarified the position saying that the Department of Justice enforcement policy would be restricted to traffickers who falsely masqueraded as medical dispensaries and used medical marijuana laws as a shield.

Beginning in the spring of 2009, Colorado experienced an explosion to over 20,000 new medical marijuana patient applications and the emergence of over 250 medical marijuana dispensaries (allowed to operate as "caregivers"). One dispensary owner claimed to be a primary caregiver to 1,200 patients. Government took little or no action against these commercial operations.

In July 2009, the Colorado Board of Health, after public hearings, voted to keep the judge's ruling of not limiting the number of patients a single caregiver could have. They also voted to change the definition of a caregiver to a person that only had to provide medicine to patients, nothing more.

On October 19, 2009, U.S. Deputy Attorney General David Ogden provided guidelines for U.S. Attorneys in states that enacted medical marijuana laws. The memo advised to "Not focus federal resources in your state on individuals whose actions are in clear and unambiguous compliance with existing state law providing for the medical use of marijuana."

By the end of 2009, new patient applications jumped from around 6,000 for the first seven years to an additional 38,000 in just one year. Actual cardholders went from 4,800 in 2008 to 41,000 in 2009. By mid-2010, there were over 900 unlicensed marijuana dispensaries identified by law enforcement.

In 2010, law enforcement sought legislation to ban dispensaries and reinstate the one-to-five ratio of caregiver to patient as the model. However, in 2010 the Colorado

Legislature passed HB-1284 which legalized medical marijuana centers (dispensaries), marijuana cultivation operations, and manufacturers for marijuana edible products. By 2012, there were 532 licensed dispensaries in Colorado and over 108,000 registered patients, 94 percent of which qualified for a card because of severe pain.

Recreational Marijuana 2013 – Present

In November of 2012, Colorado voters passed Amendment 64 which legalized marijuana for recreational use. Amendment 64 allows individuals 21 years or older to grow up to six plants, possess/use 1 ounce or less, and furnish an ounce or less of marijuana if not for the purpose of remuneration. Amendment 64 permits marijuana retail stores, marijuana cultivation sites, marijuana edible manufacturers and marijuana testing sites. The first retail marijuana businesses were licensed and operational in January of 2014. Some individuals have established private cannabis clubs, formed co-ops for large marijuana grow operations, and/or supplied marijuana for no fee other than donations.

What has been the impact of commercialized medical marijuana and legalized recreational marijuana on Colorado? Review the report and you decide.

NOTES:

- DATA, IF AVAILABLE, WILL COMPARE PRE- AND POST-2009 WHEN MEDICAL MARIJUANA BECAME COMMERCIALIZED AND AFTER 2013 WHEN RECREATIONAL MARIJUANA BECAME LEGALIZED.
- MULTI-YEAR COMPARISONS ARE GENERALLY BETTER INDICATORS OF TRENDS. ONE-YEAR FLUCTUATIONS DO NOT NECESSARILY REFLECT A NEW TREND.
- PERCENTAGE COMPARISONS MAY BE ROUNDED TO THE NEAREST WHOLE NUMBER.
- PERCENT CHANGES ADDED TO GRAPHS WERE CALCULATED AND ADDED BY ROCKY MOUNTAIN HIDTA.
- THIS REPORT WILL CITE DATASETS WITH TERMS SUCH AS “MARIJUANA-RELATED” OR “TESTED POSITIVE FOR MARIJUANA.” THAT DOES NOT NECESSARILY PROVE THAT MARIJUANA WAS THE CAUSE OF THE INCIDENT.

THIS PAGE INTENTIONALLY LEFT BLANK

SECTION 1: Impaired Driving and Fatalities

Some Findings

- Marijuana-related traffic deaths when a driver tested positive for marijuana more than doubled from 55 deaths in 2013 to 125 deaths in 2016.
 - Marijuana-related traffic deaths **increased 66 percent** in the four-year average (2013-2016) since Colorado legalized recreational marijuana compared to the four-year average (2009-2012) prior to legalization.
 - During the same time period, all traffic deaths increased 16 percent.
 - In 2009, Colorado marijuana-related traffic deaths involving drivers testing positive for marijuana represented **9 percent** of all traffic deaths. By 2016, that number has more than doubled to **21 percent**.
 - Consistent with the past, in 2016, less than half of drivers (**44 percent**) or operators (**48 percent**) involved in traffic deaths were tested for drug impairment.
 - The number of toxicology screens positive for marijuana (primarily DUID) **increased 63 percent** in the four-year average (2013-2016) since Colorado legalized recreational marijuana compared to the four-year average (2009-2012) prior to legalization.
 - The 2016 Colorado State Patrol DUID Program data includes:
 - **76 percent** (767) of the 1004 DUIDs involved marijuana.
 - **38 percent** (385) of the 1004 DUIDs involved marijuana only.
-

Differences in Data Citations

The Denver Post article “Exclusive: Traffic fatalities linked to marijuana are up sharply in Colorado. Is legalization to blame?” cited the number of drivers identified in fatal crashes who tested positive for marijuana. There were 47 positive drivers in 2013 and 115 positive drivers in 2016, which represents a 145 percent increase.

RMHIDTA cites the number of fatalities when a driver tested positive for marijuana. There were 55 fatalities in 2014 and 123 fatalities in 2016 when a driver was positive for marijuana, which represents a 124 percent increase.

There have been some fatality numbers for “cannabinoid positive drivers” cited that use slightly higher figures than those used by RMHIDTA. After careful analysis of complete data obtained from CDOT, RMHIDTA is confident the numbers cited in this report are accurate.

Definitions by Rocky Mountain HIDTA

Driving Under the Influence of Drugs (DUID): DUID could include alcohol in combination with drugs. This is an important measurement since the driver’s ability to operate a vehicle was sufficiently impaired that it brought his or her driving to the attention of law enforcement. The erratic driving and the subsequent evidence that the subject was under the influence of marijuana helps confirm the causation factor.

Marijuana-Related: Also called “marijuana mentions,” is any time marijuana shows up in the toxicology report. It could be marijuana only or marijuana with other drugs and/or alcohol.

Marijuana Only: When toxicology results show marijuana and no other drugs or alcohol.

Fatalities: Any death resulting from a traffic crash involving a motor vehicle.

Operators: Anyone in control of their own movements such as a driver, pedestrian or bicyclist.

Drivers: An occupant who is in physical control of a transport vehicle. For an out-of-control vehicle, an occupant who was in control until control was lost.

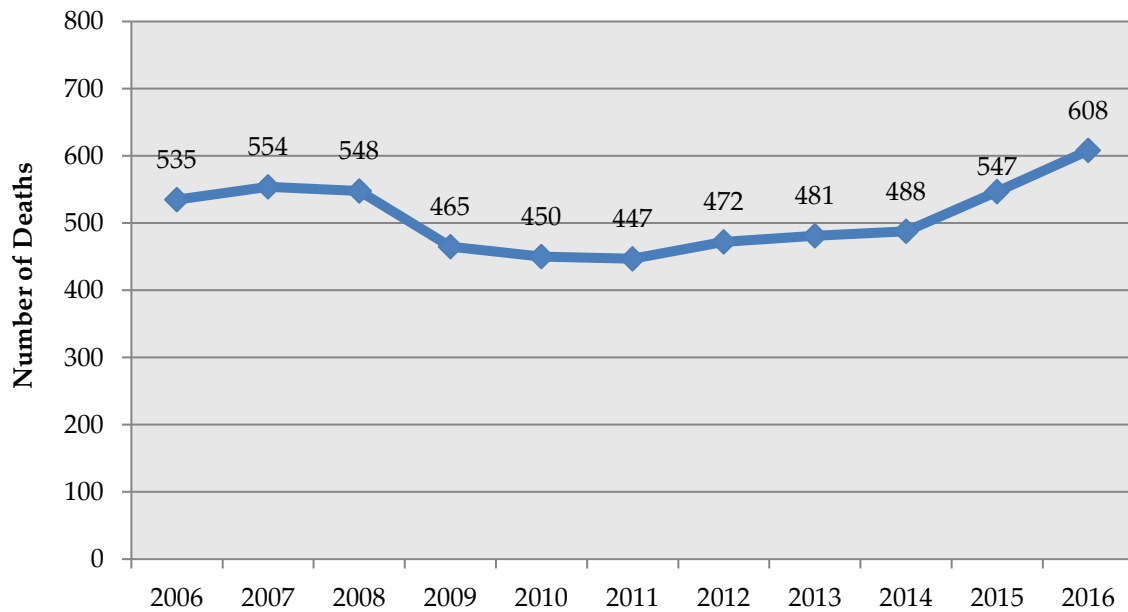
Personal Conveyance: Non-motorized transport devices such as skateboards, wheelchairs (including motorized wheelchairs), tricycles, foot scooters, and Segways. These are more or less non-street legal transport devices.

Data for Traffic Deaths

NOTE:

- THE DATA FOR 2012 THROUGH 2015 WAS OBTAINED FROM THE COLORADO DEPARTMENT OF TRANSPORTATION (CDOT). CDOT AND RMHIDTA CONTACTED CORONER OFFICES AND LAW ENFORCEMENT AGENCIES INVESTIGATING FATALITIES TO OBTAIN TOXICOLOGY REPORTS. THIS REPRESENTS 100 PERCENT REPORTING. PRIOR YEAR(S) MAY HAVE HAD LESS THAN 100 PERCENT REPORTING TO THE COLORADO DEPARTMENT OF TRANSPORTATION, AND SUBSEQUENTLY THE FATALITY ANALYSIS REPORTING SYSTEM (FARS). ANALYSIS OF DATA WAS CONDUCTED BY ROCKY MOUNTAIN HIDTA.
- 2016 FARS DATA WILL NOT BE OFFICIAL UNTIL JANUARY 2018.

Total Number of Statewide Traffic Deaths



SOURCE: National Highway Traffic Safety Administration, Fatality Analysis Reporting System (FARS) and Colorado Department of Transportation

- ❖ In 2016 there were a total of 608 traffic deaths of which:
 - 390 were drivers
 - 116 were passengers
 - 79 were pedestrians
 - 16 were bicyclists
 - 5 were in personal conveyance
 - 2 had an unknown position in the vehicle

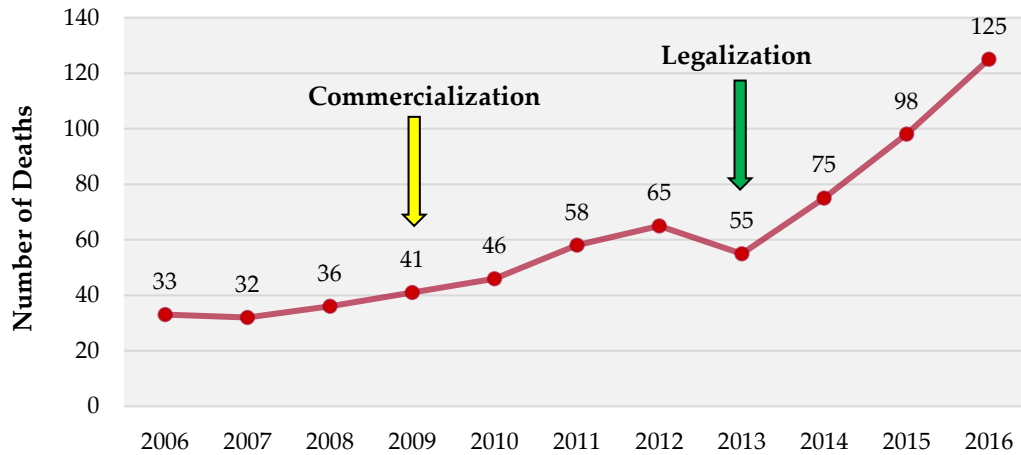
Traffic Deaths Related to Marijuana When a DRIVER Tested Positive for Marijuana			
Crash Year	Total Statewide Fatalities	Fatalities with <u>Drivers</u> Testing Positive for Marijuana	Percentage Total Fatalities
2006	535	33	6.17%
2007	554	32	5.78%
2008	548	36	6.57%
2009	465	41	8.82%
2010	450	46	10.22%
2011	447	58	12.98%
2012	472	65	13.77%
2013	481	55	11.43%
2014	488	75	15.37%
2015	547	98	17.92%
2016	608	125	20.56%

SOURCE: National Highway Traffic Safety Administration, Fatality Analysis Reporting System (FARS), 2006-2011 and Colorado Department of Transportation 2012-2016

- ❖ In 2016 there were a total of 125 marijuana-related traffic deaths when a driver tested positive for marijuana. Of which:
 - 102 were drivers
 - 19 were passengers
 - 2 were pedestrians
 - 2 were bicyclists

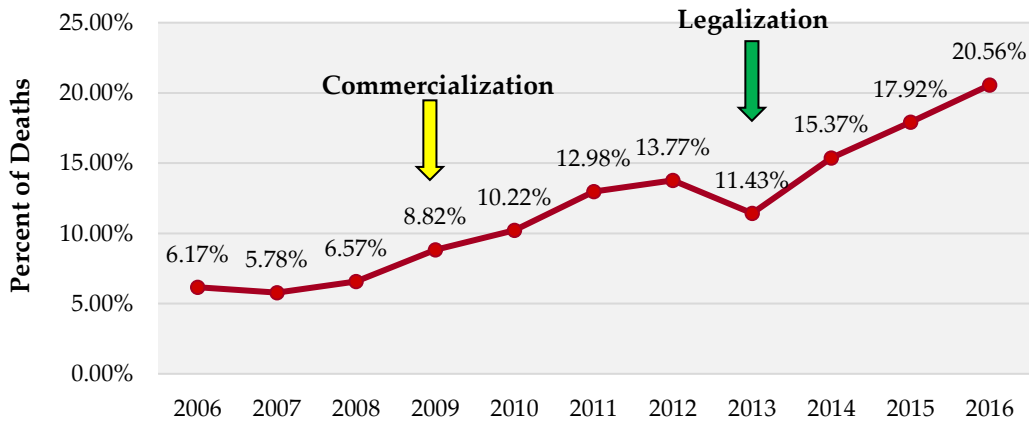
- ❖ “In 2016, of the 115 drivers in fatal wrecks who tested positive for marijuana use, 71 were found to have Delta 9 tetrahydrocannabinol, or THC, the psychoactive ingredient in marijuana, in their blood, indicating use within hours, according to state data. Of those, 63 percent were over 5 nanograms per milliliter, the state’s limit for driving.” ¹

Traffic Deaths Related to Marijuana when a Driver Tested Positive for Marijuana



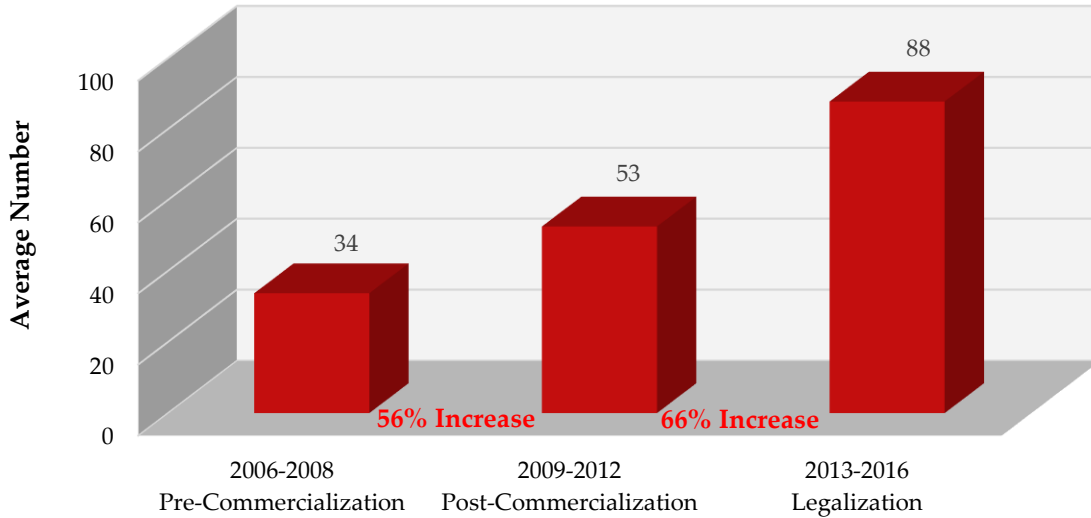
SOURCE: National Highway Traffic Safety Administration, Fatality Analysis Reporting System (FARS), 2006-2011 and Colorado Department of Transportation 2012-2016

Percent of All Traffic Deaths That Were Marijuana-Related when a Driver Tested Positive for Marijuana



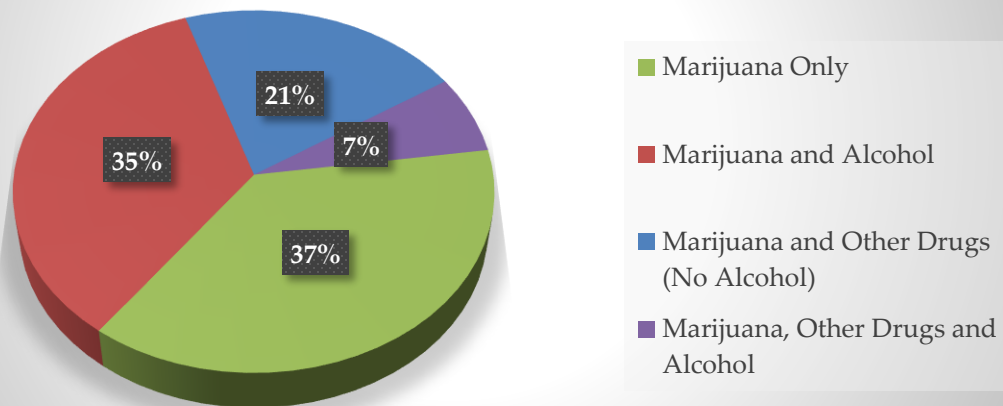
SOURCE: National Highway Traffic Safety Administration, Fatality Analysis Reporting System (FARS), 2006-2011 and Colorado Department of Transportation 2012-2016

Average Number of Traffic Deaths Related to Marijuana when a Driver Tested Positive for Marijuana



SOURCE: National Highway Traffic Safety Administration, Fatality Analysis Reporting System (FARS), 2006-2011 and Colorado Department of Transportation 2012-2016

Drug Combinations for Drivers Positive for Marijuana*, 2016



*Toxicology results for all substances present in individuals who tested positive for

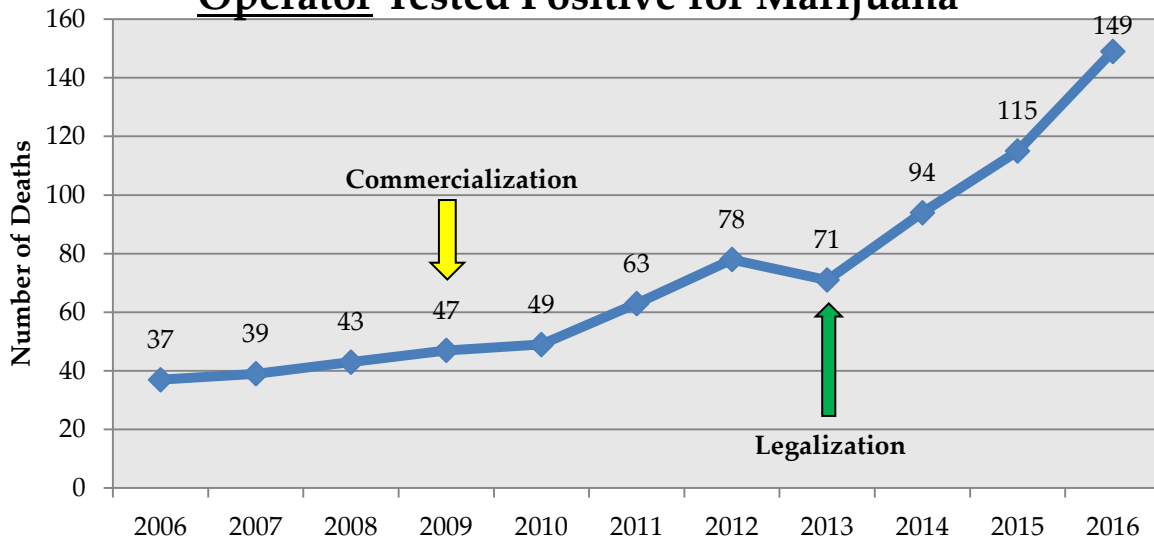
SOURCE: National Highway Traffic Safety Administration, Fatality Analysis Reporting System (FARS), 2006-2011 and Colorado Department of Transportation 2012-2016

Traffic Deaths Related to Marijuana* When an OPERATOR Tested Positive for Marijuana			
Crash Year	Total Statewide Fatalities	Fatalities with Operators Testing Positive for Marijuana	Percent of Total Fatalities
2006	535	37	6.92%
2007	554	39	7.04%
2008	548	43	7.85%
2009	465	47	10.10%
2010	450	49	10.89%
2011	447	63	14.09%
2012	472	78	16.53%
2013	481	71	14.76%
2014	488	94	19.26%
2015	547	115	21.02%
2016	608	149	24.51%

SOURCE: National Highway Traffic Safety Administration, Fatality Analysis Reporting System (FARS), 2006-2011 and Colorado Department of Transportation 2012-2016

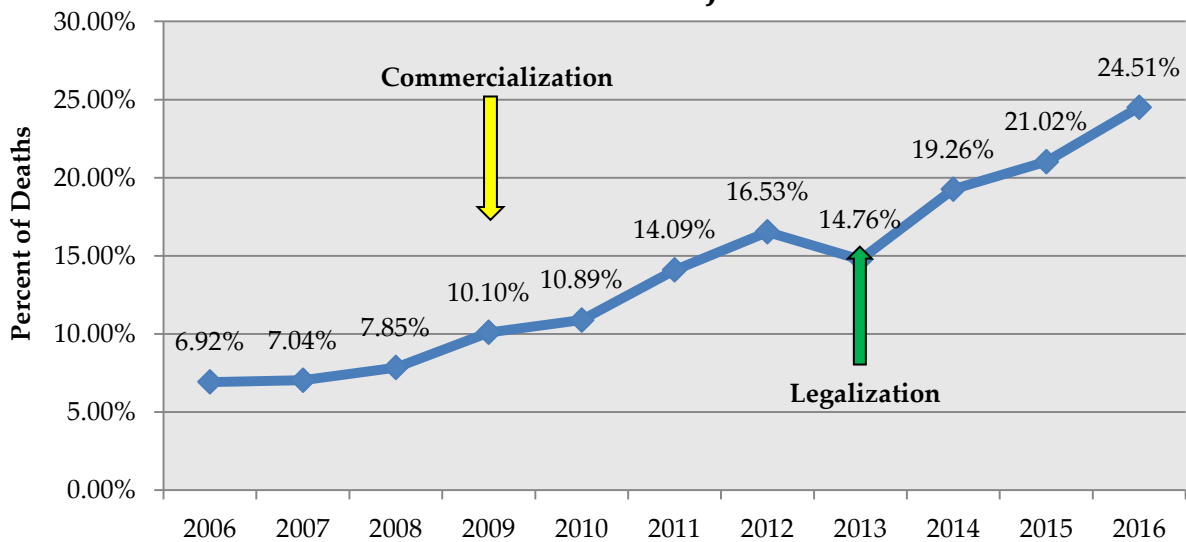
- ❖ In 2016 there were a total of 149 marijuana-related traffic deaths of which:
 - 102 were drivers
 - 19 were passengers
 - 21 were pedestrians
 - 7 were bicyclists

Traffic Deaths Related to Marijuana when an Operator Tested Positive for Marijuana



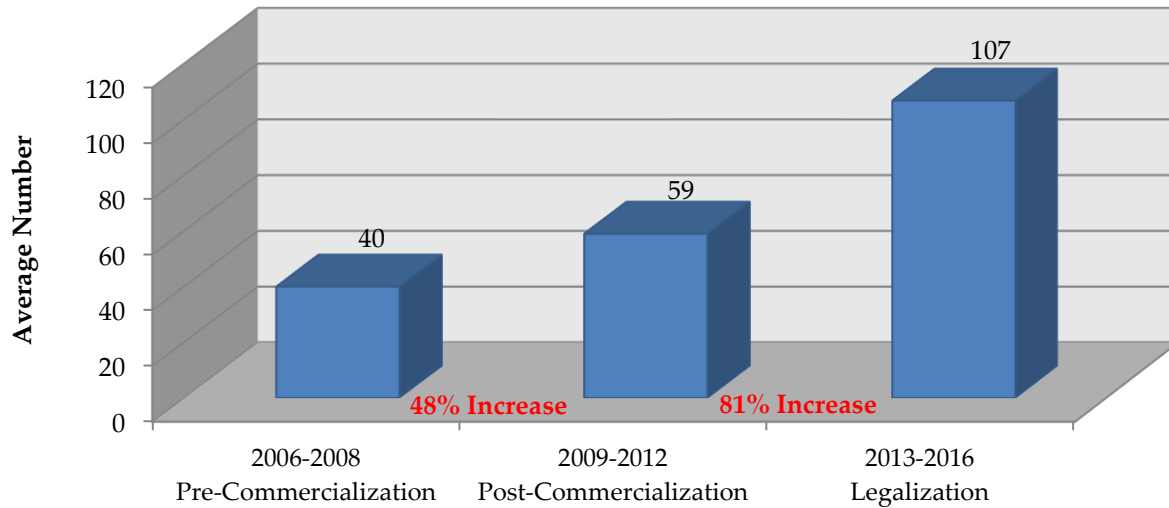
SOURCE: National Highway Traffic Safety Administration, Fatality Analysis Reporting System (FARS), 2006-2011 and Colorado Department of Transportation 2012-2016

Percent of All Traffic Deaths That Were Marijuana-Related when an Operator Tested Positive for Marijuana



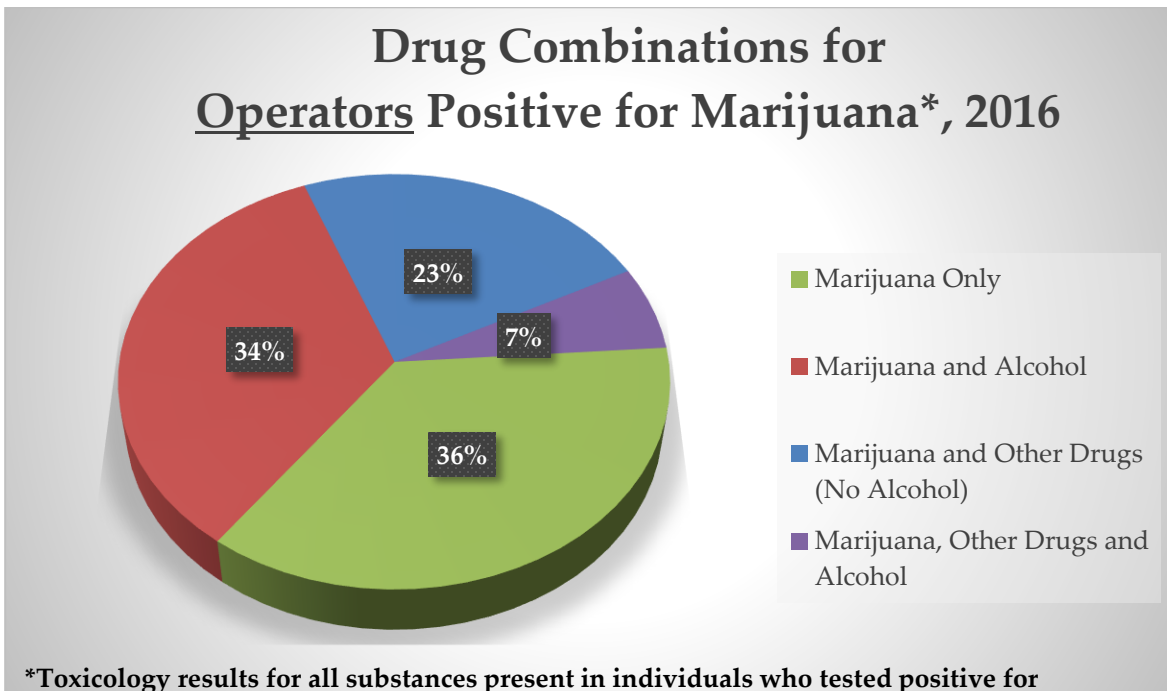
SOURCE: National Highway Traffic Safety Administration, Fatality Analysis Reporting System (FARS), 2006-2011 and Colorado Department of Transportation 2012-2016

Average Number of Traffic Deaths Related to Marijuana when an Operator Tested Positive for Marijuana



SOURCE: National Highway Traffic Safety Administration, Fatality Analysis Reporting System (FARS), 2006-2011 and Colorado Department of Transportation 2012-2016

Drug Combinations for Operators Positive for Marijuana*, 2016

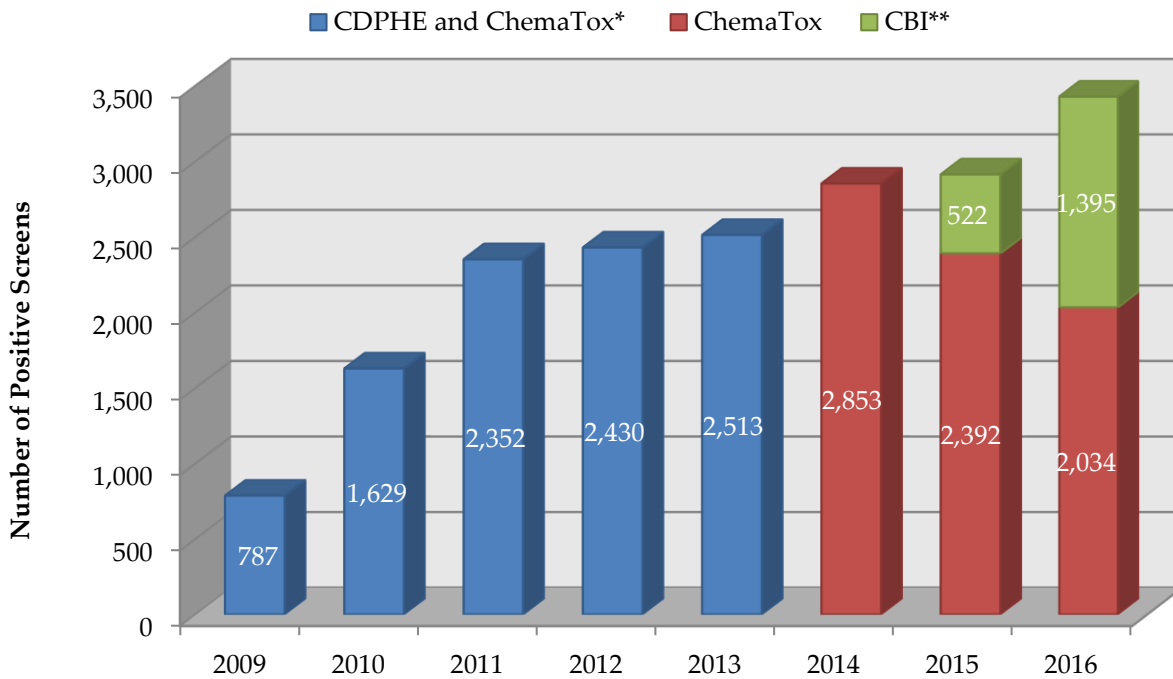


SOURCE: National Highway Traffic Safety Administration, Fatality Analysis Reporting System (FARS), 2006-2011 and Colorado Department of Transportation 2012-2016

Data for Impaired Driving

NOTE: IF SOMEONE IS DRIVING INTOXICATED FROM ALCOHOL AND UNDER THE INFLUENCE OF ANY OTHER DRUG (INCLUDING MARIJUANA), ALCOHOL IS ALMOST ALWAYS THE ONLY INTOXICANT TESTED FOR. WHETHER OR NOT HE OR SHE IS POSITIVE FOR OTHER DRUGS WILL REMAIN UNKNOWN BECAUSE OTHER DRUGS ARE NOT OFTEN TESTED.

Number of Positive Cannabinoid Screens



*Data from the Colorado Department of Public Health and Environment was merged with ChemaTox data from 2009 to 2013. CDPHE discontinued testing in July 2013.

**The Colorado Bureau of Investigation began toxicology operations in July 1, 2015.

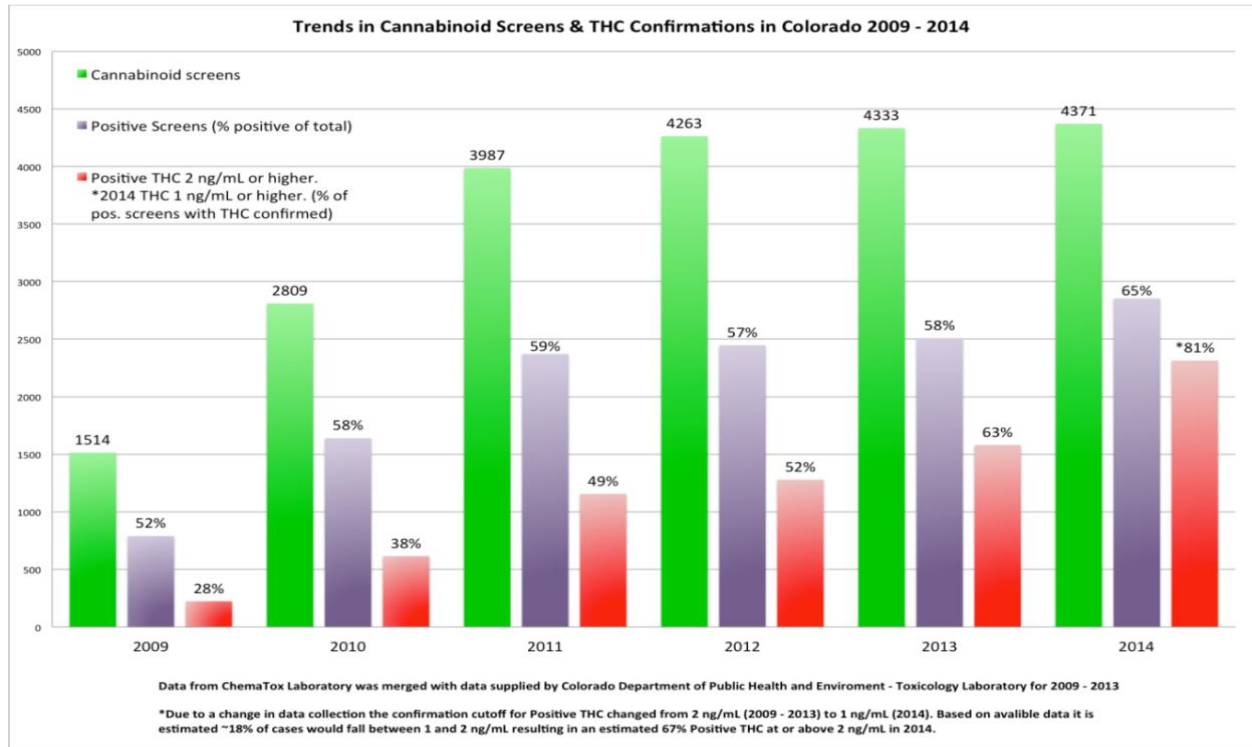
SOURCE: Colorado Bureau of Investigation and Rocky Mountain HIDTA

❖ The above graph is Rocky Mountain HIDTA’s conversion of the following ChemaTox data as well as data from the Colorado Bureau of Investigation’s state laboratory.

NOTE: THE ABOVE GRAPHS INCLUDE DATA FROM CHEMATOX LABORATORY WHICH WAS MERGED WITH DATA SUPPLIED BY COLORADO DEPARTMENT OF PUBLIC HEALTH AND ENVIRONMENT - TOXICOLOGY LABORATORY. THE VAST MAJORITY OF THE SCREENS ARE DUID SUBMISSIONS FROM COLORADO LAW ENFORCEMENT.

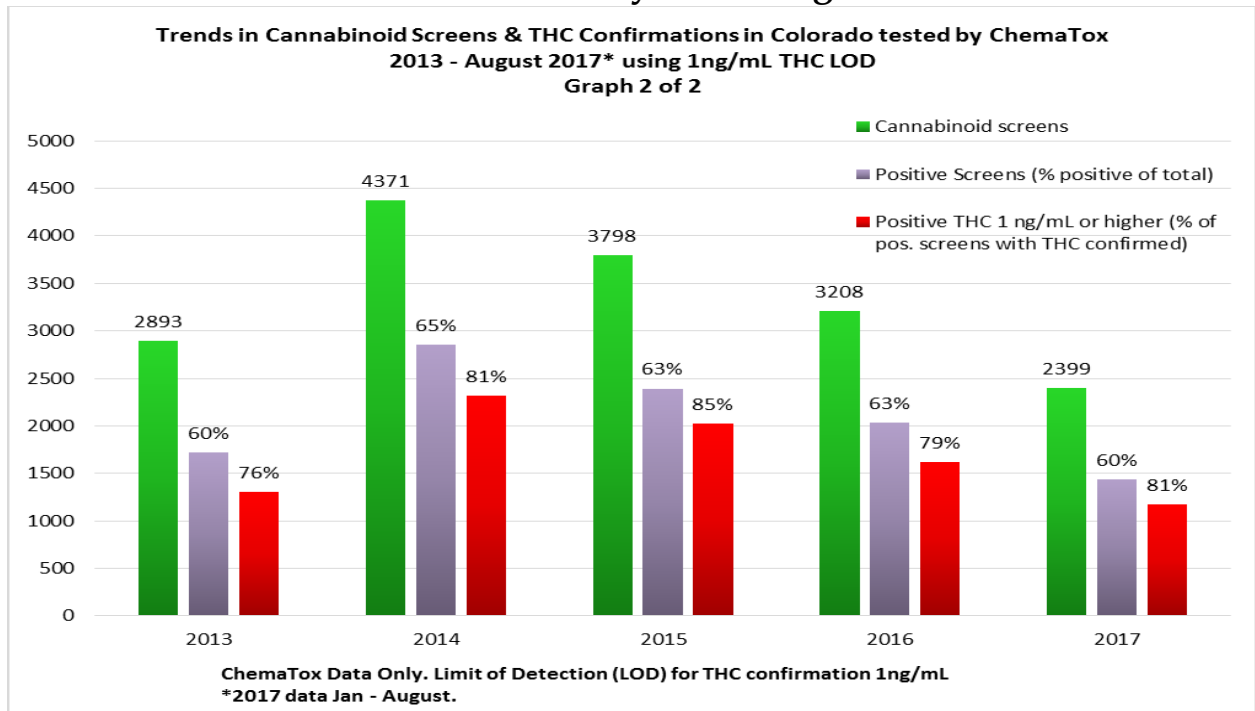
NOTE: COLORADO DEPARTMENT OF PUBLIC HEALTH AND ENVIRONMENT DISCONTINUED TESTING IN JULY 2013. THE COLORADO BUREAU OF INVESTIGATION BEGAN TESTING ON JULY 1, 2015.

ChemaTox and Colorado Department of Public Health and Environment (Data Combined 2009-2013)



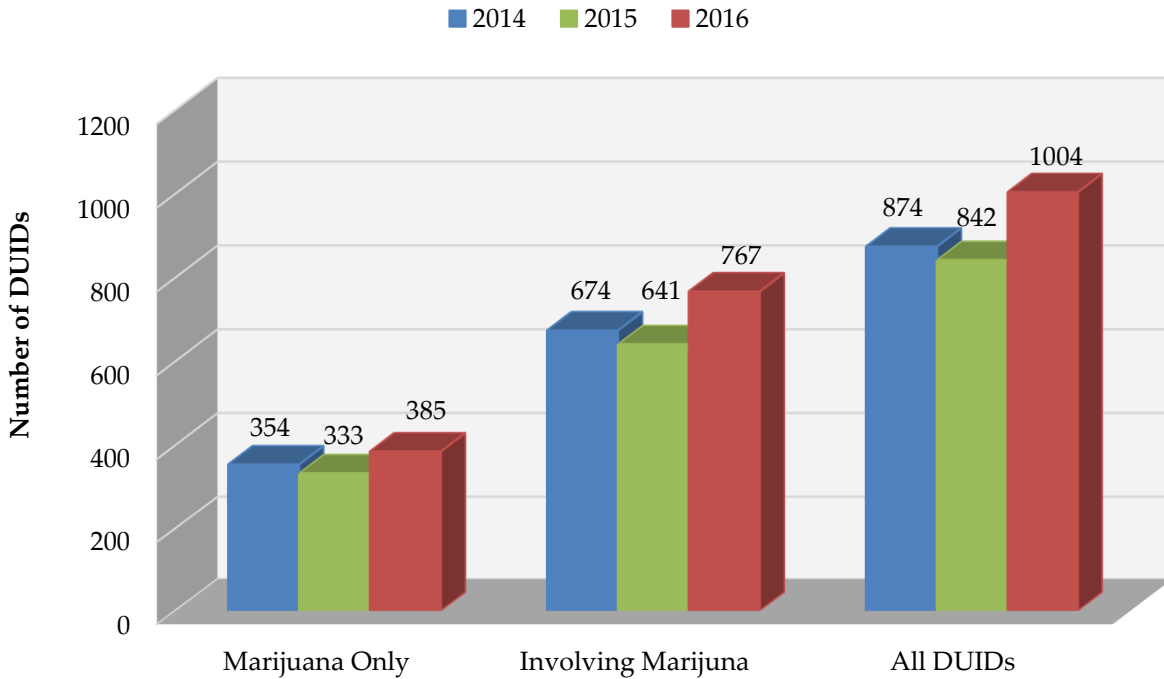
SOURCE: Sarah Urfer, M.S., D-ABFT-FT; ChemaTox Laboratory

ChemaTox Data Only (2013-August 2017)



SOURCE: Sarah Urfer, M.D., D-ABFT-FT, ChemaTox Laboratory

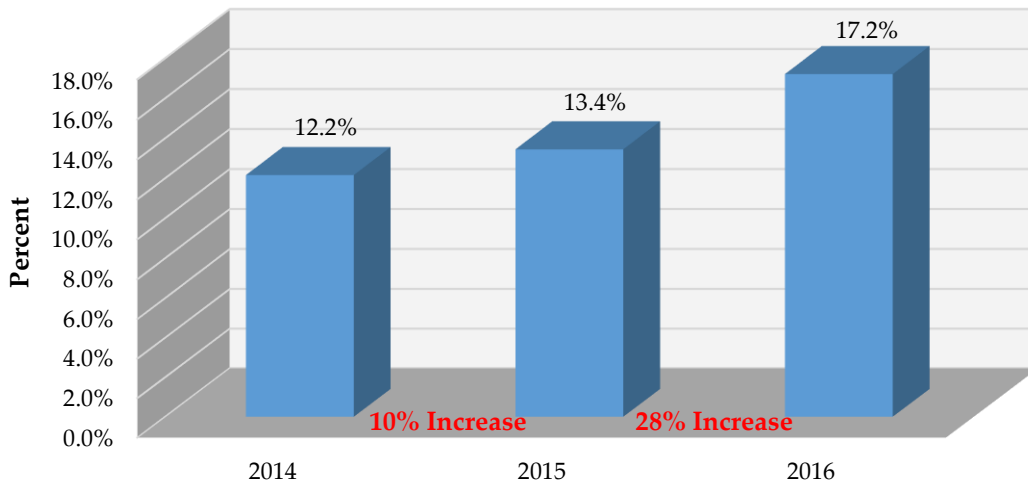
Colorado State Patrol Number of Drivers Under the Influence of Drugs (DUIDs)



SOURCE: Colorado State Patrol, CSP Citations for Drug Impairment by Drug Type

- ❖ In 2016, 76 percent of total DUIDs involved marijuana and 38 percent of total DUIDs involved marijuana only

Marijuana as a Percent of All DUI and DUIDs*



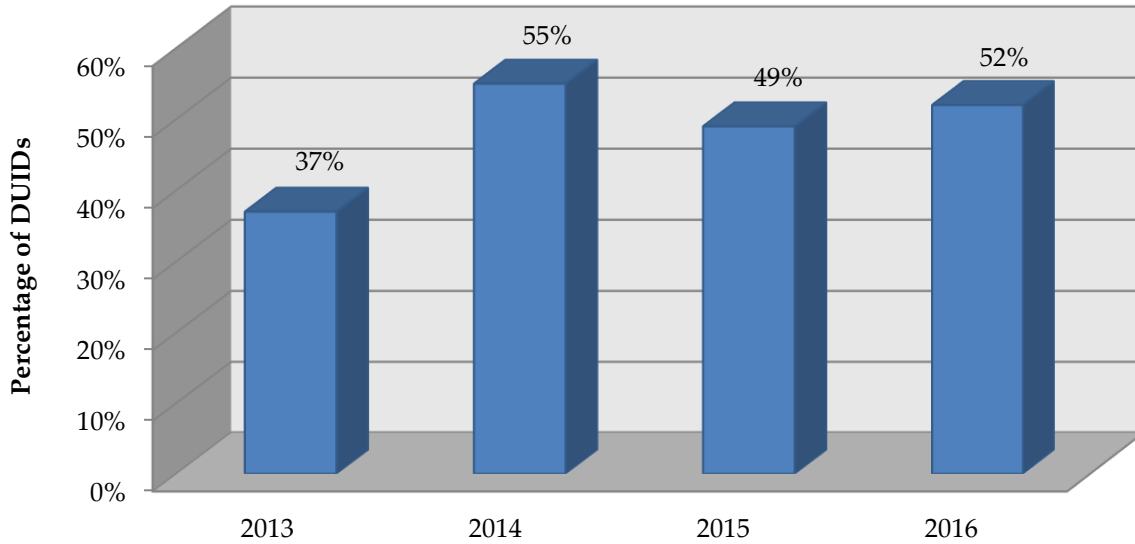
*Driving Under the Influence of Alcohol and Driving Under the Influence of Drugs

SOURCE: Colorado State Patrol, CSP Citations for Drug Impairment by Drug Type

- ❖ In 2016, Colorado State Patrol made about 300 fewer DUI and DUID cases than in 2015.
 - However, marijuana made up 17 percent of the total in 2016 compared to 13 percent of the total in 2015 and 12 percent of the total in 2014.

