

The Legalization of Marijuana in Colorado *The Impact*

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Rocky Mountain High Intensity
Drug Trafficking Area
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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
- Youth marijuana use
- Adult marijuana use
- Emergency room admissions
- Marijuana-related exposure cases
- Diversion of Colorado marijuana

This is the fourth 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:

- Marijuana-related traffic deaths increased **48 percent** in the three-year average (2013-2015) since Colorado legalized recreational marijuana compared to the three-year average (2010-2012) prior to legalization.
 - During the same time, all traffic deaths increased **11 percent**.
- Marijuana-related traffic deaths increased **62 percent** from 71 to 115 persons after recreational marijuana was legalized in 2013.

- In 2009, Colorado marijuana-related traffic deaths involving operators testing positive for marijuana represented **10 percent** of all traffic fatalities. By 2015, that number doubled to **21 percent**.

Section 2 – Youth Marijuana Use:

- Youth past month marijuana use **increased 20 percent** in the two year average (2013/2014) since Colorado legalized recreational marijuana compared to the two-year average prior to legalization (2011/2012).
 - Nationally youth past month marijuana use **declined 4 percent** during the same time.
- The latest 2013/2014 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 2013/2014 was **74 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 **17 percent** in the two-year average (2013/2014) since Colorado legalized recreational marijuana compared to the two-year average prior to legalization (2011/2012).
 - Nationally college-age past month marijuana use **increased 2 percent** during the same time.
- The latest 2013/2014 results show Colorado college age adults ranked **#1** 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 2013/2014 was **62 percent higher** than the national average compared to **42 percent higher** in 2011/2012.
- Adult past-month marijuana use **increased 63 percent** in the two year average (2013/2014) since Colorado legalized recreational marijuana compared to the two-year average prior to legalization (2011/2012).
 - Nationally adult past month marijuana use **increased 21 percent** during the same time.

- The latest 2013/2014 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 2013/2014 was **104 percent higher** than the national average compared to **51 percent higher** in 2011/2012.

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

- Colorado Emergency Department visits per year related to marijuana:
 - 2013 – **14,148**
 - 2014 – **18,255**
- Emergency Department rates likely related to marijuana increased **49 percent** in the two-year average (2013-2014) since Colorado legalized recreational marijuana compared to the two-year average prior to legalization (2011-2012).
- Number of hospitalizations related to marijuana:
 - 2011 – **6,305**
 - 2012 – **6,715**
 - 2013 – **8,272**
 - 2014 – **11,439**
- Hospital rates likely related to marijuana increased **32 percent** in the two-year average (2013-2014) since Colorado legalized recreational marijuana compared to the two-year average prior to legalization (2011-2012).

Section 5 – Marijuana-Related Exposure:

- Marijuana-related exposures increased **100 percent** in the three-year average (2013-2015) since Colorado legalized recreational marijuana compared to the three-year average (2010-2012) prior to legalization.
- Marijuana-only exposures increased **155 percent** in the three-year average (2013-2015) since Colorado legalized recreational marijuana compared to the three-year average (2010-2012) prior to legalization.

Section 6 – Treatment:

- Marijuana treatment data from Colorado in years 2005 – 2015 does not appear to demonstrate a definitive trend. Colorado averages approximately **6,500** treatment admissions annually for marijuana abuse.
- Over the last ten years, the top three drugs involved in treatment admissions, in descending order, were alcohol (average **13,382**), marijuana (average **6,652**) and methamphetamine (average **5,298**).

Section 7 – Diversion of Colorado Marijuana:

- Highway patrol yearly interdiction seizures of Colorado marijuana increased **37** percent from **288** to **394** (2013-2015), since recreational marijuana was legalized.
- Of the 394 seizures in 2015, there were **36** different states destined to receive marijuana from Colorado. The most common destinations identified were Missouri, Illinois, Texas, Iowa, and Florida.

Section 8 – Diversion by Parcel:

- Seizures of Colorado marijuana in the U.S. mail has increased **427 percent** from an average of 70 parcels (2010-2012) to 369 parcels (2013-2015) in the three years that recreational marijuana has been legal.
- Seizures of Colorado marijuana in the U.S. mail has increased **471 percent** from an average of 129 pounds (2010-2012) to 736 pounds (2013-2015) in the three years that recreational marijuana has been legal.

