Update on Marijuana Research

Source: http://www.hightimes.com/read/radical-rant-truth-about-marijuana-and-driving
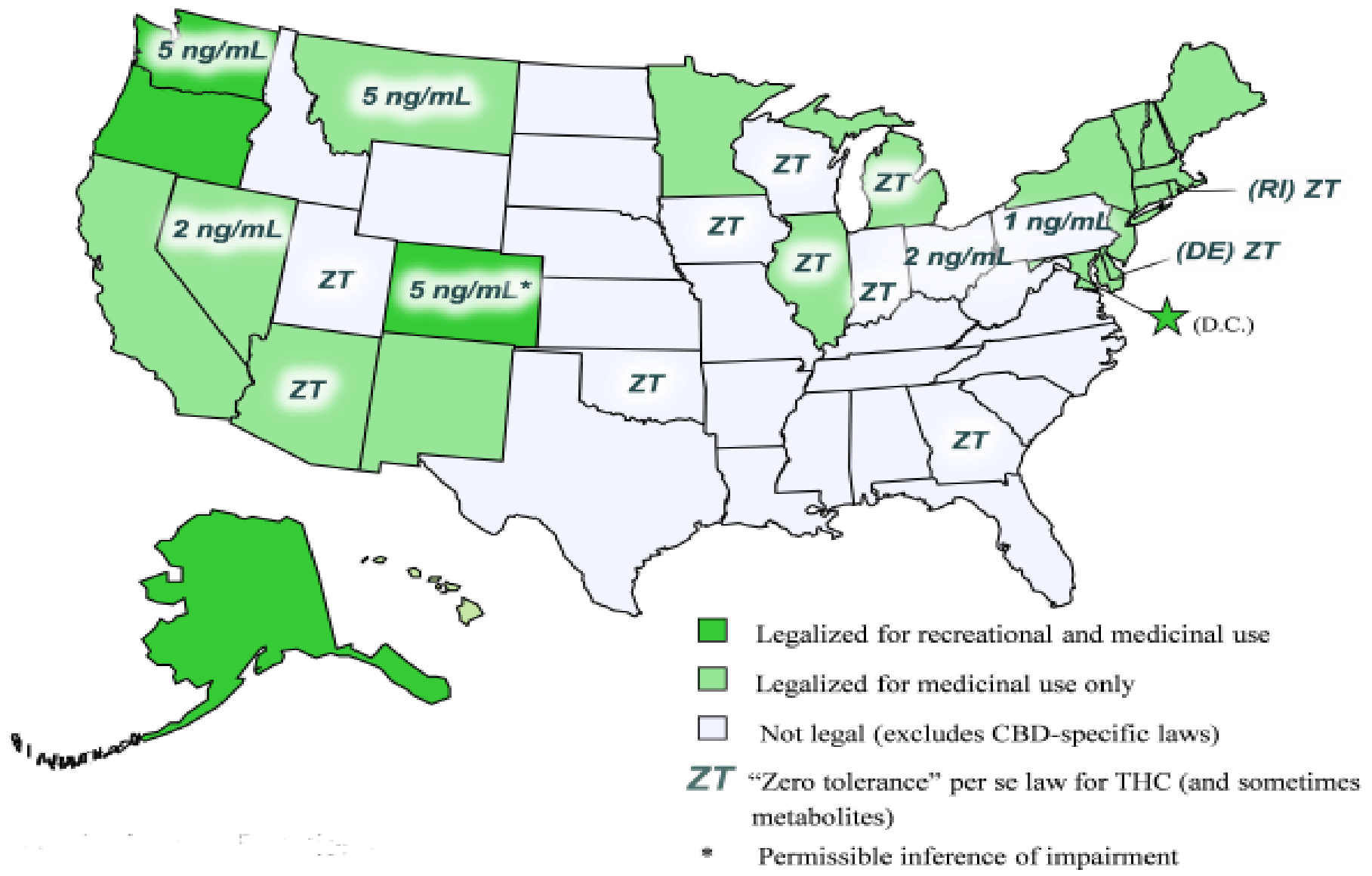
Today:

Drugged driving (DD) has received ↑ national attention, because of state legalization of:

- **marijuana for medical use**
- **recreational use**

Marijuana Laws

5 ng/mL

5 ng/mL

2 ng/mL

ZT

ZT

5 ng/mL*

ZT

ZT

ZT

ZT

ZT

ZT

2 ng/mL

1 ng/mL

(RI) ZT

(DE) ZT

★ (D.C.)

ZT

ZT

	Legalized for recreational and medicinal use
	Legalized for medicinal use only
	Not legal (excludes CBD-specific laws)
ZT	"Zero tolerance" per se law for THC (and sometimes metabolites)
*	Permissible inference of impairment

Cannabis is Complicated

- THC levels peak right after use
  - Fall to ~20% of peak 30 minutes after smoking

- No equivalent of 0.08 BAC
  - Yet many states have passed laws

Not to mention…

- No national standards for drug impairment

- "Per se" limits not informed by research

- Variation in laboratory testing

- Variation training and retention of Drug Recognition Experts (DREs)

- Variation in state policy (barriers to investigations and charges)

Car crashes rank among the leading causes of death in the United States.
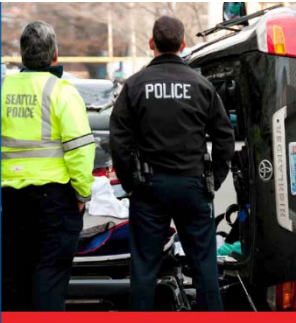
Driving Under the Influence of Alcohol and Marijuana: Beliefs and Behaviors, United States, 2013-2015

May 2016

607 14th Street, NW, Suite 201 | Washington, DC 20005 | AAAFoundation.org | 202-638-5944

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Prevalence of Marijuana Involvement in Fatal Crashes: Washington, 2010-2014

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Cannabis Use among Drivers Suspected of Driving Under the Influence or Involved in Collisions: Analysis of Washington State Patrol Data

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An Evaluation of Data from Drivers Arrested for Driving Under the Influence in Relation to *Per se* Limits for Cannabis

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Advancing Drugged Driving Data at the State Level: Synthesis of Barriers and Expert Panel Recommendations

March 2016

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Overview of Major Issues Regarding the Impacts of Alcohol and Marijuana on Driving

March 2016

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Driving Under the Influence of Alcohol and Marijuana: Beliefs and Behaviors, United States, 2013-2015

May 2016

Objective

- The purpose of this study was to:

  - o estimate prevalence of self reported use and driving under the influence of alcohol and marijuana,

  - o 18 and older in the United States

  - o present an analysis of changes in these behaviors between 2013 and 2015

Overview

- AAA Foundation's Traffic Safety Culture Index (TSCI) surveys.