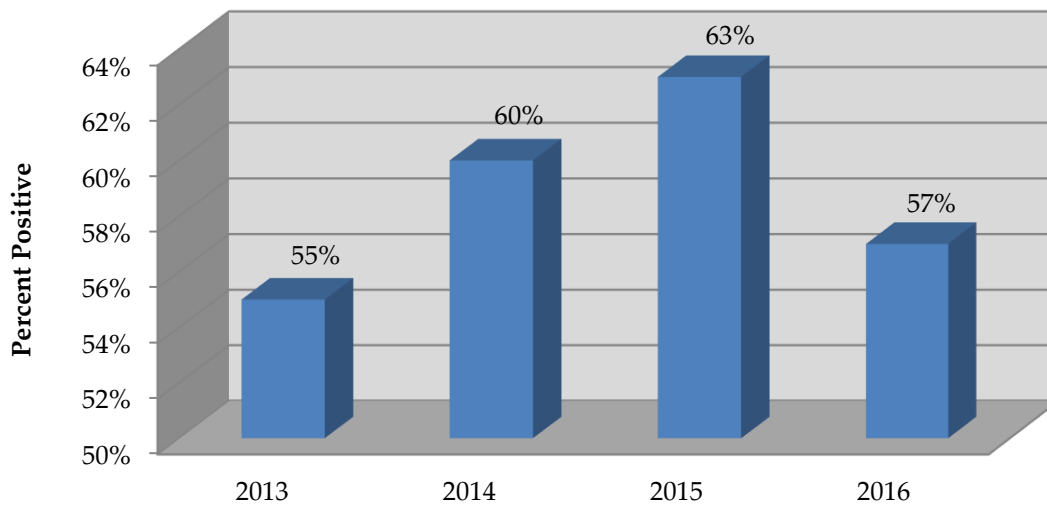
NOTE: "MARIJUANA CITATIONS DEFINED AS ANY CITATION WHERE CONTACT WAS CITED FOR DRIVING UNDER THE INFLUENCE (DUI) OR DRIVING WHILE ABILITY IMPAIRED (DWAI) AND MARIJUANA INFORMATION WAS FILLED OUT ON TRAFFIC STOP FORM INDICATING MARIJUANA & ALCOHOL, MARIJUANA & OTHER CONTROLLED SUBSTANCES, OR MARIJUANA ONLY PRESENT BASED ON OFFICER OPINION ONLY (NO TOXICOLOGICAL CONFIRMATION)." - COLORADO STATE PATROL

Denver Police Department Percent of DUIDs Involving Marijuana



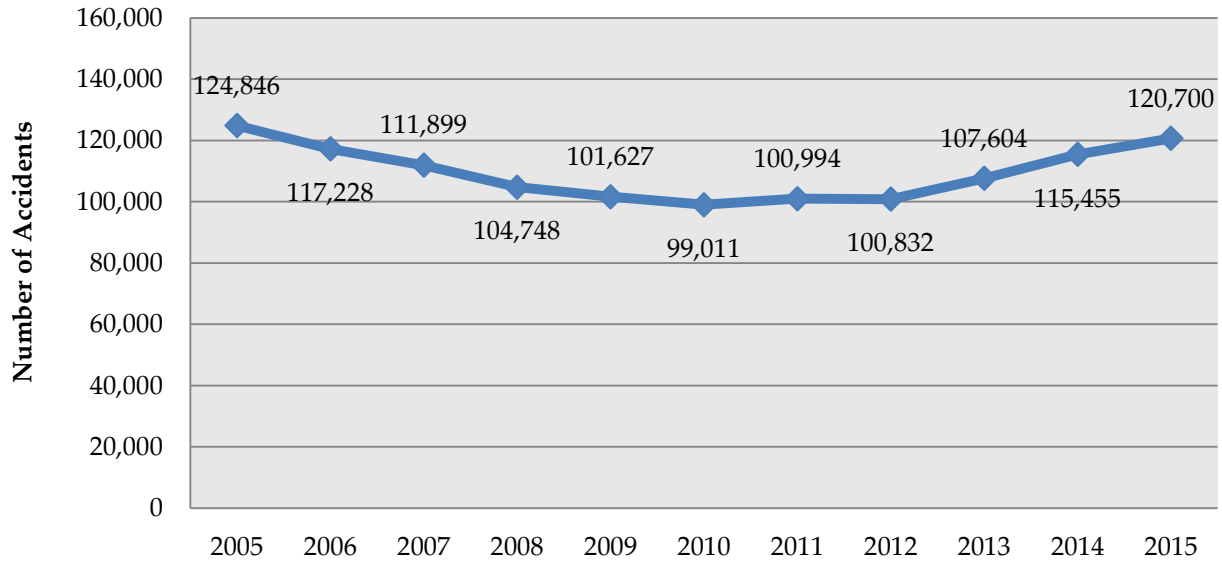
SOURCE: Denver Police Department, Traffic Operations Bureau via Data Analysis Unit

Larimer County Sheriff's Office Percent of DUIDs Involving Marijuana



SOURCE: Larimer County Sheriff's Office, Records Section

Total Number of Traffic Accidents in Colorado



SOURCE: Colorado Department of Transportation (CDOT)

❖ Per CDOT, the total number of traffic accidents in Colorado for 2016 was not available at the time of this report’s publication.

NOTE: ROCKY MOUNTAIN HIDTA HAS BEEN ASKED ABOUT THE TOTAL NUMBER OF TRAFFIC ACCIDENTS SEEN IN COLORADO SINCE LEGALIZATION AND IS, THEREFORE, PROVIDING THE DATA. ROCKY MOUNTAIN HIDTA IS NOT EQUATING ALL TRAFFIC ACCIDENTS WITH MARIJUANA LEGALIZATION.

Related Costs

Economic Cost of Vehicle Accidents Resulting in Fatalities: According to the National Highway Traffic Safety Administration report, *The Economic and Societal Impact of Motor Vehicles Crashes, 2010*, the total economic costs for a vehicle fatality is \$1,398,916. That includes property damage, medical, insurance, productivity, among other considerations.²

Cost of Driving Under the Influence: The cost associated with the first driving-under-the-influence (DUI) offense is estimated at \$10,270. Costs associated with a DUID (driving-under-the-influence-of-drugs) are very similar to those of a DUI/alcohol.³

Case Examples

Traffic Fatalities Linked to Marijuana are up Sharply in Colorado: Since the legalization of recreational marijuana, the number of fatal accidents involving drivers who tested positive for marijuana has “increased at a quicker rate than the increase of pot usage in Colorado since 2013.” Many family members and loved ones of victims involved in these fatal accidents are speaking out about the inability for authorities to properly test for impairment.

“I never understood how we’d pass a law without first understanding the impact better,’ said Barbara Deckert, whose fiancée, Ron Edwards, was killed in 2015 in a collision with a driver who tested positive for marijuana use below the legal limit and charged only with careless driving. ‘How do we let that happen without having our ducks in a row? And people are dying.’”

On January 13, 2016 just past 2 a.m., “Cody Gray, 19, and his running buddy, Jordan Aerts, 18, were joyriding around north Denver in a car they had stolen a few hours earlier. Ripping south along Franklin Street, where it curves hard to the right onto National Western Drive, Gray lost control, drove through a fence and went straight onto the bordering railroad tracks. The car rolled and Gray was ejected. Both died.” Corina Triffet, mother of Cody Gray, did not know that an autopsy done revealed that her son had 10ng/mL, twice the legal limit, of THC in his system when he died, until the *Denver Post* contacted her. “There’s just no limit on what they can take, whether it’s smoking it or edibles,” said Triffet and “I just can’t imagine people are getting out there to drive when they’re on it. But my son apparently did, and there it is.”

Too little is understood about how marijuana impairs a person’s ability to operate a vehicle. Due to this lack of understanding the *Denver Post* stated, “Even coroners who occasionally test for the drug bicker over whether to include pot on a driver’s death certificate.”

“No one’s really sure of the broad impact because not all the drivers are tested, yet people are dying,’ said Montrose County Coroner Dr. Thomas Canfield. ‘It’s this false science that marijuana is harmless, ... but it’s not, particularly when you know what it does to your time and depth perception, and the ability to understand and be attentive to what’s around you.’”

Colorado now mandates that traffic fatalities within the state be analyzed to see what role drugs played in the crashes. State police are re-analyzing samples from suspected drunk drivers in 2015 and a *Denver Post* source stated, “more than three in five also tested positive for active THC.” However, testing remains expensive and most departments will stop testing when a driver tests positive for alcohol impairment.¹

20-Year-Old Colorado Man Kills 8-Year-Old Girl While Driving High: A former star athlete at Mead High School accused of fatally running over an 8-year-old Longmont girl on her bike told police he thought he'd hit the curb — until he saw the girl's stepfather waving at him, according to an arrest affidavit released July 29, 2016.

Kyle Kenneth Couch, 20, turned right on a red light at the same time Peyton Knowlton rolled into the crosswalk on May 20, 2016. The girl was crushed by the rear right tire of the Ford F-250 pickup, and died from her injuries. Couch, of Longmont, surrendered to police Friday on an arrest warrant that included charges of vehicular homicide and driving under the influence of drugs. One blood sample collected more than two hours after the collision tested positive for cannabinoids, finding 1.5 nanograms of THC per milliliter of blood. That's below Colorado's legal limit of 5 nanograms per milliliter. But Deputy Police Chief Jeff Satur said the law allows the DUI charge when those test results are combined with officer observations of impaired behavior and marijuana evidence found inside Couch's pickup.

The presumptive sentencing range for vehicular homicide, a Class 3 felony, is four to 12 years in prison.

Couch attends Colorado Mesa University where, in 2015, he appeared in six games as a linebacker as a red shirt freshman for the football team. In 2013, Couch became the first athlete from Mead High School to win a state title when he captured the Class 4A wrestling championship at 182 pounds. He was named the *Times-Call's* Wrestler of the Year that season and was able to defend his crown a year later, winning the 4A title at 195 pounds to cap his senior season with a 49-1 record.

Couch, now 20, has been arrested on suspicion of vehicular homicide and driving under the influence of marijuana in connection with the death of 8-year-old Peyton Knowlton.⁴

Valedictorian and Friends Die in Fatal Crash after Using Marijuana: An 18 year old recent valedictorian of St. John's Military School, Jacob Whitting, was driving his truck with his friends when he “lost control and ran off the road, rolling down an embankment and into a creek.” Whitting, along with 2 of the 3 other passengers, ages 16 and 19, died in the crash. According to the toxicology report, all three deceased teenagers had taken Xanax and marijuana. Whitting's toxicology “recorded THC levels at higher than 5 nanograms or more of active THC (delta-9 tetrahydrocannabinol) per milliliter of blood, which under Colorado law is considered impaired while driving.”⁵

Man Killed, Woman and Two Children Injured after Vehicle Careens off I-76:

Anthony Griego, 28, “was driving very aggressively and speeding, and had been trying to pass a semi-truck using the shoulder when he lost control,” according to Colorado State Patrol, just before 7 a.m. on December 27, 2016. “Troopers say Griego lost control, blew through a guardrail, went airborne and flipped the truck nearly 20 feet down onto the road below.” Both Griego and the adult female passenger were not wearing seatbelts and were ejected from the vehicle. Griego died at the scene. The female passenger suffered a shattered pelvis, broke her spine in three places, and was in a coma. The two children passengers, 7 year-old Jazlynn, had a punctured lung and, 6 year-old Alexis, had a fractured skull and broken collar bone. An autopsy of Griego showed he had 19ng/mL of THC in his system at the time of the crash. That is nearly 4 times the legal limit.^{6,7}

“I fell asleep” Boulder Teen Pleads Guilty to Vehicular Homicide: Quinn Hefferan faces up to two years in the Colorado Department of Youth Corrections for killing Stacy Reynolds (30) and Joe Ramas (39) on May 7th 2016. Hefferan, who was 17 years old at the time of the accident, told the judge he “had split a joint with his friends” and fell asleep at the wheel while trying to make his midnight curfew. Hefferan rear ended the couple “at speeds upwards of 45 miles per hour... police did not find any evidence the teen driver tried to brake before the crash.” According to the toxicology report, he had 4 times the legal limit of THC in his system. Cassie Drew, a friend of the couple says, “It’s not about resentment or getting back, or feeling angry. [Hefferan’s] life is forever changed and we recognize that, we recognize how much this will impact him and his family.”^{8,9}

Middle School Counselor Killed by High Driver as She Helped Fellow Motorist:

On July 10, 2016, a counselor at Wolf Point Middle School, in Montana, was hit by a car and killed by an impaired driver in Colorado as she stopped to help another driver. The Jefferson County coroner in Colorado identified the woman as Jana Elliott, 56. She died of multiple blunt force trauma injuries. Elliott is identified as a counselor for the sixth grade in Montana.

The driver who hit Elliott, identified as Curtis Blodgett, 24, is being charged with vehicular homicide for allegedly smoking marijuana prior to the crash, according to *The Denver Post*. Blodgett allegedly admitted he had smoked marijuana that day. Detectives are working to determine whether Blodgett was legally impaired at the time of the crash. “How much he had in his system and what he had in his system will determine whether additional charges could be filed,” Lakewood Police Spokesman Steve Davis told *The Post* (subsequent testing revealed Blodgett had 4.8 ng/mL of THC in his system).

According to the Lakewood Police Department Traffic Unit, Elliott was driving on US Highway 6 when a vehicle traveling in the left lane lost the bicycle it was carrying on its top. The driver of the vehicle stopped to retrieve the bike and Elliott stopped along the shoulder as well to help. After they retrieved the bicycle and were preparing to drive away, another vehicle rear ended Elliott's vehicle at a speed of 65 mph. Elliott was killed in the crash.¹⁰

Suspected DUI Driver Runs A Red Light: On August 30th, 2017, at around 5:30 a.m. a driver in a Toyota 4Runner ran a red light and crashed into a public transit bus. Two people were injured in the crash. Police investigating the crash found "marijuana in the 4Runner and the crash is being investigated as a possible DUI for alcohol and marijuana." The typically busy intersection in Wheat Ridge, CO had to be closed down for several hours during rush hour.¹¹

For Further Information on Impaired Driving See Page 147

Sources

¹ David Migoya, "Exclusive: Traffic fatalities linked to marijuana are up sharply in Colorado. Is legalization to blame?" *The Denver Post*, August 25th, 2017, <<http://www.denverpost.com/2017/08/25/colorado-marijuana-traffic-fatalities/>>, accessed August 25th, 2017.

² National Center for Statistics and Analysis, "The Economic and Societal Impact Of Motor Vehicle Crashes," National Highway Traffic Safety Administration, Washington, DC, revised May 2015, <<https://crashstats.nhtsa.dot.gov/Api/Public/ViewPublication/812013>>, accessed August 31st, 2017.

³ *Cost of a DUI* brochure, <<https://www.codot.gov/library/brochures/COSTDUI09.pdf/view>>, accessed February 19, 2015.

⁴ Amelia Arvesen, *Times-Call*, July 29, 2016, "Driver accused of killing Longmont girl riding bike thought he'd hit curb," <http://www.timescall.com/news/crime/ci_30185142/driver-accused-killing-longmont-girl-bike-thought-hed>," accessed July 29, 2016.

⁵ Yesenia Robles, "Autopsy shows teens in fatal Conifer crash had traces of Xanax and marijuana in their system," *The Denver Post*, July 7th 2016, <<http://www.denverpost.com/2016/07/07/teens-conifer-crash-traces-drugs-thc/>>," accessed August 28th, 2017.

⁶ Allison Sylte, "Man killed, woman and two children injured after vehicle careens off I-76," *9NEWS*, December 27, 2016, <<http://www.9news.com/traffic/man-killed-woman-and-two-children-injured-after-vehicle-careens-off-i-76/379100251>>," accessed September 25, 2017.

⁷ Macradee Aegerter, "CSP: Driver who went off elevated section of I-76 may have been high," *FOX31 Denver*, December 28, 2016, <<http://kdvr.com/2016/12/28/csp-marijuana-may-have-been-contributing-factor-in-deadly-crash/>>," accessed September 25, 2017.

⁸ Michell Byars, "'I fell asleep': Boulder teen pleads guilty to vehicular homicide, DUI in crash that killed 2," *The Daily Camera*, December 16th, 2016, <http://www.dailycamera.com/news/boulder/ci_30665690/quinn-hefferan-boulder-fatal-crash-dui>," accessed August 23, 2017.

⁹ Lauren DiSpirito, "Teen Accused Of Being Stoned In Crash That Killed Boulder Couple," *CBS Denver*, June 11th 2016, <<http://Denver.cbslocal.com/2016/06/11/stacey-reynolds-joe-rama-fatal-crash/>>," accessed August 23rd, 2017.

¹⁰ Aja Goare, "Wolf Point school counselor killed by car while helping other driver in Colorado," *KTVS.com*, July 13, 2016, <<http://www.ktvq.com/story/32440083/wolf-point-school-counselor-killed-by-car-while-helping-other-driver-in-colorado>>," accessed July 13, 2016.

¹¹ Chuck Hickey, "Police: Suspected DUI driver runs red light, crashed into RTD bus in Wheat Ridge," *Fox 31 Denver*, August 30th 2017, <<http://kdvr.com/2017/08/30/rtd-bus-3-vehicles-involved-in-wheat-ridge-crash/>>," accessed August 30th, 2017.

SECTION 2: Youth Marijuana Use

Some Findings

- Youth past month marijuana use **increased 12 percent** in the three-year average (2013-2015) since Colorado legalized recreational marijuana compared to the three-year average prior to legalization (2010-2012).
- The latest 2014/2015 results show Colorado youth ranked **#1** in the nation for past month marijuana use, up from **#4** in 2011/2012 and **#14** in 2005/2006.
- Colorado youth past month marijuana use for 2014/2015 was **55 percent higher** than the national average compared to **39 percent higher** in 2011/2012.
- The top ten states with the highest rate of current marijuana youth use were all medical marijuana states, whereas the bottom ten were all non-medical-marijuana states.

Surveys NOT Utilized

- ❖ **Rocky Mountain HIDTA did not use the following datasets in this report because of the following reasons:**

Healthy Kids Colorado Survey (HKCS)

The HKCS shows a 7.6 percent increase in student marijuana use from 2013 (19.7 percent) to 2015 (21.2 percent). According to a front page article in *The Denver Post* (June 21, 2016), the increase was not statistically significant and thus “Pot use among Colorado teens flat.” In fact, *The Denver Post* released an editorial on June 22, 2016 titled “Colorado’s good news on teen pot use.” An analysis of the data paints a different picture of student marijuana use in Colorado.

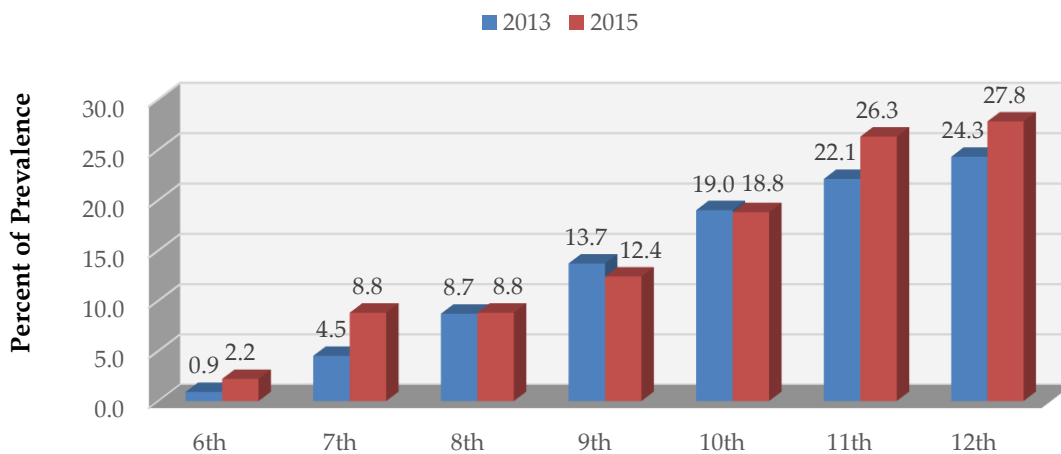
Some concerns with the HKCS include:

- Jefferson County (the 2nd largest school district), Douglas County (the 3rd largest school district), El Paso County (Colorado Springs, 2nd largest metro area), and Weld County results were listed as N/A which means data not available due to low participation in the region.

NOTE: This is a similar reason why HKCS results were considered unweighted by the national YRBS survey.

- In 2015 the HKCS survey had a response rate of 46 percent, which is well below the 60 percent rate required by YRBS. Even though HKCS samples a large number of students, their participation rate is below the industry standard for weighted data.
- From 2013 to 2015, marijuana use:
 - High School – **increased 14 percent** among seniors and **19 percent** among juniors.
 - Middle School – **increased 96 percent** for 7th Graders and **144 percent** among 6th Graders.

Healthy Kids Colorado Survey: Current Marijuana Use for High School and Middle School Students in Colorado



SOURCE: Colorado Department Public Health and Environment, Healthy Kids Colorado Survey

For a detailed analysis and additional data, go to www.rmhidta.org and click on the Reports tab to read “Colorado Youth Marijuana Use: Up – Down – Flat? Examine the Data and You Decide!”

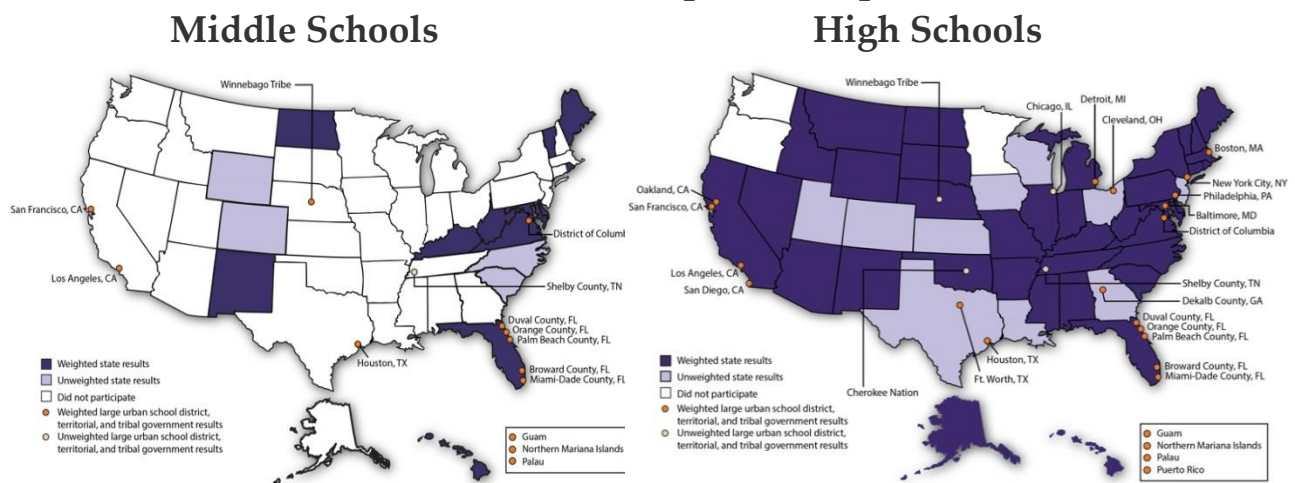
Monitoring the Future (MTF) Study

Although Colorado cited Monitoring the Future data in a response letter to Attorney General Jeff Sessions, the study is designed to be nationally-representative and not state-representative. MTF does not provide usable estimates for the specific state of Colorado because of the state’s relatively small size. Colorado is only 1.6 percent of the total U.S. population; thus, the sampling would only be 1.6 percent of Colorado schools (400) or about 6 schools per year. Since 2010, the survey sampled an average of 4.6 Colorado schools. In 2014 and 2015, there were four schools surveyed each year of which three were eighth grade. Therefore, the MTF study is not useful for state data pertaining to Colorado for school-age drug use data and trends.

Centers for Disease Control Youth Risk Behavior Survey (YRBS)

In 2015, Colorado fell short of the required 60 percent participation rate and was, therefore, not included with weighted data in this survey. Additionally, upon further review, it was discovered that since 1991 the state of Colorado has only been represented in the High School YRBS survey with weighted data four times. Since 1995, Colorado has only been represented in the Middle School YRBS survey by weighted data twice. States that participated in the 2015 Middle School and High School YRBS surveys are represented in dark purple in the below maps. It should be noted, in 2015, high schools in the following ten states were not included with weighted high school data: Utah, Colorado, Kansas, Texas, Louisiana, Georgia, Iowa, Wisconsin, Ohio, and New Jersey. Washington, Oregon, and Minnesota did not participate in the survey.

Centers for Disease Control Youth Risk Behavior Survey 2015 YRBS Participation Map

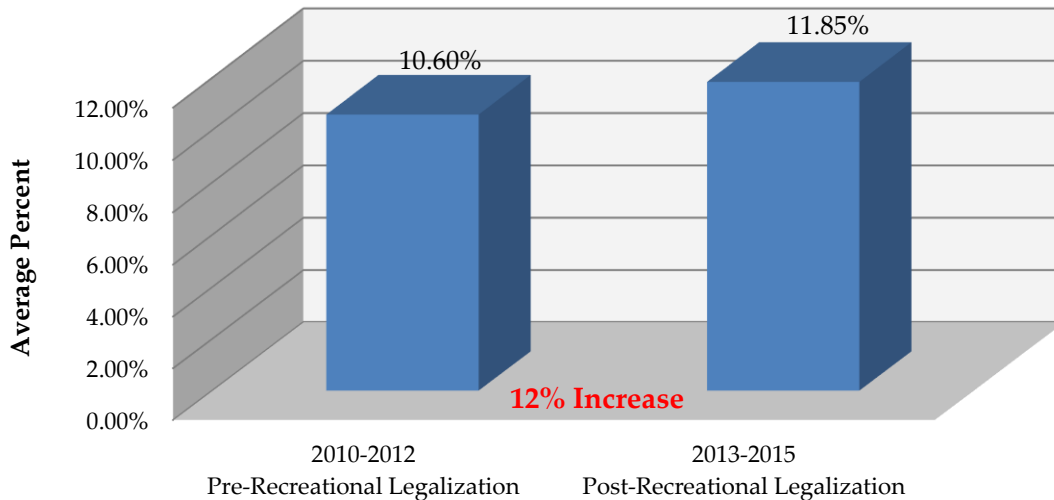


SOURCE: Centers for Disease Control and Prevention, Adolescent and School Health, YRBS Participation Maps and History <http://www.cdc.gov/healthyyouth/data/yrbs/participation.htm>

Use Data

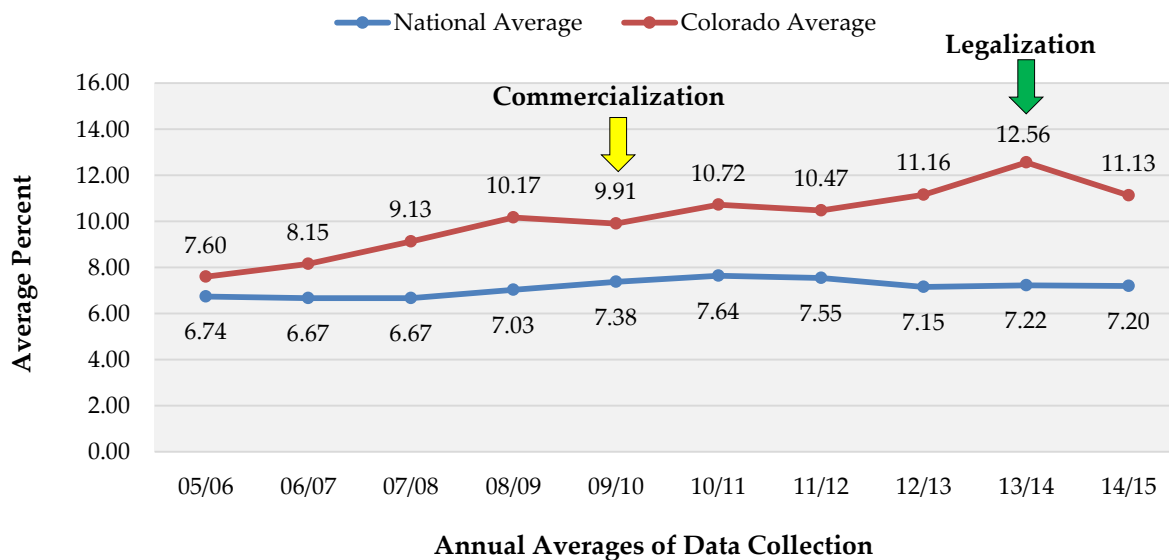
Youth Ages 12 to 17 Years Old

Average Past Month Use of Marijuana Youth Ages 12 to 17 Years Old



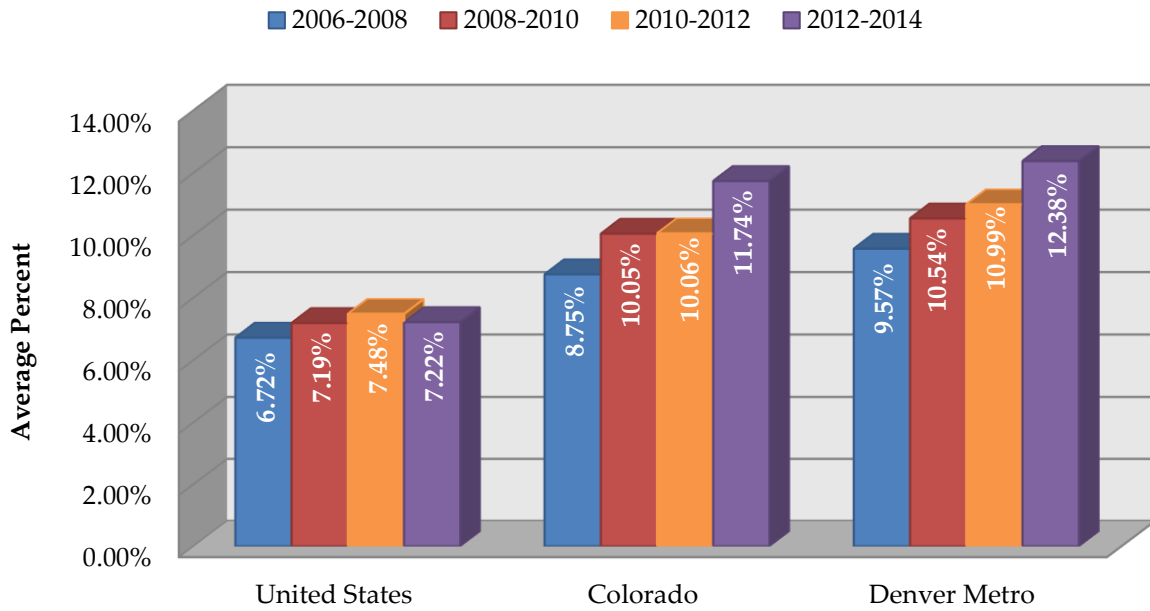
SOURCE: SAMHSA.gov, National Survey on Drug Use and Health 2014 and 2015

Past Month Marijuana Use Youth Ages 12 to 17 Years Old



SOURCE: SAMHSA.gov, National Survey on Drug Use and Health 2014 and 2015

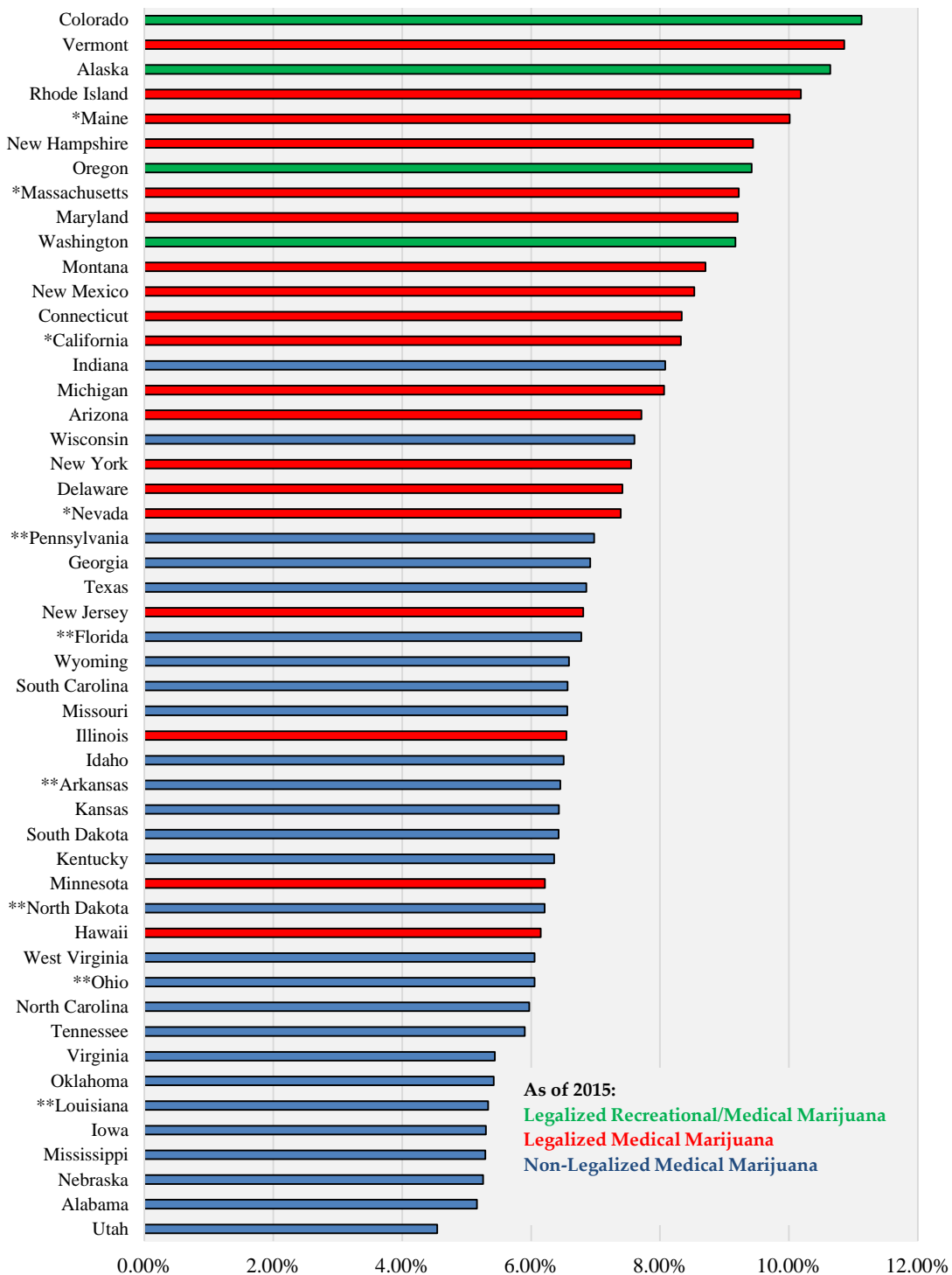
Prevalence of Past 30-Day Marijuana Use Youth Ages 12 to 17 Years Old



SOURCE: SAMHSA.gov, National Survey on Drug Use and Health, Substate Region Estimates 2006-2014

NOTE: SUB-STATE DATA IS ONLY AVAILABLE FROM THE NATIONAL SURVEY ON DRUG USE AND HEALTH IN THE ABOVE TIMEFRAMES.

Past Month Usage, 12 to 17 Years Old, 2014/2015

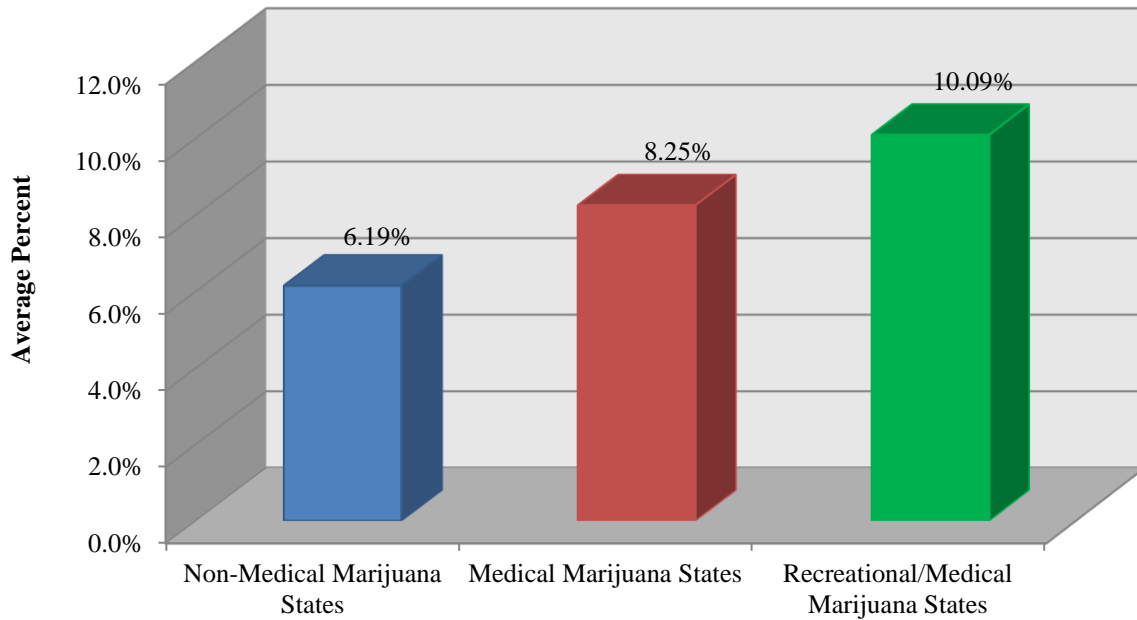


SOURCE: SAMHSA.gov, National Survey on Drug Use and Health 2014 and 2015

NOTE: *California, Massachusetts, Maine and Nevada voted to legalize recreational marijuana in November 2016

**States that had legislation for medical marijuana signed into effect during 2015

Average Past Month Use Youth Ages 12 to 17 Years Old, 2014/2015



SOURCE: SAMHSA.gov, National Survey on Drug Use and Health 2014 and 2015

Past Month Marijuana Use Youth Ages 12 to 17 Years Old, 2014/2015

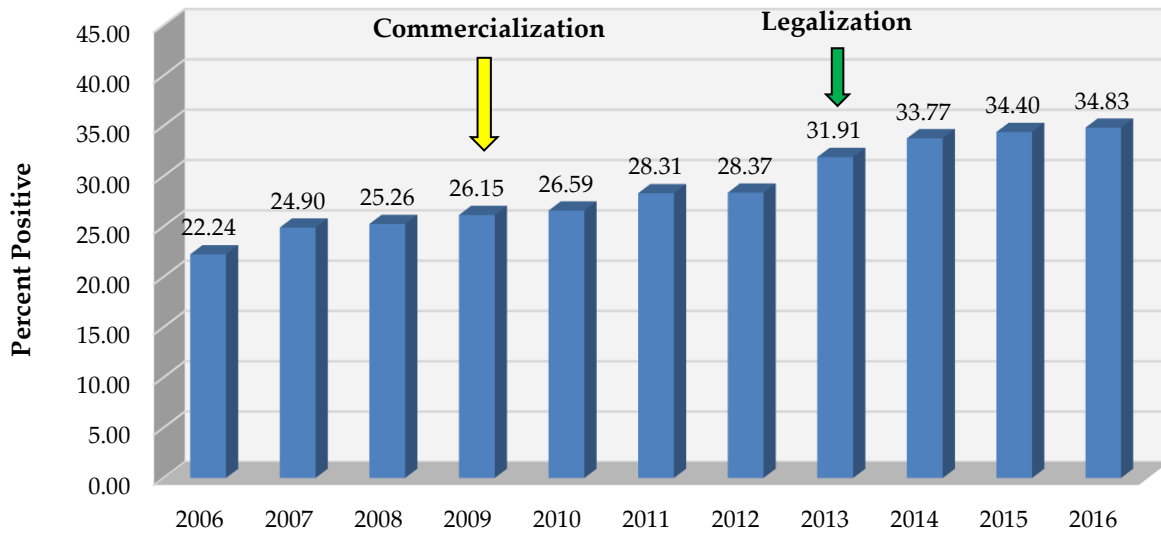
Top 10 (Medical/Recreational States)	Bottom 10 (Non-Medical or Recreational States)
---	---

National Average = 7.20%

- | | |
|--------------------------|----------------------------|
| 1. Colorado – 11.13% | 41. North Carolina – 5.97% |
| 2. Vermont – 10.86% | 42. Tennessee – 5.90 % |
| 3. Alaska – 10.64% | 43. Virginia – 5.44% |
| 4. Rhode Island – 10.19% | 44. Oklahoma – 5.42% |
| 5. Maine – 10.01% | 45. Louisiana – 5.33% |
| 6. New Hampshire – 9.44% | 46. Iowa – 5.30% |
| 7. Oregon – 9.42% | 47. Mississippi – 5.29% |
| 8. Massachusetts – 9.22% | 48. Nebraska – 5.26% |
| 9. Maryland – 9.20% | 49. Alabama – 5.16% |
| 10. Washington – 9.17% | 50. Utah – 4.54% |

SOURCE: SAMHSA.gov, National Survey on Drug Use and Health 2014 and 2015

Colorado Probation Percent of All Urinalysis Tests Positive for Marijuana Youth Ages 10 - 17 Years Old



SOURCE: Division of Probation Services/State Court Administrator's Office

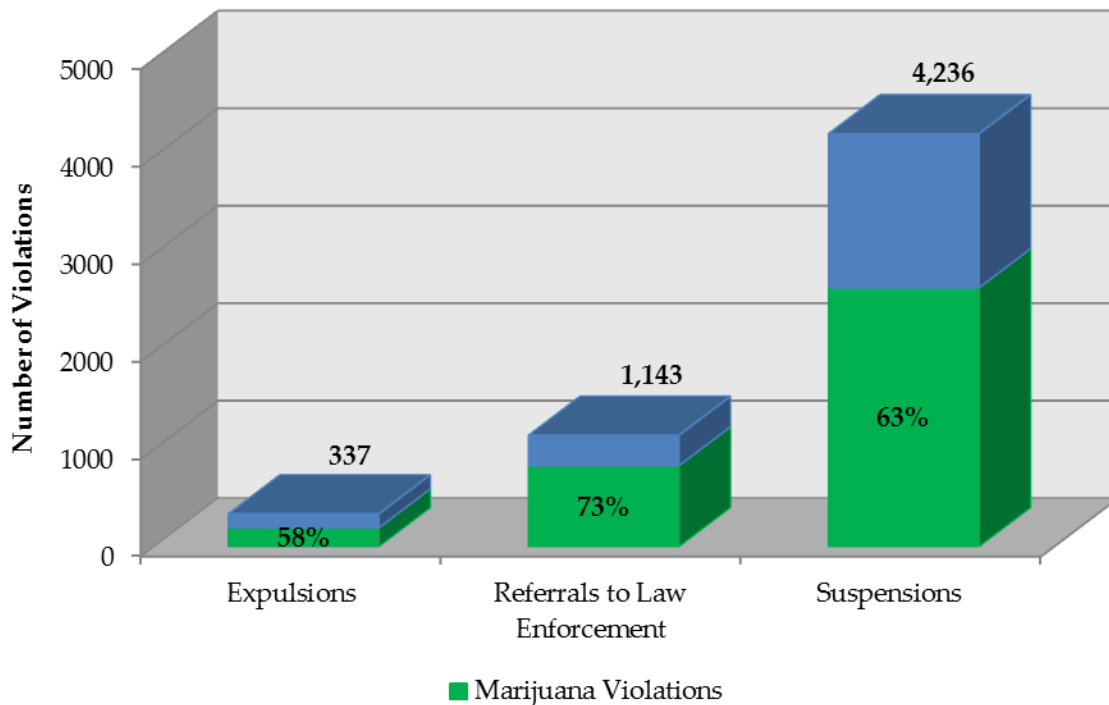
School Data

Impact on School Violation Numbers

❖ “Note that Senate Bill 12-046 and House Bill 12-1345 targeted reform of ‘zero tolerance’ policies in schools, and appear to have decreased expulsions, suspensions and referrals to law enforcement.” – Colorado Department of Public Safety, *Marijuana Legalization in Colorado: Early Findings, A Report Pursuant to Senate Bill 13-283*, March 2016

Data for the 2016-2017 school year were not available by the time of release for this report.

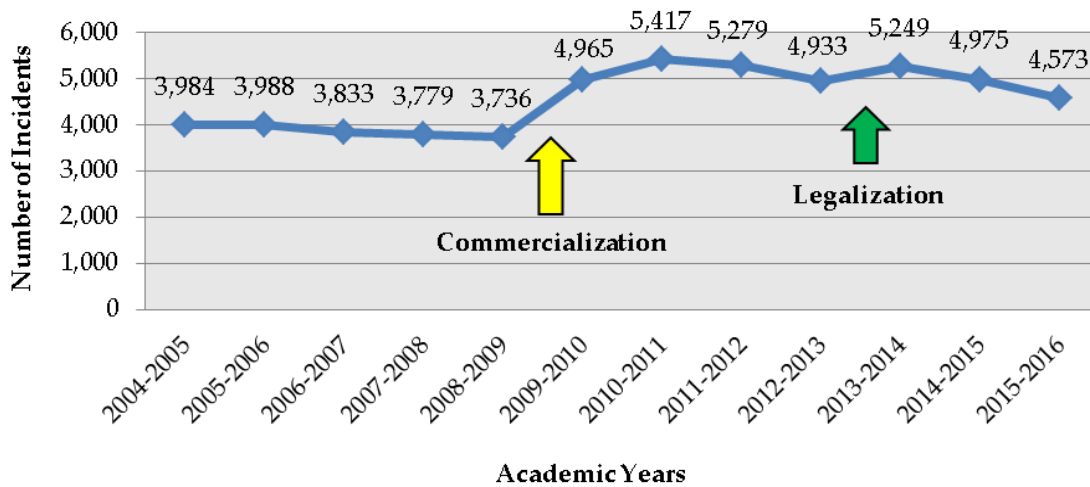
All Drug Violations,
2015-2016 School Year



SOURCE: Colorado Department of Education, 10-Year Trend Data: State Suspension and Expulsion Incident Rates and Reasons

NOTE: THE COLORADO DEPARTMENT OF EDUCATION BEGAN COLLECTING MARIJUANA VIOLATIONS SEPARATELY FROM ALL DRUG VIOLATIONS DURING THE 2015-2016 SCHOOL YEAR.

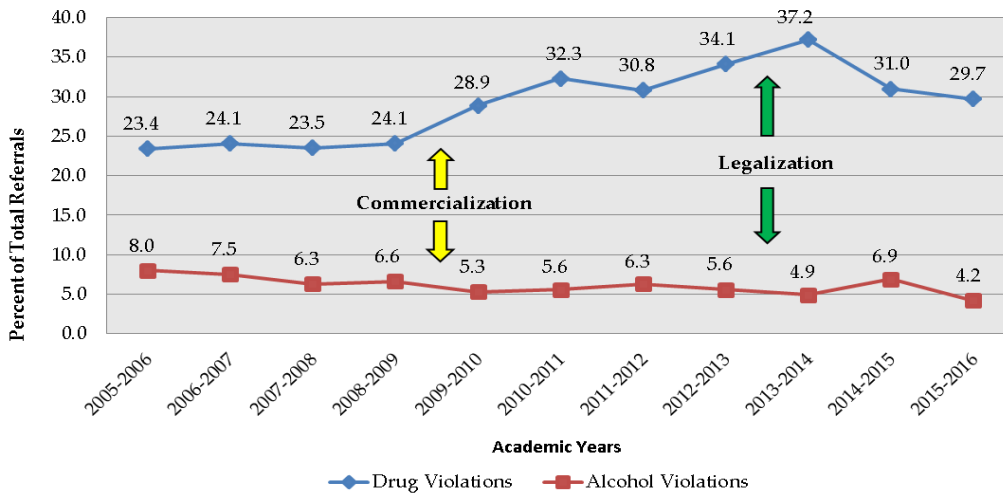
Drug-Related Suspensions/Expulsions



SOURCE: Colorado Department of Education, 10-Year Trend Data: State Suspension and Expulsion Incident Rates and Reasons

- ❖ In school year 2015/2016, 62 percent of all drug expulsions and suspensions were for marijuana violations.