Section 9 – Related Data:

- Crime in Denver and Colorado has increased from 2013 to 2015.
- Colorado annual tax revenue from the sale of recreational and medical marijuana was \$115,579,432 (CY2015) or about **0.5 percent** of Colorado's total statewide budget (FY2016).
- "Denver is losing visitors and valuable convention business as a result of these overall safety (or perception of safety) issues..." – VISIT DENVER Report

- As of January 2016, there were **424 retail marijuana stores** in the state of Colorado compared to **322 Starbucks** and **202 McDonald's**.
- **68 percent** of local jurisdictions have banned medical and recreational marijuana businesses.

Section 10 – Related Material:

- 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 CLICK ON REPORTS.

State of Washington Data:

Washington legalized recreational marijuana at the same time as Colorado. The reader is encouraged to review data from Washington on the impact of legalization in that state. Many of the same trends in Colorado related to legal marijuana also are occurring in Washington. These trends include: impaired driving, traffic fatalities, use among teens and exposure (see Sections 1 and 10).

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Introduction

Purpose

The purpose of this report and future reports is to document the impact of the legalization of marijuana for medical and recreational use in Colorado. Colorado and Washington serve as experimental labs for the nation to determine the impact of legalizing marijuana. This is an important opportunity to gather and examine meaningful data and facts. Citizens and policymakers may want to delay any decisions on this important issue until there is sufficient and accurate data to make an informed decision.

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 benefits they cite 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 tight 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 consequences they cite 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

This document should help you determine which side is more correct. A number of states have enacted varying degrees of legalized marijuana by permitting medical marijuana and four permitting recreational marijuana. In 2010, Colorado's legislature passed legislation 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 factories and testing facilities. Washington voters passed a similar measure in 2012.

Preface

Volume 4 will be formatted similar to *Volume 3*. It is important to note that, for purposes of the debate on legalizing marijuana in Colorado, there are three distinct timeframes to consider. Those are: 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.

Medical Marijuana Commercialization and Expansion 2009 – Present

In 2009, the dynamics surrounding medical marijuana in Colorado changed substantially. There were a number of factors that played a role in the explosion of the medical marijuana industry and number of patients:

The first was a Denver District Judge who, in late 2007, ruled that CDPHE violated the state's open meeting requirement when setting 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.

At a press conference in Santa Ana, California on February 25, 2009, the U.S. Attorney General 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 hearings, failed to reinstate the five-patients-to-one-caregiver rule.

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 "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 who 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 remuneration. Amendment 64 permits marijuana retail stores, marijuana cultivation sites, marijuana edible factories 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.

NOTE:

- **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.**

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SECTION 1: Impaired Driving and Fatalities

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. Not only the erratic driving but 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.