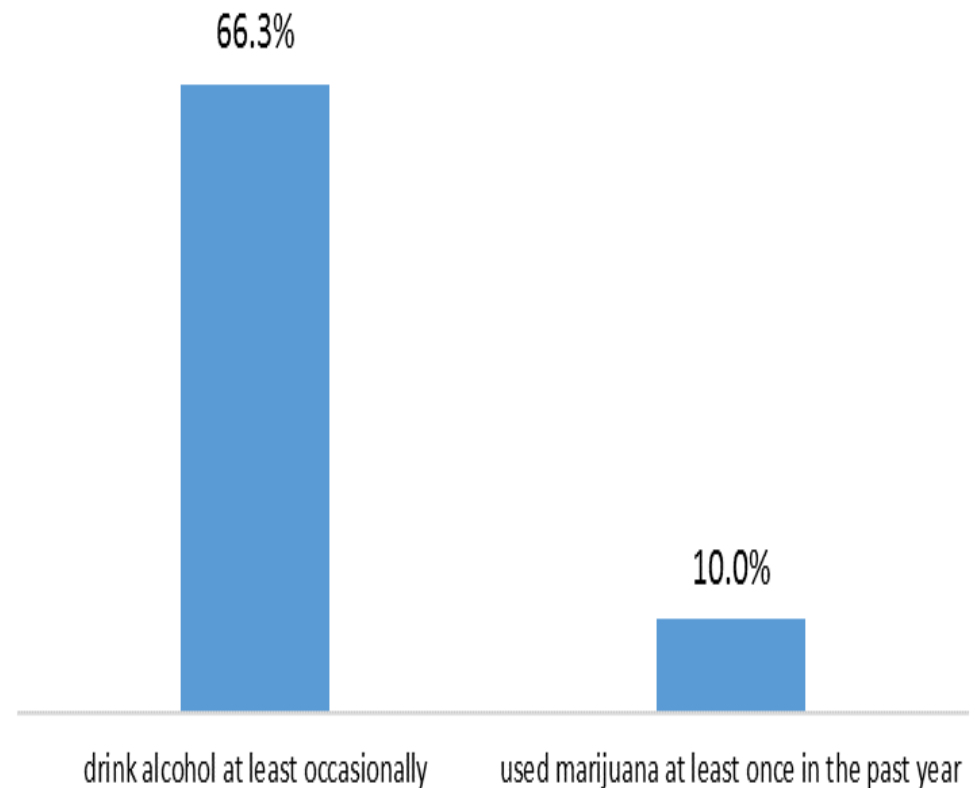 o 6,612 respondents from surveys conducted in 2013-2015

Key Findings

Alcohol and marijuana use

- Nearly two in three drivers reported that they drink alcohol at least occasionally; this was relatively stable over the study period.

- One in ten drivers reported having used marijuana at least once in the past year; there was some year-to-year fluctuation in this percentage, but no evidence of a trend

Alcohol and Marijuana Use Among Drivers Surveyed

66.3%

10.0%

drink alcohol at least occasionally   used marijuana at least once in the past year

Key Findings

Driving Under the Influence of Alcohol or
Marijuana in the Past Year

14.0% — drove with a BAC close to or over the legal limit

4.6% — drove within an hour of using marijuana
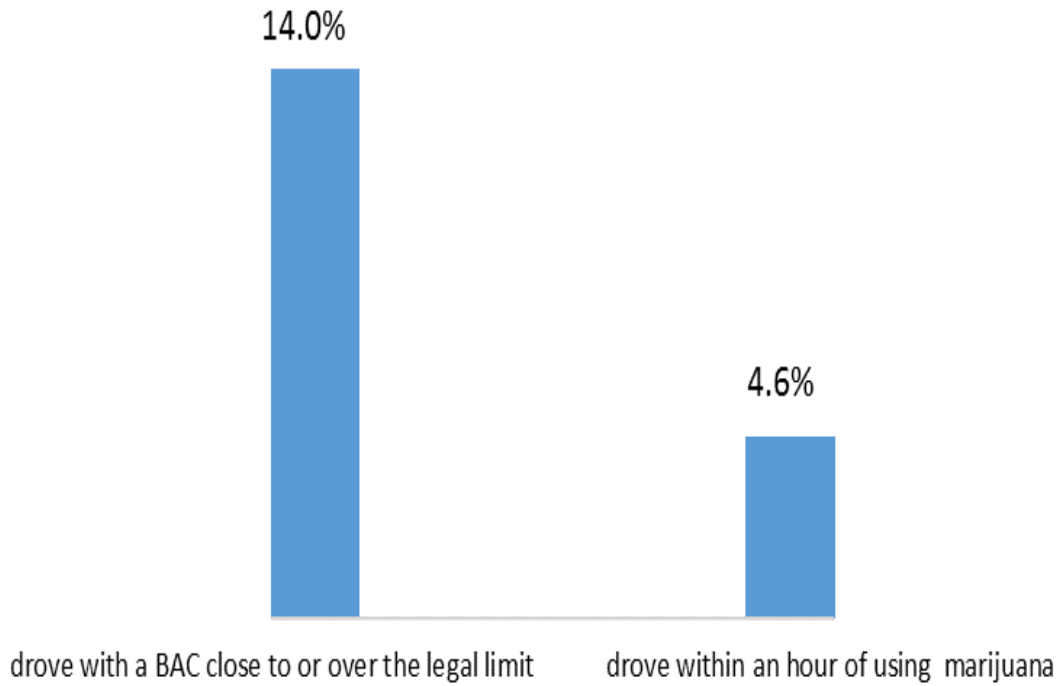
Key Findings