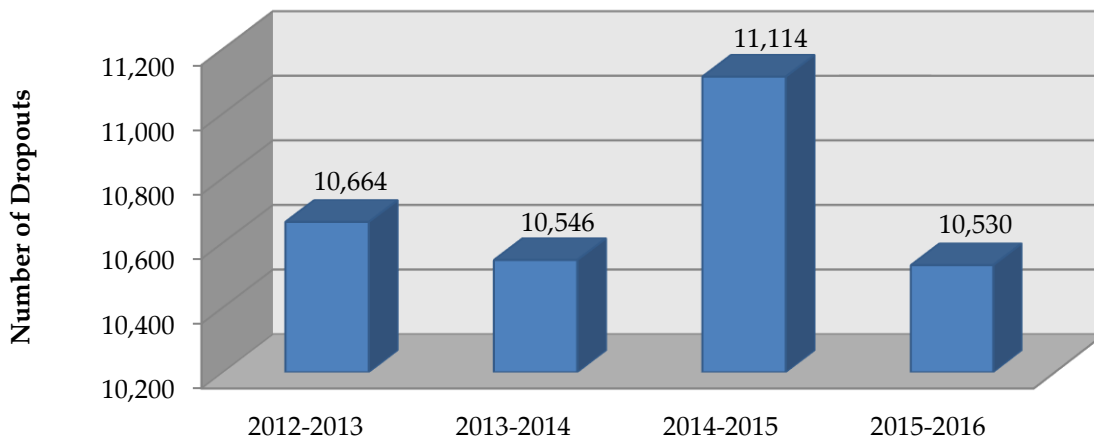
Percent of Total Referrals to Law Enforcement in Colorado



SOURCE: Colorado Department of Education, 10-Year Trend Data: State Suspension and Expulsion Incident Rates and Reasons

- ❖ In school year 2015/2016, 73 percent of all drug related referrals to law enforcement were for marijuana violations.

Number of Reported School Dropouts



SOURCE: Colorado Department of Education

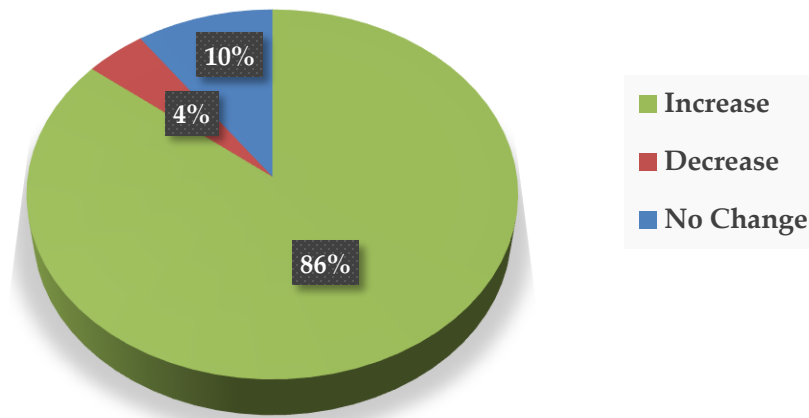
NOTE: ROCKY MOUNTAIN HIDTA HAS BEEN ASKED ABOUT THE NUMBER OF SCHOOL DROPOUTS IN COLORADO NUMEROUS TIMES AND IS, THEREFORE, PROVIDING THE DATA. ROCKY MOUNTAIN HIDTA IS NOT ATTRIBUTING THE NUMBER OF DROPOUTS TO MARIJUANA LEGALIZATION.

Colorado School Resource Officer Survey

In June 2017, 76 school resource officers (SRO) participated in a survey concerning marijuana in schools. The majority were assigned to high schools and had a tenure of three years or more as a SRO. They were asked for their professional opinion on a number of questions. The questions and their responses are shown in the following pages.

Question: Since the legalization of recreational marijuana, what impact has there been on marijuana-related incidents at your school?

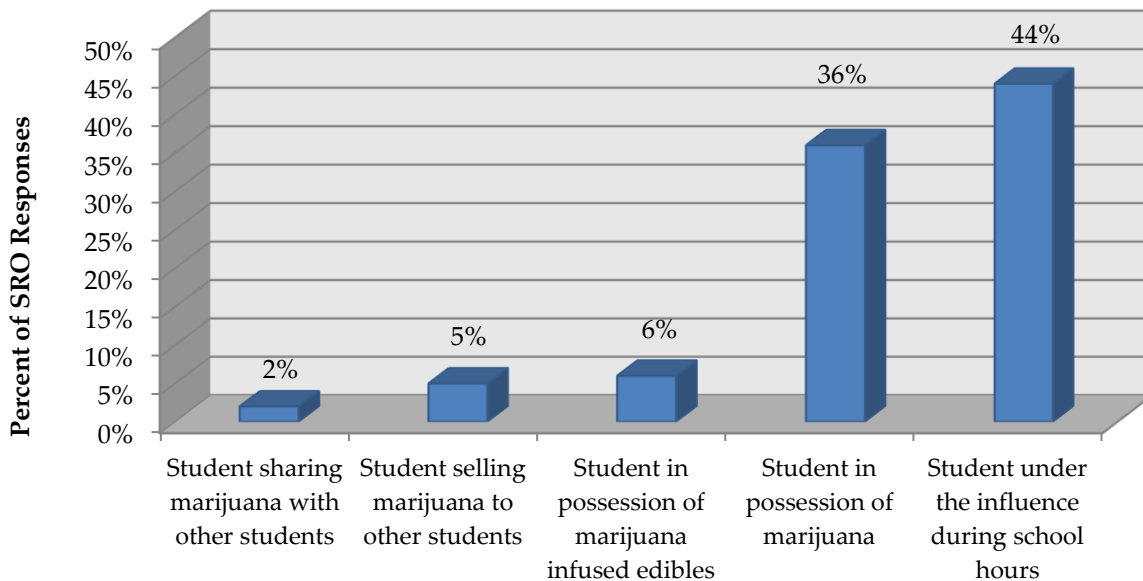
Impact on Marijuana-Related Incidents, 2017



SOURCE: Colorado Association of School Resource Officers (CASRO) and Rocky Mountain HIDTA

Question: What were the most predominant marijuana violations by students on campus?

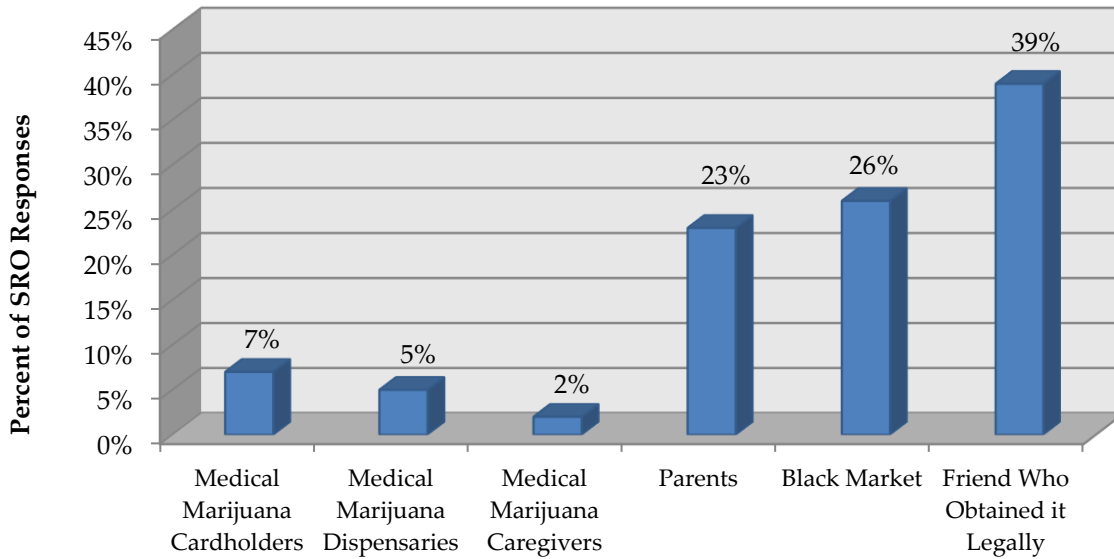
Predominant Marijuana Violations, 2017



SOURCE: Colorado Association of School Resource Officers (CASRO) and Rocky Mountain HIDTA

Question: Where do the students get their marijuana?

Student Marijuana Source, 2017



SOURCE: Colorado Association of School Resource Officers (CASRO) and Rocky Mountain HIDTA

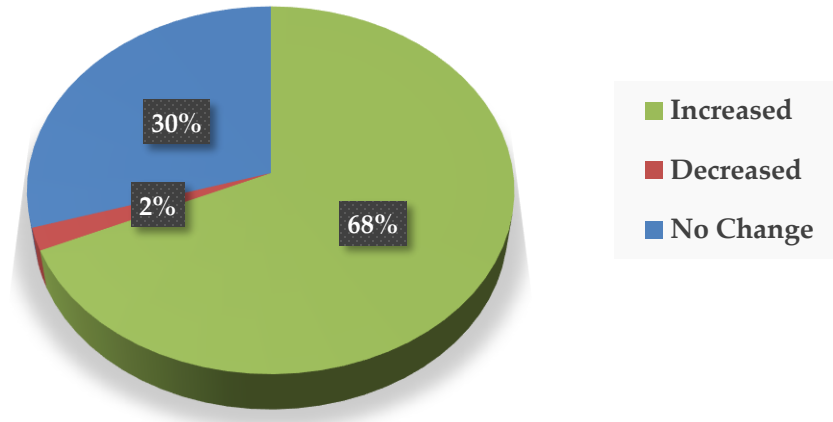
School Counselor Survey

❖ Since the 2015 survey, the Colorado School Counselor Association has elected not to participate in any further surveys.

In August 2015, 188 school counselors participated in a survey concerning the legalization of marijuana in schools. The majority were assigned to high schools with an average tenure of ten years. They were asked for their professional opinion on a number of question. The questions and their responses are shown in the following pages.

Question: Since the legalization of recreational marijuana, what impact has there been on marijuana-related incidents at your school?

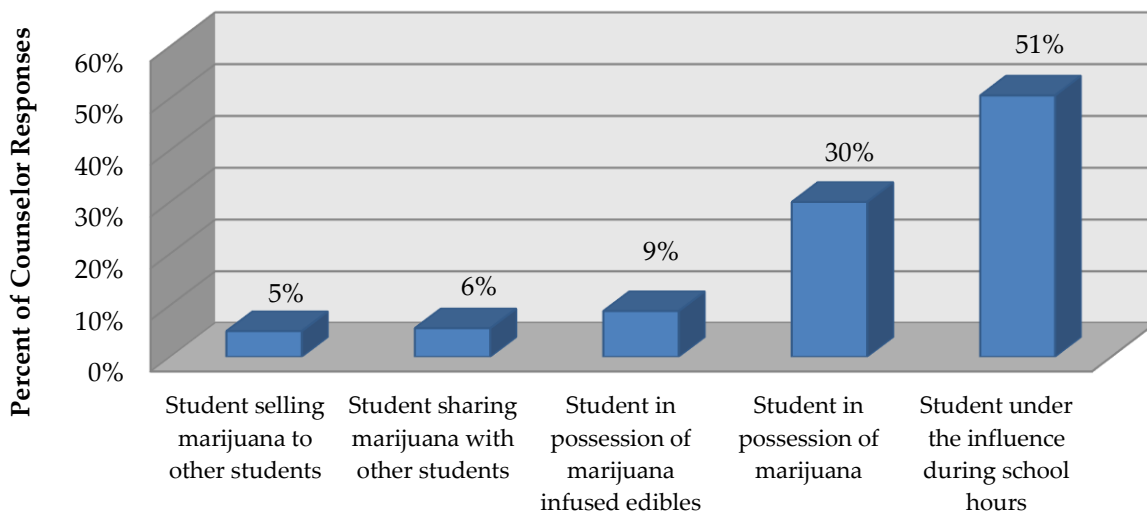
Impact on Marijuana-Related Incidents, 2015



SOURCE Colorado School Counselor Association (CSCA) and Rocky Mountain HIDTA

Question: What were the most predominant marijuana violations by students on campus?

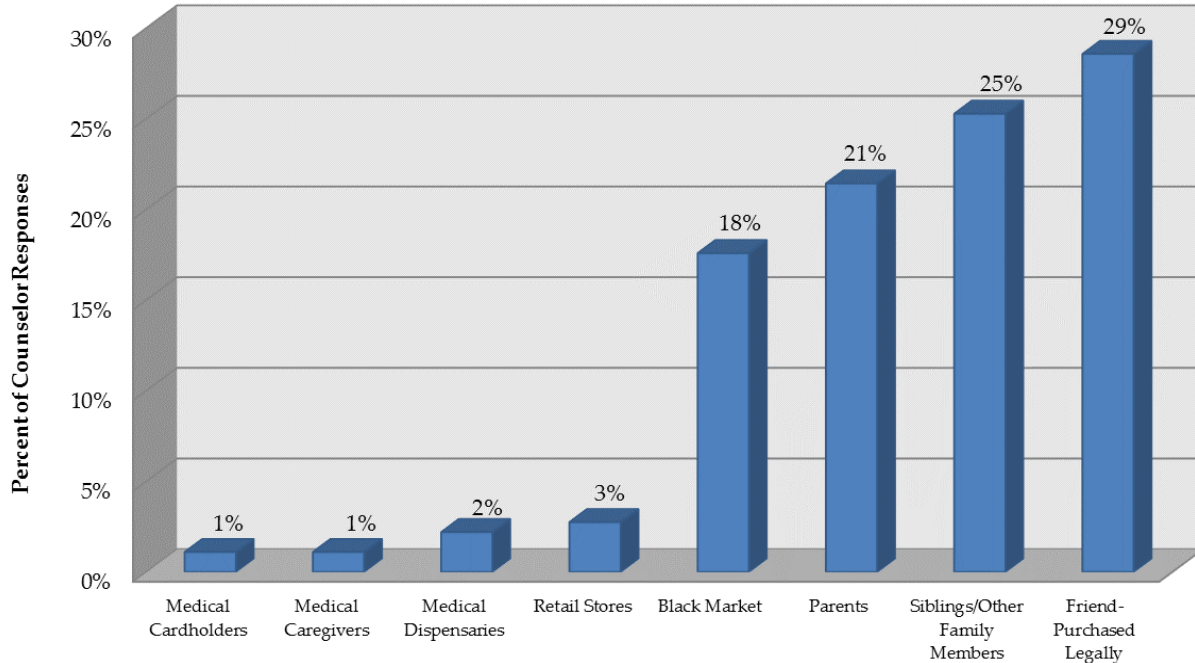
Predominant Marijuana Violations, 2015



SOURCE Colorado School Counselor Association (CSCA) and Rocky Mountain HIDTA

Question: Where do the students get their marijuana?

Student Marijuana Source, 2015



SOURCE Colorado School Counselor Association (CSCA) and Rocky Mountain HIDTA

Case Examples

My son and his Marijuana: “It was February 6th at 3:15 a.m. when my oldest son woke me and urgently whispered that his brother had just tried to take his own life. I couldn’t comprehend that my second-born, a high achieving, gifted young man had just attempted suicide by hanging. Thankfully, his brother discovered him and saved his life before we lost him. It changed our family forever.

Later that morning after the assessment and intake procedure, the hospital social worker explained that my son’s prescription for Adderall combined with his heavy marijuana use had caused a psychotic break called marijuana induced psychosis. She said this was quite common among young people today. I felt blindsided as I had no idea my son was using marijuana.

Sadly, in-patient treatment was not successful, nor was out-patient treatment. Our lives began to revolve around our son’s addiction and the never-ending appointments, meetings, confrontations, stress, and bizarre drama that we never

imagined we would experience. It was both frustrating and heartbreaking to listen as my son frequently described his passionate commitment to marijuana and observe his inability to see how negatively it impacted – even controlled him.

We learned we were not fighting a behavior but a mind-set that was cemented into his belief system. Marijuana had become his life, his religion, and his identity. In spite of a multitude of problems and ongoing depression that continue to prevent him from living successfully, his belief that marijuana will solve all of his troubles remains ingrained in him and leaves our family feeling fearful and often hopeless to help him.”¹

Teen Shot While Trying to Sell Marijuana: While attempting to sell marijuana to a car filled with four other teenagers, an 18 year old in Greeley, Colorado was shot with a handgun. The seller had been leaning into the car window when the occupants shot him and quickly drove away. The wound sustained by the teenager was not life threatening.²

One Teen Wounded, Another Killed While Trying to Steal Marijuana: Shortly after 2 a.m. on Sunday, October 9th, 2016, Denver Police received a call from a 14-year-old boy stating that he and his friend had been shot. Both boys had been trying to steal marijuana plants from a backyard when the resident was alerted to their presence and fired multiple shots at the boys. Both boys were struck as they were trying to escape the backyard, the 14-year-old was wounded and the 15-year old boy was killed. The home owner was arrested and held for investigation of murder, attempted murder and investigation of felony marijuana cultivation.³

Some Comments from School Resource Officers

They End Up Sick:

- “A student came to after-prom after eating some marijuana edibles. She later got very sick and was transported by ambulance to the hospital. She later admitted to being given the edibles by another student.”
- “A student asked another to get them marijuana. Student brought some edibles, later that week, and then the other student shared the edibles with 5 other people, who became sick. All students were disciplined. It is very common for students to bring edibles and share with others, and they end up sick from eating too much.”
- “8th grader brought marijuana brownies to school, gave them to friends and then overdosed on them and ended up in the hospital.”

Organized and Well-planned Distribution:

- “Students sometimes put Marijuana in Cheetos bags and sell to each other.”
- “Our agency just processed a 12 year old student for distribution of MJ. The child admitted to stealing ‘unnoticeable’ amounts of MJ from several different relatives, who purchased the recreational MJ legally, then sold it to other students. The 12 year old suspect had also recruited other students to sell the MJ. The crime was eventually reported by the sister of one of the accomplices.”
- “Student, age 16 (10th grade) recently came with father from California (father wanted to start a grow operation) frequently peddled marijuana on and around campus. Eventually, school/police alerted that he was packing a gun.”
- “Student has a medicinal marijuana card, became marijuana dealer to fellow students, arrested and is being prosecuted for distribution.”
- “A student baked THC brownies and sold them at school (10-12 grades). Students were charged [with distribution] of marijuana, it was organized and well-planned in school distribution (9-11 grades).

Burglarized Dispensary: “Five male students were found on school grounds with an overabundance of dabs and shatter that was still in the packaging from a dispensary that had been burglarized the previous weekend by five masked individuals that were caught on surveillance tape.”

Student Commits Suicide: “Sophomore caught selling marijuana to students on campus. He was distributing for another student. That student was obtaining high quality marijuana on the black market. Original was charged and committed suicide 3 days later. Other subject made suicidal statements and received treatment.”

Fine for Their Kids to Use: “Multiple students at my ‘affluent’ middle school obtain marijuana and use marijuana with their families who all seem to have their own marijuana grows. Most of these parents think their ‘medicine’ is fine for their kids to use.”

Social Media Delivery Service: “Students using social media to order up their hash/marijuana/shatter and have it delivered to their local park or fast food joint. No names exchanged and very difficult to prove a case. Was able to get a warrant on a suspect with the help of MED (Marijuana Enforcement Division).”

Attempting to Official a Game: “Referee in possession and smelling like marijuana while attempting to official a game.”

Leave Campus and Come Back High:

- “Students will leave campus and smoke either in their home, parks, or cars and come back after lunch. Adult dealers have trolled [the] parking lot for students looking to buy marijuana. Lots of marijuana use at juvenile parties on the weekend.”
- “Most of our marijuana offenses in the schools are at the middle school and high school level where students leave campus, get high and come back to school. Some are caught with possession of marijuana and some are only consuming.”

Young Students Stealing from Parents:

- “Ten year old in possession and consuming in school using parents pot and pipe”
- “6th grader stealing and then bringing mom’s medical marijuana to school, sharing with friends and smoking in bathrooms before school.”
- “5th grader stealing recreational marijuana from parents and bringing it to school, showing it to all his friends and then smoking it at school.”

Some Comments from School Counselors

Halls Reek of Pot After Lunch:

- “Many kids come back from lunch highly intoxicated from marijuana use. Halls reek of pot, so many kids are high that it is impossible to apprehend all but the most impaired.”
- “They go off campus and smoke during lunch with friends. They will run home with friends during lunch and smoke then.”
- “There have been several instances of students in their cars on lunch or during their off hours ‘hotboxing’ or smoking marijuana. Most students are seniors but on occasion, seniors will provide marijuana to 9th or 10th grade students.”
- “2014/2015 school year, several students caught coming back from off-campus lunch under the influence of marijuana.”
- “Had a student come back from lunch, teacher believed that they were high. Student was escorted to the office, student admitted they were indeed high to the administrator.”
- “Students are often referred after lunch (open campus) after they have been riding around smoking marijuana with their friends.”
- “More and more students are coming back to school high after lunch.”
- “In April 2015, students were going out for a break. 2-3 students smoked marijuana about a block away from school. They smelled like pot when they got back.”

Just a Plant: “In March of 2015 a fifth grade boy offered marijuana to another fifth grader on the playground. In October of 2014 a kindergarten girl described the pipe in her grandmother’s car and the store where you go to buy pipes. In May of 2015 a first grade girl reported that her mom smokes weed in the garage. ‘It’s not a drug, it’s just a plant.’”

Arrives at School Stoned:

- “At the beginning of the second semester, three middle school boys were routinely arriving late at school, and noticeable intoxicated.”
- “We have middle school students who either come to school high, or have it on them in a bag. Or they have pipes on them.”
- “In May 2015, a teacher witnessed 2 seniors smoking marijuana while driving to school. One student admitted to having done so; the other denied it.”
- “Teaching a lesson in class during first period that started 7:30 AM and 2 students were already high in class.”

- “A male 13 y/o student fell asleep in several classes. He was interviewed by the school counselor and the RSO (sic). He was assessed as being high and admitted that he uses marijuana often before school. He steals it from his older brother.”
- “12 yr. old, sixth grader, was suspected of coming to summer school high. When confronted he told the teacher that he smoked it at home the night before but denied being high at the time. Later, he confirmed that he had smoked early that morning. The marijuana came from his mother’s stash.”

New Use of Bathrooms:

- “2 students were smoking marijuana in the restroom last year.”
- “8th grade male student had marijuana in his locker, classmates reported it. 8th grade female student smoked a joint in a school bathroom during school hours. Shared it with a friend.”
- “7th grade girl last year had hidden marijuana and a pipe in the girl’s restroom and told several friends who began getting bathroom break passes from various classrooms. Security noted an increased traffic flow to and from that restroom and found the weed and soon after the violators.”

It’s Legal:

- “3 or 4 times in the last school year, students have come to school under the influence after meeting at homes where parents were absent, sharing marijuana off campus and then bringing it on campus. 7th and 8th grade students have been involved, and most often their reaction when caught is ‘it’s legal’.”
- “I met with at least 5 students last year alone that have been showing significant signs of drug use or were caught and they all said they will not stop using weed on a daily basis. Their justification was it’s fine because it’s legal. If it’s legal it’s not as bad as what adults say about the risks.”

Grades Decline: “I would like to say that in general our Marijuana incidents have not gone up. We have a savvy population that knows to keep it away from school. However, I have seen a huge spike in talking with kids about it in my sessions. Last year I had two very intelligent students (above 4.0) that used marijuana 2-6 times a week. Both of them had grades decline and significant social emotional issues spike in the spring of their Senior Year. They also both had violations at school.”

Dad Allows Pot Smoking: “We had reports of two students (brothers) appear to be high at school. Our officer assessed both of them and discovered that their father, who had a medical marijuana card, was having them both “smoke a bowl” before school. He thought it would make their school day easier.”

Parents High: “At our elementary school, we have noticed an increased number of parents showing up to school high. Kids have also brought [marijuana] to school to show their friends.”

Difficulty in Assessment: “For school personnel, it is more difficult to evaluate what substance a student is under the influence of. We can smell alcohol and smoked marijuana but the edibles and vapes are hard to detect.”

Drug Canine Use: “I would like to just offer that we need policy that allows for more use of drug dogs and not having to forewarn students or parents when these dogs will be present. Students and especially dealers, the ones we need to catch, are very vigilant in making adjustments when these resources are used.”

For Further Information on Youth Marijuana Use See Page 151

Sources

¹ Jo McGuire, “One Mom’s Story: Marijuana and My Kid,” *Jo McGuire Inc.*, August 29th, 2017, < <https://jomcguire.wordpress.com/>>, accessed August 29th, 2017.

² Nate Miller, “Sheriff’s office seeks public’s help to learn more about northeast Greeley shooting,” *The Tribune*, May 16, 2017, <<http://www.greeleytribune.com/news/crime/sheriffs-office-seeks-publics-help-to-learn-more-about-northeast-greeley-shooting/>>, accessed September 12, 2017.

³ Kirk Mitchell, “Denver man arrested after allegedly shooting, killing teen in marijuana-filled backyard,” *Denver Post*, October 10, 2016, <<http://www.denverpost.com/2016/10/10/marijuana-grow-house-slaying-denver-man-arrested/>>, accessed September 12, 2017.

THIS PAGE INTENTIONALLY LEFT BLANK

SECTION 3: Adult Marijuana Use

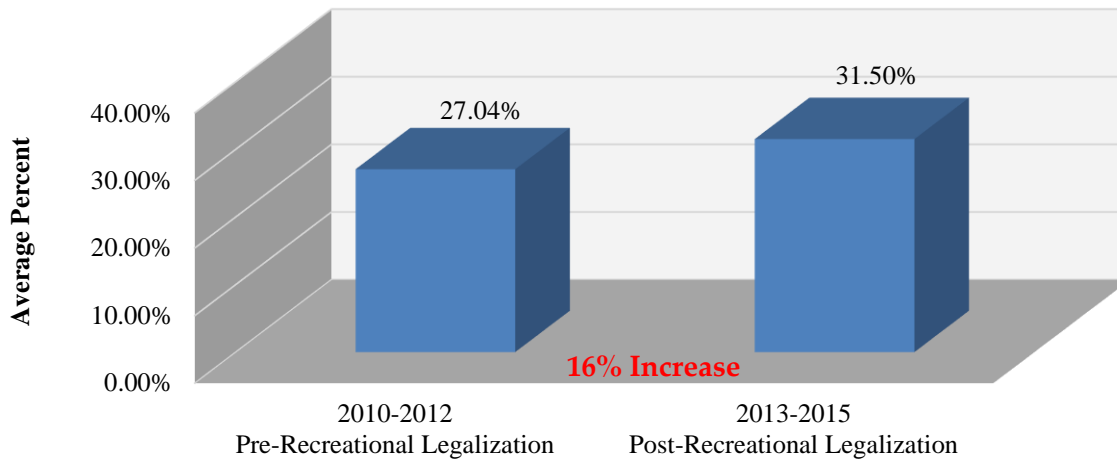
Some Findings

- College age past month marijuana use **increased 16 percent** in the three-year average (2013-2015) since Colorado legalized recreational marijuana compared to the three-year average prior to legalization (2010-2012).
- The latest 2014/2015 results show Colorado college-age adults ranked **#2** in the nation for past-month marijuana use, up from **#3** in 2011/2012 and **#8** in 2005/2006.
- Colorado college age past month marijuana use for 2014/2015 was **61 percent higher** than the national average compared to **42 percent higher** in 2011/2012.
- Adult past-month marijuana use **increased 71 percent** in the three-year average (2013-2015) since Colorado legalized recreational marijuana compared to the three-year average prior to legalization (2010-2012).
- The latest 2014/2015 results show Colorado adults ranked **#1** in the nation for past month marijuana use, up from **#7** in 2011/2012 and **#8** in 2005/2006.
- Colorado adult past month marijuana use for 2014/2015 was **124 percent higher** than the national average compared to **51 percent higher** in 2011/2012.

Use Data

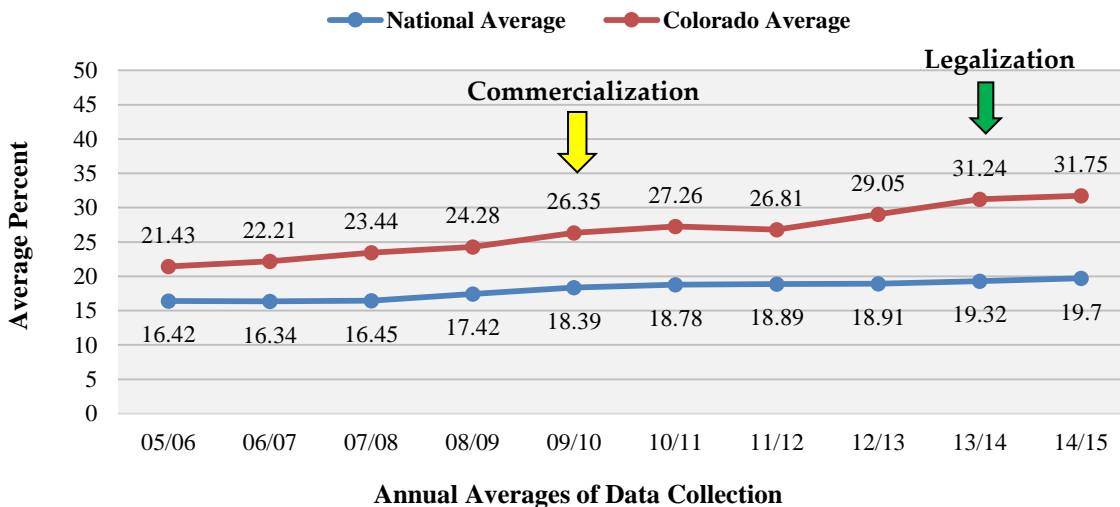
College Age 18 to 25 Years Old

**Average Past Month Use of Marijuana
College Age 18 to 25 Years Old**



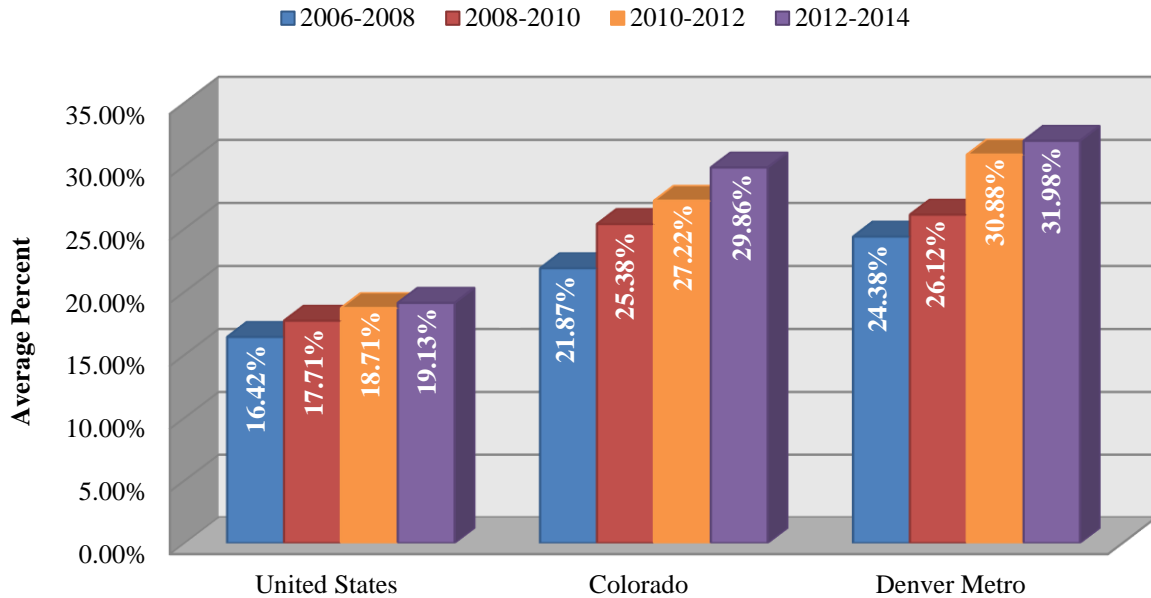
SOURCE: SAMHSA.gov, National Survey on Drug Use and Health 2014 and 2015

**Past Month Marijuana Use
College Age 18 to 25 Years Old**



SOURCE: SAMHSA.gov, National Survey on Drug Use and Health 2014 and 2015

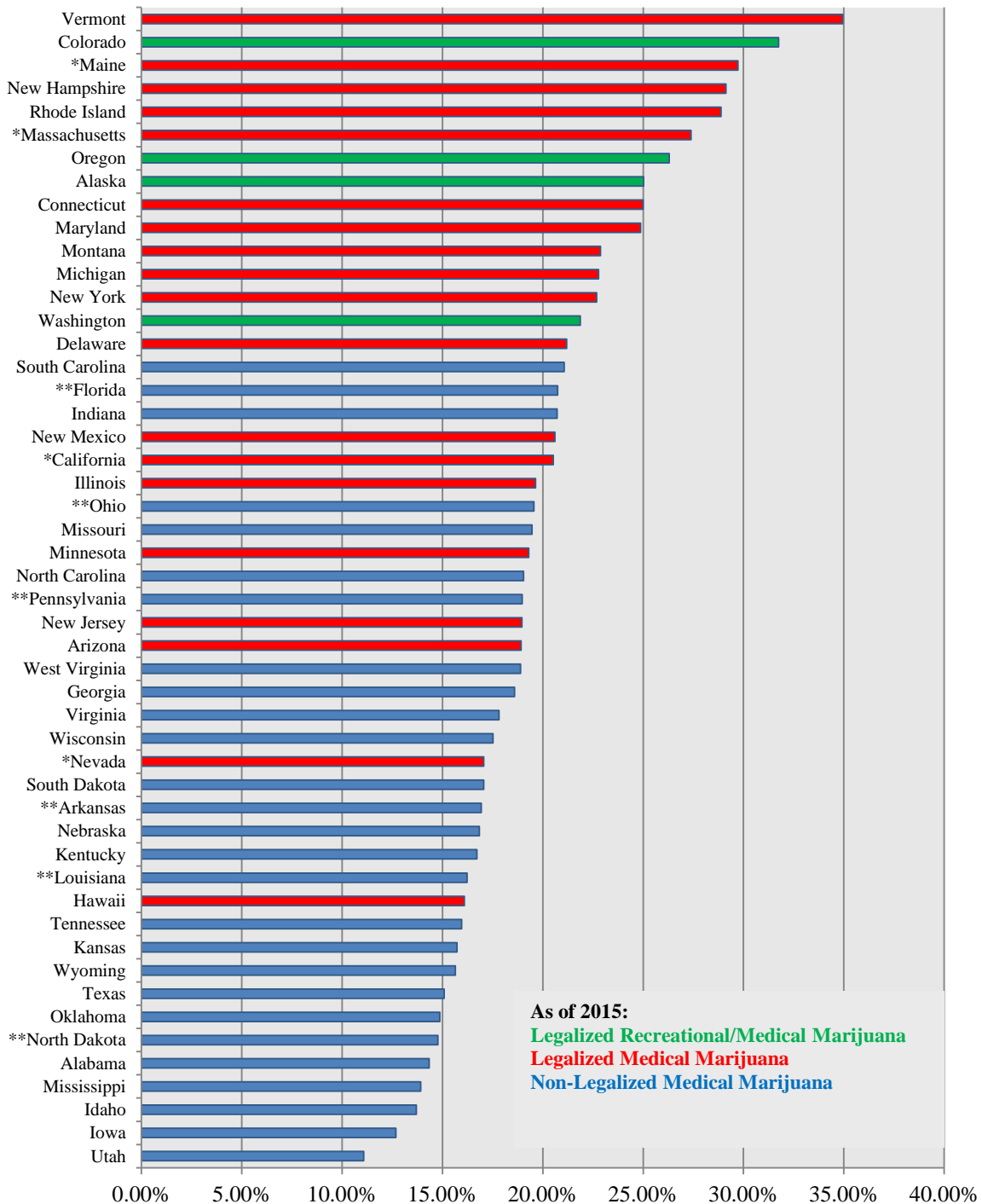
Prevalence of Past 30-Day Marijuana Use College Age 18 to 25 Years Old



SOURCE: SAMHSA.gov, National Survey on Drug Use and Health, Substate Region Estimates 2006-2014

NOTE: SUB-STATE DATA IS ONLY AVAILABLE FROM THE NATIONAL SURVEY ON DRUG USE AND HEALTH IN THE ABOVE TIMEFRAMES.

Past Month Usage, 18 to 25 Years Old, 2014/2015

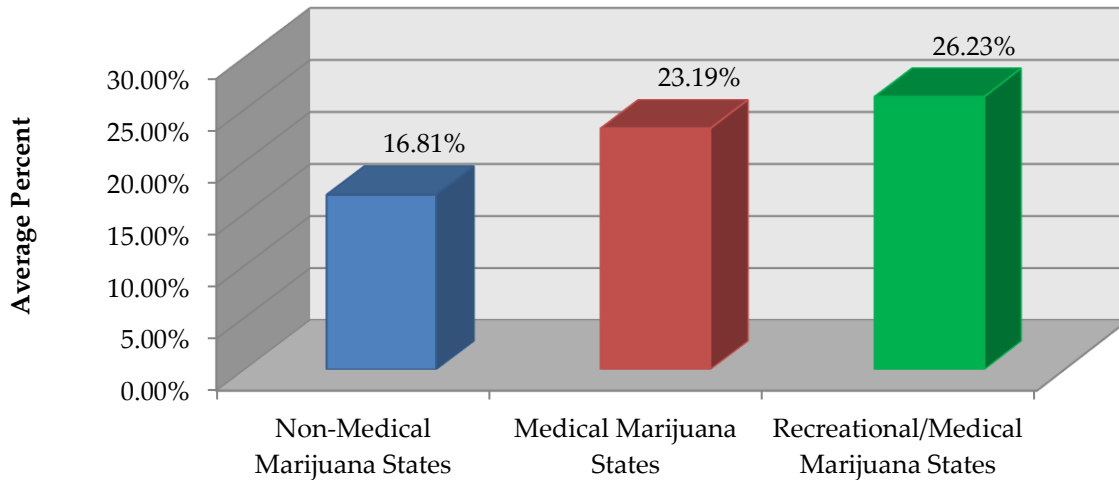


SOURCE: SAMHSA.gov, National Survey on Drug Use and Health 2013 and 2014

NOTE: *California, Massachusetts, Maine and Nevada voted to legalize recreational marijuana in November 2016

**States that had legislation for medical marijuana signed into effect during 2015

Average Past Month Use College Age 18 to 25 Years Old, 2014/2015



SOURCE: SAMHSA.gov, National Survey on Drug Use and Health 2014 and 2015

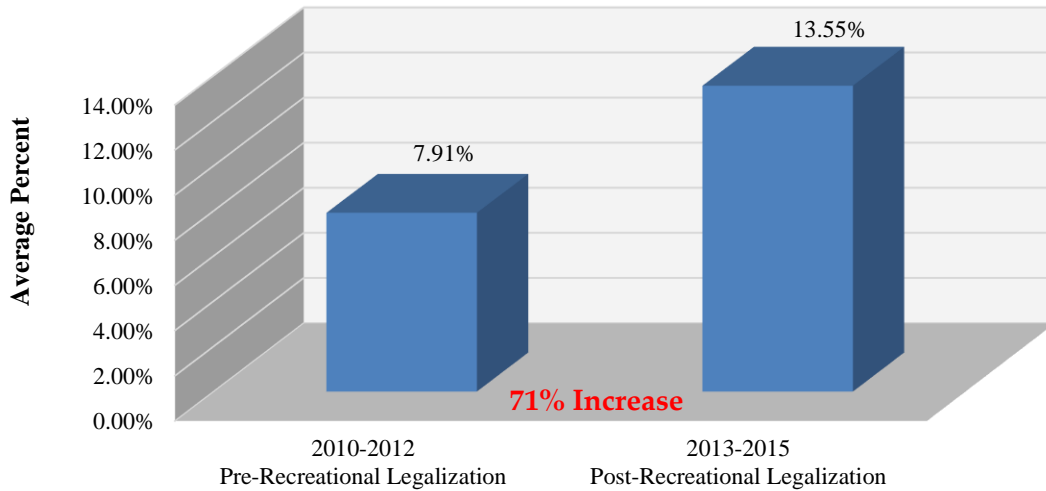
Past Month Marijuana Use College Age 18 to 25 Years Old, 2014/2015

<u>Top 10</u> (Medical/Recreational States)	<u>Bottom 10</u> (Non-Medical or Recreational States)
National Average = 19.99%	
<ol style="list-style-type: none"> 1. Vermont – 34.95% 2. Colorado – 31.75% 3. Maine – 29.72% 4. New Hampshire – 29.12% 5. Rhode Island – 28.89% 6. Massachusetts – 27.39% 7. Oregon – 26.29% 8. Alaska – 25.02% 9. Connecticut – 24.99% 10. Maryland – 24.87% 	<ol style="list-style-type: none"> 41. Kansas – 15.73% 42. Wyoming – 15.64% 43. Texas – 15.08% 44. Oklahoma – 14.87% 45. North Dakota – 14.77% 46. Alabama – 14.33% 47. Mississippi – 13.91% 48. Idaho – 13.69% 49. Iowa – 12.67% 50. Utah – 11.07%

SOURCE: SAMHSA.gov, National Survey on Drug Use and Health 2014 and 2015

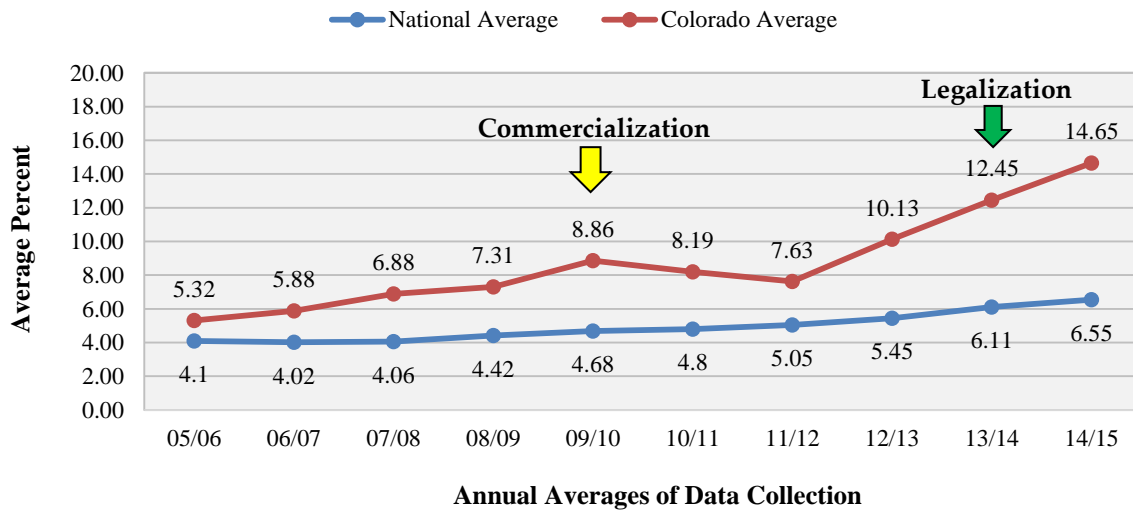
Adults Age 26+ Years Old

Average Past Month Use of Marijuana Adults Ages 26+ Years Old



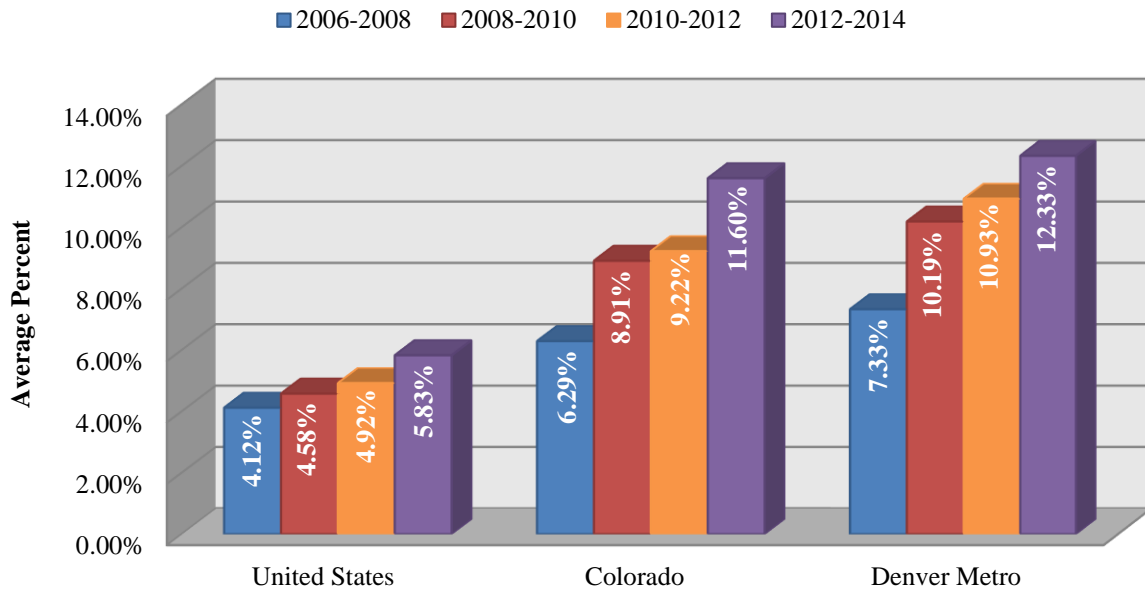
SOURCE: SAMHSA.gov, National Survey on Drug Use and Health 2014 and 2015

Past Month Marijuana Use Adults Age 26+ Years Old



SOURCE: SAMHSA.gov, National Survey on Drug Use and Health 2014 and 2015

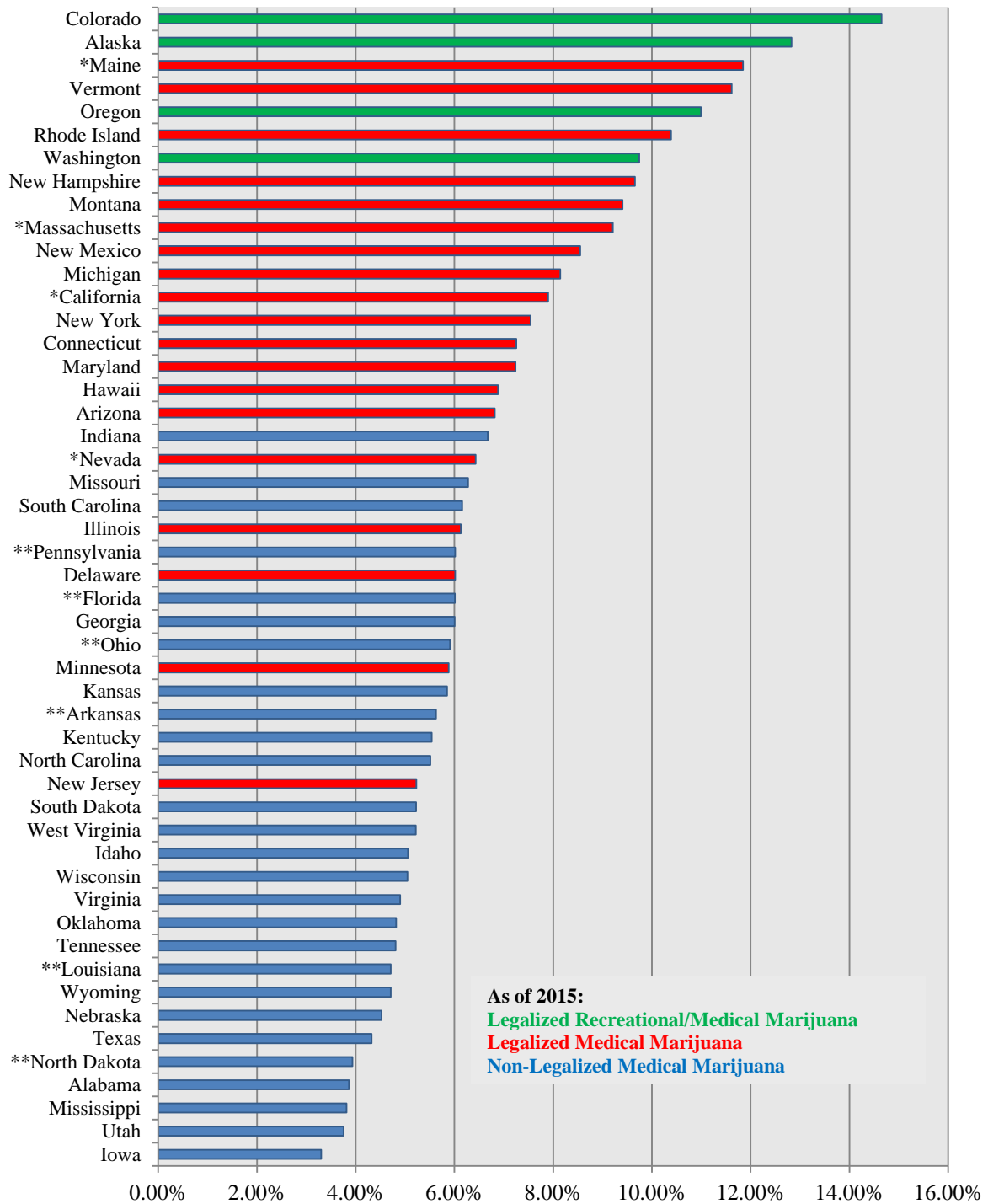
Prevalence of Past 30-Day Marijuana Use Adults Age 26+ Years Old



SOURCE: SAMHSA.gov, National Survey on Drug Use and Health, Substate Region Estimates 2006-2014

NOTE: SUB-STATE DATA IS ONLY AVAILABLE FROM THE NATIONAL SURVEY ON DRUG USE AND HEALTH IN THE ABOVE TIMEFRAMES.