Some Findings

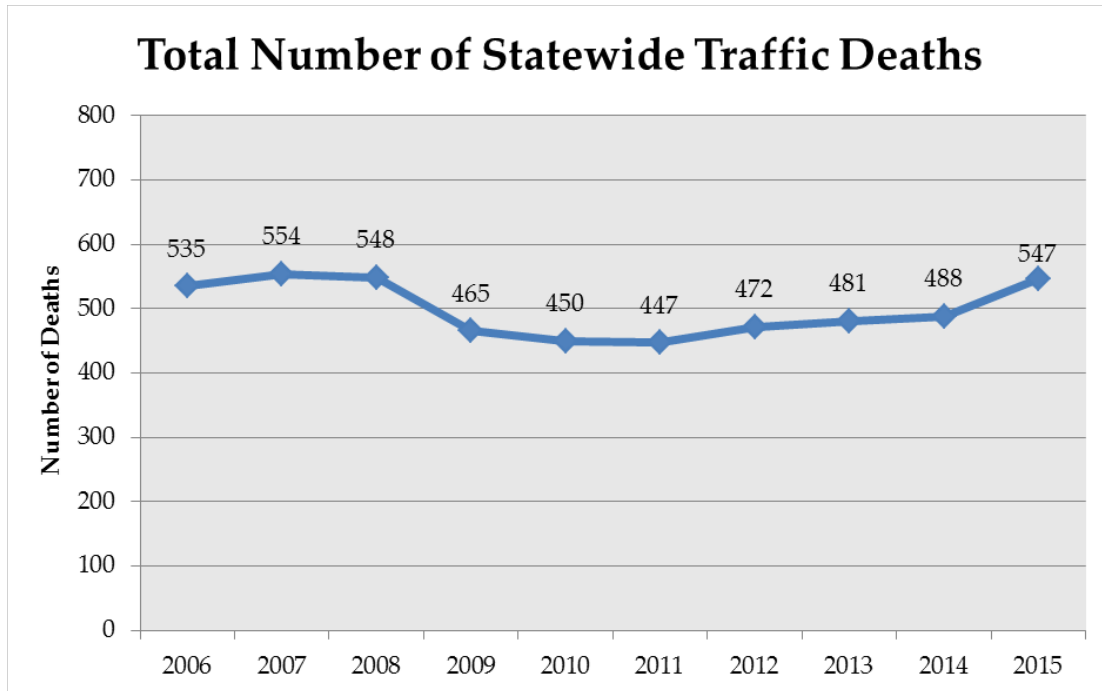
- Marijuana-related traffic deaths increased **48 percent** in the three-year average (2013-2015) since Colorado legalized recreational marijuana compared to the three-year average (2010-2012) prior to legalization.
 - During the same time period, all traffic deaths increased **11 percent**.
- Marijuana-related traffic deaths increased **62 percent** from 71 to 115 persons when recreational marijuana was legalized in 2013.

- In 2009, Colorado marijuana-related traffic deaths involving operators testing positive for marijuana represented **10 percent** of all traffic fatalities. By 2015, that number doubled to **21 percent**.
- There has been a **67 percent** increase of operators testing positive for marijuana involved in a fatal traffic accident since recreational marijuana legalization in 2013.
- Consistent with the past, in 2015 still only **49 percent** of operators involved in traffic deaths were tested for drug impairment. Out of those who were tested, about **1 in 4** tested positive for marijuana.
- The number of toxicology screens positive for marijuana (primarily DUID) increased **29 percent** in the three-year average (2013-2015) since Colorado legalized recreational marijuana compared to the three-year average (2010-2012) prior to legalization.
- The Colorado State Patrol DUID Program 2015 data includes:
 - **77 percent** (665) of the 862 DUIDs involved marijuana
 - **40 percent** (347) of the 862 DUIDs involved marijuana only

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 INVOLVED WITH 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.**
- **2015 FARS DATA WILL NOT BE OFFICIAL UNTIL JANUARY 2017.**



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

- ❖ In 2015 there were a total of 547 traffic deaths of which:
 - 359 were drivers
 - 111 were passengers
 - 59 were pedestrians
 - 13 were bicyclists
 - 4 were in wheelchairs
 - 1 was in a stroller

Traffic Deaths Related to Marijuana*			
Crash Year	Total Statewide Fatalities	Fatalities with Operators Testing Positive for Marijuana	Percentage Total Fatalities (Marijuana)
2006	535	37	6.92%
2007	554	39	7.04%
2008	548	43	7.85%
2009	465	47	10.10%
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%