Beliefs about effect of marijuana on driving

Drivers are divided with regard to their perceptions of the effect of using marijuana an hour prior to driving on one's risk of causing a crash:

- 58% risk is increased,
- 6% risk not affected,
- 4% risk decreased,
- 32% do not know.

An Evaluation of Data from Drivers Arrested for Driving Under the Influence in Relation to *Per se* Limits for Cannabis

May 2016

Objective

- The objective of this study was to determine whether data from drivers arrested for suspected driving under the influence (DUI) supported any particular quantitative threshold for a *per se* law for THC

Overview

- Data from two sources were evaluated:
  1. 602 drivers arrested for DUI in which only THC was present, along with a sample of 349 drug-free controls, in which full records of the subjects' performance in the Drug Recognition Expert (DRE) exam were available. The DRE exam includes an assessment of physiological (e.g. heart rate, blood pressure, pupil size) and psychophysical indicators (walk-and-turn, one-leg-stand, and finger-to-nose tests)

  2. 4,799 drivers arrested for DUI who tested positive for one or more cannabinoids (THC, hydroxy-THC, and carboxy-THC).
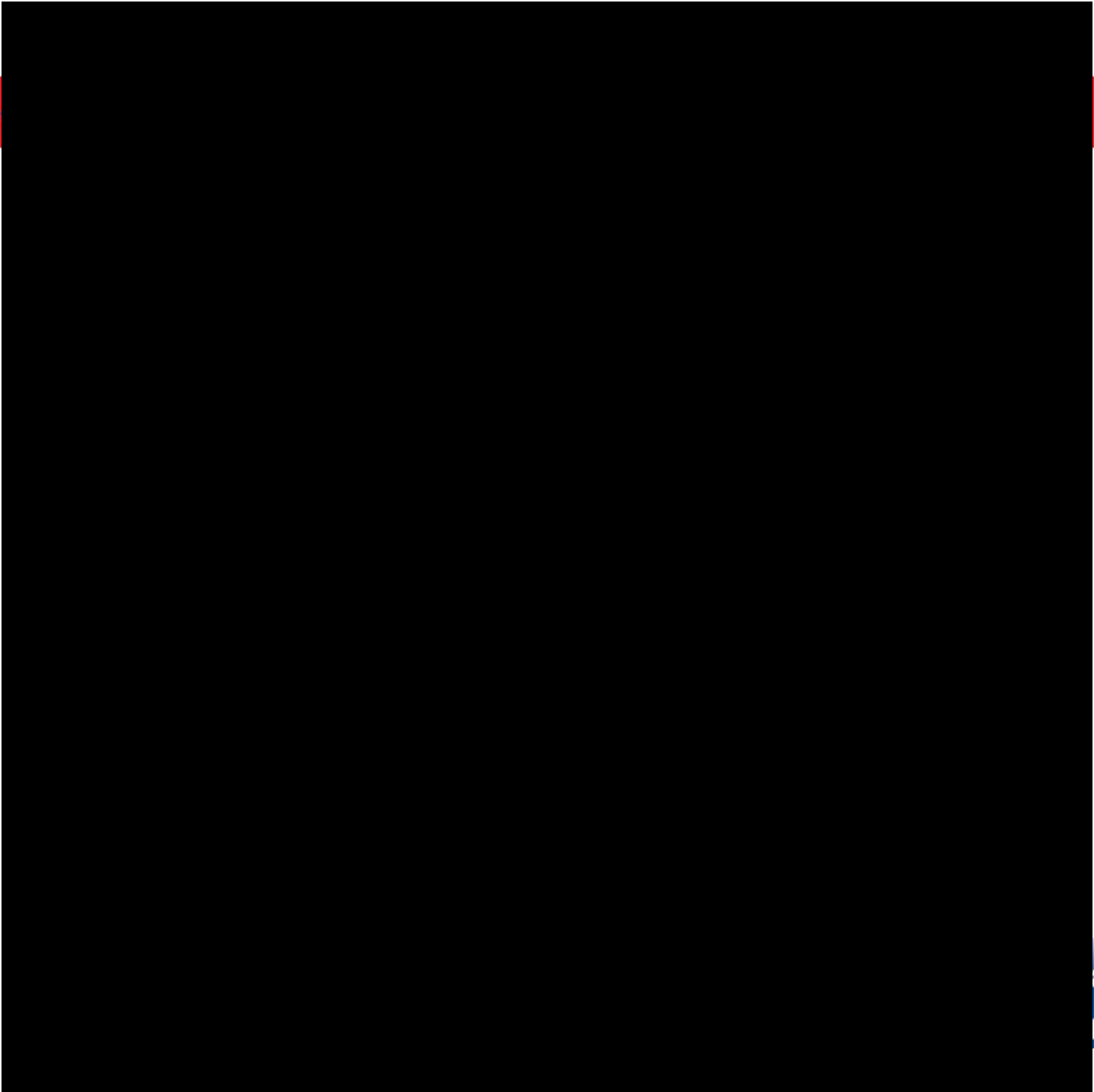
Conclusions