Past Month Usage, 26+ Years Old, 2014/2015

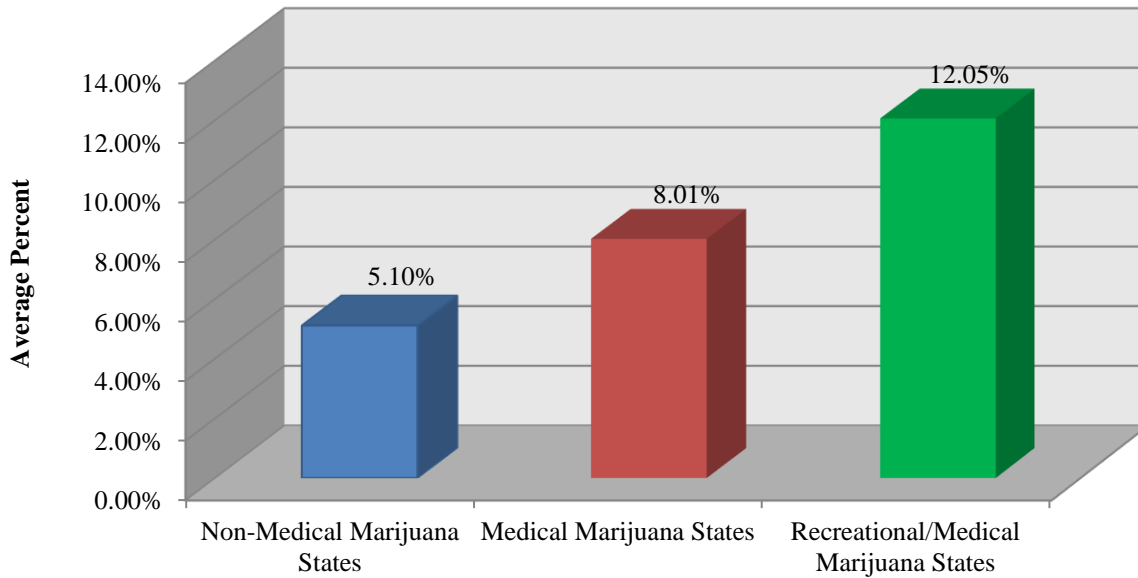


SOURCE: SAMHSA.gov, National Survey on Drug Use and Health 2014 and 2015

NOTE: *California, Massachusetts, Maine and Nevada voted to legalize recreational marijuana in November 2016

**States that had legislation for medical marijuana signed into effect during 2015

Average Past Month Use Adults Ages 26+ Years Old, 2014/2015



SOURCE: SAMHSA.gov, National Survey on Drug Use and Health 2014 and 2015

Past Month Marijuana Use Adults Ages 26+ Years Old, 2014/2015

<u>Top 10</u> (Medical/Recreational States)	<u>Bottom 10</u> (Non-Medical or Recreational States)
--	--

National Average = 6.76%

- | | |
|--|--|
| <ol style="list-style-type: none"> 1. Colorado – 14.65% 2. Alaska – 12.83% 3. Maine – 11.84% 4. Vermont – 11.61% 5. Oregon – 10.99% 6. Rhode Island – 10.39% 7. Washington – 9.74% 8. New Hampshire – 9.65% 9. Montana – 9.41% 10. Massachusetts – 9.21% | <ol style="list-style-type: none"> 41. Tennessee – 4.81% 42. Louisiana – 4.71% 43. Wyoming – 4.71% 44. Nebraska – 4.53% 45. Texas – 4.32% 46. North Dakota – 3.93% 47. Alabama – 3.86% 48. Mississippi – 3.81% 49. Utah – 3.75% 50. Iowa – 3.30% |
|--|--|

SOURCE: SAMHSA.gov, National Survey on Drug Use and Health 2014 and 2015

Colorado Adult Marijuana Use Demographics¹

According to the Colorado Behavior Risk Factor Surveillance System, 2016:

- 13.6 percent of adults (18+ years old) are current users of marijuana
 - Nearly half of current users (47 percent) report using marijuana daily
- 1 out of 5 current users (20 percent) report driving after using marijuana
- Top demographics of those who report current marijuana use:
 - Between 18 to 25 years old
 - Next highest are those 26 to 34 years old
 - Black, Non- Hispanic individuals
 - Next highest are Multiracial (Non-Hispanic) individuals
 - Gay/Lesbian/Bisexual adults
 - Males
- The Southwest region of Colorado reports the highest current marijuana use
 - The Southeast and Northwest regions are tied for second highest

NOTE: THE BEHAVIORAL RISK FACTOR SURVEILLANCE SYSTEM (BRFSS) COLLECTS DATA ON ADULT, INDIVIDUAL-LEVEL BEHAVIORAL HEALTH RISK FACTORS. QUESTIONS SPECIFICALLY REGARDING MARIJUANA USE WERE NOT ADDED UNTIL 2014. – MONITORING HEALTH CONCERNS RELATED TO MARIJUANA IN COLORADO: 2016, COLORADO DEPARTMENT OF PUBLIC HEALTH AND ENVIRONMENT

Case Examples

Young Professional Commits Suicide at 23, Parents Question if THC is to Blame:

Marc Bullard, a young professional with no apparent signs of depression or mental illness committed suicide in April 2016. He had recently graduated college “near the top of his college class,” and had been hired at a consulting firm in Denver. “In December of 2015, he was on top of the world explaining in a video documenting his success that, ‘It’s been a good year..’ and that he was looking forward to making plans for 2016.” After his death, his parents began reading Marc’s personal diaries and found that he had been writing entries such as:

I found out I was dabbing too much which I already knew and had cut back in February. But apparently if you overdo it, you can get almost like poison and experience some negative effects.

Marc's parents began to question "whether his death [was] related to his use of high potency THC." Before Marc's death neither of them had even heard of dabbing. Marc's father Mike explained "I had the mindset, well, it's just marijuana, it's not going to hurt anything." While Marc's death certificate does not say marijuana was the cause of death, it "lists a contributing factor to 'use of concentrated marijuana products.'"²

Parents Charged with Child Abuse for Identical Deaths of Two Babies: In Aurora, Colorado a couple was booked into jail on two counts of misdemeanor child abuse. Charges were filed against the couple after their second child died under similar circumstances as their first child who died two years previously. According to police reports, both babies "died while sleeping in bed with the parents" and both parents "appear[ed] to be intoxicated or under the influence." During the investigation of the first child's death there were "indications of alcohol and marijuana use." The cause of death as shown on autopsy reports for each child was listed as undetermined, however per the Arapahoe County Coroner Dr. Kelly Lear-Kaul this is "because suffocation leaves no trace."³

Man Shoots Wife and Kills Neighbor in a "Marijuana and Caffeine-Fueled Paranoid State": While home for lunch, Dr. Kenneth Atkinson heard shots being fired next door at his neighbor's home. He went outside to see what was going on and "found his neighbor, Elizabeth Lyons, lying in a driveway, covered in blood." Elizabeth Lyons had been shot in the back by her husband Kevin Lyons. Dr. Atkinson attempted to attend to Mrs. Lyons' wounds when Kevin Lyons shot at him striking him in the leg. Dr. Atkinson attempted to call 911 but "more shots rang out as Lyons fired at Atkinson's head at point-blank range, fatally wounding him."

Lyons was sentenced to life in prison plus 352 years in May 2017. Lyons' public defender stated in defense of his actions that "Lyons suffered repeated head injuries – from sports, a car wreck and other activities – that, combined with substance abuse and difficult circumstances in his life, including marital and financial problems, left him delusional. Lyons was also in a marijuana and caffeine-fueled paranoid state on the day of the shooting."⁴

For Further Information on Adult Marijuana Use See Page 152

Sources

¹ Colorado Behavioral Risk Factor Surveillance System 2016, "Marijuana Use in Colorado," Colorado Department of Public Health and Environment.

² John Ferrugia, "Marijuana in Colorado: A warning about dabbing," *9News*, <<http://www.9news.com/news/health/marijuana-in-colorado-a-warning-about-dabbing/346018775>>, accessed September 12, 2017.

³ Rob Low, March 7, 2017, "Aurora parents charged with child abuse for identical deaths of 2 babies," Fox 31News, <<http://kdvr.com/2017/03/07/parents-charged-with-child-abuse-for-identical-deaths-of-2-babies/>>, accessed April 19, 2017.

⁴ Jesse Paul, "Kevin Lyons apologizes for Centennial shooting rampage that killed beloved doctor, gets life in prison plus 352 years," *Denver Post*, <<http://www.denverpost.com/2017/06/05/kevin-lyons-centennial-shooting-rampage-killed-kenneth-atkinson/>>, accessed September 12, 2017.

SECTION 4: Emergency Department and Hospital Marijuana-Related Admissions

Some Findings

- The yearly rate of emergency department visits related to marijuana **increased 35 percent** after the legalization of recreational marijuana (2011-2012 vs. 2013-September 2015).
- Number of hospitalizations related to marijuana:
 - 2011 – **6,305**
 - 2012 – **6,715**
 - 2013 – **8,272**
 - 2014 – **11,439**
 - Jan-Sept 2015 – **10,901**
- The yearly number of marijuana-related hospitalizations **increased 72 percent** after the legalization of recreational marijuana (2009-2012 vs. 2013-September 2015).

Definitions

Marijuana-Related: Also referred to as “marijuana mentions.” Data could be obtained from lab tests, patient self-admission or some other form of validation obtained by the provider. Being marijuana-related does not necessarily prove marijuana was the cause of the emergency department admission or hospitalization.

International Classification of Disease (ICD): A medical coding system used to classify diseases and related health problems.

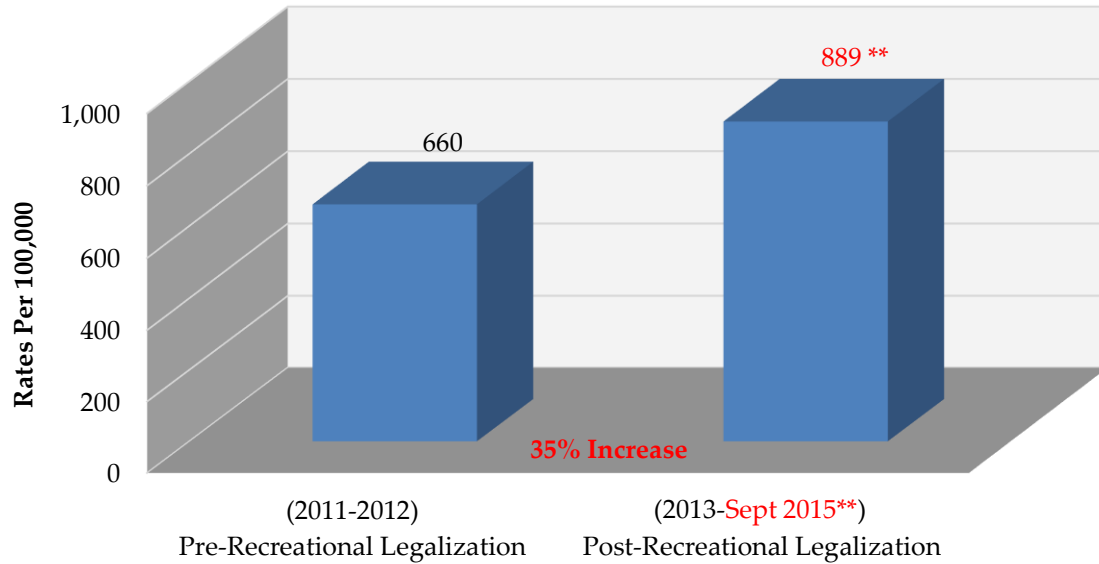
❖ ****In 2015, ICD-10 (the tenth modification) was implemented in place of ICD-9. Although ICD-10 will allow for better analysis of disease patterns and treatment outcomes for the advancement of medical care, comparison of trends before and after the conversion can be made difficult and/or impossible. The number of codes increased from approximately 13,600 codes to approximately 69,000 codes. For the above reasons, hospitalization and emergency department data is only provided pre-conversion to ICD-10.¹**

Emergency Department Data

Colorado Department of Public Health and Environment

NOTE: "POSSIBLE MARIJUANA EXPOSURES, DIAGNOSES, OR BILLING CODES IN ANY OF LISTED DIAGNOSIS CODES: THESE DATA WERE CHOSEN TO REPRESENT THE HD AND ED VISITS WHERE MARIJUANA COULD BE A CAUSAL, CONTRIBUTING, OR COEXISTING FACTOR NOTED BY THE PHYSICIAN DURING THE HD OR ED VISIT. FOR THESE DATA, MARIJUANA USE IS NOT NECESSARILY RELATED TO THE UNDERLYING REASON FOR THE HD OR ED VISIT. SOMETIMES THESE DATA ARE REFERRED TO AS HD OR ED VISITS 'WITH ANY MENTION OF MARIJUANA.'" - *COLORADO DEPARTMENT OF PUBLIC HEALTH AND ENVIRONMENT, MONITORING HEALTH CONCERNS RELATED TO MARIJUANA IN COLORADO: 2014*

Average Emergency Department Rates Related to Marijuana*



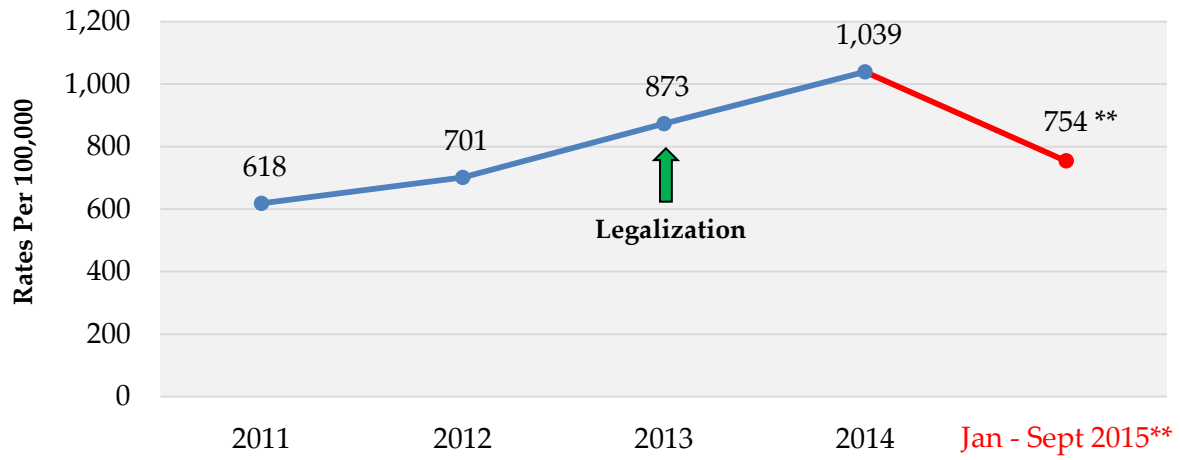
*Rates of Emergency Department (ED) Visits with Possible Marijuana Exposures, Diagnoses, or Billing Codes per 100,000 ED Visits by Year in Colorado

**Only 9 months of comparable 2015 data, see ICD definition on page 68

SOURCE: Colorado Department of Public Health and Environment

NOTE: DATA NOT AVAILABLE PRE-2011. EMERGENCY DEPARTMENT DATA FROM 2011 AND 2012 REFLECTS INCOMPLETE STATEWIDE REPORTING. INFERENCES CONCERNING TRENDS, INCLUDING 2011 AND 2012, SHOULD NOT BE MADE.

Emergency Department Rates Related to Marijuana*



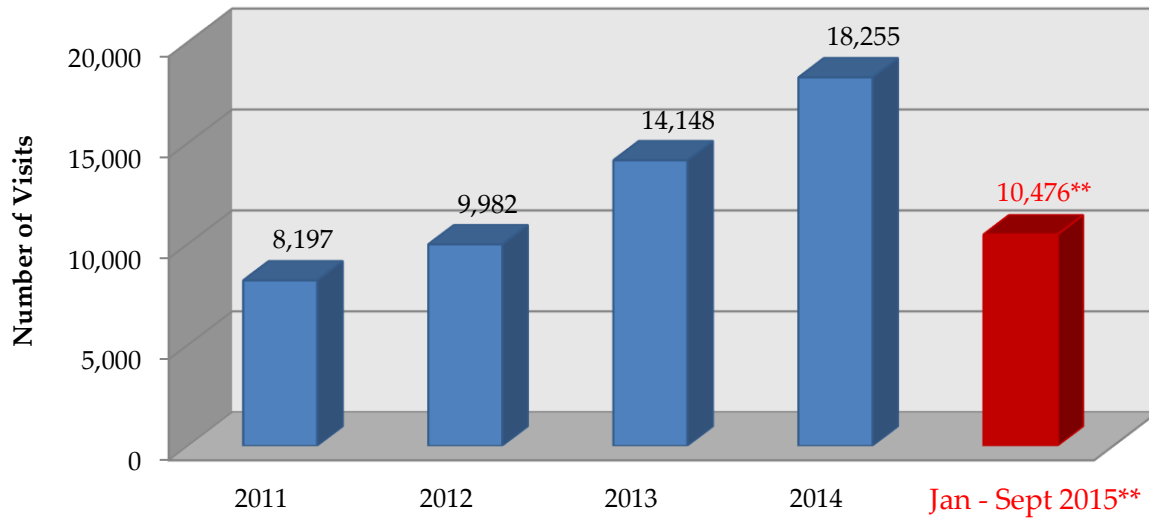
*Rates of Emergency Department (ED) Visits with Possible Marijuana Exposures, Diagnoses, or Billing Codes per 100,000 ED Visits by Year in Colorado

**Only 9 months of comparable 2015 data, see ICD definition on page 68

SOURCE: Colorado Department of Public Health and Environment, *Monitoring Health Concerns Related to Marijuana in Colorado: 2016*

NOTE: DATA NOT AVAILABLE PRE-2011. EMERGENCY DEPARTMENT DATA FROM 2011 AND 2012 REFLECTS INCOMPLETE STATEWIDE REPORTING. INFERENCES CONCERNING TRENDS, INCLUDING 2011 AND 2012, SHOULD NOT BE MADE.

Emergency Department Visits Related to Marijuana



****Only 9 months of comparable 2015 data, see ICD definition on page 68**

SOURCE: Colorado Hospital Association, Emergency Department Visit Dataset. Statistics prepared by the Health Statistics and Evaluation Branch, Colorado Department of Public Health and Environment

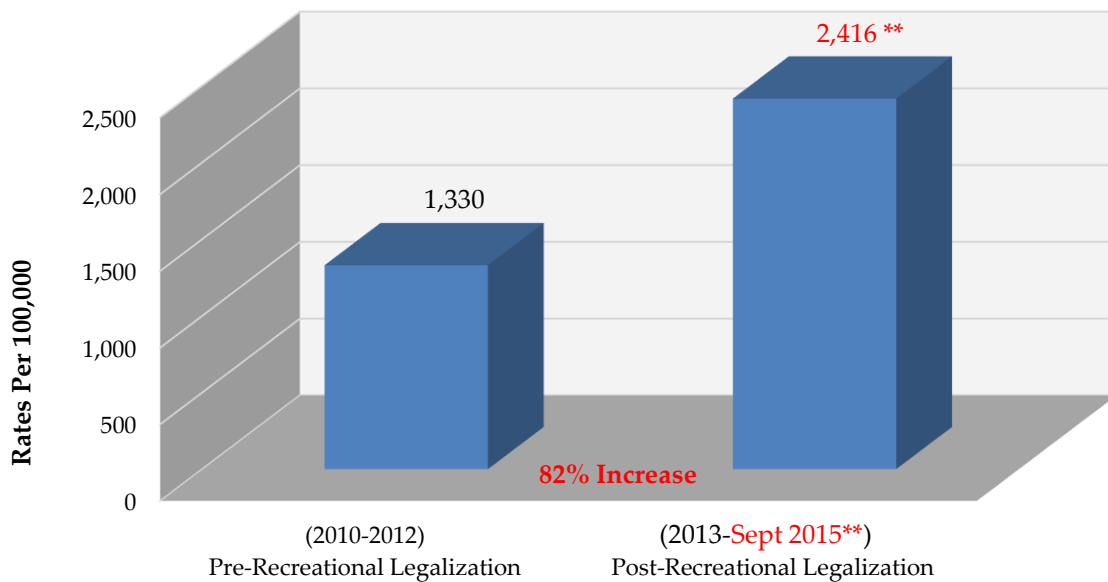
NOTE: DATA NOT AVAILABLE PRE-2011. EMERGENCY DEPARTMENT DATA FROM 2011 AND 2012 REFLECTS INCOMPLETE STATEWIDE REPORTING. INFERENCES CONCERNING TRENDS, INCLUDING 2011 AND 2012, SHOULD NOT BE MADE.

Hospitalization Data

Colorado Department of Public Health and Environment

NOTE: "POSSIBLE MARIJUANA EXPOSURES, DIAGNOSES, OR BILLING CODES IN ANY OF LISTED DIAGNOSIS CODES: THESE DATA WERE CHOSEN TO REPRESENT THE HD AND ED VISITS WHERE MARIJUANA COULD BE A CAUSAL, CONTRIBUTING, OR COEXISTING FACTOR NOTED BY THE PHYSICIAN DURING THE HD OR ED VISIT. FOR THESE DATA, MARIJUANA USE IS NOT NECESSARILY RELATED TO THE UNDERLYING REASON FOR THE HD OR ED VISIT. SOMETIMES THESE DATA ARE REFERRED TO AS HD OR ED VISITS 'WITH ANY MENTION OF MARIJUANA.'" - COLORADO DEPARTMENT OF PUBLIC HEALTH AND ENVIRONMENT, *MONITORING HEALTH CONCERNS RELATED TO MARIJUANA IN COLORADO: 2014*

Average Hospitalization Rates Related to Marijuana*

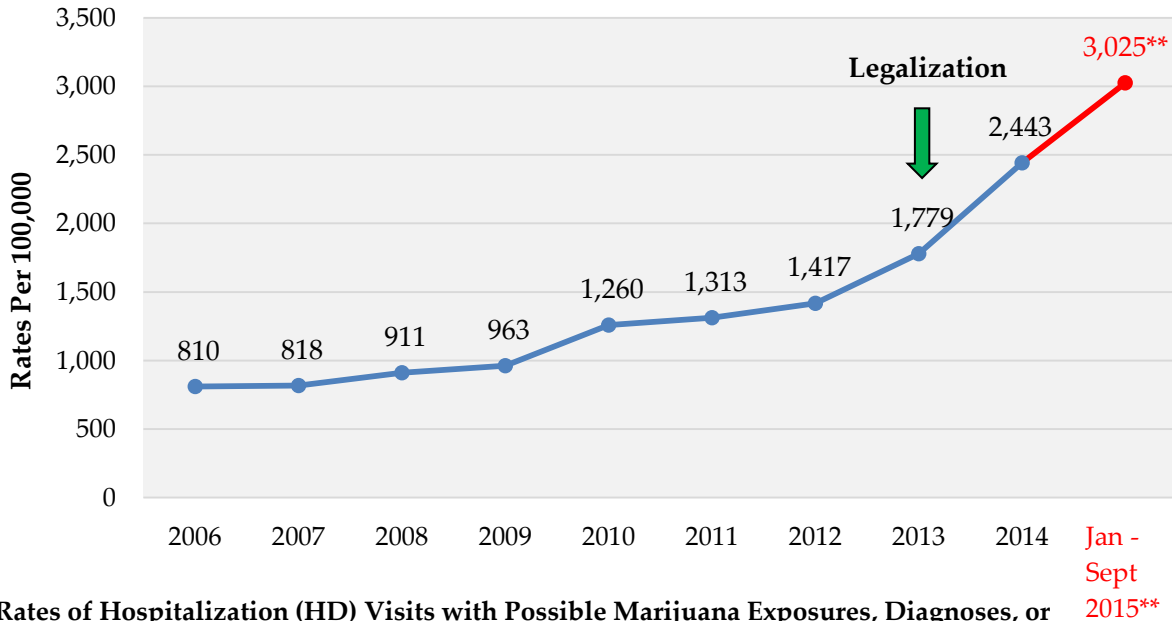


*Rates of Hospitalization (HD) Visits with Possible Marijuana Exposures, Diagnoses, or Billing Codes per 100,000 HD Visits by Year in Colorado

**Only 9 months of comparable 2015 data, see ICD definition on page 68

SOURCE: Colorado Department of Public Health and Environment

Hospitalization Rates Related to Marijuana*

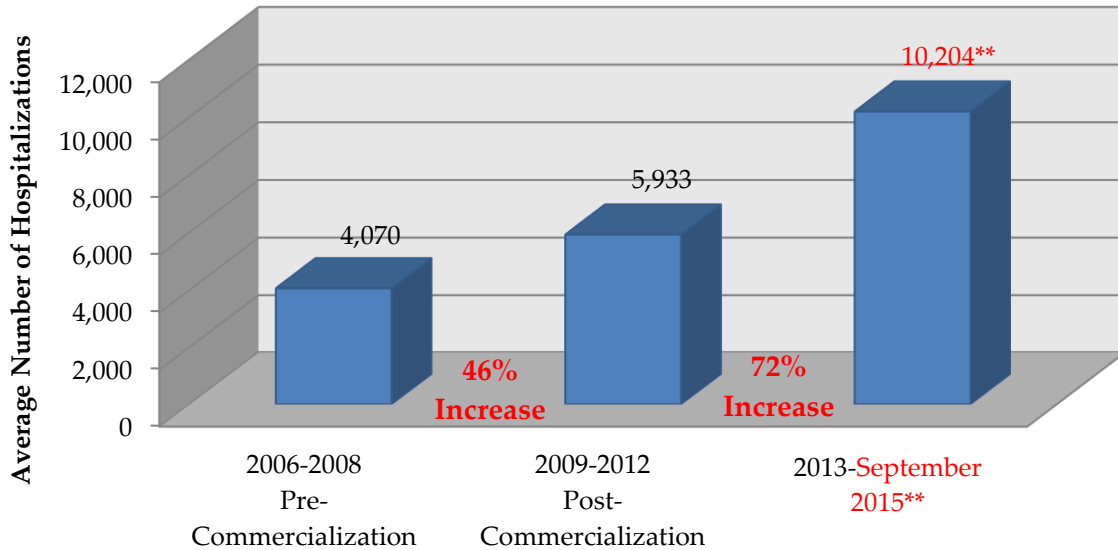


*Rates of Hospitalization (HD) Visits with Possible Marijuana Exposures, Diagnoses, or Billing Codes per 100,000 HD Visits by Year in Colorado

**Only 9 months of comparable 2015 data, see ICD definition on page 68

SOURCE: Colorado Department of Public Health and Environment, *Monitoring Health Concerns Related to Marijuana in Colorado: 2014*

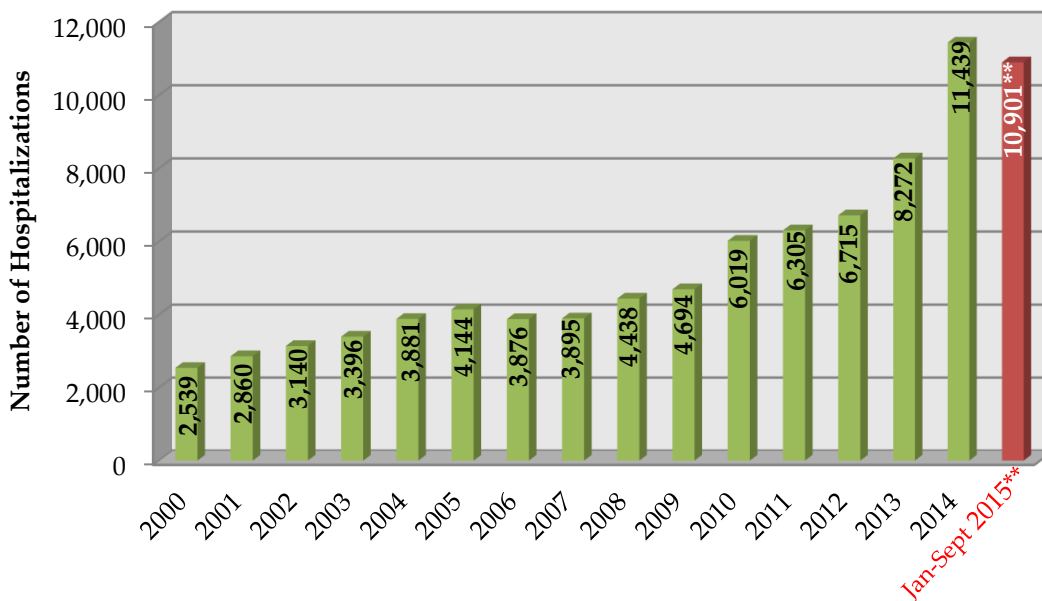
Average Hospitalizations Related to Marijuana



****Only 9 months of comparable 2015 data, see ICD definition on page 68**

SOURCE: Colorado Hospital Association, Hospital Discharge Dataset. Statistics prepared by the Health Statistics and Evaluation Branch, Colorado Department of Public Health and Environment

Hospitalizations Related to Marijuana

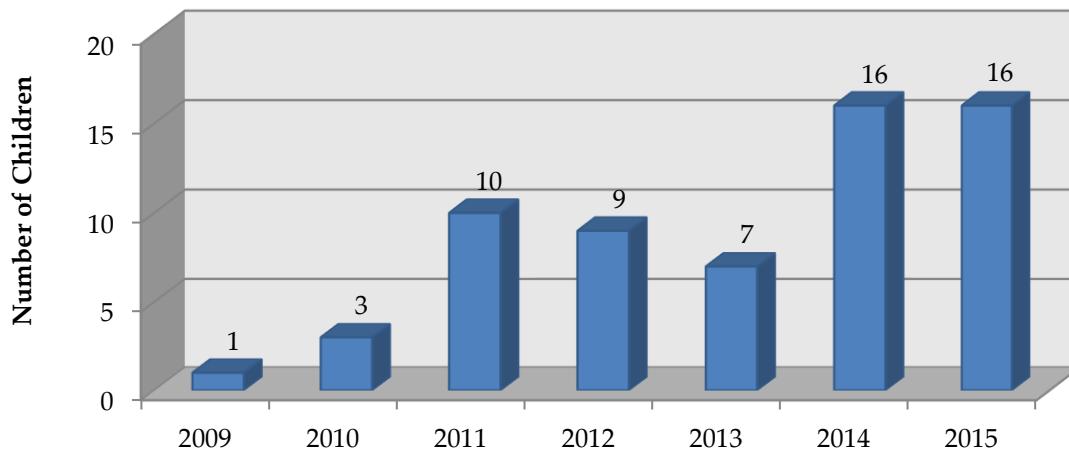


****Only 9 months of comparable 2015 data, see ICD definition on page 68**

SOURCE: Colorado Hospital Association, Hospital Discharge Dataset. Statistics prepared by the Health Statistics and Evaluation Branch, Colorado Department of Public Health and Environment

Additional Sources

Colorado Children's Hospital, Marijuana Ingestion Among Children Under 9 Years Old



SOURCE: George Sam Wang, MD, Marie-Claire Le Lait, MS, Sara J. Deakyne, MPH, Alvin C. Bronstein, MD, Lalit Bajaj, MD, MPH, Genie Roosevelt, MD, MPH, July 25, 2016

Cost

Cost of Emergency Room: The U.S. Department of Health and Human Services estimates the average cost of an emergency room visit in 2014 was \$1,533.00.”²

Case Examples

Elderly Male with Altered Mental Status: “I had an elderly male come to the [emergency department] with a family chief complaint of ‘altered mental status’ or stroke. The patient was essentially catatonic (awake but not responsive and not following commands). He had a very expensive stroke work up (including an EKG, CT, labs, etc.). Work up was negative and then family stated that he ate [marijuana] butter on his toast in the morning and then became catatonic. He had consumed at least 200 mg of THC. He was observed for many hours and improved. His [emergency department] visit costs probably topped \$10,000.”³

Elderly Woman with Nausea and Vomiting: “I had an elderly female who came to the [emergency department] with a chief complaint of significant nausea and vomiting. The patient had come to visit a family member who happened to work at a pot shop. They thought it would be fun to get ‘grandma high’ and gave her edibles. She ate too much and spent 12 hours in the emergency department vomiting and screaming (probably some psychosis induced at the time).”³

Marijuana Laced with Methamphetamine: “I had a young woman who was in her last trimester of pregnancy, she came to the ED for ‘anxiety.’ Her urine drug screen was positive for methamphetamines and [marijuana]. The patient states that the MJ (street) sellers, dip their products in cocaine or methamphetamines to make them ‘better.’ She was using both and was pregnant. She justified the use of MJ for her anxiety and did not want to hear about how the MJ would or could affect her child.”³

High on Marijuana while Riding a Bicycle: “A 16 [year old] male came after being struck by a car while riding a bike. He had been smoking marijuana. He was morbidly obese (over 300 pounds), not in school and getting his MJ from his parents who thought ‘it’s ok because it’s legal.’”³

Unresponsive after an Edible Overdose: “I just had a case last week of a young patient who ate a full bag of the chocolates, 100 mcg of THC per chocolate. She presented unresponsive, GCS of 6. (Only slightly withdrew to painful stimuli, otherwise unresponsive). She went to the ICU and there was just observed until she woke up. She stayed in the ED for over 8 hours with no change before going to the ICU. There were no other substances on her drug screens that were positive.”⁴

Dangers of Marijuana Experienced Firsthand: A May 2017 article written by Dr. Brad Roberts described his experience of returning to his home town of Pueblo, CO in order to serve the community he grew up in.

I recently finished my residency in emergency medicine and began to practice in Pueblo, Colorado. I grew up there, and I was excited to return home. However, when I returned home, the Pueblo I once knew had drastically changed. Where there were once hardware stores, animal feed shops, and homes along dotted farms, I now found marijuana shops—and lots of them.

Among the various observations the newly minted doctor noted:

Multiple different types of patients are coming into the emergency department with a variety of unexpected problems such as marijuana-induced psychosis, dependence, burn injuries, increased abuse of other drugs, increased homelessness and its associated problems, and self-medication with marijuana to treat their medical problems instead of seeking appropriate medical care.

Dr. Roberts recalled a few specific incidents in which marijuana was directly involved in the patient's visit to the emergency department. Among the specific incidents were cases in which a teenage girl had to be restrained after dabbing highly potent THC. Additionally, a young man reported that after smoking marijuana "all day, every day" and he was "seeing ghosts" that were telling him to kill himself (he tried to hang himself three times). Lastly, two young men presented with severe burns due to a butane hash oil explosion they created when trying to make concentrated THC.

The greatest concern that I have is the confusion between medical and recreational marijuana. Patients are being diagnosed and treated from the marijuana shops by those without any medical training. I have had patients bring in bottles with a recommended strain of cannabis and frequency of use for a stated medical problem given at the recommendation of a marijuana shop employee. My colleagues report similar encounters, with one reporting seeing two separate patients with significantly altered sensorium and with bottles labeled 60 percent THC. They were taking this with opioids and benzodiazepines.

After discussing a variety of significantly adverse health effects of marijuana use, Dr. Roberts stated "We need to provide immediate treatment and assistance in stopping use. If we are going to use this as a medication, then we should use it as we use other medications. It should have to undergo the same scrutiny, Food and Drug Administration approval, and regulation that any other medication does."⁵

Pot-Related ER Visits Increase among Visitors to Colorado: In February 2017, Matt Kroschel of CBS Denver described how “some of Colorado’s mountain towns helped push Summit County to the top of the list for emergency room visits related to people getting high.”

Summit County reported 21 marijuana-related emergency room visits (per 1,000 people) from 2011-2013. In 2014-2015, that number increased to 56 visits per 1,000 people.

Dr. Marc Doucette of St. Anthony Summit Medical Center stated, “We certainly do see patients that come in with adverse effects related to marijuana.” In response to the recent statistics released by the Colorado Department of Public Health and Environment, Doucette said, “I was a little surprised to see that but it speaks to the fact that most of our population, especially in the ski season, are out-of-state patients and tourists.” Discussing the types of patients and cases presenting to the emergency room, Dr. Doucette reported “Often we see complications related to edible products.”

“Hospital officials say they did notice the uptick in people coming in for help following the legalization of marijuana in the state in 2014. They say most of those cases were patients visiting from outside of Colorado.”⁶

ER Visits for Kids Rise Significantly after Pot Legalized in Colorado: In 2017, researchers reported “the number of teenagers sent to emergency rooms more than quadrupled after marijuana was legalized in Colorado – mostly for mental health symptoms.”

Dr. George Sam Wang, a Colorado physician, was the lead researcher who authored a study which examined Colorado youth, marijuana use and associated emergency room visits. According to a May 2017 article published by NBC News, “639 teenagers who went to one hospital system in Colorado in 2015 had either cannabis in their urine or told a doctor they’d been using cannabis. That’s up from 146 in 2005, before the use of marijuana was legalized in Colorado.”

“In 2016 Wang found that the average rate of marijuana-related visits to the children’s hospital doubled after legalization. Poison center calls about marijuana went from nine in 2009 to 47 in 2015.”

In the 2017 interview by NBC News, Dr. Wang explained that “The perception of risk has gone down quite a bit.” In the same interview, he goes on to say that “People believe marijuana is safe – but it is not.”⁷

Mysterious Illness Tied to Marijuana Use on the Rise in States with Legal Weed: An Indianapolis physician recently diagnosed a condition in a patient, Lance Crowder, who had been experiencing severe abdominal pain and vomiting for over two years. None of the local physicians had been able to diagnose the problem, until now. Over the past several years there has been an increase in the number of emergency room visitors presenting with the same exact signs and symptoms as Lance, known as cannabinoid hyperemesis syndrome (CHS).

Dr. Kennon Heard of Aurora, Colorado co-authored a study published in 2015 which showed that when medical marijuana became widely available, emergency room visit diagnoses for CHS in two Colorado hospitals nearly doubled. “It is certainly something that, before legalization, we almost never saw,” Heard said in an interview. “Now we are seeing it quite frequently.”

“CHS has only been recognized for about the past decade, and nobody knows exactly how many people suffer from it. But as more states move towards the legalization of marijuana, emergency room physicians like Dr. Heard are eager to make sure both doctors and patients have CHS on their radar.”⁸

For Further Information on Emergency Department Visits and Hospitalizations See Page 155

Sources

¹ American Academy of Professional Coders, "ICD-10 FAQ," <<https://www.aapc.com/icd-10/faq.aspx>>, accessed August 1, 2017.

² Medical Expenditure Panel Survey 2014, "Emergency Room Services-Median and Mean Expenses per Person With Expense and Distribution of Expenses by Source of Payment: United States," U.S. Department of Health and Human Services.

³ Karen Randall, DO, "MJ ER Visits/Exposure," e-mail message, September 14, 2017.

⁴ Brad Roberts, MD, "MJ ER Visits/Exposure," e-mail message, September 15, 2017.

⁵ Brad Roberts, MD, "Dangers of Marijuana Experienced Firsthand," May 15, 2017, <<http://www.acepnow.com/article/dangers-marijuana-experienced-firsthand/>>, accessed August 9, 2017.

⁶ Matt Kroschel, "Pot-Related ER Visits Increase Among Visitors To Colorado," February 14, 2017, <<http://denver.cbslocal.com/2017/02/14/pot-related-er-visits-increase-among-visitors/>>, accessed September 12, 2017.

⁷ Maggie Fox, "ER Visits for Kids Rise Significantly After Pot Legalized in Colorado," NBC News, May 5, 2017, <<http://www.nbcnews.com/health/health-news/er-visits-kids-rise-significantly-after-pot-legalized-colorado-n754781>>, accessed May 4, 2017.

⁸ Jonathan Lapook, "Mysterious illness tied to marijuana use on the rise in states with legal weed," KKTV/CBS, December 28, 2016, <<http://www.kktv.com/content/news/Mysterious-illness-tied-to-marijuana-use-on-the-rise-in-states-with-legal-weed-408565045.html>>, accessed August 2, 2017.

SECTION 5: Marijuana-Related Exposure

Some Findings

- Marijuana-related exposures **increased 139 percent** in the four-year average (2013-2016) since Colorado legalized recreational marijuana compared to the four-year average (2009-2012) prior to legalization.
- Marijuana-related exposures in children (ages 0 to 5) nearly tripled in the four-year average (2013-2016) since Colorado legalized recreational marijuana compared to the four-year average (2009-2012) prior to legalization.
- For adults 26 years of age or older, nearly triple the amount of yearly marijuana-related exposures occurred in 2013-2016 as compared to 2009-2012.
- Marijuana only exposures more than doubled (**increased 210 percent**) in the four-year average (2013-2016) since Colorado legalized recreational marijuana compared to the four-year average (2009-2012) prior to legalization.

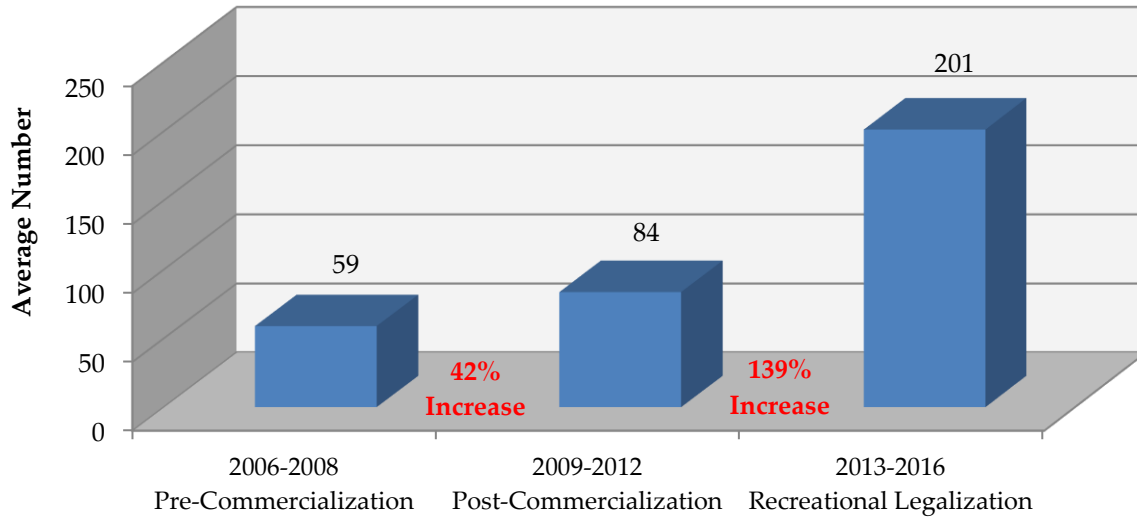
Definitions

Marijuana-Related Exposure: Any phone call to the Rocky Mountain Poison and Drug Center in which marijuana is mentioned.

Marijuana Only Exposure: Marijuana was the only substance referenced in the call to the poison control center.