*Fatalities Involving Operators Testing Positive for Marijuana

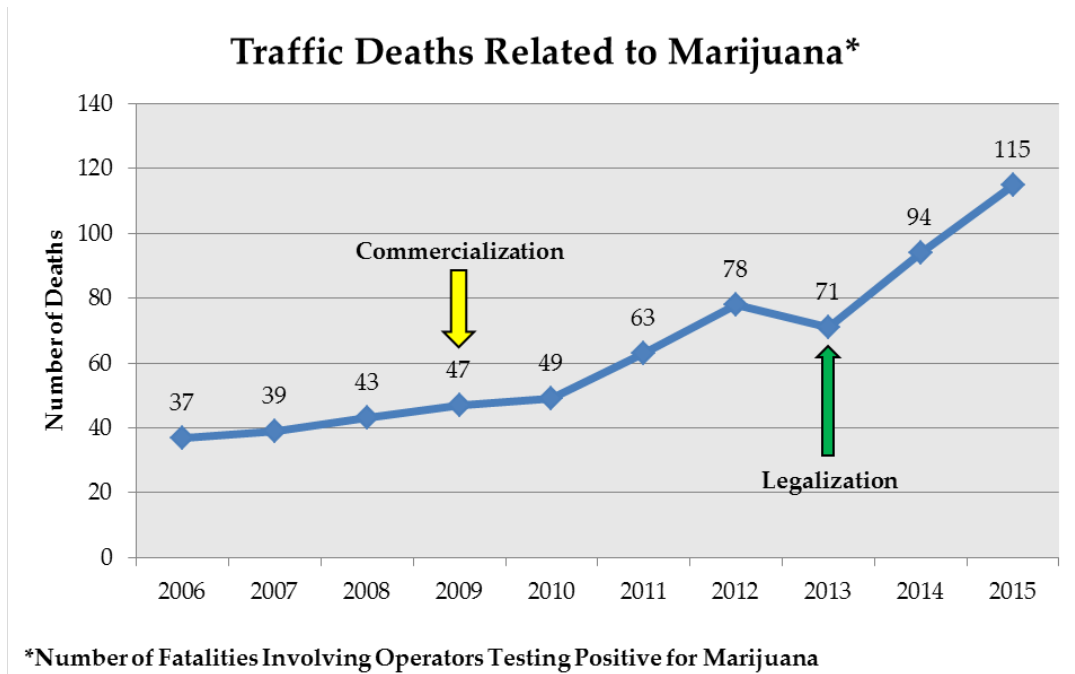
SOURCE: National Highway Traffic Safety Administration, Fatality Analysis Reporting System (FARS)

Percent of All Traffic Deaths That Were Marijuana-Related*



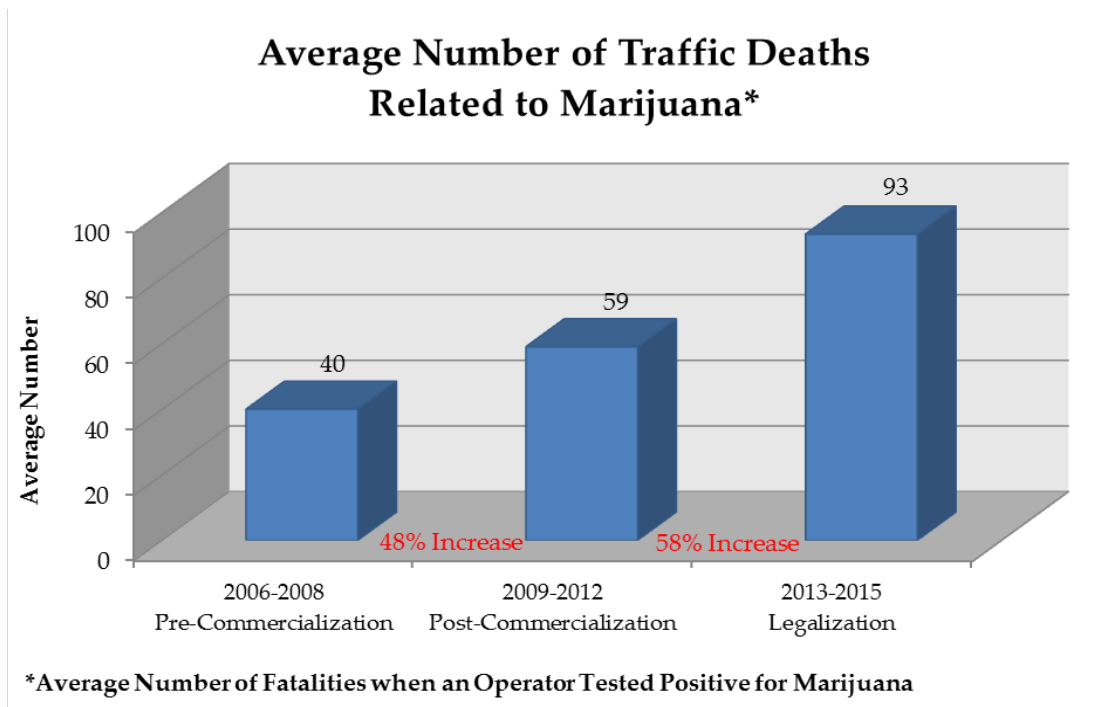
*Percent of All Fatalities Where the Operators Tested Positive for Marijuana