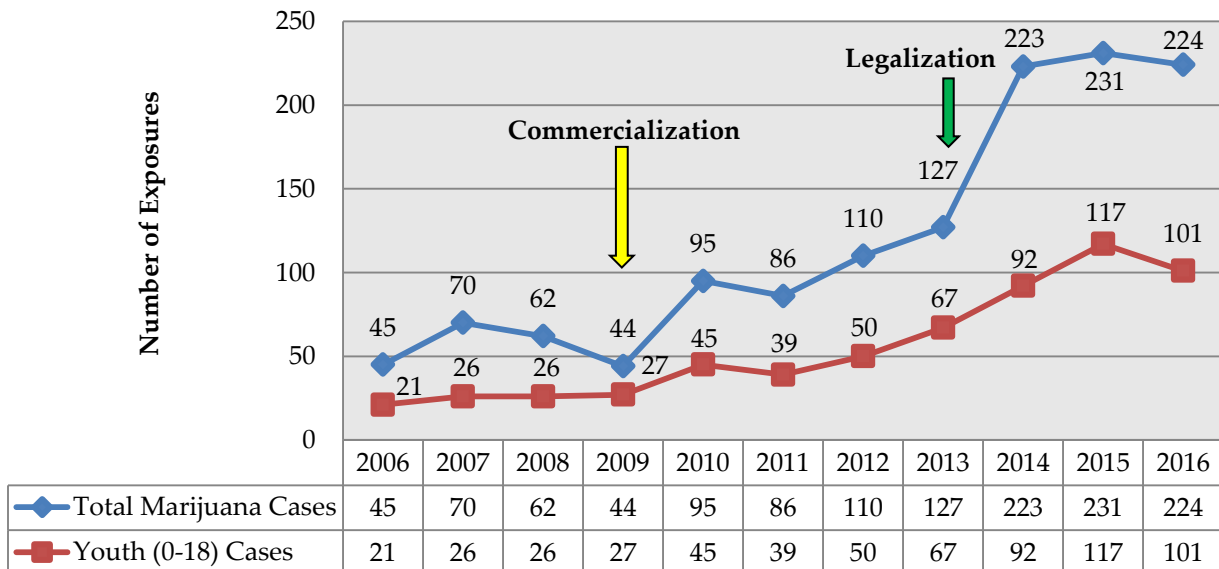
Data

Average Number of Marijuana-Related Exposures, All Ages



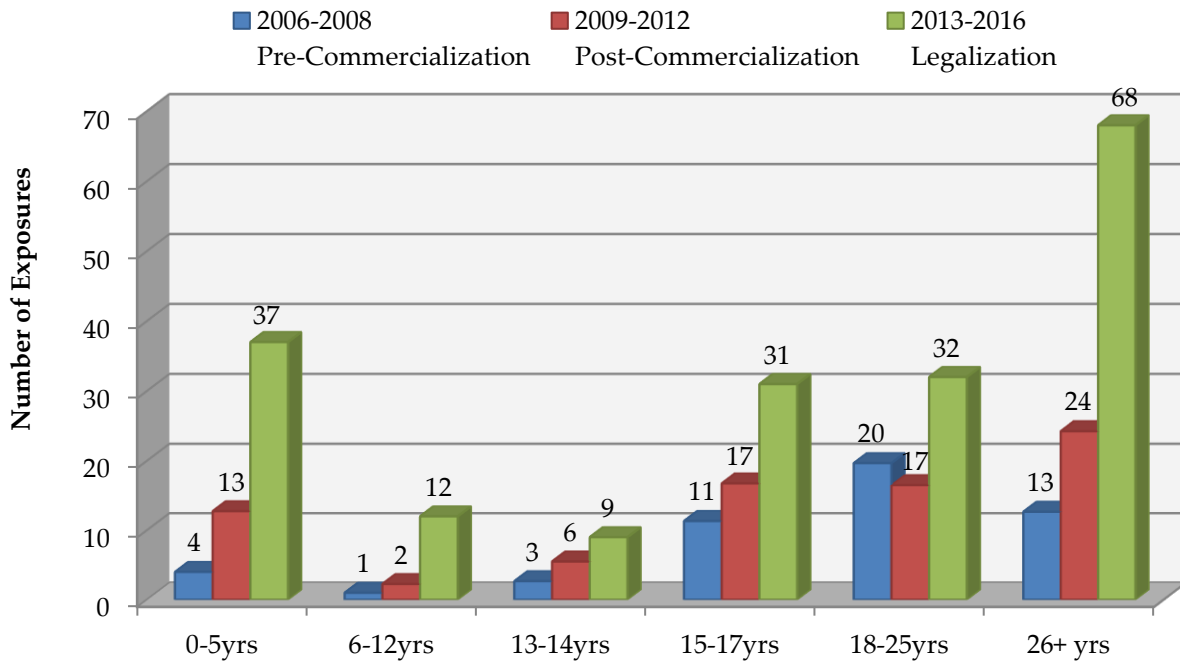
SOURCE: Rocky Mountain Poison and Drug Center

Marijuana-Related Exposures



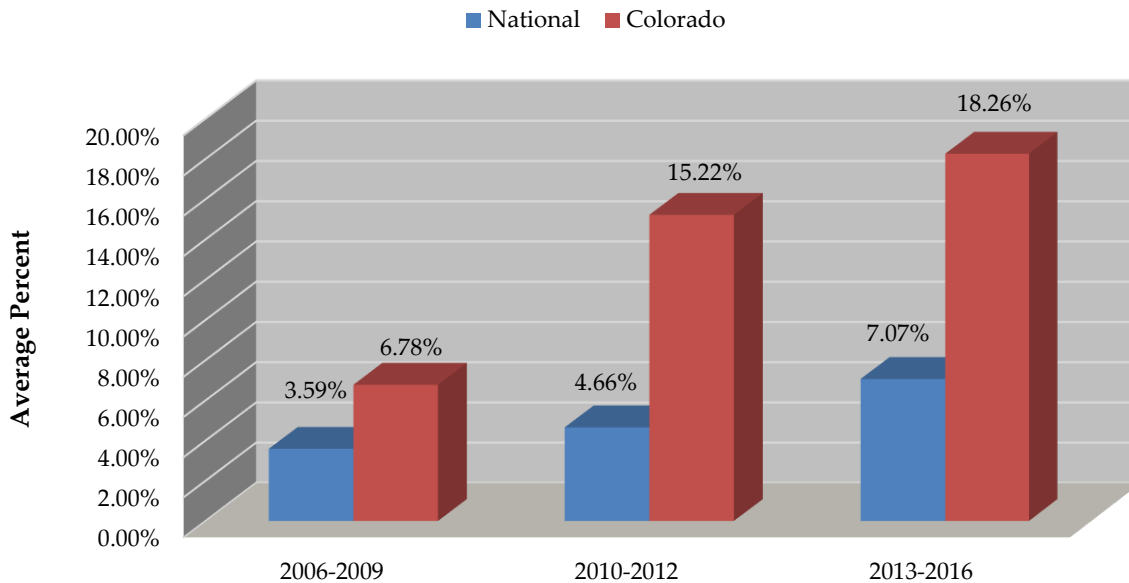
SOURCE: Rocky Mountain Poison and Drug Center Report, Colorado Marijuana Statistics for 2016

Average Marijuana-Related Exposures by Age Range



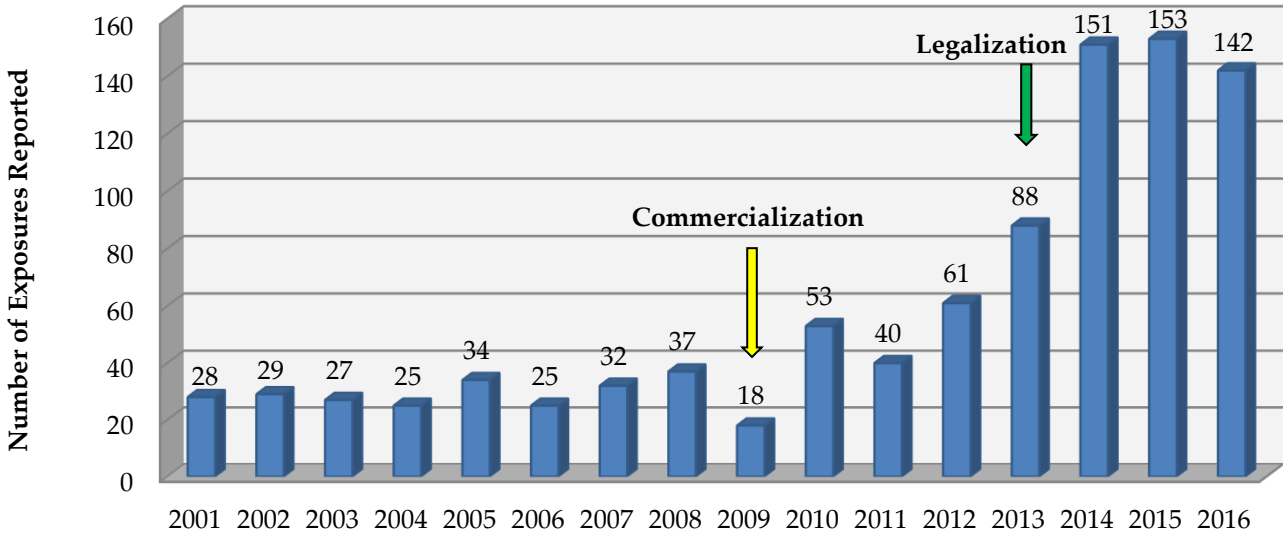
SOURCE: Rocky Mountain Poison and Drug Center

Average Percent of All Marijuana-Related Exposures, Children Ages 0 to 5 Years Old



SOURCE: Rocky Mountain Poison and Drug Center

Number of Marijuana Only* Exposures Reported



*Marijuana was the only substance referenced in the call to the poison control center

SOURCE: Rocky Mountain Poison and Drug Center

Case Examples

Rocky Mountain Poison and Drug Center: ¹

“Caller asking if there is such thing as a withdrawal phenomenon with marijuana? Her daughter is home from college and she is having major anxiety since being home and not smoking her daily weed. She also wants to know if it will ‘hurt her brain’ while in college if she smokes regularly? She was advised that yes, withdrawal has been described after heavy use. And that yes, there could be effects to her brain.”

“Caller concerned – had out of town guests staying at her house. Made a favorite pie one day when they were out, and substituted marijuana oil for the normal amount of oil. She did not intend for her guests to eat her pie. Guests ate a significant amount one day when she was upstairs and developed paranoia, confusion, and feeling ‘stoned.’ The effects wore off the next day.”

“Caller ate a couple marijuana gummys [sic] while at work, not knowing they were MJ-containing. Developed lightheadedness and dizziness, which resolved the next day without any treatment.”

“Caller asking if marijuana can be transferred to baby who is breast-feeding.”

“Caller says her spouse ingested an edible containing THC and felt nauseous. Then took an OTC [over the counter] medicine to counteract the queasiness, and then felt worse (foggy, dizzy, confused). PC referred caller to an Emergency Department because of her worsened status.”

Colorado dog dazed and confused: In late 2016, Colorado resident Heidi Sodetz took her two golden retrievers for a run on Tenderfoot Mountain. According to the resident, one of the dogs began to act strangely approximately an hour after the run. Lenni was “...barely moving, not responsive and even peed herself on the carpet, something she never does.” The dog was taken to the Buffalo Mountain Animal Hospital in Silverthorne, CO to investigate what was happening.

Based on the signs and symptoms, the local veterinarian was immediately suspicious of THC being in the dog’s blood. The dog tested positive for THC, the psychoactive ingredient in marijuana. According to the owner, who claims to not use the drug, “the only plausible explanation was that Lenni had eaten a marijuana edible that someone had dropped on the trail.”

Dr. Michelle Gross, Lenni’s primary care provider said “For me, lately it’s been about one or two a month, but it used to be maybe once a year.” Coincidentally, there were two additional dogs being treated for marijuana exposure at the same facility at the same time.²

For Further Information on Exposures See Page 157

Sources

¹ Rocky Mountain Poison and Drug Center, August 2017.

² Jack Queen, “Colorado dog dazed and confused after eating marijuana edibles found on trail,” *Summit Daily*, <<http://www.summitdaily.com/news/marijuana/in-colorado-marijuana-edibles-increasingly-sending-dogs-to-the-animal-er/>>, accessed September 12th, 2017.

THIS PAGE INTENTIONALLY LEFT BLANK

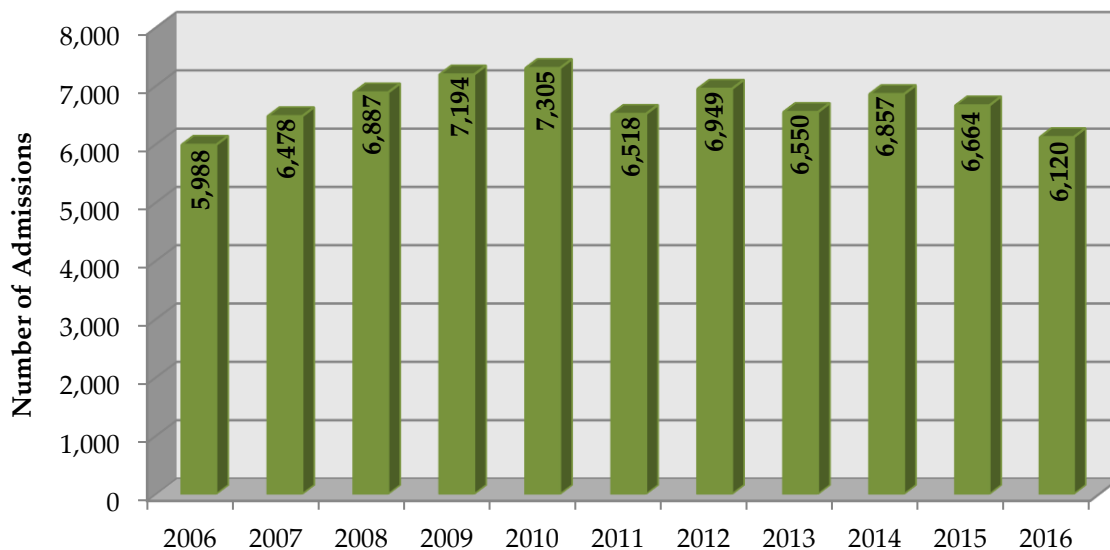
SECTION 6: Treatment

Some Findings

- Marijuana treatment data from Colorado in years 2006 – 2016 does not appear to demonstrate a definitive trend. Colorado averages **6,683** treatment admissions annually for marijuana abuse.
- Over the last ten years, the top four drugs involved in treatment admissions were alcohol (average **13,551**), marijuana (average **6,712**), methamphetamine (average **5,578**), and heroin (average **3,024**).

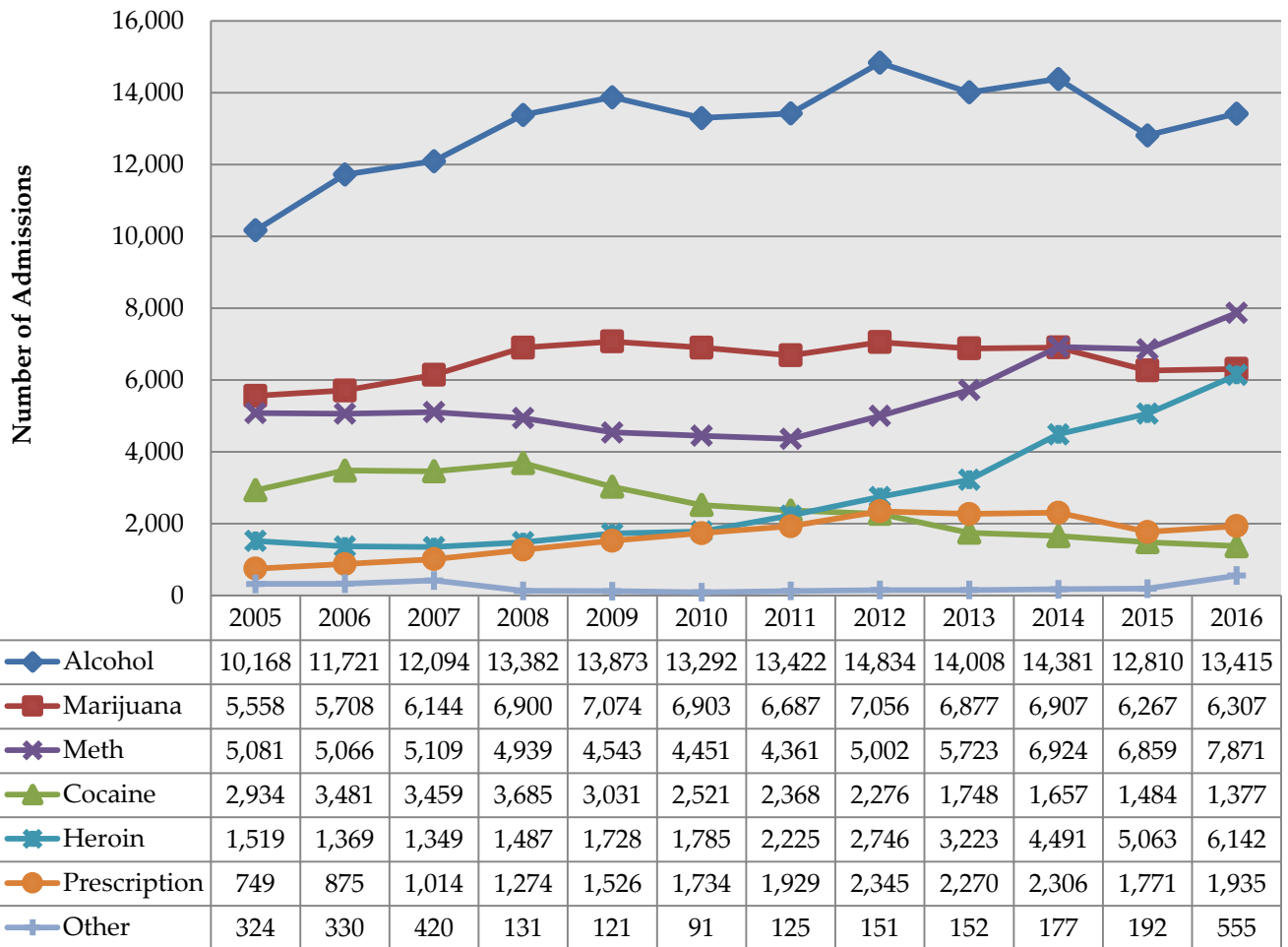
Data

Treatment with Marijuana as Primary Substance of Abuse, All Ages



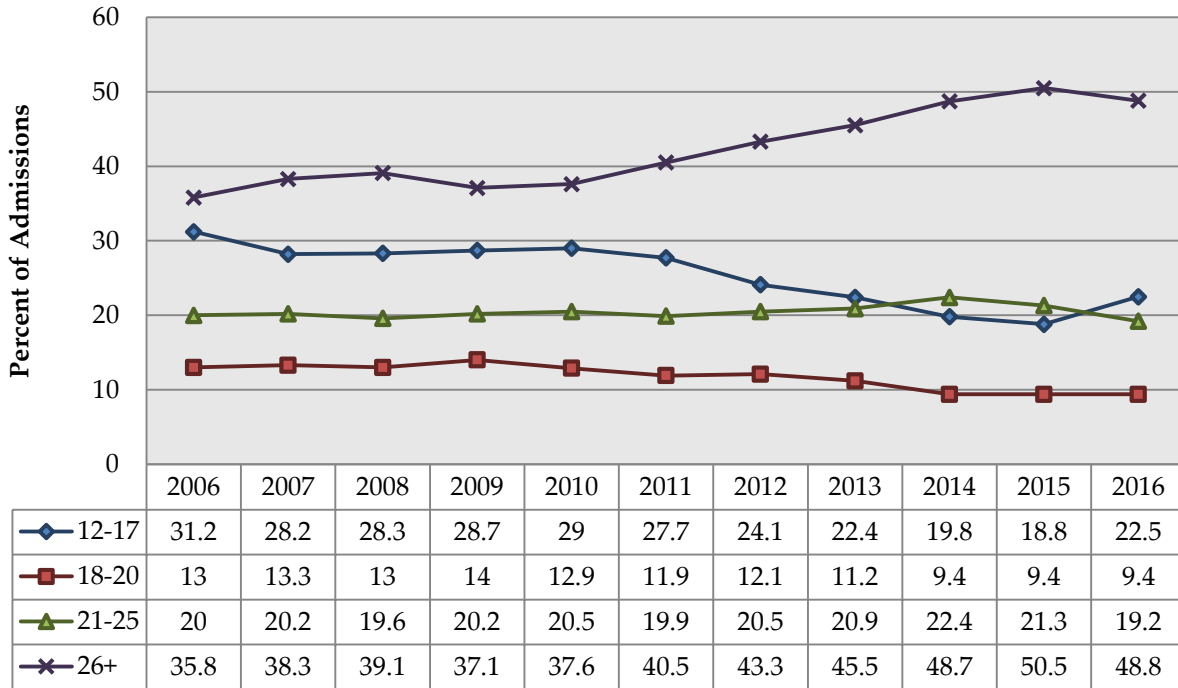
SOURCE: Center for Behavioral Health Statistics and Quality, Substance Abuse and Mental Health Services Administration, Treatment Episode Data Set (TEDS) Based on administrative data reported by States to TEDS through July 6, 2017

Drug Type for Treatment Admissions, All Ages



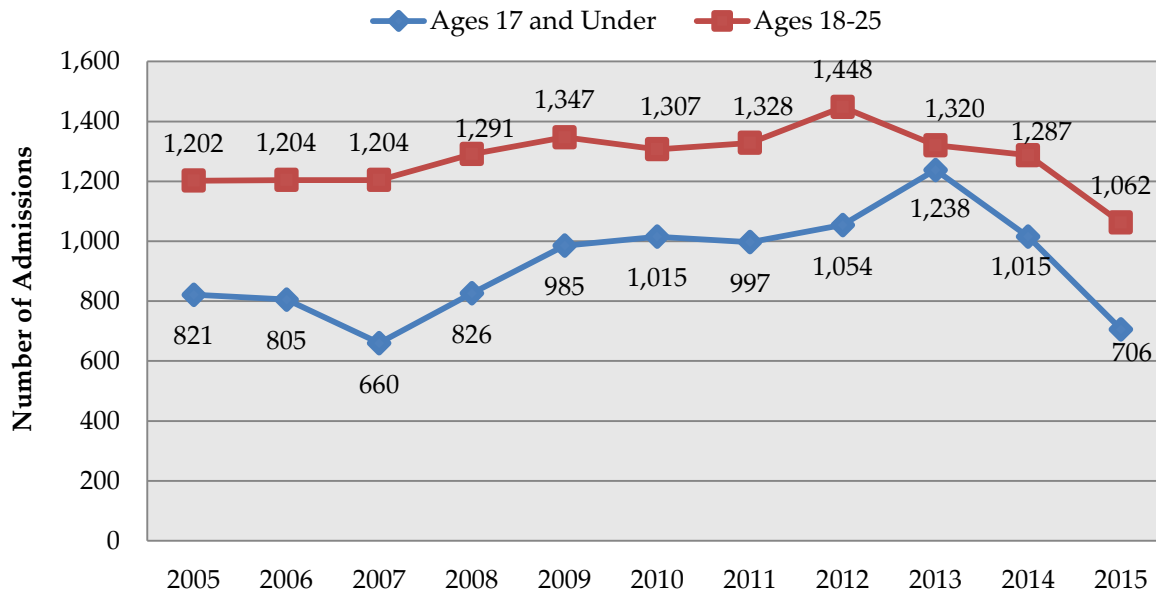
SOURCE: Colorado Department of Health Services, Office of Behavioral Health, 2005-2016

Percent of Marijuana Treatment Admissions by Age Group



SOURCE: Center for Behavioral Health Statistics and Quality, Substance Abuse and Mental Health Services Administration, Treatment Episode Data Set (TEDS) Based on administrative data reported by States to TEDS through July 6, 2017

Marijuana Treatment Admissions Based on Criminal Justice Referrals



SOURCE: Colorado Department of Health Services, Office of Behavioral Health, 2005-2016

Comments from Colorado Treatment Providers

“...Symptoms Are So Debilitating...”: “Many patients minimize the consequences of cannabis use, yet they consistently report that they have become isolated, paranoid and unable to effectively interact with the outside world. In treatment, there has been a consistent increase in psychosis associated with patients who use cannabis. Thought broadcasting, thought insertion, ideas of reference and command hallucinations are not uncommon. These symptoms often occur in the absence of any other psychiatric disorder. The symptoms appear to decrease over time, with more time in recovery, but it is unclear whether the symptoms are long lasting. Since these symptoms are so debilitating, it is crucial to learn more about the long term effects of cannabis use.”¹

“...Lives Have Been Completely Disrupted...”: “In my professional experience, have definitely seen more cannabis use in the individuals I am treating. I've also seen an increasing number of young men coming into treatment with symptoms of mania, psychosis and dangerous behaviors associated with cannabis use. Their lives have been completely disrupted due to the cannabis use. Unfortunately, abstinence from the cannabis use alone is not enough to make the symptoms go away. They require mood stabilizing and anti-psychotic medications to get to a point that they can communicate

coherently enough and trust others enough to participate in therapy. I do think this is related to the increased availability and potency, and this is consistent with the scientific literature.

On a personal note, my 10 and 11 year old children know what cannabis smoke smells like, identifying cannabis in the area rather than wondering if it is a skunk. Public use occurs everywhere. Children call each other, 'vapers,' in their less kind moments, and children with anything green are made fun of. One of my 11 year old's friends since preschool was allegedly expelled for selling cannabis on the 5th grade campus. As a parent, I'm terrified for the future of our children." ²

"...Psychosis and Cannabis is Well Documented...": "We recently reviewed data for patients receiving treatment in the residential portion of our substance abuse treatment center, CeDAR. What we found was that patients who met criteria for a cannabis use disorder were markedly younger than those that did not, were much more likely to have other substance use disorders (an average of 2.8 substance use disorder diagnoses vs 1.9 substance use disorder diagnoses when cannabis use disorder was excluded) and there was a trend towards more mental health pathology in this data set as well.

Anecdotally, I and my colleagues have seen the number of patients with cannabis use disorder admitted to our facility increase over time. The amount of cannabis that patients describe consuming is also increasing, while the age they report first starting to use is decreasing. Overall the severity of cannabis use disorder we see appears more severe as do the psychosocial sequelae of this addiction. The link between psychosis and cannabis is well documented and it is becoming routine to admit young men who have used cannabis since early adolescence and who present with psychosis. Many of these patients may suffer long standing neuropsychiatric symptoms as the result of cannabis use. The burden of this illness is disproportionately falling on our younger population." ³

Case Examples

Colorado Doctor's Warning to Vermont: Dr. Karen Randall, a practicing emergency medicine physician out of Pueblo, CO, described her first-hand experience of how marijuana has affected her community in Pueblo. Dr. Randall tells Vermont voters how the marijuana industry originally lured her community into becoming "the Napa Valley of Pot" by promising jobs and tax income but instead her community received an influx of homeless and low income jobs where workers are a burden on the Medicaid system

and other government assistance programs. Furthermore, she describes how “the number of youth testing positive for marijuana plus methamphetamine and/or heroin” has increased in her hospital as marijuana use becomes “normalized in public by some parents.” According to Dr. Randall, in 2016, “257 of 300 community physicians signed an open petition in the paper in support of reversing the marijuana stance in [Pueblo] county.” She urges Vermont voters to ask “local professionals how they feel” about the issue before voting.⁴

For Further Information on Treatment See Page 157

Sources

¹ Bari K Platter, MS, RN, PMHCNS-BC, Clinical Nurse Specialist, Center for Dependency, Addiction and Rehabilitation (CeDAR), University of Colorado Health, Aurora, Colorado, August 2016.

² Laura F. Martin, M.D. Distinguished Fellow of the American Psychiatric Association, American Board of Addiction Medicine Diplomate Medical Director, Center for Dependency, Addiction and Rehabilitation (CeDAR), Associate Professor, Department of Psychiatry, University of Colorado School of Medicine, August 2016.

³ Ruth Marie Huhn, M.D., Board Certified Attending Psychiatrist at the Center for Dependency, Addiction and Rehabilitation (CeDAR), Instructor, Department of Psychiatry, University of Colorado School of Medicine, August 2016.

⁴ Dr. Karen Randall, *VTDIGGER*, “Karen Randall: Marijuana legalization from a Colorado community member,” <<https://vtdigger.org/2017/06/20/karen-randall-marijuana-legalization-colorado-community-member/#.WcFCX8KWY71>> accessed September 19, 2017.

SECTION 7: Diversion of Colorado Marijuana

Some Findings

- In 2016, RMHIDTA Colorado drug task forces completed **163 investigations** of individuals or organizations involved in illegally selling Colorado marijuana both in and out of state.
 - These cases led to:
 - **252** felony arrests
 - **7,116 pounds (3.5 tons)** of marijuana seized
 - **47,108** marijuana plants seized
 - **2,111** marijuana edibles seized
 - **232** pounds of concentrate seized
 - **29** different states to which marijuana was destined
- Highway interdiction seizures of Colorado marijuana **increased 43 percent** in the four-year average (2013-2016) since Colorado legalized recreational marijuana compared to the four-year average (2009-2012) prior to legalization.
- Highway interdiction seizures of Colorado marijuana **increased 20 percent** from **288** in 2013, when recreational marijuana was legalized, to **346** in 2016.
- Of the **346** highway interdiction seizures in 2016, there were **36 different states** destined to receive marijuana from Colorado.
 - The most common destinations identified were Illinois, Missouri, Texas, Kansas and Florida.
 - Approximately half of all seizures (**48 percent**) containing Colorado marijuana originated from Denver.

Definitions

Colorado Marijuana Investigations: RMHIDTA Colorado drug task forces investigating individual or organizations involved in illegally selling Colorado marijuana, both within and outside of the state. These investigations only include those reported by the ten RMHIDTA drug task forces.

Colorado Marijuana Interdictions: Incidents where state highway patrol officers stopped a driver for a traffic violation and subsequently found Colorado marijuana destined for other parts of the country. These interdiction seizures are reported on a voluntary basis to the National Seizure System (NSS) managed by the El Paso Intelligence Center (EPIC). These are random traffic stops, not investigations, and do not include local law enforcement data.

- ❖ **A Colorado document contained the following statement in one of their presentation slides: “Data prior to 2014 is not comparative due to changes in the reporting. The RMHIDTA began entering seizure data into the NSS beginning January 1, 2014 and that resulted in a spike of seizures being reported. There has not been a discernable upward trend in seizures since retail sales began in 2014.”**

This statement is inaccurate and misleading. The data used in the Rocky Mountain HIDTA report is only highway patrol seizures and not from any of the task forces or drug units. This is the same dataset that RMHIDTA has been using since 2005.

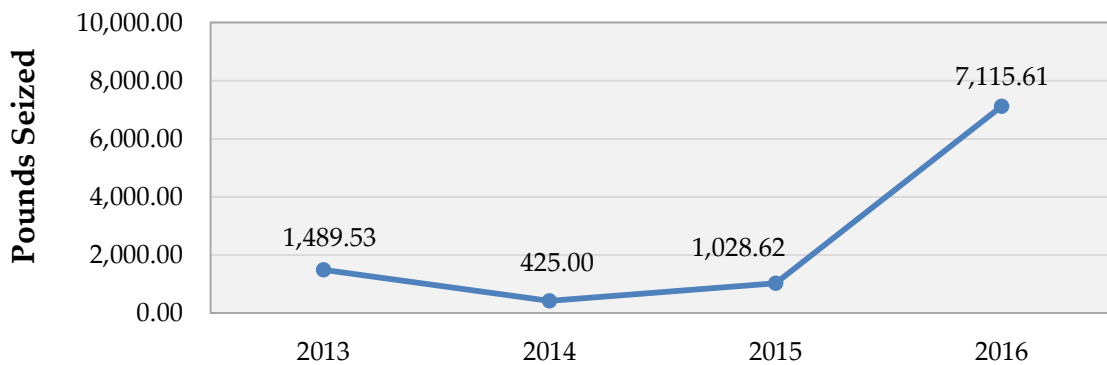
Data on Marijuana Investigations

NOTE: THE CHARTS ONLY INCLUDE COMPLETED INVESTIGATIONS REPORTED BY THE TEN RMHIDTA DRUG TASK FORCES. IT IS UNKNOWN HOW MANY OF THESE TYPES OF INVESTIGATIONS WERE COMPLETED BY NON-RMHIDTA DRUG UNITS OR TASK FORCES.

- ❖ **The RMHIDTA drug task force unit commanders feel that the Colorado marijuana investigations completed in 2016 only impacted a relatively small portion of actual operations involved in illegally selling Colorado marijuana both in and out of state.**

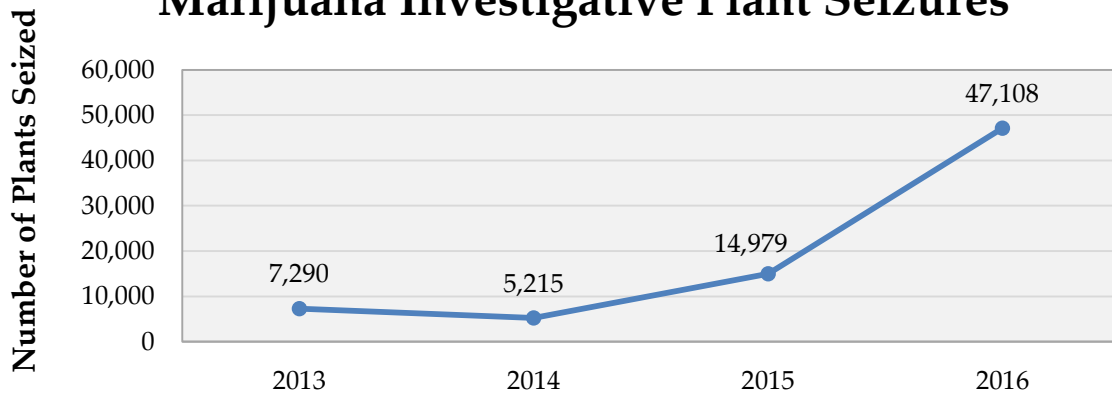
In 2016, ten RMHIDTA Colorado drug task forces completed **163 investigations** of individuals or organizations involved in illegally selling Colorado marijuana both within and outside of the state. The task forces seized approximately **3.5 tons of marijuana; 47,108 plants; 2,111 edibles; and 232 pounds of concentrate**. There were **252 felony marijuana arrests** and **29 different states** identified as to where the Colorado marijuana was being sent.

**RMHIDTA Colorado Task Forces:
Marijuana Investigation Seizures**



SOURCE: Rocky Mountain HIDTA Performance Management Process (PMP) Data

RMHIDTA Colorado Task Forces: Marijuana Investigative Plant Seizures

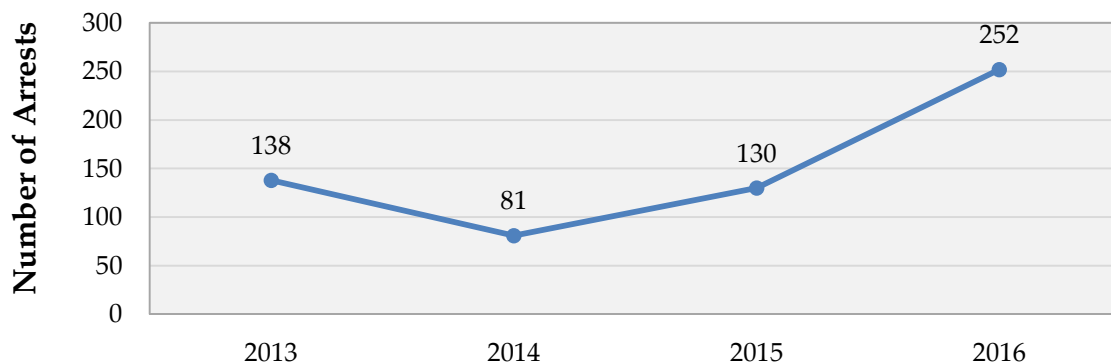


SOURCE: Rocky Mountain HIDTA Performance Management Process (PMP) Data

- **Marijuana Concentrate Seizures**
 - 2016: 232.12 pounds of hash oil (1,099 percent increase from 2015).
 - 2015: 19.36 pounds of hash oil.
 - Data not collected prior to 2015.

- **Marijuana Edible Seizures**
 - 2016: 2,111 individual edible items (633 percent increase from 2015).
 - 2015: 288 individual edible items.
 - Data not collected prior to 2015.

RMHIDTA Colorado Task Forces: Marijuana Investigative Felony Arrests



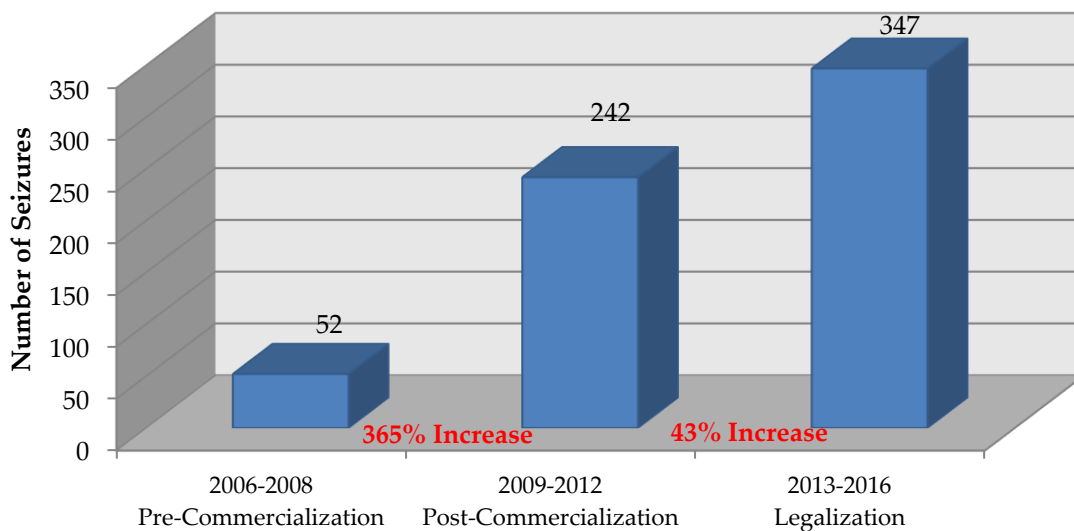
SOURCE: Rocky Mountain HIDTA Performance Management Process (PMP) Data

Data on Highway Interdictions

NOTE: THE CHARTS ONLY INCLUDE CASES WHERE COLORADO MARIJUANA WAS ACTUALLY SEIZED AND REPORTED. IT IS UNKNOWN HOW MANY COLORADO MARIJUANA LOADS WERE NOT DETECTED OR, IF SEIZED, WERE NOT REPORTED.

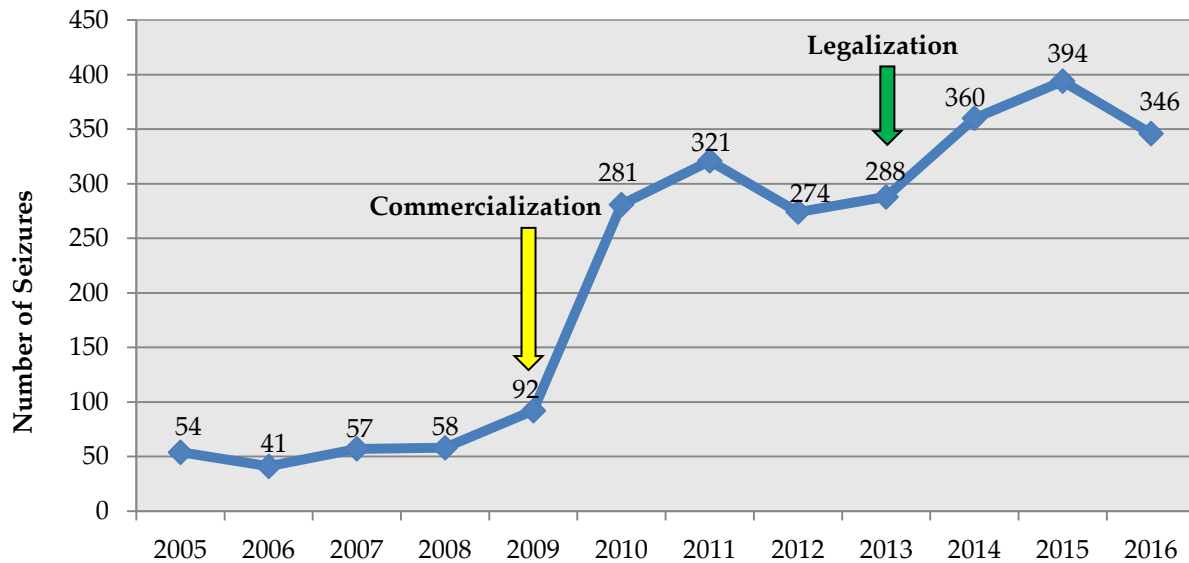
- ❖ A 2014 survey of approximately 100 interdiction experts estimates that 10 percent or less of marijuana being trafficked is seized by state highway patrol agencies.

Average Colorado Marijuana Interdiction Seizures



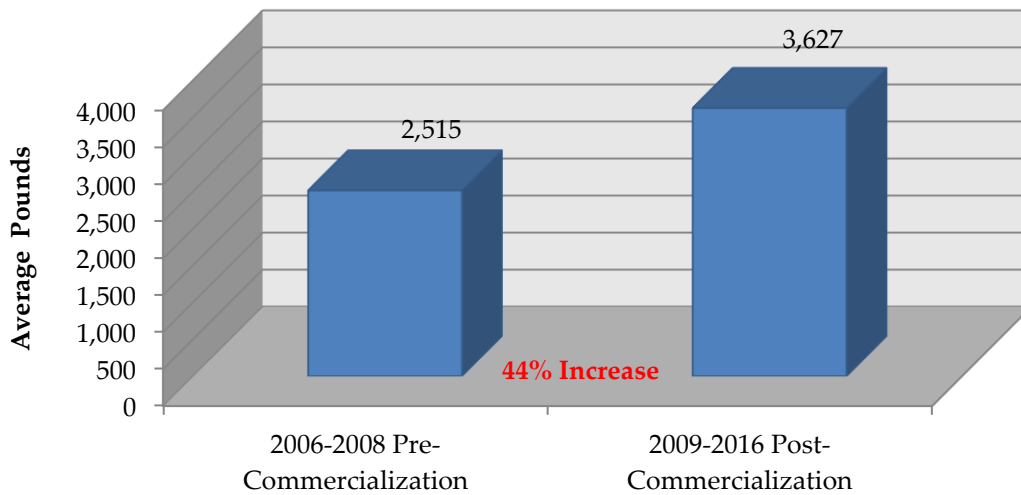
SOURCE: El Paso Intelligence Center, National Seizure System, as of August 28th, 2017

Colorado Marijuana Interdiction Seizures



SOURCE: El Paso Intelligence Center, National Seizure System, as of August 28th, 2017

Average Pounds of Colorado Marijuana from Interdiction Seizures



SOURCE: El Paso Intelligence Center, National Seizure System, as of August 28th, 2017

- ❖ In the four years (2013-2016) of legalized recreational marijuana in Colorado, highway patrol seizures have resulted in over 6 tons of Colorado marijuana being seized (12,873 pounds).

States to which Colorado Marijuana was Destined, 2016 (Total Reported Incidents per State)



❖ There were 15 seizures for which the destination was unknown.

Top Three Cities for Marijuana Origin

Originating City Rank	Number of Seizures from Originating City	Percent
1. Denver	166	48%
2. Colorado Springs	34	10%
3. Aurora	13	4%

* Of the 346 seizures, only 283 seizures had an origin city identified. The numbers above represent the top three cities from which Colorado marijuana originated. The percent was calculated from known origin cities.

SOURCE: El Paso Intelligence Center, National Seizure System, as of August 28th, 2017.

Case Examples of Investigations

NOTE: THE EXAMPLES BELOW ARE ONLY A SMALL SAMPLE OF THE MANY INVESTIGATIONS INVOLVING COLORADO MARIJUANA CITED BY VARIOUS DRUG UNITS.

Dozens of Indictments in Largest Illegal Marijuana Trafficking Ring Bust since

Legalization: Colorado Attorney General Cynthia Coffman announced that the largest illegal marijuana trafficking investigation has resulted in arrests in late June of 2017. The trafficking organization spanned five states, and the investigation resulted in 62 people having files charged against them. More than 20 law enforcement organizations were involved in the investigation and/or takedown which included the Denver Police Department and the U.S. Drug Enforcement Administration. According to Coffman, this single investigation is a prime example of how the marijuana black market continues to flourish in Colorado.

During raids, agents seized 2,600 marijuana plants and another 4,000 lbs. of marijuana. As a whole, the trafficking ring produced an estimated 100 lbs. of marijuana a month, which is sold for approximately \$2,000 per pound on the black market in Colorado. ¹

Indictment in Colorado Pot Biz's Largest Fraud Case Ever: Scott Pack was indicted by a grand jury in what attorney Matthew Buck referred to as "the largest fraud case in the history of Colorado's marijuana industry." The large operation that distributed Colorado grown marijuana across state lines ended in the indictment of sixteen people. Among those indicted was Renee Rayton, a former Marijuana Enforcement Division employee.

According to attorney Matthew Buck, "There are potentially victims for as much as \$10 million. Scott Pack's company is one of the larger marijuana companies in Colorado. They own a significant number of licenses, and through a series of shell companies, they hold the leases on many buildings across the state."

In the *Westword* article published June of 2017, Buck continued to describe the details of the indictment, and said "[Scott Pack] had a sophisticated understanding of how to use loopholes to get around state law." ²

Arrests Made in South Pueblo County Marijuana Grow: According to a press release by the Pueblo County Sheriff's Office, three individuals were arrested on April 13th, 2016 in connection with an illegal marijuana grow operating from within a Pueblo, CO home. In total, 180 marijuana plants were found growing in the home being occupied by the three individuals.

The three individuals had been living in Florida, but were originally from Cuba. One of the three individuals had recently purchased the home in February of 2016.

Although the press release did not specifically state that the marijuana was being illegally trafficked outside the state, several indicators suggest that the marijuana was intended to leave Colorado. Twelve people, all from Florida, have been arrested in seven separate illegal marijuana grow operations discovered in Pueblo County on March 30th and April 14th, 2016. Five of the twelve individuals were originally from Cuba. ³

Individuals Indicted for an Illegal Home-grow Also Possess Legal Marijuana

Licenses: In March 2017, 16 people were indicted for participating in a massive illicit marijuana home-grow operation. Of the 16, eight are recorded as having active or expired licenses to work in the legal marijuana business including the ringleader, Michael Alan Stonehouse, who acts as a consultant for the marijuana industry in Colorado. According to authorities, the group cultivated their marijuana in properties in Colorado Springs, Castle Rock, Elbert County and Denver and then diverted the marijuana to **Illinois, Arkansas, Minnesota and Missouri** to make a higher profit. ⁴

All in the Family Marijuana Operation: Weld County Drug Task Force received a crime tip that a family was involved in cultivating and distributing marijuana from properties located in Weld County. Information was that they were shipping the marijuana out of state as motor cycle parts using “runners” utilizing parcel post. A search warrant was served on the rural properties of the father and mother where officers discovered 101 marijuana plants and marijuana in vacuum sealed bags. However, the mother and father were able to show they had medical marijuana licensing allowing them to have 50 marijuana plants each and 16 ounces of edibles. A search warrant on the son’s and daughter-in-law’s rural residence did not have any documentation and led to the seizure of 379 marijuana plants, 70 pounds of marijuana, 13 pounds of edibles, 6 shot guns, 6 rifles, and 6 pistols. One of the “runners” was at the scene and arrested for having multiple pounds of dried marijuana in vacuum sealed containers and edibles hidden in his vehicle. ⁵

Laotian Marijuana Operation: Southern Colorado Drug Task Force managed by DEA began an investigation of a Laotian drug trafficking organization that had relocated to Colorado from Arkansas and California. This organization had 12 different cultivation marijuana sites located in 5 different counties in southeast Colorado. Task force officers served search warrants seizing 2,291 marijuana plants, 2,393 pounds of processed marijuana. Also seized were 4 hand guns and 6 long guns. ⁵

Rental House Remodel: In February 2016, Western Colorado Drug Task Force arrested two Cubans from Florida for illegally growing marijuana for distributions. These two rented a \$750,000 house and modified it to cultivate marijuana at a cost of about

\$50,000. Both subjects obtained medical marijuana cards with a doctor's recommendation for 99 plants each. Agents seized the "first round of plants" (63), equipment for a butane hash-oil lab and a hand gun.⁵

Florida and Colorado Connection: Southern Colorado Drug Task Force managed by DEA executed search warrants in the Pueblo area targeting a drug trafficking organization that had relocated from Florida to Colorado for sole purpose of setting up a large scale marijuana grow operation. As a result of a search warrant, officers seized 1,900 marijuana plants, 17 pounds of processed marijuana, 2 butane hash oil extraction labs and 9 fire arms. There was an independent seizure in Texas that the group was responsible for which included 12 pounds of marijuana and marijuana shatter. The search warrant resulted in 7 arrests.⁵

Marijuana and Guns: Southwest DTF with DEA targeted a drug trafficking organization responsible for cultivation and distribution of hundreds of pounds of marijuana outside the state of Colorado. Search warrants were served on a number of residents where officers discovered marijuana cultivation as well as 480 pounds of packaged marijuana, 13 fire arms and numerous expired "medical" marijuana licensing documents.⁵

Large BHO Lab Seized: West Metro Drug Task Force served a search warrant on a residence in Jefferson County. Officers seized 2 large butane hash oil labs along with 5 five-gallon butane tanks, 271 marijuana plants, hash and numerous guns. Officers also discovered documentation confirming the distribution of hash and marijuana to Florida.⁵

Florida Cuban Drug Trafficking Organization: In May 2016, Southern Colorado Drug Task Force executed search warrants at 5 different residential locations operated by a group of Cubans from Florida. These grow operations were in Pueblo County and offices seized a total of 214 marijuana plants, 55 pounds of processed marijuana and over \$100,000 in grow equipment.⁵

Mississippi Connection: In August 2016, Western Colorado Drug Task Force arrested two suspects from Mississippi who recently moved to Colorado to cultivate marijuana and to distribute it back to Mississippi. They rented an upscale house and made major modifications including theft of electrical power. About 50 percent of the living space of the home was used to cultivate marijuana. Agents seized 306 marijuana plants and turned the three young children who were living in the house over to Child Protective Services.⁵

Marijuana Bust in Northeast Colorado Springs: In July of 2017, federal agents hauled at least 180 marijuana plants out of a private residence in northeast Colorado Springs. Although authorities did not disclose many details of the investigation, they did disclose that one person was taken into custody, and that they had prior knowledge of the illegal marijuana grow inside the home.

The home was currently being rented, and the owner lived out of state. It wasn't stated whether or not marijuana was being trafficked outside of Colorado, but a 180 marijuana plant operation is certainly enough to contribute significantly to an illegal trafficking operation. ⁶

Colorado Deputy Finds 180 Pounds of Marijuana Mixed in with Tractor Trailer's Onion Load: In December of 2016, a Sheriff's Deputy with Prowers County in southeastern Colorado made an interesting discovery. The truck was pulled over after remaining in the passing lane while traveling from Brighton, CO to **Naples, Florida**. The driver of the vehicle consented to the search of the vehicle after the deputy issued a warning for the driving infraction. Upon further investigation, the deputy found over 180 lbs. of marijuana mixed in among a load of onions being hauled by a tractor-trailer. In total, there were three trash bags containing marijuana, and eight packages of plastic wrapped marijuana concealed in the trailer. ⁷

Case Examples of Interdictions

Tractor-Trailer Marijuana Transport: May 2017, Florida Highway Patrol stopped a semi-truck and trailer traveling southbound through Alachua, FL. Upon search of the vehicle, 170 lbs. of marijuana was located and seized by state troopers. The vehicle was traveling from Colorado to **Florida**. ⁸

Motorhome Carrying 100 Pounds of Pot Seized in Tennessee: In August of 2016, a Tennessee Highway Patrol trooper pulled over a vehicle after observing several indicators of possible criminal activity. After requesting backup and obtaining permission to search the vehicle, law enforcement officials found several duffel bags and boxes filled with marijuana. The various containers of marijuana were located in the bedroom area of the motorhome. In total, the various bags and boxes contained approximately 100 pounds of illegally trafficked marijuana. The driver admitted that he obtained the marijuana in Colorado and he was headed to **Florida**. ⁹

Texas DPS Seizes Load Destined for Florida: January 2016, the Texas Department of Public Safety stopped a passenger van traveling southbound US-81. The state trooper

developed reasonable suspicion of criminal activity, and searched the vehicle based on verbal consent provided by the driver. Upon search of the vehicle, over 72 lbs. of marijuana was located in the vehicle. The trip originated in Colorado Springs, CO and was destined for **Jacksonville, Florida**.⁸

Reckless Driving Leads to Over 76 lbs of Marijuana: February 2016, Colorado State Patrol stopped a vehicle due to several public complaints of reckless driving. Initially, the driver of the vehicle would not pull over, but eventually pulled to the side of the road. Upon further investigation, the trooper discovered over 76 lbs. of marijuana and over \$20,000 inside the vehicle. Although the driver's travel plans were not made clear, the driver was a Florida resident.⁸

Colorado Marijuana Variety Headed to Illinois: April 2017, two Illinois residents who recently left Colorado were stopped by Nebraska State Patrol while speeding eastbound along I-80. Upon contact with the driver and passenger, the smell of marijuana was immediately detected by the state trooper. After both occupants admitted that there was marijuana in the vehicle, a thorough search was conducted. Over 4 ounces of marijuana, a limited amount of hash oil infused marijuana, 161 THC infused edibles, marijuana seeds, THC vaporizer oil cartridges, marijuana wax and several items of paraphernalia were discovered in the vehicle.⁸

Illinois: May 2017, a Dodge Charger was stopped for speeding while traveling eastbound along I-80 in Nebraska. The smell of marijuana was immediately detected as the state trooper approached the vehicle. Upon a probable cause search, the four Illinois residents inside the vehicle were found to be in possession of approximately 1.5 lbs. of marijuana, over a hundred THC edibles, nearly two ounces of THC "shatter," 5 grams of THC "wax," 8 freshly rolled "joints," several recently smoked "joints," and other items of paraphernalia.⁸

Indiana "Marijuana Head" with Colorado Marijuana: April 2017, a Kansas Highway Patrol Trooper stopped a vehicle traveling from Colorado to **Indiana** with THC "Shatter," THC "Budder," 54 THC cartridges, 6 lbs. of marijuana, various other marijuana items and a loaded .40 caliber handgun. The suspect claimed all the marijuana was for the consumption of those within the vehicle, and he went on to explain that he is a "marijuana head" and that he had been smoking marijuana since he was a kid.⁸

Colorado Marijuana to Iowa: February 2016, Colorado State Patrol stopped a vehicle traveling from Brighton, Colorado to **Des Moines, Iowa**. The stop resulted in the arrest of the driver from Des Moines, Iowa, passenger from Clearlake, Iowa and the seizure of

8 lbs. of marijuana, 85.05 grams marijuana concentrate, and a S/W M&P 9mm handgun. The vehicle was initially stopped for a signal violation. The marijuana was located inside a large clothing duffel bag in the vehicle's trunk.¹⁰

Colorado Marijuana Plants to Kentucky: May 2017, a vehicle was stopped in eastern Colorado while traveling eastbound from Boulder, Colorado to **Lexington, Kentucky**. After the driver provided his consent to search the vehicle, Colorado State Patrol located 288 individual marijuana plants inside the vehicle.⁸

Colorado Marijuana to Maryland: November 2016, an Ohio State Highway Patrol Trooper stopped a vehicle traveling eastbound along I-80. The driver was a Colorado resident traveling to **Maryland**. After the driver displayed several indications of criminal activity, a canine was allowed to perform an "exterior sniff" of the vehicle. The canine alerted to the presence of an illegal substance. After a thorough search, law enforcement found a variety of cannabis products in the vehicle (chocolate bars, gummies, etc.). Upon questioning, the driver said that he's from Colorado where it's legal to have marijuana.¹¹

Maryland: June 2017, an Ohio State Highway Patrol Trooper stopped a car-hauler traveling eastbound along I-70. Upon investigation, the State Trooper became suspicious of both vehicles being transported on the car-hauler. After driver consent and a subsequent external canine search, a probable cause search was performed and approximately 5 lbs. of marijuana along with 108 vials of liquid THC were discovered in one of the vehicles being transported. The vehicle was being shipped from Denver, Colorado to **Bethesda, Maryland**. There were no indications that the driver of the car-hauler knew he was illegally transporting marijuana.¹²

Minnesota – Medical Marijuana for Distribution: April 2017, a vehicle was stopped while traveling eastbound along I-80 in North Platte, Nebraska. The driver immediately claimed to be a medical marijuana patient who had been diagnosed with multiple sclerosis. Upon further investigation, the driver was found to be in possession of a substantial amount of marijuana, THC liquid vials, and other edible THC products that were packaged in a way that made the state trooper suspicious that the marijuana was intended for distribution. Several of the bags of THC edibles were actually labeled with individual's names. It is assumed that these individual were the intended recipients of the marijuana infused products. The vehicle was traveling from Colorado to **Minnesota**.⁸

Destination Unknown: March 2017, Missouri State Highway Patrol stopped a vehicle from Colorado which was southbound I-29. The Colorado driver would not disclose

where he was traveling to. After several indicators of criminal behavior were noted, a search of the vehicle yielded 26 lbs. of marijuana concealed inside a red duffel bag on the back seat.¹³

Missouri: May 2017, Kansas Highway Patrol stopped a car hauler traveling from Denver, Colorado to **Missouri**. A subsequent search of one of the vehicles being hauled yielded 50 lbs. of high-grade marijuana.¹⁴

New York Distribution: January 2016, Ohio State Patrol stopped a vehicle traveling eastbound along I-70 in Madison County, Ohio. After displaying suspicious behavior when interacting with the state trooper, a canine search was performed on the vehicle. The canine indicated a positive response on the vehicle, and a full search ensued. During the search, 123 lbs. of marijuana were discovered in rubber totes in the rear storage area of the vehicle along with a vacuum sealer machine. The vehicle was traveling from Colorado to **New York**.⁸

Flying to Buy Colorado Marijuana: April 2016, a Kansas Highway Patrol Trooper stopped an eastbound vehicle traveling along I-70. Upon investigation, the sole occupant was found to be in possession of 4.3 lbs. of marijuana, 158 marijuana edibles, and 8 ounces of a THC infused drink. The driver had flown from his home in Pennsylvania and through a third-party had obtained a one way rental from Aurora, Colorado. After buying the recreational marijuana products, the driver was transporting the product to his home state (**Pennsylvania**).⁸

Note: Flying to Colorado and driving back home is a common method for illegally transporting marijuana out of state.

South Carolina Dealer Uses Rental Vehicle: March 2017, Kansas Highway Patrol stopped a vehicle traveling eastbound along I-70 in Goodland, Kansas. After a short roadside investigation, the driver of the vehicle was found to be in possession of 13 lbs. of marijuana, 101 THC vapor cartridges, and 378 fl. oz. of THC infused beverages (20 individual drinks). The driver had rented the vehicle four days prior. He had driven from South Carolina to Colorado, and was headed back to **South Carolina** when he had been stopped in Kansas.⁸

Note: Rental vehicles are commonly used to buy and transport Colorado marijuana out of state.

Marijuana and Concentrate to Iowa: In February 2017, Kansas Highway Patrol stopped a vehicle traveling from Loveland, Colorado to **Iowa**. A search of the vehicle yielded 25 lbs. of marijuana and 1 lb. of THC shatter.¹⁵

Sources

¹ Chuck Hickey, “Dozens of indictments in largest illegal marijuana trafficking ring bust since legalization,” KDVR-TV Channel 2 Denver, June 28, 2017, <<http://kdvr.com/2017/06/28/62-people-12-businesses-indicted-in-largest-illegal-marijuana-ring-bust-in-colorado-history/>>, accessed June 28, 2017.

² Michael Roberts, “Scott Pack Indicted in Colorado Pot Biz’s Largest Fraud Case Ever, Attorney Says,” *Westword*, June 14, 2017, <<http://www.westword.com/news/scott-pack-indicted-in-huge-colorado-marijuana-fraud-case-9156890>>, accessed August 11, 2017.

³ Pueblo County Sheriff’s Office, April 14, 2016, “Arrests Made in South Pueblo County Illegal Marijuana Grow,” <<http://www.sheriff.co.pueblo.co.us/pio/?p=2405>>, accessed July 26, 2017.

⁴ Jesse Paul, “Eight of 16 people indicted in Colorado marijuana trafficking operation listed as having state pot licenses,” *The Denver Post*, March 24, 2017, <<http://www.denverpost.com/2017/03/24/denver-marijuana-smuggling-operation-medical-marijuana-licenses/http://www.denverpost.com/2017/03/24/denver-marijuana-smuggling-operation-medical-marijuana-licenses/>>, accessed April 19, 2017.

⁵ Rocky Mountain HIDTA Task Force Quarterly Reports, Calendar Year 2016-2017.

⁶ Danielle Kreutter, “Marijuana bust in northeast Colorado Springs,” July 12, 2017, <<http://www.kktv.com/content/news/DEA-search-warrant-in--434154383.html>>, accessed July 26, 2017.

⁷ Jesse Paul, “Colorado deputy finds 180 pounds of marijuana mixed in with tractor-trailer’s onion load,” *The Denver Post*, December 8, 2016, <<http://www.denverpost.com/2016/12/08/colorado-deputy-finds-180-pounds-of-marijuana-mixed-in-with-tractor-trailers-onion-load/>>, accessed December 8, 2016.

⁸ El Paso Intelligence Center, National Seizure System. Data pull August 28th, 2017.

⁹ The Associated Press, “Motorhome carrying 100 pounds of pot seized in Tennessee,” August 28, 2016, <<http://www.denverpost.com/2016/08/28/motorhome-100-pounds-marijuana-seized-tennessee/>>, accessed August 28, 2016.

¹⁰ RMHIDTA Quarterly Report. Colorado Criminal Interdiction, 1st Quarter 2016.

¹¹ Ohio State Highway Patrol Report of Investigation, via e-mail dated July 31st, 2017; accessed August 1st, 2017.

¹² Ohio State Highway Patrol Report of Investigation, via e-mail dated July 13th, 2017; accessed July 22nd, 2017.

¹³ Midwest HIDTA Interdiction Bulletin 2017-47.

¹⁴ Midwest HIDTA Interdiction Bulletin 2017-84.

¹⁵ Midwest HIDTA Interdiction Bulletin 2017-26.

SECTION 8: *Diversion by Parcel*

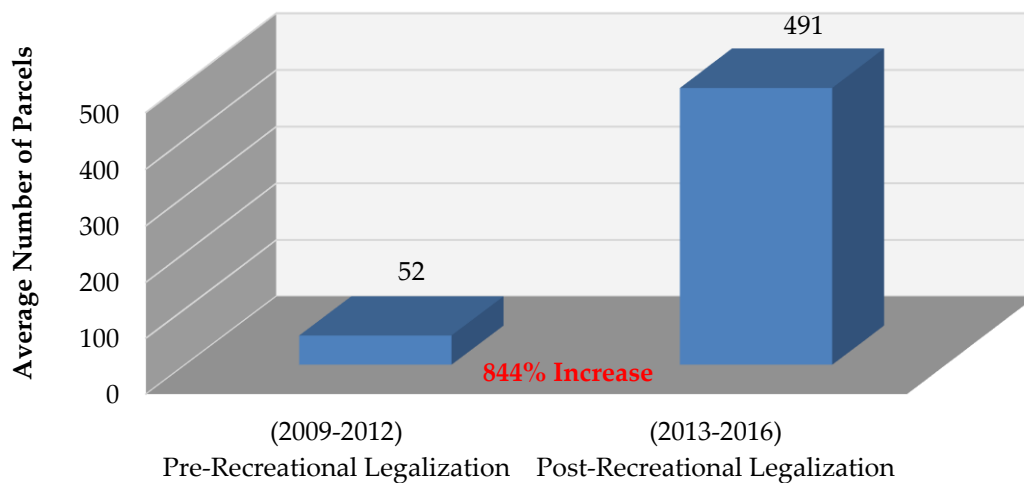
Some Findings

- Seizures of Colorado marijuana in the U.S. mail has **increased 844 percent** from an average of 52 parcels (2009-2012) to 491 parcels (2013-2016) in the four-year average that recreational marijuana has been legal.
- Seizures of Colorado marijuana in the U.S. mail has **increased 914 percent** from an average of 97 pounds (2009-2012) to 984 pounds (2013-2016) in the four-year average that recreational marijuana has been legal.

Data from U.S. Postal Service

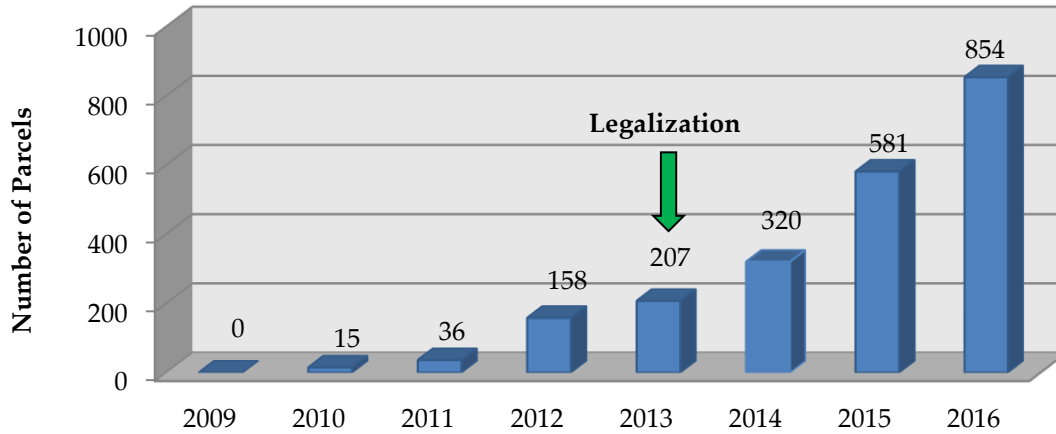
NOTE: THESE FIGURES ONLY REFLECT PACKAGES SEIZED; THEY DO NOT INCLUDE PACKAGES OF COLORADO MARIJUANA THAT WERE MAILED AND REACHED THE INTENDED DESTINATION. INTERDICTION EXPERTS BELIEVE THE PACKAGES SEIZED WERE JUST THE "TIP OF THE ICEBERG."

Average Number of Parcels Containing Marijuana Mailed from Colorado to Another State



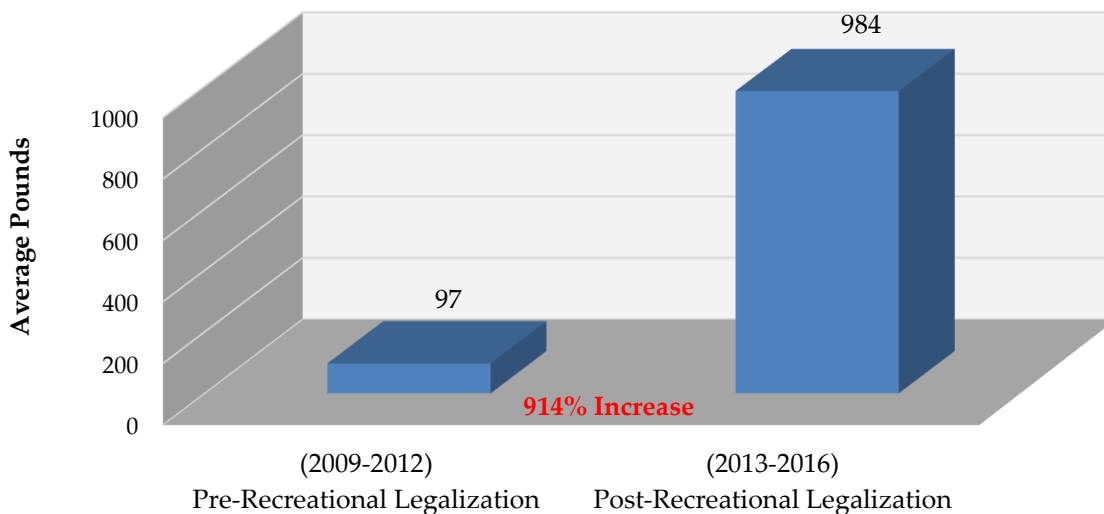
SOURCE: United States Postal Inspection Service, Prohibited Mailing of Narcotics

Parcels Containing Marijuana Mailed from Colorado to Another State



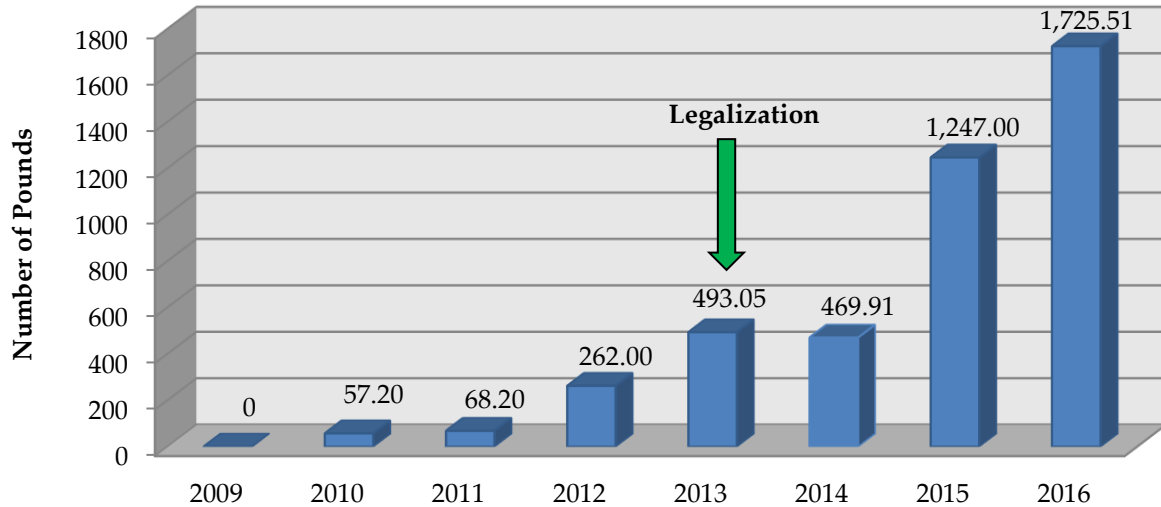
SOURCE: United States Postal Inspection Service, Prohibited Mailing of Narcotics

Average Pounds of Colorado Marijuana Seized by the U.S. Postal Inspection Service



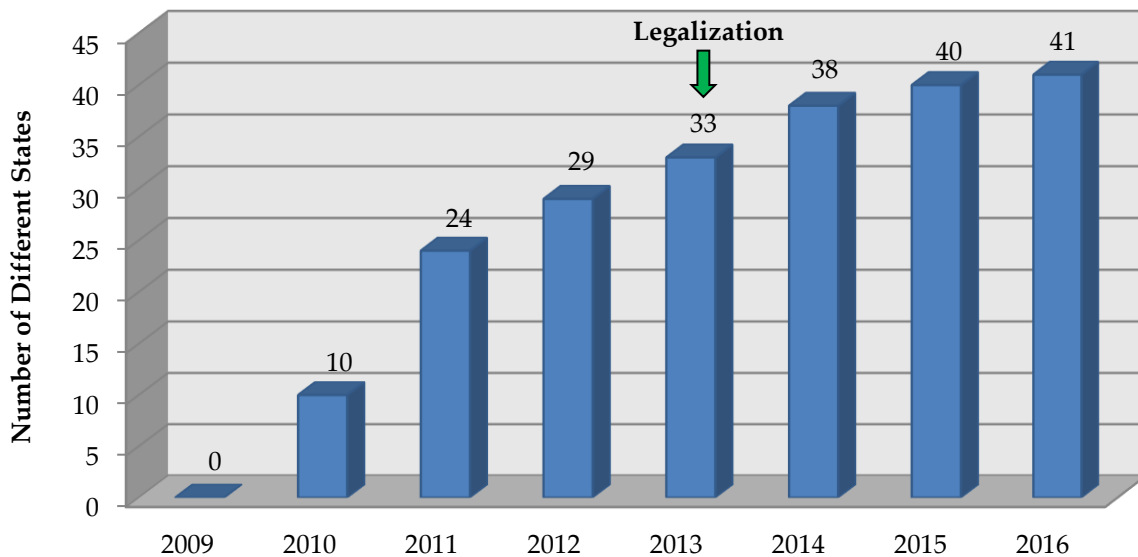
SOURCE: United States Postal Inspection Service, Prohibited Mailing of Narcotics

Pounds of Colorado Marijuana Seized by the U.S. Postal Inspection Service



SOURCE: United States Postal Inspection Service, Prohibited Mailing of Narcotics

Number of States Destined to Receive Marijuana Mailed from Colorado



SOURCE: United States Postal Inspection Service, Prohibited Mailing of Narcotics

Private Parcel Companies

- ❖ **There are courier delivery service companies, with locations throughout the country, from which Colorado marijuana destined for other states has been seized. Unlike the U.S. Postal Service, a central data system does not exist for these various private couriers.**

Several HIDTA regions were asked about parcel interdictions of marijuana from Colorado during calendar year 2016. The following data were provided by those HIDTA regions, although they do not represent 100% reporting for any state or region:

Chicago: There were a total of 23 separate parcel interdictions in which Colorado marijuana, edibles, and/or marijuana concentrates (THC/wax) were seized by law enforcement. Totalling more than 47 lbs. of product, Chicago region law enforcement estimates the street value of products seized to be approximately \$420,000.

Houston: 6 packages of Colorado marijuana, weighing 5.3 lbs.

Midwest: 18 packages of Colorado marijuana weighing 9.3 lbs.

North Florida: 25 packages of Colorado marijuana, hashish and concentrated THC were seized, totaling 64 lbs.

Ohio: 15 packages of Colorado marijuana, hash oil, concentrated THC wax and edibles were seized, weighing approximately 30 lbs.

Washington/Baltimore: 25 packages containing over 37 lbs. of Colorado marijuana and/or THC concentrates were seized.

Rocky Mountain: (packages destined outside of Colorado) 75 packages in total, which included 132 lbs. of marijuana products, and 89 individual edible products (brownies, candies, bars, etc.), and 6 live plants.

When asked where the packages were destined, it was reported that these marijuana packages are being shipped all over the United States and out of the country. The furthest destination noted was the United Kingdom.

Case Examples

From the Mountains to the Beach: In March of 2016, over 11 lbs. of high-grade marijuana was seized as it was being transported by FedEx Express. The marijuana was sent from Aspen, Colorado to **Neptune Beach, Florida.** ¹

\$12,000 Worth of Marijuana in the Mail: In December of 2016, over 6 lbs. of marijuana was seized as it was being transported by United Parcel Service (UPS). The marijuana was mailed from Grand Junction, Colorado to **Riviera Beach, Florida.** ¹

New Year's Gift from Longmont, CO: In January of 2017, over 6.5 lbs. of high-grade marijuana were seized as it was being transported by FedEx Express. The marijuana was mailed from Longmont, Colorado to **Jacksonville Beach, Florida.** ¹

Sending "Green" from Evergreen, CO: In March of 2017, 13 lbs. of high-grade marijuana was seized as it was being transported by UPS. The marijuana was mailed from Evergreen, Colorado to **Atlantic Beach, Florida.** ¹

Headed to the Atlantic: In June of 2017, over 8.5 lbs. of high-grade marijuana was seized as it was being transported by FedEx Ground. The marijuana was sent from Littleton, Colorado to **Jacksonville Beach, Florida.** ¹

Arvada Man Gets One Year in Prison for Mailing Edibles: On February 18, 2017, 27 year-old Stephen Paul Anderson was sentenced to serve a year and one day in federal prison and three years of community supervised release for sending boxes of illegal marijuana edibles through the U.S. Postal Service. Anderson, who moved from Texas to Colorado, was manufacturing highly concentrated THC oil in his basement using an open flame fueled by a propane tank. This method of extracting oil has led to multiple fires and explosions throughout the Denver area. ²

Seizure of Marijuana-Filled Parcels Increasing: Police Chief Aaron Jimenez (St. Ann Police, Missouri) was recently interviewed by a St. Louis news media outlet. The article mentioned, "pounds upon pounds of high-grade marijuana are being shipped to the **St. Louis area** from states where the drug is legal."

Jimenez explained how it was not always that way. "We might've had 5 to 10 maybe in a year, but since I've started the narcotics unit here, I can tell you within the last year, these guys probably get one or two a week."

U.S. Postal Inspector Dan Taylor said, "Just here in the St. Louis area, our postal inspectors have seized over 1,200 pounds of marijuana, from the mail, in the last year."

We've become very good at identifying these packages." It is worth noting that this amount of seized marijuana equates to over 32 pounds a day.

According to police, "marijuana is most commonly sent from Colorado and California, but the packages nearly always have fake names and addresses." ³

Second Bust of Illegal Grow, Same Two People Arrested on the Same Property:

"Nearly 150 marijuana plants, packaged marijuana and firearms were seized from a property that has been busted before for illegally growing marijuana. The two arrested were the same two busted nearly a year ago." While the El Paso Sheriff's office led the operation, agents from the Drug Enforcement Administration assisted with the investigation and seizure of the marijuana plants, cash, grow equipment, and four firearms. Of note, investigators found several packages of processed marijuana located in numerous United States Postal Services boxes, which appeared to be nearly ready to ship. According to the August article published by KKTV, the Colorado Springs news outlet, "The DEA estimates there was between \$25,000 to \$30,000 worth of lighting equipment inside the single grow house. The marijuana seized has an estimated value greater than \$125,000." ⁴

Home Improvement Goods: In November of 2016, the North Metro Task Force (NMTF) intercepted a package to be shipped via UPS that contained 18.5lbs of marijuana packaged in a Home Depot bucket. The package was being shipped to an address in **Stanley, North Carolina**. The investigation has resulted in the arrest of two suspects. ⁵

Heading South: In November of 2016, the North Metro Task Force (NMTF) intercepted a UPS shipment that contained 7.5lbs of marijuana and marijuana edibles. The two packages within the shipment were addressed to **Dallas, Texas**, and **Magnolia, Texas**. ⁵

April Fools' Delivery: In April of 2017, the North Metro Task Force (NMTF) intercepted a package shipped via UPS that contained over 23lbs of marijuana. The package was being shipped to an address in **Malden, Massachusetts**. With the help of the Malden Police Department, a coordinated investigation took place which resulted in the arrest of a single suspect. ⁵

Sources

¹ North Florida HIDTA Information Bulletins, Package Interdiction Summaries. Received July 25th, 2017.

² Kirk Mitchell, "Arvada man who used post office to distribute marijuana edibles sentenced to a year and a day," *The Denver Post*, February 22, 2017, <<http://www.denverpost.com/2017/02/22/arvada-man-usps-marijuana-edibles/>>, accessed April 19, 2017.

³ Rebecca Roberts, "Seizure of marijuana filled parcels increasing," Fox 2 Now/St. Louis, June 17, 2017, <<http://fox2now.com/2014/06/17/seizure-of-marijuana-filled-parcels-increasing/>>, accessed August 17, 2017.

⁴ Khloe Keeler, "2nd bust of illegal grow, same 2 people arrested on the same property," KKTV/11 News, August 8, 2017, <<http://www.kktv.com/content/news/Illegal-grow-bust-guns-and-marijuana-seized-in-El-Paso-County-438387943.html>>, accessed August 10, 2017.

⁵ Rocky Mountain HIDTA Task Force Quarterly Reports, Calendar Year 2016-2017.

THIS PAGE INTENTIONALLY LEFT BLANK

SECTION 9: Related Data

Topics

- Crime
- Revenue
- Event Planners' Views of Denver
- Homeless
- Suicides
- THC Potency
- Marijuana Use and Alcohol Consumption
- Medical Marijuana Registry
- Licensed Marijuana Businesses
- Business Comparisons
- Demand and Market Size
- Reported Sales of Marijuana
- Price of Marijuana
- Local Response to the Medical and Recreational Marijuana Industry in Colorado

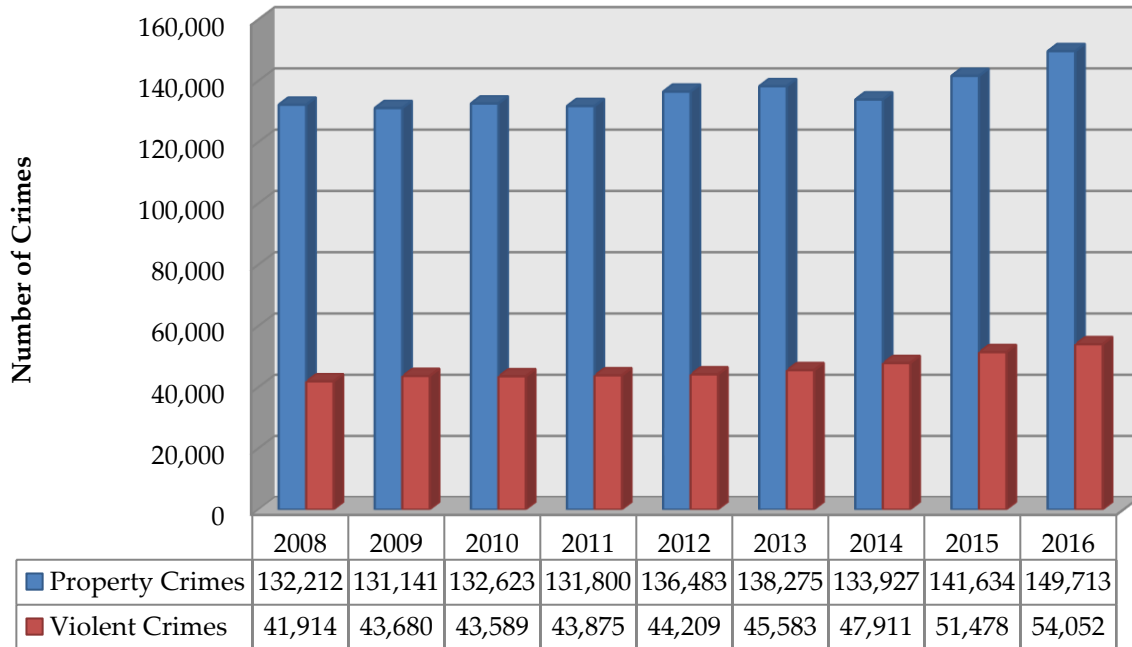
NOTE: SOME OF THE DATA REPORTED IN THIS SECTION IS BECAUSE THERE HAVE BEEN SO MANY INQUIRIES ON THE PARTICULAR SUBJECT, SUCH AS CRIME AND SUICIDES. THIS IS NOT TO INFER THAT THE DATA IS DUE TO THE LEGALIZATION OF MARIJUANA.

Some Findings

- Crime in Denver **increased 6 percent** from 2014 to 2016 and crime in Colorado **increased 11 percent** from 2013 to 2016.
- Colorado annual tax revenue from the sale of recreational and medical marijuana was **0.8 percent** of Colorado's total statewide budget (FY2017).
- As of June 2017, there were **491 retail marijuana stores** in the state of Colorado compared to **392 Starbucks** and **208 McDonald's**.
- **66 percent** of local jurisdictions have banned medical and recreational marijuana businesses.

Crime

Colorado Crime



SOURCE: Colorado Bureau of Investigation, <http://crimeinco.cbi.state.co.us/>

Colorado Crime	From 2009 to 2012	From 2013 to 2016
Property Crime	Increased 4.1%	Increased 8.3%
Violent Crime	Increased 1.2%	Increased 18.6%
All Crime	Increased 3.4%	Increased 10.8%

SOURCE: Colorado Bureau of Investigation, <http://crimeinco.cbi.state.co.us/>

City and County of Denver Crime



*In May 2013 the Denver Police Department implemented the Unified Summons and Complaint (US&C) process. This process unifies multiple types of paper citations, excluding traffic tickets, into an electronic process. That information is transmitted to the Denver Sheriff, County Court, City Attorney and District Attorney through a data exchange platform as needed. As a result of this process a reported offense is generated which was previously not captured in National Incident Based Reporting System (NIBRS).

SOURCE: City and County of Denver, Denver Police Department, Crime Statistics and Maps, April 2016

Crime in Denver (City and County)				
	2013	2014	2015	2016
*All Reported Crimes (To include all categories listed below)	55,115 **	61,276	64,317	64,736

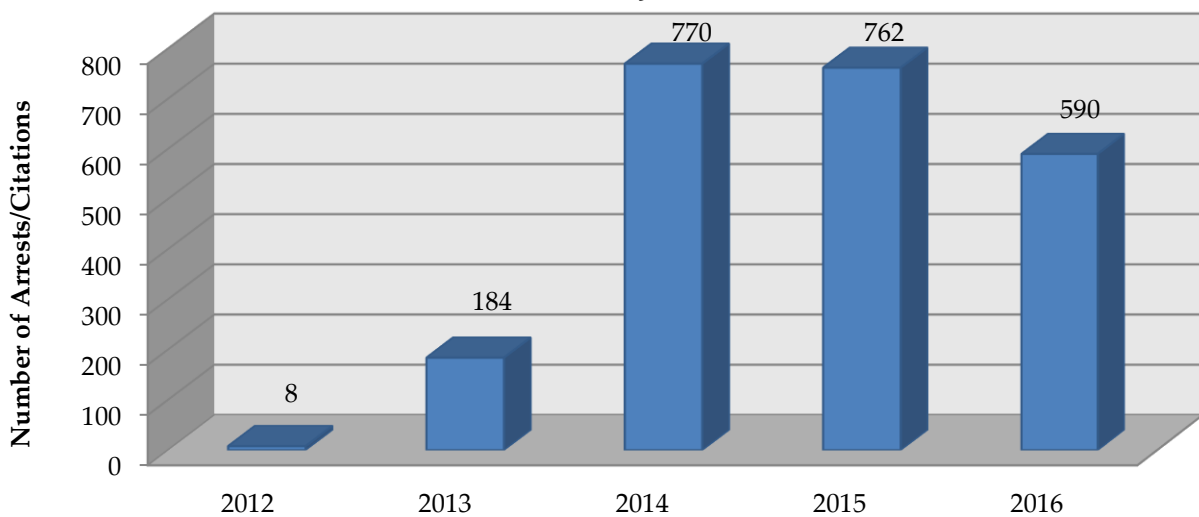
*Denver Crime	From 2014 to 2016
Crimes Against Persons	Increased 6%
Crimes Against Property	Increased 8%
Crimes Against Society	Increased 31%
All Other Offenses	Decreased 9%
All Denver Crimes	Increased 6%

* Actual number of crimes in Denver

** New process began in May 2013 and 2013 data is not comparable to 2014-2016

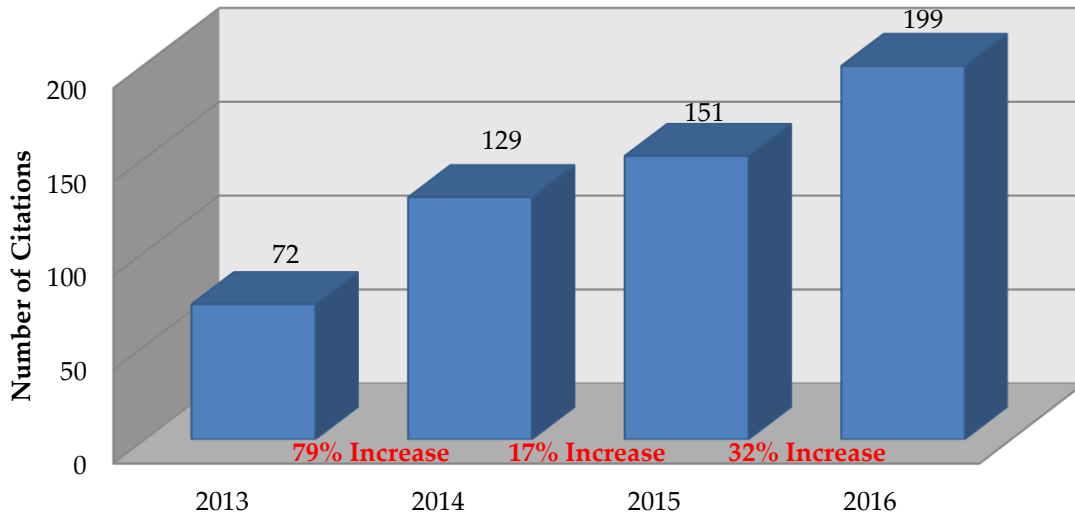
SOURCE: City and County of Denver, Denver Police Department, Crime Statistics and Maps, April 2016

Denver Police Department Unlawful Public Display/Consumption of Marijuana



SOURCE: Denver Police Department, Traffic Operations Bureau/Vice/Drug Bureau via Data Analysis Unit

Boulder Police Department Marijuana Public Consumption Citations



SOURCE: Boulder Police Department, Records and Information Services

NOTE: THE CITY OF BOULDER DID NOT HAVE A MUNICIPAL STATUTE SPECIFIC TO PUBLIC CONSUMPTION OF MARIJUANA UNTIL MID-2013.

Case Examples

“Marijuana is the Gateway Drug to Homicide”: After indicting thirteen people involved in illegally distributing around 200 pounds of marijuana District Attorney Dan May stated in a public announcement, “Colorado Springs Police Department... had 22 homicides in Colorado Springs last year, 2016. Eight of those were directly marijuana.” During the public announcement May explained that authorities are overwhelmed having to deal with the crime that is associated with marijuana and claimed that “marijuana is the gateway drug to homicide.”¹

Homicides have “Marijuana Nexus”: Colorado Springs is Colorado’s second largest urban area located in El Paso County. Neither the city nor the county permit the sale of recreational marijuana but both allow medical marijuana. Even so, the Colorado Springs Police Department stated 11 of the 59 homicides that occurred in Colorado Springs between 2015 and early 2017 have a “marijuana nexus.” According to the

report, “In most cases robbery of marijuana was a motive or the victim was killed during a marijuana narcotics transaction.”²

Pot Deal Ends in Gunfire when Buyer Realizes they Bought Broccoli: Local Colorado drug dealers, Tercell Davis and Sababu Colbert-Evans, “accepted \$10,000 for a marijuana sale, but Davis substituted broccoli for the pot.” Both parties had already driven off when the buyers realized they had actually purchased broccoli instead of marijuana. The buyers noticed they had been duped and arranged another meeting with Davis using a different name. The next night they all met up again and “an argument broke out, and Colbert-Evans and Davis fired 11 shots at the fleeing would-be buyers. One was hit in the torso.”³

Texas Trio Charged with Murder during Marijuana Robbery: Three individuals from Texas were charged with first-degree murder while attempting to rob David Gaytan in May 2017. The shooting that led to the death of David Gaytan occurred at a mobile home park in Lightner Creek, Colorado. District Attorney Christian Champagne, in a response to the shooting, stated,

Colorado voters have clearly stated they are in favor of legalized marijuana... which makes the state a target for people with nefarious intent from other states. It’s a problem; I don’t know where the solution is..., I think it’s important that we send a message that we’re taking it very seriously, and people who come from other states to commit crimes in our community are going to be dealt with very seriously, and that’s how we’re approaching it.⁴

At Least Eleven Pot-Related Homicides Since Legalization: In response to the recent conviction of Shawn Geerdes, an owner of a shared marijuana grow who murdered his business partner, a local Colorado District Attorney indicated that there have been “at least eleven pot-related homicides since legalization.” District Attorney George Brauchler claimed that “since the passage of Amendment 64, jurisdictions across the state have noted significant violent crime related to marijuana cultivation and distribution.” In addition to homicide, he noted that there are additional crimes such as “robbery, burglary, and attempted-murder cases in our community also motivated by marijuana.”⁵

Triple Homicide at Illegal Marijuana Grow: 24-year-old Garrett Coughlin was charged with six counts of first degree murder after being accused of killing 3 people in Boulder County. Police believed “the home was specifically targeted” by Coughlin on April 13, 2017. Witnesses told investigators they “saw Coughlin with large amounts of marijuana packaged in a manner consistent with the marijuana owned by the victims, as well as

large amounts of cash following the homicides.” Over 100 plants were found at the murder location.^{6,7}

A Troubling Weakness in Colorado Marijuana Enforcement: Former Colorado Marijuana Enforcement Officer, Renee Rayton, was recently indicted due to her involvement in shipping millions of dollars worth of marijuana outside the state. Within weeks after leaving her state employment she was working for a shell company, Harmony & Green. “Harmony & Green...bought legal pot cultivation licenses and tricked investors into helping finance the scheme.” In addition to breaking state and federal law by shipping marijuana outside of Colorado, Rayton also breached a specific policy that prevents “former regulators from working in the industries they oversaw for six months.”

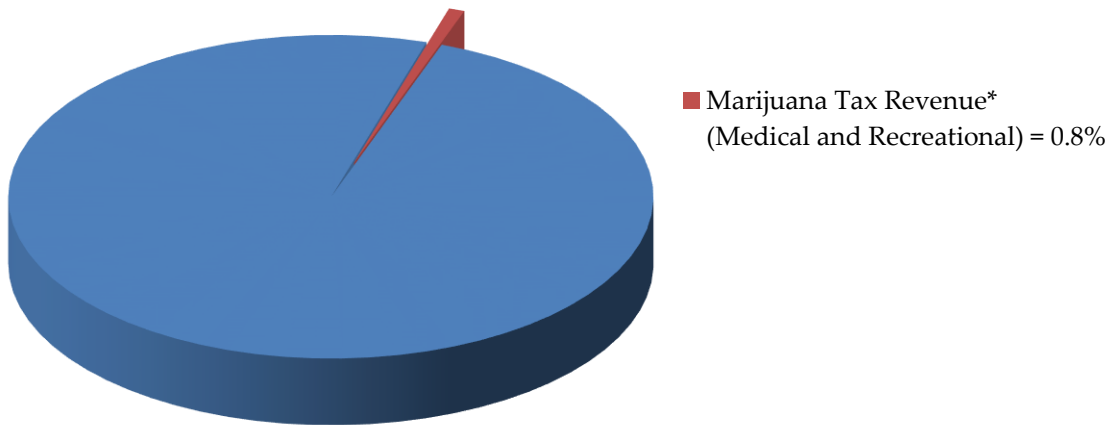
During her time with Harmony & Green, Rayton reportedly bragged about knowing someone at the Colorado Department of Revenue who would help the company “get legal.” According to investigators assigned to the case, it is doubtful that she was unaware of the “duplicitous practices that were lining her pocket,” given her vast regulatory field experience.

Although Colorado’s Enforcement Division was correct in asking the Colorado Bureau of Investigation to conduct an independent investigation, this example of an Enforcement Officer gone bad highlights the complexities and challenges involved in regulating recreational marijuana. This case made it pretty clear that the “Department of Revenue should launch a review of its enforcement division’s practices and ensure, through education and otherwise, that its regulators can be trusted.”⁸

County Official Arrested Over Illegal Pot Grow: According to investigators, Ted Archibeque, the elected Eagle County surveyor, and his brother Thomas Archibeque are “suspected of knowingly allowing the cultivation/manufacturing of marijuana” at an illegal grow. Local officials and the DEA served a warrant to a property owned by Ted Archibeque and found “28 growing plants and 65 pounds of processed marijuana” they also observed “what appeared like recent construction of multiple greenhouses and an airfield.” According to Kris Friel, an Eagle County spokeswoman, “Ted is still the county surveyor” because as an elected position “there is no provision for placing the surveyor on administrative suspension.”⁹

Revenue

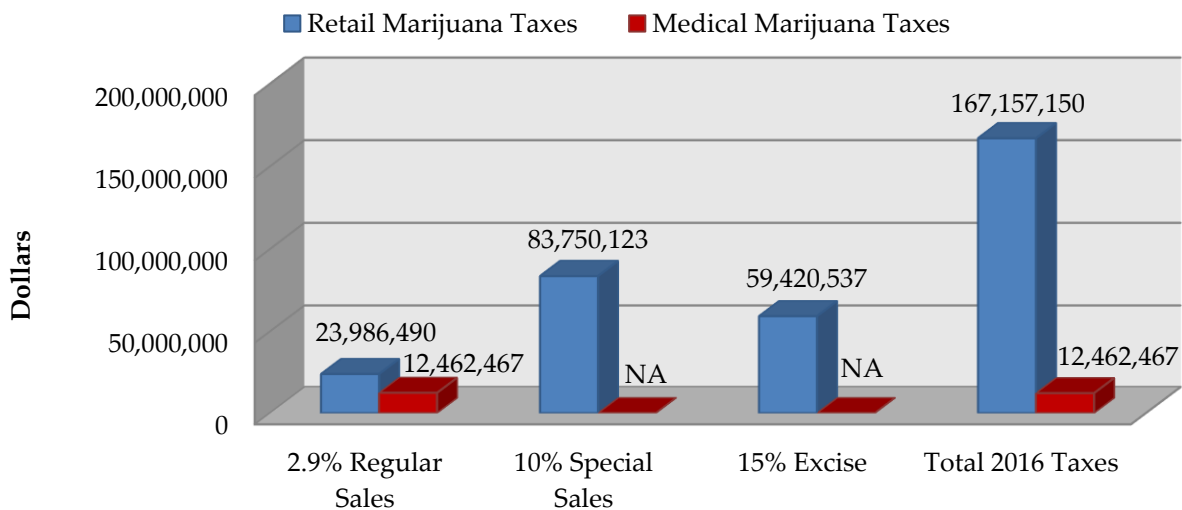
Colorado's Statewide Budget, Fiscal Year 2017



*Revenue from marijuana taxes as a portion of Colorado's total statewide budget

SOURCE: Governor's Office of State Planning and Budgeting

Total Revenue from Marijuana Taxes, Calendar Year 2016



SOURCE: Department of Revenue, Monthly Marijuana Taxes, Licenses and Fees Transfers and Distribution, 2016

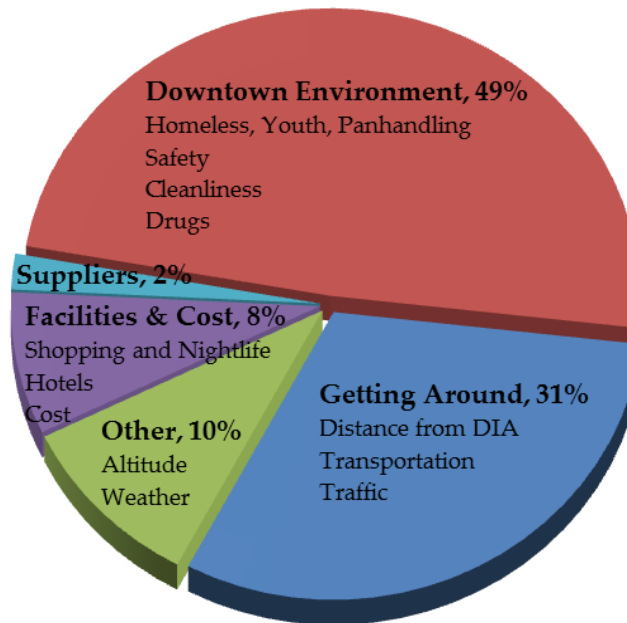
NOTE: FIGURES DO NOT INCLUDE ANY CITY TAXES; THE STATE DOES NOT ASSESS OR COLLECT THOSE TAXES.