SOURCE: National Highway Traffic Safety Administration, Fatality Analysis Reporting System (FARS), 2006-2011 and Colorado Department of Transportation 2012-2015



SOURCE: National Highway Traffic Safety Administration, Fatality Analysis Reporting System (FARS), 2006-2011 and Colorado Department of Transportation 2012-2015

- ❖ In 2015 there were a total of 115 marijuana-related traffic deaths of which:
 - 75 were drivers
 - 20 were passengers
 - 17 were pedestrians
 - 3 were bicyclists



SOURCE: National Highway Traffic Safety Administration, Fatality Analysis Reporting System (FARS), 2006-2011 and Colorado Department of Transportation 2012-2015

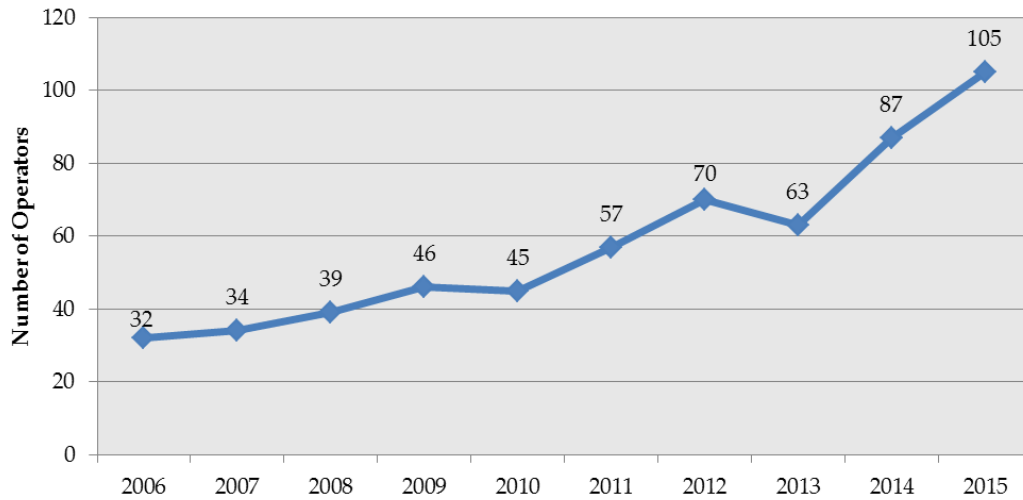
Operators Testing Positive for Marijuana Involved in Fatal Crashes*

Crash Year	Total Operators Involved in Fatal Crashes	Operators in Fatal Crashes Testing Positive for Marijuana	Percentage of Total Operators Who Tested Positive for Marijuana
2006	795	32	4.03%
2007	866	34	3.93%
2008	782	39	4.99%
2009	718	46	6.41%
2010	652	45	6.90%
2011	648	57	8.80%
2012	732	70	9.56%
2013	702	63	8.97%
2014	765	87	11.37%
2015	871	105	12.06%

*Operators Involved in Fatalities Testing Positive for Marijuana

SOURCE: National Highway Traffic Safety Administration, Fatality Analysis Reporting System (FARS), 2006-2011 and Colorado Department of Transportation 2012-2015