Case Example

Falling Marijuana Prices Mean Trouble for States that Have Legalized: As more time elapses since marijuana legalization, prices for marijuana are expected to continue to drop. However, states like Colorado “that tax legal marijuana sales based solely on price” may begin to have budgetary issues. “The progression of marijuana prices over time in Colorado perfectly parallels the pattern in Washington after that state legalized: Prices briefly spiked due to initial supply shortages, but then began dropping as the marijuana industry matured and expanded. Wholesale prices in Colorado tumbled 24.5 percent over the past year to \$1,471 per pound.” While prices dropping may be good for consumers it may not be good for Colorado as “sinking prices translate automatically into sinking tax revenue per sale.” In order for Colorado to compensate for this reduction and ensure that tax revenue remains the same, it will need to “have substantially increased sales volume.” However, increasing consumption comes with its own risks “such as more auto accidents by drivers who are stoned, an increase in heavy cannabis users dropping out of school, and so on. If the state adopts measures to cut soaring consumption, it will by definition lose tax revenue, potentially making the recreational marijuana system unable to pay for its own regulatory costs.”¹⁰

Event Planners' Views of Denver

Negative Meeting Planner Perceptions, 2014



SOURCE: VISIT DENVER, *Impacts of the Downtown Environment on the Tourism Industry and Visitor Perceptions* report

VISIT DENVER is the marketing organization for the city and it measures, records and reports hundreds of data points, to include safety trends and feedback received from convention and leisure visitors. Based on data collected they came away with three key takeaways:

1. "The downtown environment is the #1 complaint from meeting planners, far surpassing any other categories. The severity of this issue has increased and as of 2014 nearly 50% of meeting planners negatively commented on homeless, youth, panhandling, safety, cleanliness, and drugs including public marijuana consumption."
2. "Denver ranks very high on walkability, affordability, facilities, and other factors. However, Denver as a 'safe city' ranks significantly lower according to interviews with key convention planners conducted by an independent third-party."
3. "Denver is losing visitors and valuable convention business as a result of these overall safety (or perception of safety) issues. Unfortunately, word is beginning to spread among meeting planners about the safety challenges Denver is facing."

As the market organization for the city, we fear not being able to brand Denver away from this growing reputation.”

Comments made by the Colorado Convention Center clients and visitors to Denver:

- “I’m sorry but I would never consider putting attendees in danger by holding a convention in your city. We are staying at Embassy Suites downtown on 16th, and last night witnessed a group of about 30 teenagers attack a man walking along 16th street. I am told this is not an unusual occurrence. The homeless situation is very sad, and public streets reek of weed. The Denver police should be more alert to large groups of minors congregating on city streets attacking tourists. My feedback from this meeting will be to never locate here again; I have felt much safer in downtown NYC, Philly, Seattle, and Chicago.”
- “I am a 5th generation Colorado native. I am downtown for a national convention and within 10 minutes of walking to the Convention Center I was so disheartened: I didn’t feel safe and it was 2:00 in the afternoon. I passed drunks, disheveled people, smelled weed being smoked in the open. It was disgusting and I thought so this is where the current government is taking us. I use [sic] to be so proud of Denver and Colorado; today I was heart sick and embarrassed, knowing I’d be apologizing to colleagues coming from other states that didn’t have sanctuary cities, legalized pot etc. Mayor Hancock, you need to rethink what you’re doing before the Denver that was beautiful and safe is gone.”
- “This client chose to contract with the Hyatt Regency San Antonio. I would like to share with you why Denver dropped off his list. This client does a lot of business in Denver and was disappointed to see, in his opinion, how things have changed in the city since marijuana was legalized. He says he sees lots of people walking around looking ‘out of it’ and does not want to expose his attendees to this. I hope you don’t mind the honestly [sic] but I wanted you to know exactly ‘why’.”
- “Greetings, we wanted to pass along some comments based on a national meeting we hosted for our industry in Denver in July [2015]. It was held with delegates arriving as early as July 11 and continued through July 15. This is a meeting of industry executives and business owners from around the entire country. The meeting was headquartered at the Sheraton downtown. The chairman commented, ‘We will most likely not return to Denver based on the current situation with all the street people.’ This was followed up by comments from the President who echoed these comments about a reluctance to return to Denver based on the condition of the City and the abundance of homeless people walking the mall and in and about the downtown area. The

attendees were also less than complementary with Denver and in particular the downtown area. Some of the comments received from attendee in survey after the conference were:

- 'Denver seems less safe now that pot is legalized.'
- 'Don't have a meeting in downtown Denver...what a depressing downtown area.'
- 'The neighborhood had way too many vagrants. I don't remember Denver being that bad.'
- 'Poor area, lots of crime as we sat outside on a patio on the 16th Street mall on Sunday evening having a beer, I turned my head to look at a television, when I turned back a street person was drinking my beer. I am sure this is not an image Denver wants portrayed around the country.'"

Homeless

How Recreational Weed is attracting People, but Spiking the State's Homeless Rate:

An article written in the summer of 2016 described the journey of a young man from a small town in Texas to the Southern Colorado town of Pueblo. In the first half of a two-part article, Devin Butts describes his journey to Colorado which was made largely due to the current recreational marijuana laws. "He'd come to Colorado...because he'd decided that cannabis would be the only indulgence he would keep as he tore himself away from all the other, far more dangerous substances and habits he was used to."

Devin is not alone in his journey to Colorado; in fact, there are many others that have followed a similar fate and ended up in one of Colorado's overcrowded homeless shelters while trying to make a new future.

At Denver's St. Francis Center day shelter, executive director Tom Luehrs said a survey conducted by a grad student last year found that between 17 and 20 percent of the 350 or so new people the center was seeing each month said they'd come to the area in part because of medical marijuana. If anything, said Luehrs and his colleagues, that figure is low. At the nearby Salvation Army Crossroads Shelter, an informal survey of 500 newcomers in the summer of 2014 determined that nearly 30 percent were there because of cannabis. ¹¹

Marijuana Legalization: Pot Brings Poor People to Colorado, but What's Being Done To Help Them?:

In the second part of a summer 2016 article written to describe the journey of a young man to Colorado, Devin Butts describes his newfound perspective. Devin, along with hundreds of other individuals who relocated to Colorado in pursuit of marijuana-related opportunities, found that the journey isn't quite what he was hoping for – especially with regards to finding employment.

The vice president of communications and public policy for the Colorado Coalition for the Homeless spoke about hourly wage requirements to live in Denver, which is bad news for marijuana migrants looking for work. According to Cathy Alderman, “Workers need to make at least \$19 an hour to afford housing in the Denver area. But marijuana trimmers usually start at around \$10 an hour, and budtenders working in the dispensaries often don't make much more than that.” This news, along with the fact that Colorado's housing market has been skyrocketing, seems to indicate significant challenges for those hoping to move to Colorado in pursuit of greater futures.

Relatedly, an unexpected consequence of the legalization of recreational marijuana is the surge in the homeless population in many Colorado cities. Recently, the city of Aurora pledged \$4.5 million in cannabis revenue to homeless programs – certainly an unforeseen cost. Although this might seem to be a step in the right direction in order to help those in need, it might also signal a trend in government spending and population dependency at least partially brought-on by the legalization of recreational marijuana.¹²

Denver on 'breaking point' with homeless population: A Salvation Army Captain recently spoke with reporters about the growing homeless population. Captain Eric Wilkerson said that the cause is most likely what many Denver citizens suspect, the cause is marijuana. “People are coming here from out of state to smoke weed,” a trend that hasn't gone unnoticed by many of Colorado's residents.

Additionally, “The city of Denver is not denying legal marijuana has resulted in an increase in homelessness.” In an email from a local social services employee, it was said that “While there isn't a formal study on the issue, many service providers for those experiencing homelessness tell us, anecdotally, that 20 (percent) to 30 percent of people they encounter who are moving to Colorado tell them that they are moving here, in part, because of legalized marijuana or to try to find work in the industry.”

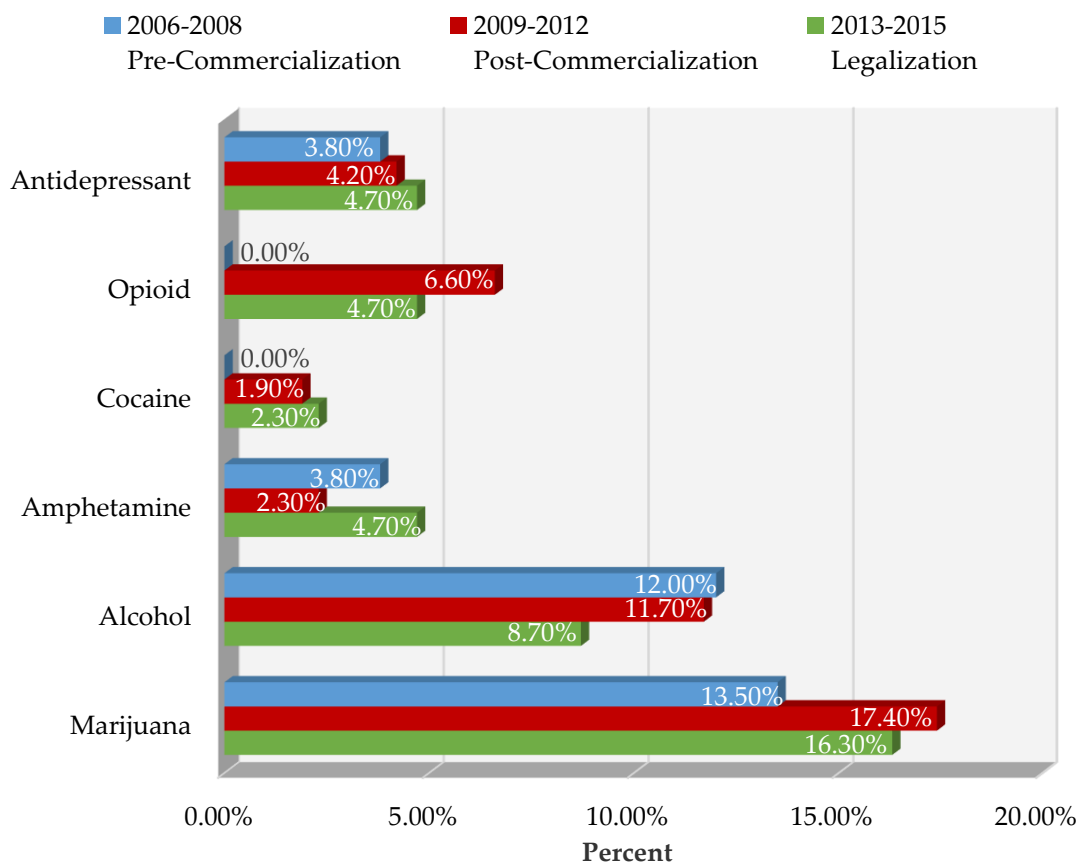
Although the city of Denver has pledged large sums of money to those in need of affordable housing, a local branding and marketing expert expressed her concern that we get ahead of this growing trend as the last thing she wants is for her city to have the perception of a “homeless problem.”¹³

Legalized Marijuana Turns Colorado Resort Town into Homeless Magnet: Several people holding cardboard signs can be seen lining the sidewalks and streets of Durango, CO. Durango is a picturesque, upscale community where many businesses

rely on tourism. The city has recently become overrun with transients and panhandlers, many of them people between the ages of 20-30. One resident and business owner mentioned “most of the kids here are from out of state, and I would say it has a lot to do with the legalized pot.” The small city has also experienced an increase in crime, placing its property crime rate 12 percent higher than the national average.¹⁴

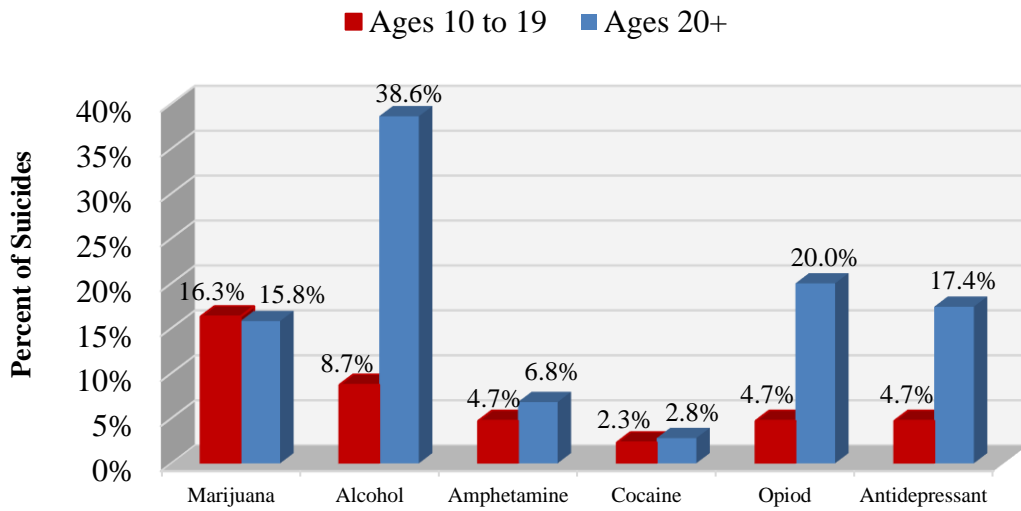
Suicide Data

Average Toxicology of Suicides Among Adolescents Ages 10 to 19 Years Old (With Known Toxicology)



SOURCE: Colorado Department of Public Health and Environment (CDPHE), Colorado Violent Death Reporting System

Average Toxicology Results by Age Group, 2013-2015

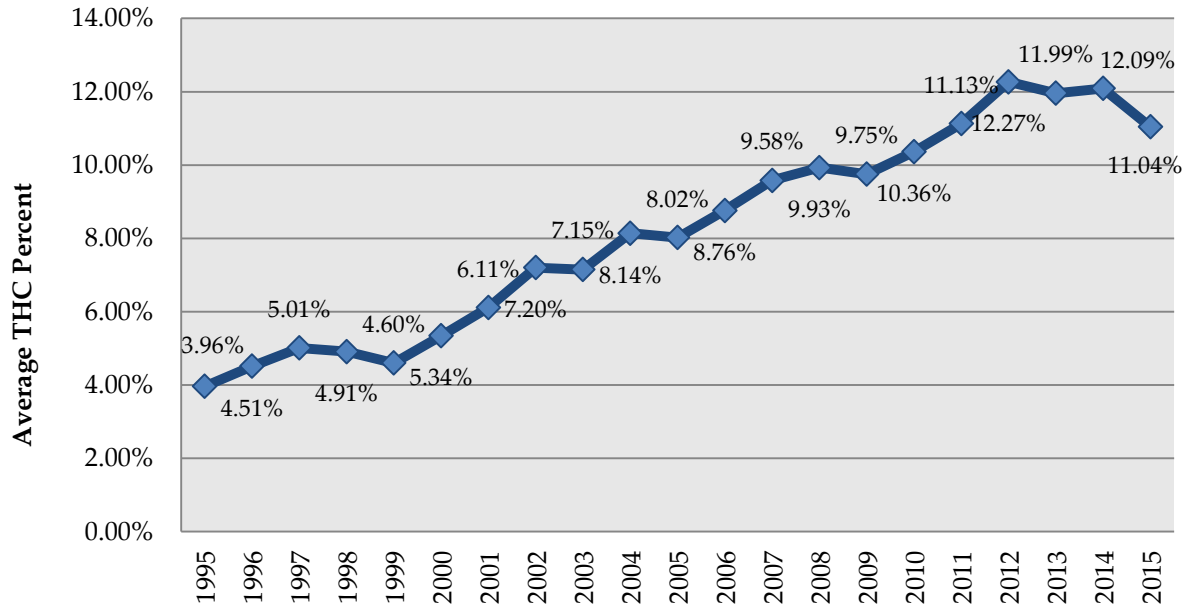


SOURCE: Colorado Department of Public Health and Environment (CDPHE), Colorado Violent Death Reporting System

- ❖ Marijuana is the only substance where youth, ages 10 to 19, have a higher percentage than adults, ages 20 and older.

THC Potency

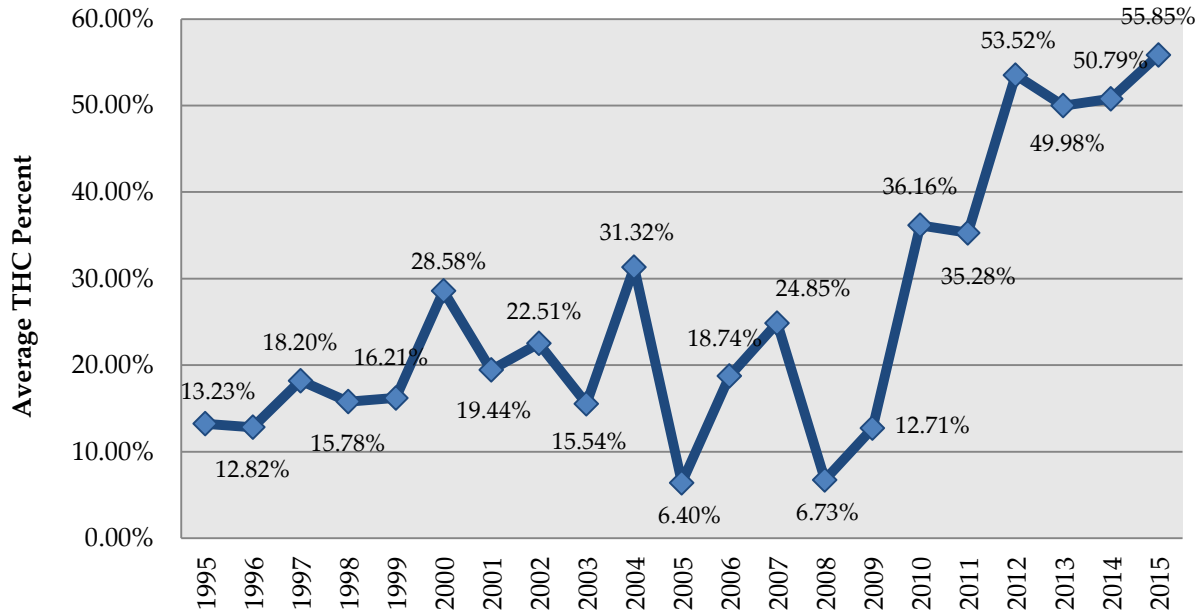
National Average THC Potency Submitted Cannabis Samples



SOURCE: Potency Monitoring Program, Quarterly Report Number 135, National Center for Natural Products Research (NCNPR) at the University of Mississippi, under contract with the National Institute on Drug Abuse.

❖ The average potency for buds/flower in Colorado is 17.1 percent.¹⁵

National Average THC Potency Submitted Hash Oil Samples



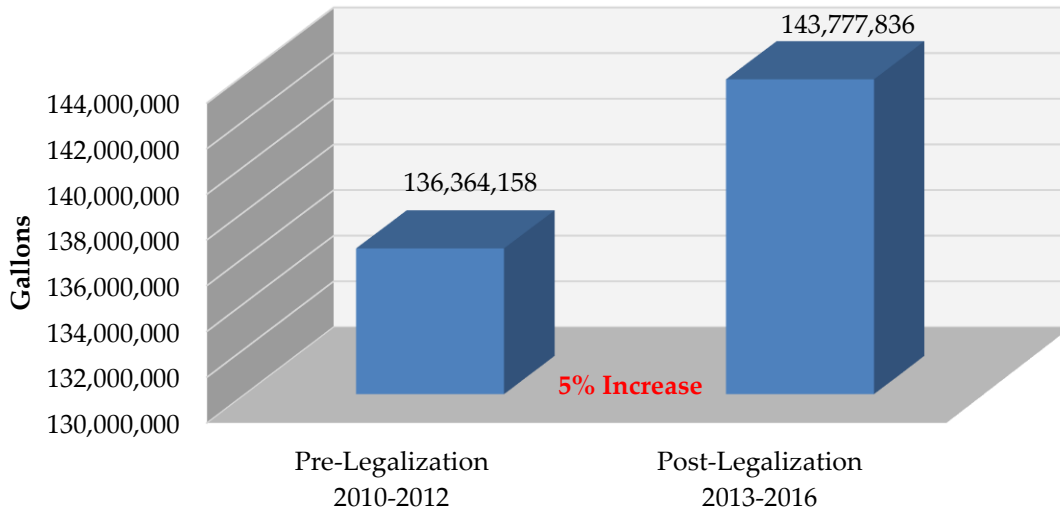
SOURCE: Potency Monitoring Program, Quarterly Report Number 135, National Center for Natural Products Research (NCNPR) at the University of Mississippi, under contract with the National Institute on Drug Abuse.

❖ The average potency for concentrates in Colorado is 62.1 percent.¹⁵

Alcohol Consumption

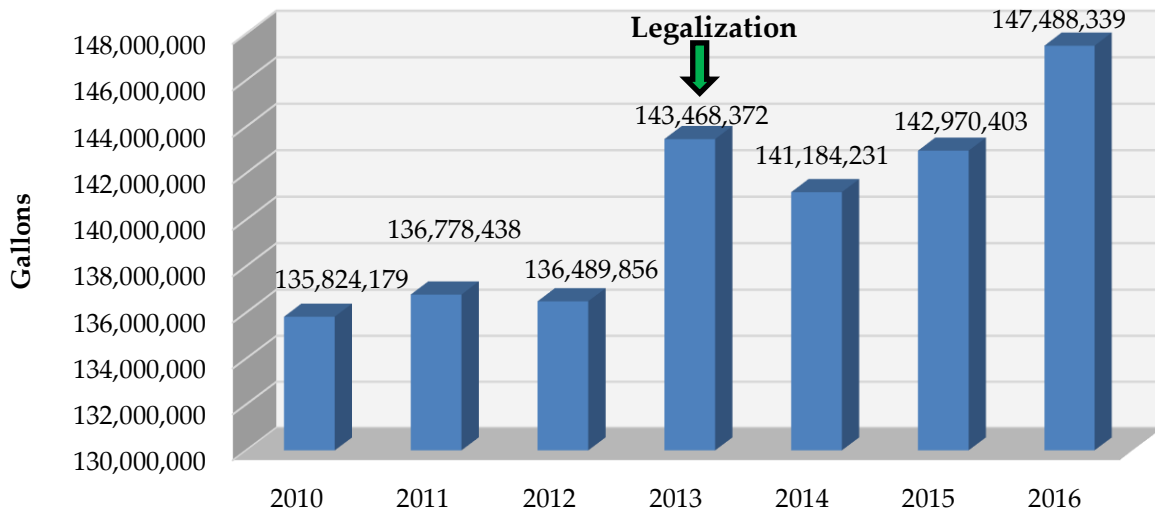
- ❖ It has been suggested that legalizing marijuana would reduce alcohol consumption. Thus far that theory is not supported by the data.

Colorado Average Consumption of Alcohol



SOURCE: Colorado Department of Revenue, Colorado Liquor Excise Tax

Colorado Consumption of Alcohol



SOURCE: Colorado Department of Revenue, Colorado Liquor Excise Tax

Medical Marijuana Registry ¹⁶

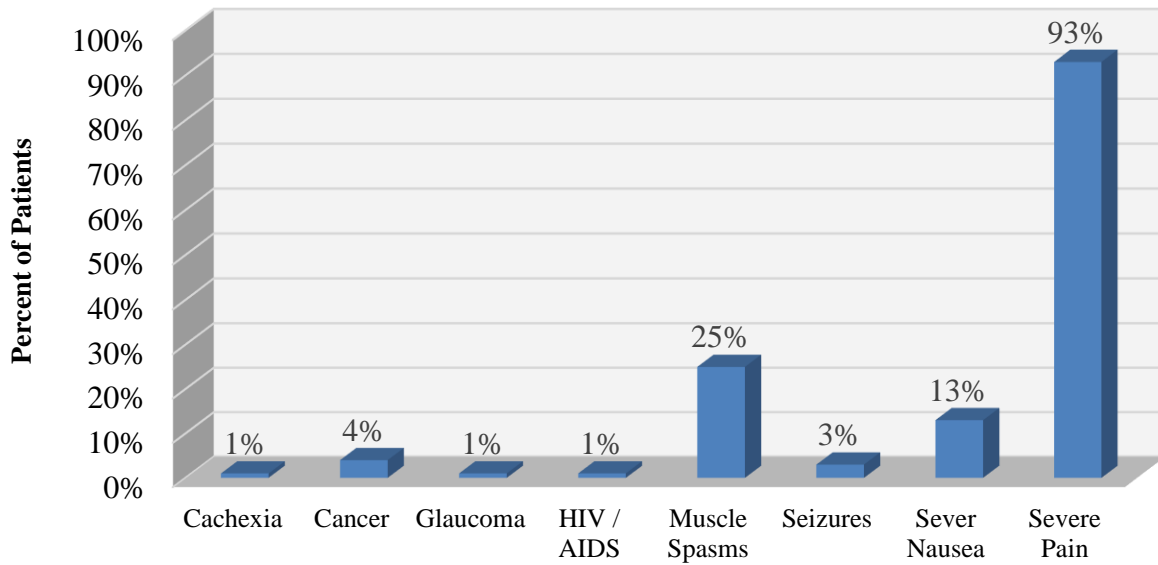
Medical Marijuana Registry Identification Cards

- December 31, 2009 – 41,039
- December 31, 2010 – 116,198
- December 31, 2011 – 82,089
- December 31, 2012 – 108,526
- December 31, 2013 – 110,979
- December 31, 2014 – 115,467
- December 31, 2015 – 107,534
- December 31, 2016 – 94,577

Profile of Colorado Medical Marijuana Cardholders:

- Age of cardholder
 - 63 percent male, with an average age of 43 years
 - 0.3 percent between the ages of 0 and 17
 - 46 percent between the ages of 18 and 40
 - 21 percent between the ages of 21 and 30
- Reporting medical condition of cardholder
 - 93 percent report severe pain as the medical condition
 - 6 percent collectively report cancer, glaucoma and HIV/AIDS
 - 3 percent report seizures

Percent of Medical Marijuana Patients Based on Reporting Conditions, 2016



SOURCE: Colorado Department of Public Health and Environment, Medical Marijuana Statistics

NOTE: TOTAL DOES NOT EQUAL 100 PERCENT AS SOME PATIENTS REPORT USING MEDICAL MARIJUANA FOR MORE THAN ONE DEBILITATING MEDICAL CONDITION.

Colorado Licensed Marijuana Businesses as of August 1st, 2017 ¹⁷

Medical Marijuana:

- 759 marijuana cultivation facilities
- 507 medical marijuana centers (dispensaries)
- 255 infused products (edibles) businesses
- 14 testing facilities

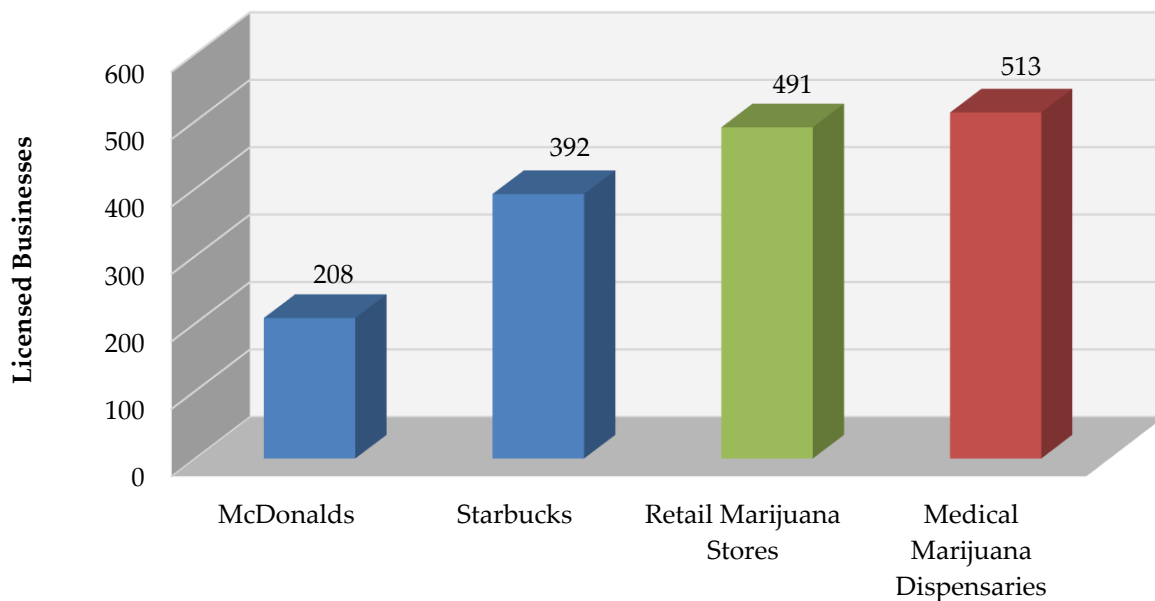
Recreational Marijuana:

- 701 marijuana cultivation facilities
- 498 marijuana retail stores
- 273 infused product (edibles) businesses
- 13 testing facilities

Business Comparisons, June 2017

❖ Figures for business comparisons were all acquired by June of 2017 for comparable data.

Colorado Business Comparisons, June 2017



SOURCE: Colorado Department of Revenue; Starbucks Coffee Company, Corporate Office Headquarters; McDonalds Corporation, Corporate Office Headquarters

Demand and Market Size ¹⁸

The Colorado Department of Revenue published a report in July 2014 called, “Market Size and Demand for Marijuana in Colorado.” A follow-up to this report showed data for 2015. Some of the information included:

Demand

- In 2015, the established demand for marijuana by Colorado residents 21 years and older is **134.7 metric tons (296,962.67 pounds)** of marijuana.
- In 2015, the estimated demand for marijuana by out-of-state visitors 21 years and older is **14.0 metric tons (30,864.7 pounds)**.

Market Size

- There are an estimated 569,000 Colorado adult regular marijuana users (at least once per month).
- Heavy users who consume marijuana nearly daily make up less than **25 percent** of the user population but account for **76.4 percent** of the demand for marijuana.

Marijuana Enforcement Division Reported Sales of Marijuana in Colorado ^{19, 20}

In 2015:

- 144,537 pounds of medical marijuana flower
- 106,932 pounds of recreational marijuana flower
- 2,261,875 units of medical edible products
- 5,280,297 units of recreational edible products

In 2016:

- 159,998 pounds of medical marijuana flower
- 175,642 pounds of recreational marijuana flower
- 2,117,838 units of medical edible products
- 7,250,936 units of recreational edible products

- ❖ **A single ounce of marijuana, depending on the solvent type and production method, can produce “between 347 and 413 edibles of 10 mg [THC] strength.”¹⁵**

2017 Price of Marijuana

Marijuana prices as of July 2017 are based off a compilation of medical and recreational prices from local dispensaries and averaged:

Area	Gram	Ounce
State Average	\$11.00	\$191.00
Denver	\$11.00	\$159.00
Boulder	\$13.00	\$213.00
Fort Collins	\$11.00	\$235.00
Colorado Springs*	\$8.00	\$157.00

*Colorado Springs does not allow selling of recreational marijuana within city limits.

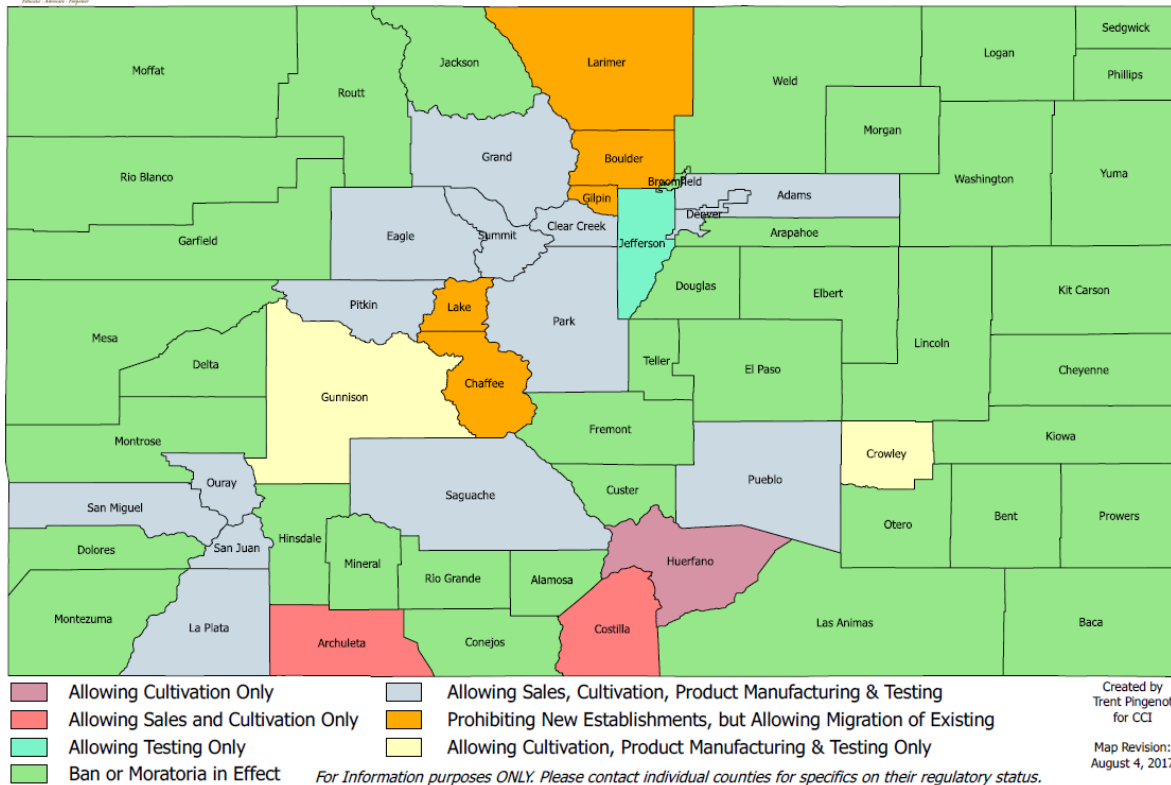
SOURCE: “Colorado marijuana prices for July 2017,” Marijuanarates.com, Accessed August 29, 2017

Local Response to Medical and Recreational Marijuana in Colorado

Recreational Marijuana Business and Local Jurisdiction Response: 21, 22



County Regulatory Status* - Recreational Marijuana



SOURCE: Colorado Counties, Inc.; as of August 4th, 2017

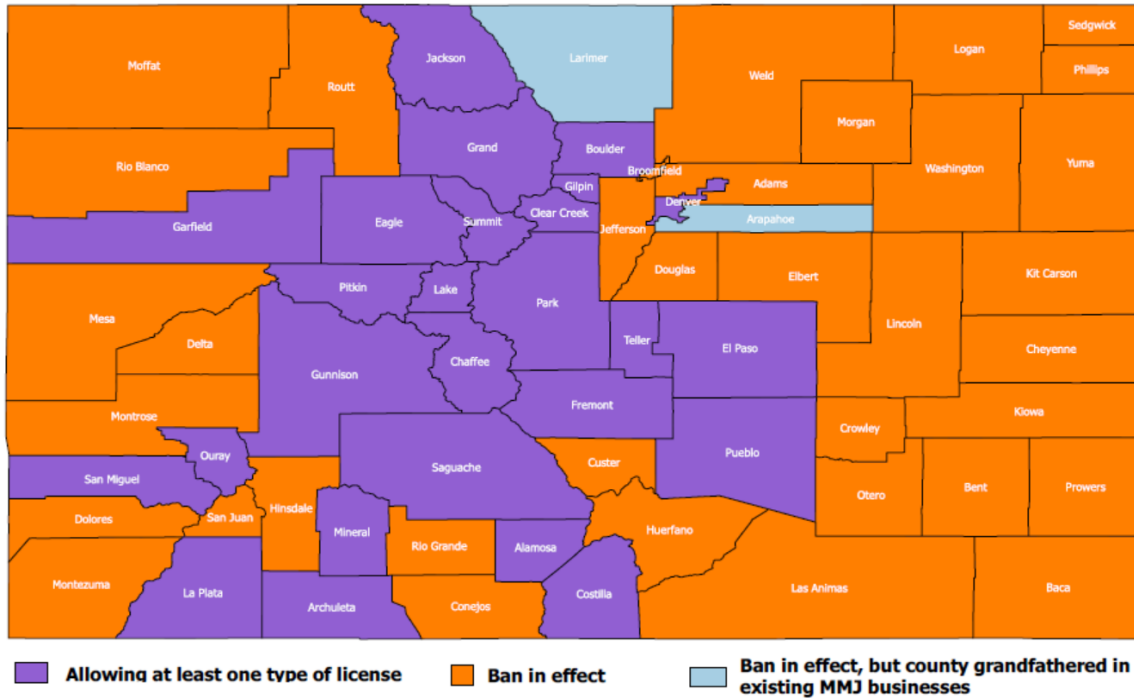
***NOTE: THIS MAP SHOWS THE REGULATORY STATUSES OF UNINCORPORATED AREAS WITHIN EACH COUNTY. MUNICIPALITIES WITHIN EACH COUNTY SET POLICY WITHIN THEIR BOUNDARIES.**

- 64 counties*
 - 61 percent have prohibited or have a moratorium (39)
 - 39 percent have allowed (25)
- * Broomfield and Denver are both a city and county but included only once in county data.
- 243 municipalities (cities and incorporated areas) have taken action on the issue
 - 72 percent have prohibited (167) or have a moratorium (8)
 - 28 percent have allowed (68)

Medical Marijuana Business and Local Jurisdiction Response:^{21, 22}



County Regulatory Status - Medical Marijuana



SOURCE: Colorado Counties, Inc.; as of July 31, 2017

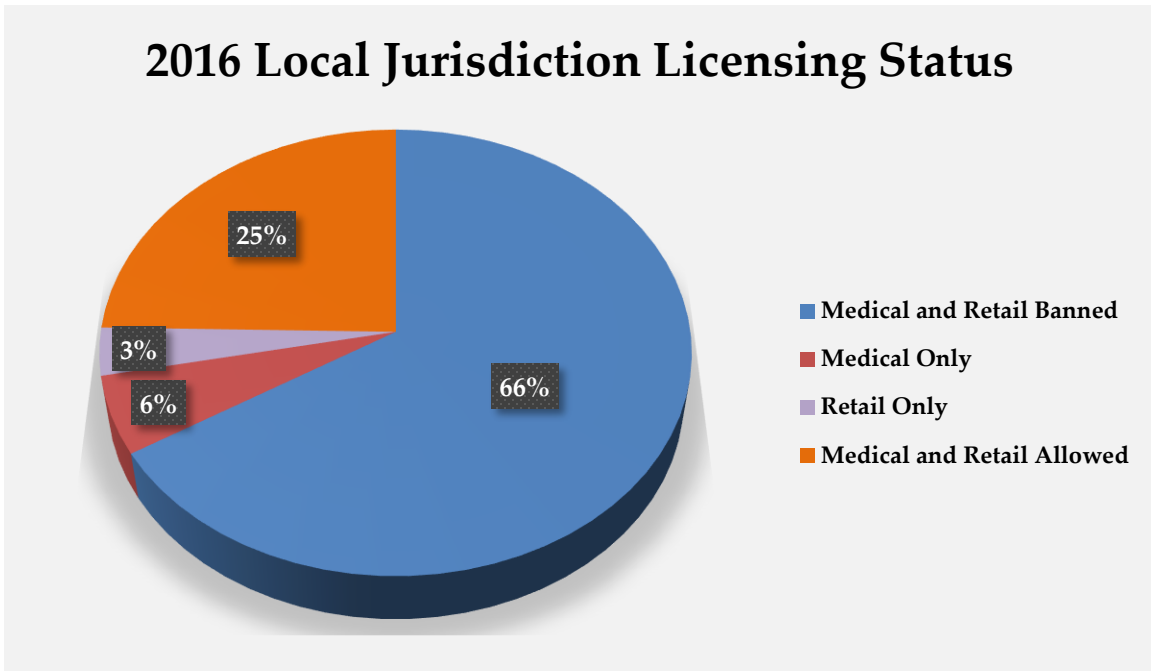
***NOTE: THIS MAP SHOWS THE REGULATORY STATUSES OF UNINCORPORATED AREAS WITHIN EACH COUNTY. MUNICIPALITIES WITHIN EACH COUNTY SET POLICY WITHIN THEIR BOUNDARIES.**

- 64 counties*
 - 59 percent have prohibited or have a ban on new businesses (38)
 - 41 percent have allowed (26)

* Broomfield and Denver are both a city and county but included only once in county data.

- 177 municipalities have taken action on the issue
 - 65 percent have prohibited (115)
 - 35 percent have allowed (62)

Local Jurisdictions Reporting Marijuana Licensing Status as of December 31, 2016 ²⁰	
Medical and Retail Marijuana Banned	212
Medical Marijuana Licenses Only	18
Retail Marijuana Licenses Only	11
Medical and Retail Marijuana Licenses	79



SOURCE: Marijuana Enforcement Division, 2016 Annual Update

For Further Related Data See Page 158

Sources:

¹ Colorado Springs, Colo. (KKTv), “Black market marijuana bust leaves bruises on Colorado’s marijuana industry,” July 25, 2017, <<http://www.kktv.com/content/news/Black-market-marijuana-bust-leaves-bruises-on-Colorados-marijuana-industry-436622893.html>>, accessed July 31, 2017.

² Blair Miller, “Colorado Springs Police: 18 Percent of Homicides Since 2015 Have ‘Marijuana Nexus’; No State Data.” *Denver Channel*, March 15th, 2017, <<http://www.thedenverchannel.com/news/local-news/colorado-springs-police-18-percent-of-homicides-since-2015-have-marijuana-nexus-no-state-data>>, accessed August 29th, 2017.

³ Kieran Nicholson, “Bogus pot deal, involving broccoli, and gunfire at Aurora mall gets man 16 years in prison,” *Denver Post*, <<http://www.denverpost.com/2017/07/25/aurora-marijuana-deal-broccoli-town-center-gunfire-sentenced/>>, accessed September 12th, 2017.

⁴ Shane Benjamin, “Texas trio charged with first-degree murder in Lightner Creek shooting,” *Durango Herald*, <<https://durangoherald.com/articles/164814-texas-trio-charged-with-first-degree-murder-in-lightner-creek-shooting>>, accessed September 12th, 2017.

⁵ George Brauchler, “At Least Eleven Pot-Related Homicides Since Legalization, DA Says,” *Westword*, <<http://www.westword.com/news/marijuana-related-homicides-in-colorado-since-legalization-9345285>>, accessed September 12th, 2017.

⁶ Mitchel Byars, “Suspect in Coal Creek Canyon Triple Homicide To Appear in Court Thursday,” *Daily Camera*, <http://www.dailycamera.com/boulder-county-news/ci_30994865/suspect-coal-creek-canyon-triple-homicide-appear-court?source=pkg>, accessed September 11, 2017.

⁷ Mitchel Byars, “Garrett Coughlin Charged With 6 Murder Counts in Coal Creek Canyon Killings,” *Daily Camera*, <http://www.dailycamera.com/boulder-county-news/ci_30996366/suspect-coal-creek-canyon-triple-homicide-charged-six?source=pkg>, accessed September 11, 2017.

⁸ The Denver Post Editorial Board, “A troubling weakness in Colorado Marijuana enforcement,” June 16, 2017, *The Cannabist*,

<<http://www.thecannabist.co/2017/06/16/colorado-marijuana-enforcement-indictment-wakeup-call/82104/>>, accessed September 21, 2017.

⁹ Jesse Paul, “Eagle County official and his brother arrested in connection with illegal marijuana grow,” *The Denver Post*, December 8, 2016, <<http://www.denverpost.com/2016/12/08/eagle-county-official-brother-arrested-illegal-marijuana-grow/>>, accessed September 22, 2017.

¹⁰ Keith Humphreys, “Falling marijuana prices mean trouble for states that have legalized,” *The Washington Post*, January 18th, 2017, <<http://www.thecannabist.co/2017/01/18/marijuana-price-drops-state-revenue/71657/>>, accessed August 3rd, 2017.

¹¹ Joel Warner, “Marijuana Legalization in Colorado: How Recreational Weed Is Attracting People, But Spiking The State’s Homeless Rate {PART ONE},” *International Business Times*, June 20, 2016, <<http://www.ibtimes.com/marijuana-legalization-colorado-how-recreational-weed-attracting-people-spiking-2374204>>, accessed October 9, 2016.

¹² Joel Warner, “Marijuana Legalization: Pot Brings Poor People To Colorado, But What’s Being Done To Help Them? {PART TWO},” *International Business Times*, June 21, 2016, <<http://www.ibtimes.com/marijuana-legalization-pot-brings-poor-people-colorado-whats-being-done-help-them-2378769>>, accessed October 9, 2016.

¹³ Joe St. George, “Salvation Army: Denver on ‘breaking point’ with homeless population,” Fox31 Denver, July 7, 2016, <<http://kdvr.com/2016/07/07/salvation-army-denver-on-breaking-point-with-homeless-population/>>, accessed October 9, 2016.

¹⁴ Joseph J. Kolb, “Legalized marijuana turns Colorado resort town into homeless magnet,” FoxNews.com, May 17, 2017, <<http://www.foxnews.com/us/2017/05/17/legalized-marijuana-turns-colorado-resort-town-into-homeless-magnet.html>>, accessed May 17, 2017.

¹⁵ Marijuana Policy Group, “Marijuana Equivalency in Portion and Dosage (as of August 10th, 2015),” <https://www.colorado.gov/pacific/sites/default/files/MED%20Equivalency_Final%2008102015.pdf>, accessed May 12th, 2017.

¹⁶ Colorado Department of Public Health and Environment, “Medical Marijuana Registry Program Update (as of December 31st, 2016),”

<https://www.colorado.gov/pacific/sites/default/files/CHED_MMR_Report_December_2016.pdf> accessed May 12th, 2017.

¹⁷ Colorado Department of Revenue, “Licensees – Marijuana Enforcement Division (As of August 1st, 2017),” <<https://www.colorado.gov/pacific/enforcement/licensees-marijuana-enforcement-division>>, accessed August 31, 2017.

¹⁸ Marijuana Policy Group, “The Economic Impact of Marijuana Legalization in Colorado,” Marijuana Enforcement Division, received August 1, 2017.

¹⁹ Marijuana Enforcement Division, “MED 2015 Annual Update,” Colorado Department of Revenue, September 26, 2016.

²⁰ Marijuana Enforcement Division, “MED 2016 Annual Update,” Colorado Department of Revenue, August 2, 2017.

²¹ Colorado Municipal League, “Municipal Retail Marijuana Status,” <<http://www.cml.org/rmj-action-visual/>>, accessed 8/29/2017>.

²² Colorado Counties Inc., <ccionline.org>, August 28, 2017.

THIS PAGE INTENTIONALLY LEFT BLANK

SECTION 10: Reference Materials

Reports and Articles

Impaired Driving

Higher Levels of THC: In Colorado, the legal limit of THC in a driver's blood is 5ng/mL. However, according to the *Denver Post*, "THC levels in drivers killed in crashes in 2016 routinely reached levels of more than 30 ng/mL... [t]he year before, levels only occasionally topped 5 ng/mL." This trend has coroners concerned because some are "uncertain about listing the presence of THC on a death certificate because of doubts on what constitutes impairment." Police Chief Jackson of Greenwood Village, CO attributes the rise in THC levels of drivers to the rise in THC potency in marijuana oils and concentrates. He states, "This is not your grandfather's weed." ¹

Cannabis-Impaired Driving is a Public Health and Safety Concern: According to a 2015 study which aimed to examine some of the issues surrounding cannabis impaired driving, "The percentage of weekend nighttime drivers with measureable Δ^9 -tetrahydrocannabinol (THC) in blood or oral fluid increased to 12.6%, a 48% increase since 2007." With the recent recreational legalization of marijuana in multiple states, this is likely a national trend we will see continue in the years to come. ²

Controlled Cannabis Vaporizer Administration with and without Alcohol: Researchers behind a 2015 study examined the vaporization of cannabis both with and without blood alcohol present in the systems of thirty-two regular cannabis smokers. As noted in the *Clinical Chemistry* article, smoking is the most common administration route of cannabis but the use of vaporization is increasing rapidly. The conclusions section of the study stated that the significantly higher blood THC concentration values in combination with blood alcohol "possibly explain[s] increased impairment observed from cannabis-alcohol combinations." The conclusions of this study further underscore the complexities and issues that need to be closely examined, especially when considering drugged driving legislation. ³

Correlates of Marijuana Drugged Driving and Openness to Driving While High: A 2015 study funded and independently conducted by RTI International, a nonprofit research and technical services organization, examined 865 Colorado and Washington residents who self-reported using marijuana in the past 30 days. Two behaviors were looked at among the group of study participants; any instances of driving while high in the last year, and driving within 1 hour of using marijuana 5 or more times in the past month.

Researchers found that the “Prevalence of past-year driving while under the influence of marijuana was 43.6% among respondents.” Additionally, “The prevalence of driving within 1 hour of using marijuana at least 5 times in the past month was 23.9%.”

Furthermore, it was concluded that “Interventions for reducing the incidence of marijuana DUI are likely to be more successful by targeting safety perceptions related to marijuana DUI rather than knowledge of DUI laws.”⁴

A 2-Year Study of THC Concentrations in Drivers: A recent study aimed to examine police and Drug Recognition Expert (DRE) evaluations with regards to driving under the influence of marijuana. Researchers hoped to determine whether or not a correlation exists between whole-blood THC concentrations and field sobriety test performance. “As suspected, the findings of this study did not find a correlation between performance on field sobriety tests and the concentration of THC tested in whole-blood samples.” This information further adds to the discussion around marijuana use and permissible driving limits. Much more research is needed in order to come up with appropriate marijuana driving laws/legislation throughout the country.

Furthermore, the researchers concluded that, “The driving behaviors seen in THC-impaired drivers are similar to those seen in alcohol-impaired drivers.” Contrary to anecdotal accounts of “high” drivers being slow and cautious drivers, the most often observed driving behaviors of study participants included speeding, the inability to maintain lane position, and running red lights or stop signs.⁵

57 Percent of Marijuana Users in Colorado Admit Driving within 2 Hours: A survey conducted by the Colorado Department of Transportation discovered that 57 percent of people who reported using marijuana drove within two hours after consumption. The survey also indicated that, on average, those participants who reported consuming marijuana and then driving within 2 hours did so on 11.7 of 30 days. By comparison, 38 percent of respondents who drank alcoholic beverages reported driving within 2 hours after consumption and only reported doing so on 2.8 of 30 days.⁶

DRE Examination Characteristics of Cannabis Impairment: The frequently-debated 5ng/mL blood THC *per se* cutoff has been the source of much controversy since

legalized marijuana has hit the scene. In 2016, a study of Drug Recognition Expert (DRE) characteristics of cannabis impairment further highlighted the “limited relevance” of the 5ug/L cutoff. “Combined observations on psychophysical and eye exams produced the best cannabis-impairment indicators.” Additionally, “No significant differences were detected between cases with blood THC >5ng/mL versus ≤5ng/mL.” More specifically the finger-to-nose test was seen as the best indicator of cannabis impairment, with the values of sensitivity, specificity, predictive value and efficiency being considered.⁷

Smoked Cannabis Psychomotor and Neurocognitive Effects in Occasional and

Frequent Smokers: A group of researchers interested in examining the severity of psychomotor performance, cognition, and driving ability differences among frequent and occasional users of cannabis found substantial differences among the frequent users and the occasional users. During the study, “fourteen frequent (equal or greater than 4x/week) and 11 occasional (less than 2x/week) cannabis smokers entered a secure research unit approximately 19 hours prior to smoking one 6.8% THC cigarette.” Cognitive and psychomotor performance was measured in a variety of ways at certain intervals of time both prior to and after the drug use.

Researchers concluded that there are “significant differences between occasional and frequent cannabis smokers in psychomotor, subjective and physiological effects following cannabis smoking, with weaker effects in frequent smokers suggesting tolerance development. Impairment domains included those that play a key role in driver’s ability to accurately control a car or to react to events on the road.”⁸

Time Profile of Serum THC Levels in Occasional and Chronic Marijuana

Users after Acute Drug Use: Although it is commonly accepted that cannabis consumption has the ability to influence cognitive and psychomotor functions, the rules on how to assess the ability to drive while under the influence of cannabis are not very clear. “The psychoactive compound delta-9-tetrahydrocannabinol (THC) impairs cognition, psychomotor behavior and driving performance in a dose-related manner approximately.” After researching the time profile related to cannabis consumption and the related physiologic affects (through observation of human volunteers), it is apparent that there is “great individual variability of the kinetic profile of THC in blood...” The research article goes on to describe that “Low blood concentrations of THC close to the limit of detection... are justified in an effective traffic legislation.”⁹

Effect of Blood Collection Time: Drug testing is a highly scrutinized topic when it comes to marijuana use and the operation of motor vehicles. This topic has been made even more controversial as several states have legalized marijuana for medical and/or

recreational use. Therefore, a group of researchers examined the impact of blood collection time on toxicological evaluation for THC.

Researchers found that blood THC concentrations at the time of driving cannot be reliably determined due to individual variances.¹⁰

Drivers Killed in Crashes More Likely to be on Drugs than Alcohol: A recent study using data available from 2015 indicates that “[d]rivers who are killed in car crashes are now more likely to be on drugs than alcohol.” Drugs were present in 43 percent of drivers in fatal accidents compared to 37 percent with alcohol above the legal limit. Additionally, 36 percent of the drivers tested had marijuana present in their system at the time of the accident. In general, traffic fatalities are rising and can be attributed to factors such as improved economy, more distracted drivers, and more drugged drivers.¹¹

Drug-impaired Driving: In this report, Dr. James Hedlund, under contract with the Governors Highway Safety Association (GHSA), described “the current state of knowledge on drug-impaired driving, including what little is known about the costs and effectiveness of these actions, and identifies actions states can take to reduce drug-impaired driving.” The report cites a variety of sources, including the Fatality Analysis and Reporting System (FARS) and various roadside surveys conducted in multiple states. Through these data sources, Dr. Hedlund determined “marijuana is by far the most common drug that is used.” He also described that while drug-impaired driving is more complex than alcohol-impaired driving, “43% of fatally-injured drivers with known test results tested positive for drugs or marijuana in 2015, more than tested positive for alcohol”. The report pointed out additional differences between alcohol-impaired driving and drug-impaired driving and made recommendations for states to enact education programs, legislation, and officer training programs.¹²

Youth Marijuana Use

Marijuana Use up among Teens since Legalized in Colorado, Washington:

Researchers at the University of California Davis and Columbia University Mailman School of Public Health conducted a study involving teens' perception of marijuana use before and after recreational marijuana was legalized in their state. The study, which used nation-wide data of nearly 254,000 students who participated in the Monitoring the Future survey, showed that legalization of recreational marijuana significantly reduced perceptions of marijuana's harmfulness by 14 percent in 8th graders and 16 percent in 10th graders in Washington state but not in Colorado. Researchers attribute the lack of change in perception in Colorado to the state's robust medical marijuana industry that was established prior to recreational legalization. Youth were exposed to substantial advertising from the medical marijuana industry and therefore Colorado has had lower rates of perceived harmfulness and higher rates of use compared to Washington state and other states. The researchers recommend that states considering legalizing recreational marijuana should also consider investing in substance abuse prevention programs for adolescents.¹³

Pot Smoking Common among Pregnant Teens: A recent national survey given to approximately 14,400 pregnant women aged 12-44, found "more than twice as many pregnant 12- to 17-year-olds use marijuana as their non-pregnant peers." This constituted 14% of the surveyed mothers-to-be. Teen pregnancies are already "associated with smaller babies," but there may be other risks to a pregnancy caused by marijuana use. According to Dr. Judy Chang, associate professor of obstetrics, gynecology and reproductive sciences at the University of Pittsburgh, "some of the studies that do exist suggest that there are risks to the pregnancy from pot use." Some of those risks may include "scrawnier babies, kids who have some problems with their thinking and learning abilities, [and] kids who find it harder to do more complicated brain tasks when they are teenagers." Additional evidence may suggest that "there could be a risk of causing brain damage in a developing baby," and that the tetrahydrocannabinol (THC) "may also influence neural development and brain maturation," which could lead to a "long-term risk for addiction."¹⁴

Unintentional Pediatric Exposures to Marijuana in Colorado, 2009-2015: Colorado researchers examined the effects of the legalization of marijuana on youth in Colorado by analyzing data regarding pediatric marijuana exposures. Specifically, researchers set out to compare the incidence of pediatric marijuana exposures before and after recreational marijuana legalization. Additionally, this study compared Colorado data with nationwide data.

It was found that cases for pediatric marijuana exposure increased significantly and at a higher rate than the rest of the United States. “Almost half of the patients seen in the children’s hospital in the 2 years after legalization had exposures from recreational marijuana, suggesting that legalization did affect the incidence of exposures.”¹⁵

Pediatricians Warn against Use of Pot: A report released in 2017 from the American Academy of Pediatrics describes why many doctors are now “beefing up warnings about marijuana’s potential harms for teens amid increasingly lax laws and attitudes on pot use.” This report states that the group “opposes medical and recreational marijuana use for kids.” A youth’s brain continues to develop through their early 20s, so “the potential short-term and long-term effects of a mind-altering drug” are of great concern. Some of these effects may even be permanent. This is particularly true for frequent users who begin at an early age. “Teens who use marijuana at least 10 times a month develop changes in brain regions affecting memory and the ability to plan” as well as lowered IQ scores in some cases. Also some studies have shown that “starting marijuana use at a young age is more likely to lead to addiction than starting in adulthood.” These doctors stress that messaging is particularly important because according to government data “kids 12-17 increasingly think marijuana use is not harmful.”¹⁶

Adult Marijuana Use

Study Finds Increase in Illicit Pot Use, Abuse in States that Allow Medical Marijuana: “In a study published in the Journal of American Medical Association (JAMA) Psychiatry, researchers noted a significant increase in illegal cannabis use and so-called cannabis-use disorders in states with medical marijuana laws” Although a small minority of the population might potentially benefit from medical marijuana use, this study aims to quantify how much non-medical, illicit use is taking place over a multi-year timespan. The research study defined illegal or illicit use as “obtaining marijuana not from a prescription or a dispensary with the intent of getting high.” Those with cannabis-use disorders are described as having withdrawal symptoms, developing a tolerance for the drug, having cravings for the drug, and suffering impaired functioning in daily activities.

The lead author of the study, Dr. Deborah Hasin of the Columbia University Mailman School of Public Health said “[Americans have] come to see cannabis as a harmless drug or harmless substance.” More education is certainly needed on the risks associated with marijuana use.

The study examined cannabis use and cannabis use disorder from 1991-1992 through 2012-2013 timeframes. In the *Washington Times* article, Dr. Hasin said “I was somewhat surprised with rates that increased so sharply in Colorado and California, who most experienced increase in dispensaries in 2009 and 2010.”¹⁷

Drug Positivity in U.S. Workforce Rises to Nearly Highest Level in a Decade:

According to the world’s leading provider of diagnostic drug testing services, “The percentage of employees in the combined U.S. workforce testing positive for drugs has steadily increased over the last three years to a 10-year high.” The three primary diagnostic tests offered by Quest Diagnostics include oral, urine and hair follicle drug tests. Speaking to oral fluid testing, which provides a 24-48 hour history, the positivity rate increased 47 percent in the past three years. According to the diagnostics corporation, “The increase was largely driven by double-digit increases in marijuana positivity during this time period. In 2015, there was a 25 percent relative increase in marijuana detection as compared to 2014.” Additionally, “Almost half (45 percent) of individuals in the general U.S. workforce with a positive drug test for any substance in 2015 showed evidence of marijuana use.”¹⁸

Marijuana is Not Safe to Smoke: A study conducted by UC Davis academics found multiple bacterial and fungal pathogens in marijuana that can cause serious infections. The weed tested originated from Northern California dispensaries where the Department of Public Health is working on guidelines for marijuana testing to ensure marijuana is safe. George Thompson III, an associate professor of clinical medicine at the university who helped conduct the study, stressed that “there really isn’t a safe way to smoke marijuana buds, even for those who are healthy”. Inhaling marijuana smoke leads the pathogens directly into the lungs where they can cause serious illness and even death.¹⁹

These College Students Lost Access to Legal Pot – and Started Getting Better Grades:

A recent study out of the Netherlands found that “college students with access to recreational cannabis on average earn worse grades and fail classes at a higher rate.” Due to a new policy change to cannabis cafes, noncitizens were barred from buying recreational marijuana from the cafes. Due to this policy change, an experiment regarding college students and marijuana use was conducted. “The research on more than 4,000 students... found that those who lost access to legal marijuana showed substantial improvement in their grades. Specifically, those banned from cannabis cafes had a more than 5 percent increase in their odds of passing their courses.”²⁰

More U.S. Women Report Using Marijuana during Pregnancy, Amid Uncertainty on Potential Harms: About 4 percent of pregnant women ages 18 to 44 reported using

marijuana during pregnancy. The study conducted between 2002 and 2014 showed an increase of 62 percent from numbers in 2002 to numbers in 2014. Pregnant women are turning towards marijuana to help alleviate nausea caused during pregnancy even though it is discouraged by the American College of Obstetricians and Gynecologists. Studies show links between prenatal marijuana exposure and impaired functions such as impulse control, visual memory, and attention during school years. Other studies showed smoking marijuana during pregnancy may also lead to restricted fetal growth during pregnancy as well as increased frontal cortical thickness among school-aged children.²¹

Pregnant Women Turn to Marijuana, Perhaps Harming Infants: Doctors and researchers are concerned that due to “an increased perception of the safety of cannabis use, even in pregnancy,” it is becoming more common for people to “presume that cannabis has no consequences for developing infants.” Evidence on the effects of prenatal marijuana use has been limited up to this point, which may contribute to the false perception of safety by some. However, preliminary research indicates that marijuana’s psychoactive ingredient, tetrahydrocannabinol (THC), can cross the placenta and reach the fetus potentially harming development. In addition, because THC is stored in fat and can linger there for weeks or months, breast milk can contain THC.

Despite evidence being limited, several studies linking maternal marijuana use have found “changes in the brains of fetuses, 18 to 22 weeks old.” Additional studies conducted in Pittsburgh and Ottawa show that children whose mothers used marijuana heavily in the first trimester may have difficulty “understand[ing] concepts in listening and reading,” and had “lower scores in reading, math and spelling... than their peers.” Much of the research that has been done in this area was done when marijuana was far less potent. An epidemiologist with the University of Washington stated “all those really good earlier studies on marijuana effects aren’t telling us what we need to know now about higher concentration levels.” Not much is known about the lingering effects of marijuana, and whether or not the fetus’s exposure is limited to the time a mother feels high. Both the American Academy of Pediatrics and the American College of Obstetricians and Gynecologists advise expecting mothers against the use of cannabis during pregnancy citing cognitive impairment and academic underachievement as areas of concern.²²

Causal Relationship Identified between Marijuana Use and Numerous Fetal Issues during Pregnancy: Since 2002, there has been a 62% increase in pregnant marijuana users. “Estimates suggest that marijuana use complicates 2% to 5% of all pregnancies” in the United States. The amount of studies regarding marijuana use is limited due to the drug’s complicated legal status. However, “evidence has identified a causal

relationship between marijuana use and decreased birth weight, increased spontaneous abortion, impaired neurodevelopment, and functional deficits among children and adults who were exposed [to marijuana] in utero.” It is not yet known how exactly fetal development is effected by marijuana which leads obstetricians and gynecologists to “urge their patients who are pregnant or contemplating pregnancy to discontinue marijuana use.” Further concern for the effects of marijuana during pregnancy are warranted “due to its lipophilic nature, [it] can easily cross the blood brain barrier and enter the placenta.” Additionally, the nature of Tetrahydrocannabinol (THC) is such that it can remain in maternal blood for weeks and “[a]s a result, occasional use of marijuana during pregnancy, as little as once per month, results in fetal exposure that persists throughout the pregnancy.”²³

Emergency Department and Hospital Marijuana-Related Admissions

Marijuana Abuse Linked to Increased Myocardial Infarction (MI) Risk: Cardiology News recently published an article about marijuana being linked with an “eye-opening doubled risk of acute MI.” Myocardial infarction (MI) is more commonly known as a heart attack.

The March 2017 article summarized the results of a study led by Dr. Ahmad Tarek Chami: “The link was strongest by far in young adult marijuana abusers, with an adjusted 3.2-fold increased risk of MI in 25- to 29-year-olds with marijuana abuse noted in their medical records, compared with age-matched controls and a 4.56-fold greater risk among the 30- to 34-year-old cannabis abusers.” The study examined over 200,000 patients with cannabis abuse noted in their medical records, and spanned a five year period (October, 2011 through September, 2016).

Dr. Chami observed that “Our study raises the possibility [of] an association between cannabis and MI independent of age, hypertension, diabetes, smoking, and abuse of other substances.” Admittedly, there is much need for further research on this topic.

“The cannabis plant contains more than 60 cannabinoids. Although marijuana is widely prescribed for treatment of nausea, anorexia, neuropathic pain, glaucoma, seizure disorders, and other conditions, the long-term effects of marijuana on the cardiovascular system are largely unknown.”²⁴

Marijuana Use and Schizophrenia: New Evidence Suggests Link: New research on marijuana use and its connection to schizophrenia shows that “not only are people who are prone to schizophrenia more likely to try cannabis, but that cannabis may also increase the risk of developing symptoms.” Cannabis use has been shown to be more common among individuals with psychosis than it is with the general population. This

may be particularly troubling as people with schizophrenia who use cannabis “are more likely to be hospitalized than those with the condition who do not use the drug.” Further research is needed to determine if there is a definitive genetic link between marijuana use and schizophrenia.²⁵

Colorado Cannabis Legalization and Its Effect on Emergency Care: With the early commercialization of marijuana in Colorado dating back to the year 2000, and recreational marijuana being voted into law in 2012, Colorado provides a unique opportunity to educate physicians on the different considerations related to increased marijuana-related emergency department visits. This document not only summarizes the epidemiologic effect of legalization, but also discusses the effect of legalization on emergency care. Specifically, researchers discuss acute marijuana intoxication, cannabinoid hyperemesis syndrome, and pediatric exposures in an effort to educate healthcare providers everywhere. With Colorado leading the way regarding marijuana legalization, Colorado physicians are leading the way with regards to recognizing and addressing the associated healthcare trends noted in the population.²⁶

Trends and Correlates of Cannabis-involved Emergency Department Visits 2004 to 2011: This study published in the Journal of Addiction Medicine utilized data obtained from the Drug Abuse Warning Network over the period of 2004 to 2011. Trends in cannabis-involved emergency department visits were examined for both cannabis-only and cannabis-polydrug instances. Cannabis-polydrug instances are those in which other drugs were detected in the patient’s body, in addition to cannabis. The findings of this study suggest that there is a notable increase in the number of emergency department visits for both cannabis-only and cannabis-polydrug users. In particular, this study highlights the increased numbers for youth and non-Hispanic blacks.²⁷

Marijuana-Related Exposure

Cannabis Use Causing Alarming Increase in Emergency Hospital Visits and

Childhood Poisoning: Dr. Mark S. Gold, a world renowned expert on addiction-related diseases, summarizes a study published in late 2016 that aimed to examine trends and correlates of cannabis-involved emergency department visits in the United States from 2004-2011. “The ED visit rate increased for both cannabis-only use (51 to 73 visits per 100,000) and cannabis-polydrug use (63 to 100 per 100,000) in those aged 12 and older. Of note, the largest increase occurred in adolescents aged 12-17, and among persons who identified as non-Hispanic black.”

Dr. Gold goes on to highlight the findings of the study which state that “The odds of hospitalization increased with older age users, as compared to adolescent admissions. These data suggest a heavier burden to both the patient and to the health care system as a result of increasing cannabis use among older adults. The severity of the “burden” is associated with the prevalence of cannabis use, specific cannabis potency and dose (which is increasing over time), the mode of administration, and numerous individual risk factors.”²⁸

Treatment

Cannabinoid Hyperemesis Syndrome: Cannabinoid Hyperemesis Syndrome, a relatively new clinical condition, is “characterized by chronic cannabis use, cyclic episodes of nausea and vomiting, and frequent hot bathing.” A 2011 study published by the National Institutes of Health explores various aspects of this clinical condition including the associated epidemiology, pharmacology, clinical presentation, and treatment options. This condition has grabbed the attention of emergency room physicians across the country as many physicians fail to diagnose the condition. According to the study, “further initiatives are needed to determine this disease prevalence and its other epidemiological characteristics, natural history, and pathophysiology.”²⁹

Use and Diversion of Medical Marijuana among Adults Admitted to Inpatient Psychiatry: Many states, including Colorado, have legalized the medical use of marijuana, but it is unclear how much medical marijuana is being diverted from those medical marijuana patients. Furthermore, marijuana is linked to anxiety, depressive, psychotic, neurocognitive, and substance use disorders, but it is also unclear how many psychiatric patients use marijuana. In this study, a group of Colorado researchers aimed to determine the prevalence of medical marijuana use and diversion among psychiatric

inpatients in Colorado. Over 600 participants responded to an anonymous 15-item survey administered at discharge. It was concluded that “medical marijuana use is much more prevalent among adults hospitalized with a psychiatric emergency than in the general population.” It was also found that “diversion is common.”³⁰

Related Data

Everything You Need to Know about Pot’s Environmental Impact: Indoor marijuana grows are estimated to use a total of one percent of all electricity used in the United States every year. One percent is “about the same amount of electricity consumed by every computer in every home and apartment in the country annually... In order to power all those light fixtures, as well as dehumidifiers and heating and ventilation systems, indoor grow operations use about eight times the amount of energy per square foot as a normal commercial building. That’s on par with a modern data center.”

In addition to the electricity needed to sustain a marijuana grow, the plants require a significant amount of water to grow. “Some estimates suggest that pot plants use six gallons of water per day per plant over the summer. For reference, it takes about four gallons of water to run an energy-efficient dishwasher once.”³¹

High Time to Assess the Environmental Impacts of Cannabis Cultivation: In an attempt to understand the impact that the cultivation of marijuana has on the environment, researchers “have identified potentially significant environmental impacts due to excessive water and energy demands and local contamination of water, air, and soil with waste products such as organic pollutants and agrochemicals [fungicides, pesticides, etc.]” Additionally, they pointed out that, cannabis plants require “high temperatures..., strong light..., highly fertile soil, and large volumes of water (...around twice that of wine grapes).” Naturally, due to these needs for proper cultivation in either an indoor or outdoor grow requires a significant amount of maintenance and energy. “It has been estimated that the power density of marijuana cultivation facilities is equal to that of data centers.” Typically, with new industries, it is the responsibility of U.S. Federal agencies such as the “U.S. Department of Agriculture, Environmental Protection Agency, National Institutes of Health, and Occupation Safety and Health Administration” to research and fund research for what that industry’s environmental impact will be and how to reduce the footprint. However, when it comes to the marijuana industry due to “[t]he ambiguous legal status of marijuana in the U.S... [it] has made it historically difficult for those agencies to actively fund research in this field.”³²

Cartels are Growing Marijuana Illegally in California – and there’s a War Brewing:

“Even as California embraces the booming legal marijuana market... it is also seeing an explosion in illegal cultivation, much of it on the state’s vast and remote stretches of public land.” Growing marijuana on public lands is creating “insidious side effects: The lethal poisons growers use to protect their crops and campsites from pests are annihilating wildlife, polluting pristine public lands, and maybe even turning up in your next bong hit.” Some of these poisons are so powerful that they have been “banned in the U.S., Canada and the EU” and “farmers in Kenya have used [them] to kill lions.” These toxicants are often used by growers as a means to “keep rodents and other animals from eating the sugar-rich sprouting plants, from gnawing on irrigation tubing, and from invading their campsites in search of food.” According to Craig Thompson, a wildlife ecologist working for the U.S. Forest Service “People don’t tend to grasp the industrial scale of what’s going on. There are thousands of these sites in places the public thinks are pristine, with obscene amounts of chemicals at each one. Each one is a little environmental disaster.”

In addition to toxicants, these illegal grows present another environmental problem due to water consumption. “In a controlled setting, a marijuana plant uses about six gallons of water per day... Illegal grows, of course, are another story [its] estimated that trespass grows use 50 percent more water because of less efficient irrigation systems and added stressors like pests, pathogens, and drier weather at higher elevations. Worse, some trespass growers leave their irrigation systems running around the clock throughout the year, even when nothing is growing.”³³

Thousands of Marijuana Plants Found on Forest Land in Pueblo County: According to *Fox31 Denver*, there were more than 7,400 marijuana plants discovered in an illegal grow which included two separate fields. Both of the fields were on U.S. Forest Service land near Rye, Colorado.

The July 2017 article stated, “Narcotics detectives said it was the second-largest operation uncovered in Pueblo County to date and the fifth found in fields on or near the San Isabel National Forest in the past five years. The four previous grows are believed to be connected to a Mexican cartel. Detectives are investigating whether Friday’s grow is connected to previous grows.”

Pueblo County Sheriff Kirk Taylor reported, “These grows are not indigenous to Colorado and the water and fertilizers required for these grow operations represent a clear environmental hazard for our beautiful Colorado mountains,”

Two of the past incidents within the San Isabel National Forest include an August 2012 operation in which over 9,400 plants were involved, and an October 2015 operation in which 2,400 plants were involved. There are countless other illegal grow operations within U.S. Forest Service land, but limited resources prevent any further action to stop these grows and prevent further environmental impact.³⁴

Marijuana Grows Leaving More Colorado Homes Filled with Mold: It is unclear how many homes throughout Colorado are being used to grow marijuana, but Denver Detective Brian Matos estimated it could be as high as “one in every 10 homes in [Denver].” When people grow marijuana plants indoors they bring moisture into the home which is likely to cause mold problems especially if it is a large grow. In many cases, these grows are illegal and the homeowner is simply using the home for the purpose of growing marijuana without any concern for the damage caused. The damage is often compared to that of meth labs, but environmental lawyer Timothy Gablehouse disagrees, “Since [meth] labs are smaller now, contamination from meth is usually confined to small areas of the home where it was smoked.” Whereas, marijuana grow contamination and destruction can be seen throughout the home. According to the *Denver Post*, “Illegal growers also sometimes dig into the foundation to tap a power line before the line can reach the meter to ensure they don’t have to pay for the electricity they are using.” This practice is often associated with punching holes through the walls or ceilings for ventilation. The DEA tells the *Denver Post* that illegal grows are often “expensive properties in upper-middle-class, high-income neighborhoods.” Sometimes these homeowners lay a fresh coat of paint on the home and resell the home to unsuspecting buyers. This was the case of David and Christine Lynn who recently purchased a \$388,000 home that turned out to be a former grow and are currently suing the previous homeowners.³⁵

Mid-Year Update, by the Colorado Department of Revenue, Marijuana Enforcement Division: This report includes information on marijuana business licensing status, number of plants cultivated for medical and recreational purposes, volume of marijuana sold within both recreational and medical markets, units of infused edibles and non-edibles sold, mandatory retail testing for edibles, enforcement activity and administrative actions taken by the state’s licensing authority from January through June 2016.³⁶

Cannabinoid Dose and Label Accuracy in Edible Medical Cannabis Products: A study including 3 California and Washington cities sought to determine the accuracy of dosage labels on edible medical cannabis products. Nine dispensaries selling baked goods, beverages, and candy or chocolate were selected for the study. Individuals with a physician’s letter were assigned to purchase a “large variety of products... within budget (\$400/city).” The resulting 75 purchased products were tested by researchers to determine whether the indicated levels of tetrahydrocannabinol (THC) and cannabidiol (CBD) of the edible products were accurate, within 10%.

Of the purchased products, which included 47 different brands, 17% were determined to be accurately labeled, 23 percent were under labeled, and 60 percent

were over labeled for THC content. Forty-four products (59 percent) were found to have detectable levels of CBD, of which only 13 were labeled to include CBD. None of the 13 labels for CBD were accurate, 4 were under labeled, and 9 were over labeled. Inaccurate labeling of products may lead consumers to get more of an effect than desired or not enough to produce the desired medical benefit.³⁷

Tracking the Money That’s Legalizing Marijuana and why it Matters: The National Families in Action (NFIA) released a report in the early part of 2017 regarding the financial support behind marijuana related ballot initiatives. The NFIA tracked the majority of the financial support on these initiatives for the past two decades to three private parties worth billions of dollars. The report outlines how much money per initiative is contributed by the three billionaires compared to other sources. Additionally, the report gives reasons for why the financial contributions of three individuals matter for the overall legalization of marijuana in the nation.³⁸

Seed to Sale Tracking for Commercial Marijuana: This report examines the concept of seed to sale tracking for marijuana plants. Radio Frequency Identification (RFID) tracking is discussed along with some of the positives and negatives of Inventory Tracking Systems.³⁹

Houston HIDTA Marijuana Legalization Threat Assessment, “Why Marijuana Legalization is NOT a Good Idea for Texas”: This document, put together by the Houston Investigative Support Center, intends to provide easy access to salient facts regarding the serious negative consequences of marijuana legalization in the United States. Topics addressed include public health and safety ramifications, as well as economic and social impacts of marijuana legalization.⁴⁰

Is the Marijuana Industry Actually Making Money for Alaska? One of the most compelling arguments for marijuana legalization is the amount of tax revenue that marijuana would generate. However, with legalization also comes the need for regulation, which also requires money to maintain. In Alaska, the amount of money generated for the 2017 fiscal year was \$1.75 million, but the amount of money budgeted for regulation by The Alcohol and Marijuana Control Office was \$1.9 million. The goal is that, eventually, the tax revenue generated from the marijuana industry will fully fund the agency. Until then, however, general fund money has to be used to supplement the rest of the budget. From 2015 through 2018 a total of “\$4.57 million has been budgeted from the state’s general fund to regulate marijuana.” It is the goal of The Alcohol and Marijuana Control Office that by the year 2020 the agency will be self-supported.⁴¹

Working Paper on Projected Costs of Marijuana Legalization in Rhode Island: This paper was written in an effort to inform Rhode Island legislators about the potential economic impact of marijuana legalization in Rhode Island. The paper indicates that “although a full cost accounting of marijuana legalization would be impossible at present, enough data exists to make rough-and-ready estimates of certain likely direct and short-term costs.” Some of the costs covered by the paper include administrative and enforcement costs for regulators, costs from drugged driving, health costs from emergency room visits, potential costs related to homelessness, and costs to employers. Costs reported in this paper are projections based off of figures from states with full marijuana legalization.⁴²

Monitoring Health Concerns Related to Marijuana in Colorado: This 2016 report was published by the Colorado Department of Public Health and Environment in order to address the changes in marijuana use patterns, provide a systematic literature review, and address possible marijuana related health effects in the state of Colorado. The report covers findings addressed by such surveys as the Behavioral Risk Factor Surveillance Survey (BRFSS), Child Health Survey (CHS), Healthy Kids Colorado Survey (HKCS), and the Pregnancy Risk Assessment Monitoring System (PRAMS). In addition to the survey data, the report covers possible marijuana related health effects in Colorado, specifically looking at data from the Rocky Mountain Poison and Drug Center (RMPDC) and the Colorado Hospital Association (CHA).⁴³

Sources:

¹ David Migoya, "Exclusive: Traffic fatalities linked to marijuana are up sharply in Colorado. Is Legalization to blame?" *The Denver Post*, August 25th, 2017, <<http://www.denverpost.com/2017/08/25/colorado-marijuana-traffic-fatalities/>>, accessed August 26th, 2017.

² Marilyn A. Huestis, "Cannabis-Impaired Driving: A Public Health and Safety Concern," *Clinical Chemistry*, September 28, 2015, <<http://clinchem.aaccjnls.org/content/61/10/1223>>, accessed September 29, 2016.

³ Hartman, RL, Brown TL, Milavetz G, Spurgin A, Gorelick DA, Gaffney G, Huestis MA, "Controlled Cannabis Vaporizer Administration: Blood and Plasma Cannabinoids with and without Alcohol," *Clinical Chemistry*, May 27, 2015, <<https://www.ncbi.nlm.nih.gov/pubmed/26019183>>, accessed September 29, 2016.

⁴ Davis KC, Allen J, Duke J, Nonnemaker J, Bradfield B, Farrelly MC, et al. (2016) Correlates of Marijuana Drugged Driving and Openness to Driving While High: Evidence from Colorado and Washington. *PLoS ONE* 11(1): e0146853. doi:10.1371/journal.pone.0146853.

⁵ Sewell, R. Andrew, James Poling, and Mehmet Sofuoglu. "The Effect of Cannabis Compared with Alcohol on Driving." *The American journal on addictions / American Academy of Psychiatrists in Alcoholism and Addictions* 18.3 (2009): 185–193. PMC. Web. 7 Feb. 2017.

⁶ Anica Padilla, "Study: 57 percent of marijuana users in Colorado admit driving within 2 hours," *KDVR/Fox 31 Denver*, March 9, 2017, <<http://kdvr.com/2017/03/09/study-57-percent-of-marijuana-users-in-colorado-admit-driving-within-2-hours/>>, accessed March 21, 2017.

⁷ Hartman RL, Richjan JE, Hayes CE, Huestis MA, "Drug Recognition Expert (DRE) examination characteristics of cannabis impairment," April 22, 2016, <<https://www.ncbi.nlm.nih.gov/pubmed/27107471>>, accessed September 20, 2016.

⁸ Desrosiers NA, Ramaekers JG, Chauchard E, Gorelick DA, Huestis MA, "Smoked cannabis' psychomotor and neurocognitive effects in occasional and frequent smokers," March 4, 2015, <<https://www.ncbi.nlm.nih.gov/pubmed/25745105>>, accessed July 29, 2017.

⁹ Balikova M, Hlozek T, Palenicek T, Tyls F, Viktorinova M, Melicher T, Androvicova R, Tomicek P, Roman M, Horacek J, “Time profile of serum THC levels in occasional and chronic marijuana smokers after acute drug use – implication for driving motor vehicles,” 2014, <<https://www.ncbi.nlm.nih.gov/pubmed/24625019>>, accessed July 29, 2017.

¹⁰ Hartman RL, Brown TL, Milavetz G, Spurgin A, Gorelick DA, Gaffney GR, Huestis MA, “Effect of Blood Collection Time on Measured $\Delta 9$ -Tetrahydrocannabinol Concentrations: Implications for Driving Interpretation and Drug Policy,” January 2016, <<https://www.ncbi.nlm.nih.gov/pubmed/26823611>>, accessed July 29, 2017.

¹¹ Melanie Zanona, “Study: Drivers Killed in Crashes More Likely to be on Drugs than Alcohol,” *The Hill*, April 26th, 2017, <<http://thehill.com/policy/transportation/330648-drivers-in-fatal-crashes-more-likely-to-be-on-drugs-than-alcohol>>, accessed August 17th, 2017.

¹² James Hedlund, “Drug-impaired Driving: A Guide for States,” Governors Highway Safety Association (GHSA), April 2017 Update, <https://www.google.com/url?sa=t&rct=j&q=&esrc=s&source=web&cd=1&cad=rja&uact=8&ved=0ahUKEwjLrNHUirfWAhUI2oMKHVVBuIQFggoMAA&url=http%3A%2F%2Fwww.ghsa.org%2Fsites%2Fdefault%2Ffiles%2F2017-04%2FGHSA_DruggedDriving2017_FINAL.pdf&usg=AFQjCNFoM3Mj52HFSwYS1m-yFYNYaoBGEA> , Accessed September 22, 2017.

¹³ Janice Wood, “Marijuana Use Up Among Teens Since Legalized in Colorado, Washington,” PsychCentral, December 27, 2016, <<https://psychcentral.com/news/2016/12/27/marijuana-use-up-among-teens-since-legalized-in-colorado-washington/114378.html>>, accessed December 29, 2016.

¹⁴ Alan Mozes, “Pot smoking common among pregnant teens,” Healthday, April 28, 2017, <<http://www.cbsnews.com/news/pot-smoking-common-among-pregnant-teens/>>, accessed April 24, 2017.

¹⁵ George Sam Wang, MD; Marie-Claire Le Lait, MS; Sara J. Deakyne, MPH; et al, “Unintentional Pediatric Exposures to Marijuana in Colorado, 2009-2015,” September 6, 2016, <<http://jamanetwork.com/journals/jamapediatrics/article-abstract/2534480>>, accessed August 3, 2017.

¹⁶ Lindsey Tanner, "Pediatricians warn against teen pot use amid increasingly lax laws," *The Associated Press*, as published in *The Denver Post*, February 27, 2017, <<http://www.denverpost.com/2017/02/27/pediatricians-warn-against-pot-use/>>, accessed March 7, 2017.

¹⁷ Laura Kelly, "Study finds increase in illicit pot use, abuse in states that allow medical marijuana," *The Washington Times*, April 26, 2017, <<http://www.washingtontimes.com/news/2017/apr/26/study-finds-increase-in-illicit-pot-use-abuse-in-s/>>, accessed August 17, 2017.

¹⁸ Quest Diagnostics, "Drug Positivity in U.S. Workforce Rises to Nearly Highest Level in a Decade, Quest Diagnostics Analysis Finds," Press Release, September 25, 2016, <<http://ir.questdiagnostics.com/phoenix.zhtml?c=82068&p=irol-newsArticle&ID=2202029>>, accessed September 15, 2016.

¹⁹ Dennis Romero, "Marijuana Is Not Safe to Smoke, Researchers Say," *LA Weekly*, February 14, 2017, <<http://www.laweekly.com/news/marijuana-is-not-safe-to-smoke-researchers-say-7927826>>, accessed March 2, 2017.

²⁰ Keith Humphreys, "These College Students Lost Access to Legal Pot – and Started Getting Better Grades," *The Washington Post*, July 25th 2017, <https://www.washingtonpost.com/news/wonk/wp/2017/07/25/these-college-students-lost-access-to-legal-pot-and-started-getting-better-grades/?utm_term=.5b072778f294>, accessed August 9th 2017.

²¹ Samantha Smith, "More U.S. women report using marijuana during pregnancy, amid uncertainty on potential harms," *The Cannabist*, February 9, 2017, <<http://www.thecannabist.co/2016/12/19/study-women-marijuana-use-pregnancy/69672/>>, accessed May 17, 2017.

²² Catherine Saint Louis, "Pregnant Women Turn to Marijuana, Perhaps Harming Infants," *The New York Times*, February 2, 2017, <https://www.nytimes.com/2017/02/02/health/marijuana-and-pregnancy.html?_r=1>, accessed March 8, 2017.

²³ Mark Gold, MD, "Researchers & NIDA Warn Marijuana Use Could Be Toxic and Is Contraindicated in Pregnancy," *Rivermend Health*, September 15th, 2017, <<https://www.rivermendhealth.com/resources/researchers-nida-warn-marijuana-use-toxic-contraindicated->

pregnancy/?utm_source=RyCUNewsletter&utm_medium=email&utm_campaign=RyCU>, accessed September 18th, 2017.

²⁴ Bruce Jancin, "Marijuana abuse linked to increased MI risk," *Cardiology News*, March 31, 2017, <<http://www.mdedge.com/ecardiologynews/article/134784/acute-coronary-syndromes/marijuana-abuse-linked-increased-mi-risk>>, accessed August 9, 2017.

²⁵ Yvetter Brazier, "Marijuana Use and Schizophrenia: New evidence suggests link," *Medical News Today*, December 25, 2016, <<http://www.medicalnewstoday.com/articles/314896.php>>, accessed April 24, 2017.

²⁶ Howard S. Kim, MD and Andrew A. Monte, MD, "Colorado Cannabis Legalization and Its Effect on Emergency Care," *Annals of Emergency Medicine*, July 2016, <<http://www.bumc.bu.edu/emergencymedicine/files/2016/08/MJ-legalization-and-impact-on-EM-care.pdf>>, accessed August 9, 2017.

²⁷ Zhu, He PhD; Wu, Li-Tzy ScD, RN, MA, "Trends and Correlates of Cannabis-involved Emergency Department Visits: 2004 to 2011," *Journal of Addiction Medicine*: November/December 2016 – Volume 10 – Issue 6 – p 429-436, <http://journals.lww.com/journaladdictionmedicine/Abstract/2016/12000/Trends_and_Correlates_of_Cannabis_involved.9.aspx>, accessed April 17th, 2017.

²⁸ Mark Gold, MD, "Cannabis Use Causing Alarming Increase in Emergency Hospital Visits and Childhood Poisoning," Rivermend Health, <<https://www.rivermendhealth.com/resources/cannabis-use-causing-alarming-increase-emergency-hospital-visits-childhood-poisoning/>>, accessed April 17, 2017.

²⁹ Jonathan A. Galli, MD; Ronald Andari Sawaya, MD; and Frank K. Friedenberg, MD, "Cannabinoid Hyperemesis Syndrome", Department of Gastroenterology, Temple University School of Medicine, December 2011, <<https://www.ncbi.nlm.nih.gov/pmc/articles/PMC3576702/pdf/nihms353647.pdf>>, accessed August 2, 2017.

³⁰ Abraham M. Nussbaum, Christian Thurstone, Laurel McGarry, Brendan Walker and Allison L. Sabel, "Use and diversion of medical marijuana among adults admitted to inpatient psychiatry," *The American Journal of Drug and Alcohol Abuse*, <<http://www.tandfonline.com/doi/pdf/10.3109/00952990.2014.949727?needAccess=true&>>, accessed August 11, 2017.

³¹ Clayton Aldern, "Everything you need to know about pot's environmental impact," *Grist*, April 19, 2016, <<http://grist.org/living/everything-you-need-to-know-about-pots-environmental-impact/>>, accessed July 31, 2017.

³² K. Ashworth and W. Vizuete, "High Time to Assess the Environmental Impacts of Cannabis Cultivation," *Environmental Science and Technology*, February 17, 2017, <<http://pubs.acs.org/doi/ipdf/10.1021/acs.est.6b06343>>, accessed July 31, 2017.

³³ Julian Smith, "Cartels are growing marijuana illegally in California – and there's a war brewing," *Business Insider*, April 08, 2017, <<https://finance.yahoo.com/news/cartels-growing-marijuana-illegally-california-194700553.html>>, accessed August 3, 2017.

³⁴ Sarah Schueler, "Thousands of marijuana plants found on forest land in Pueblo County," *Fox 31 News/Denver*, July 3, 2017, <<http://kdvr.com/2017/07/03/thousands-of-marijuana-plants-found-on-forest-land-in-pueblo-county/>>, accessed August 16, 2017.

³⁵ Tom McGhee, "Marijuana grows leaving more Colorado homes filed with mold," *The Denver Post*, July 31, 2017, <<http://www.denverpost.com/2017/07/31/marijuana-leaving-colorado-homes-mold/>> accessed September 11, 2017.

³⁶ Brohl, Kammerzell, Koski and Burack, "Colorado Marijuana Enforcement Division: 2016 Mid Year Report (January 1-June 30, 2016)," <<https://www.colorado.gov/pacific/sites/default/files/Final%20Mid%20year%202016.pdf>>, accessed April 19, 2017.

³⁷ Ryan Vandrey, PhD; Jeffrey C. Raber, PhD; Mark E. Raber; et al, "Cannabinoid Dose and Label Accuracy in Edible Medical Cannabis Products," *The JAMA Network*, June 2015, <<http://jamanetwork.com/journals/jama/fullarticle/2338239>>, accessed March 13, 2017.

³⁸ National Families in Action, "Tracking the Money That's Legalizing Marijuana And Why It Matters," <https://www.dalgarnoinstitute.org.au/images/resources/pdf/cannabis-conundrum/Tracking_Marijuana_Money.pdf>, accessed April 20, 2017.

³⁹ National Marijuana Initiative, "Seed To Sale Tracking For Commercial Marijuana," March 2017, <https://hidtanmidotorg.files.wordpress.com/2017/03/seed-to-sale_march-2017.pdf>, accessed March 2017.

⁴⁰ Houston HIDTA Investigative Support Center, December 2016, <<https://hidtanmidotorg.files.wordpress.com/2016/10/2016-houston-hidta-marijuana-legalization-threat-assessment.pdf>>, accessed December 2016.

⁴¹ Laurel Andrews, "Is the Marijuana Industry Actually Making Money for Alaska?" *Alaska Dispatch News*, August 12th, 2017, <<https://www.adn.com/alaska-marijuana/2017/08/12/is-the-marijuana-industry-actually-making-money-for-alaska/>>, accessed August 17th, 2017.

⁴² Smart Approaches to Marijuana, "Working Paper on Projected Costs of Marijuana Legalization in Rhode Island," April 2017, <<https://learnaboutsam.org/wp-content/uploads/2017/04/10Apr2017-report-re-RI-costs.pdf>>, accessed June 2017.

⁴³ Colorado Department of Public Health and Environment, "Monitoring Health Concerns Related to Marijuana in Colorado: 2016," <https://localtvkdvr.files.wordpress.com/2017/01/monitoring_health_concerns_report_final.pdf>, accessed March 2017.