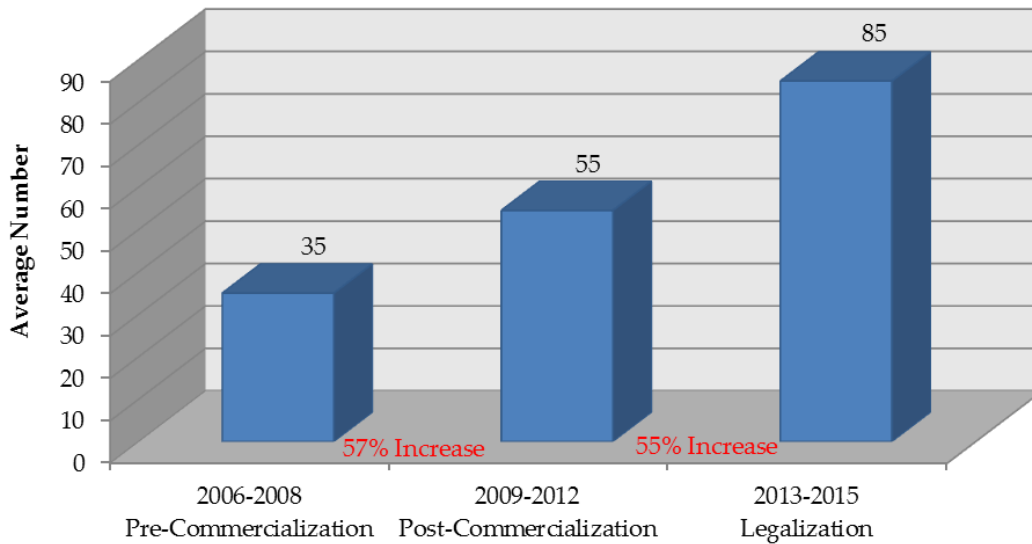
Number of Operators Involved in Fatal Accidents who Tested Positive for Marijuana



SOURCE: National Highway Traffic Safety Administration, Fatality Analysis Reporting System (FARS), 2006-2011 and Colorado Department of Transportation 2012-2015

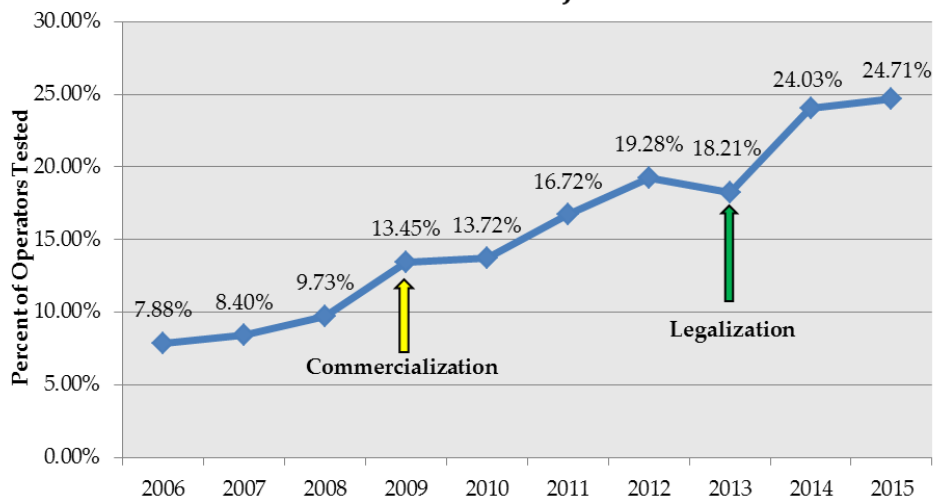
- ❖ Consistent with the past, in 2015 only 49 percent of operators involved in traffic deaths were tested for drug impairment.
- ❖ In 2015, there were a total of 105 operators testing positive for marijuana of which:
 - 88 were drivers
 - 15 were pedestrians
 - 2 were bicyclists

Average Number of Operators Testing Positive for Marijuana



SOURCE: National Highway Traffic Safety Administration, Fatality Analysis Reporting System (FARS), 2006-2011 and Colorado Department of Transportation 2012-2015

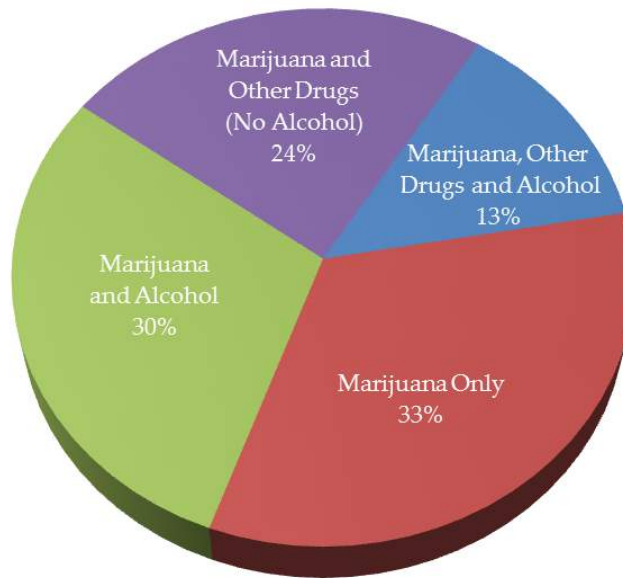
Percent of Operators Tested Who Were Positive for Marijuana*



*Percent of those tested (49% of Total) who were positive for marijuana

SOURCE: National Highway Traffic Safety Administration, Fatality Analysis Reporting System (FARS), 2006-2011 and Colorado Department of Transportation 2012-2015

Drug Combinations for Operators Positive for Marijuana*, 2015

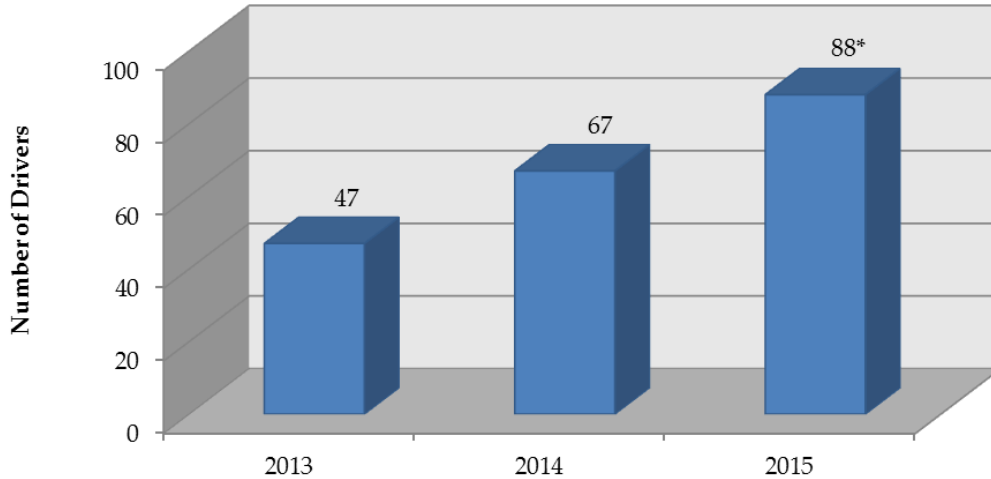


*Toxicology results for all substances present in individuals who tested positive for marijuana

SOURCE: National Highway Traffic Safety Administration, Fatality Analysis Reporting System (FARS), 2006-2011 and Colorado Department of Transportation 2012-2015

- ❖ In 2015, of the operators who tested positive for marijuana, one out of three had only marijuana present in their system.

Number of Drivers Involved in Fatal Crashes Who Tested Positive for Marijuana



*2015 data obtained from CDOT

SOURCE: Colorado Department of Public Safety, Division of Criminal Justice, Office of Research and Statistics, "Marijuana Legalization in Colorado: Early Findings/A Report Pursuant to Senate Bill 13-283," March 2016

- ❖ There was an 87 percent increase in drivers testing positive for marijuana who were involved in fatal crashes from 2013 to 2015.

Data for Impaired Driving

NOTE: THE NUMBER OF DUID ARRESTS IS NOT REFLECTIVE OF THE TOTAL NUMBER OF PEOPLE ARRESTED FOR DRIVING UNDER THE INFLUENCE WHO ARE INTOXICATED ON NON-ALCOHOL SUBSTANCES. IF SOMEONE IS DRIVING BOTH INTOXICATED ON ALCOHOL AND INTOXICATED ON ANY OTHER DRUG (INCLUDING MARIJUANA), ALCOHOL IS ALMOST ALWAYS THE ONLY INTOXICANT TESTED FOR. A DRIVER WHO TESTS OVER THE LEGAL LIMIT FOR ALCOHOL WILL BE CHARGED WITH DUI, EVEN IF HE OR SHE IS POSITIVE FOR OTHER DRUGS. HOWEVER, WHETHER OR NOT HE OR SHE IS POSITIVE FOR OTHER DRUGS WILL REMAIN UNKNOWN BECAUSE OTHER DRUGS ARE NOT OFTEN TESTED FOR.