- All of the candidate THC concentration thresholds examined would have misclassified a substantial number of driver as impaired who did not demonstrate impairment on the SFST, and would have misclassified a substantial number of drivers as unimpaired who did demonstrate impairment on the SFST

- Based on this analysis, a quantitative threshold for *per se* laws for THC following cannabis use **cannot** be supported

Prevalence of Marijuana Involvement in Fatal Crashes: Washington 2010-2014

May 2016

The Situation

- In November 2012, the citizens of the state of Washington approved by popular vote ballot Initiative 502, which allows adults aged 21 years and older to possess up to 1 ounce of marijuana for personal use

 o The new law became effective on December 6, 2012

Objective

- The purpose of this study was to quantify the prevalence of marijuana involvement in fatal crashes in the state of Washington in years 2010 – 2014 and to investigate whether the prevalence changed after Washington Initiative 502, which legalized recreational use of marijuana for adults aged 21 years and older, took effect on December 6, 2012

Key Findings

- 3,031 drivers involved in fatal crashes, estimated 10% positive for THC

THC- Positive Drivers Involved in Fatal Crashes
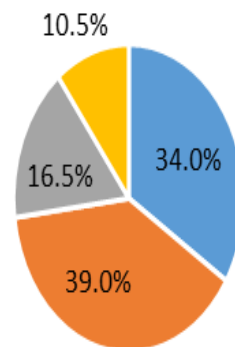
- had neither alcohol nor other drugs
- had detectable alcohol in addition to THC
- had other drugs in addition to THC
- had both alcohol and other drugs in addition to THC

Key Findings

- THC is most prevalent for:
  - Ages 18-34 (especially 18-20)
  - Drivers with suspended/revoked license
  - Drivers with detectable alcohol levels
 - Drivers of older vehicles

Key Findings

- From 2010 through 2013, the estimated proportion of drivers involved in fatal crashes who had a detectable concentration of THC in their blood ranged from a low of 7.9% to a high of 8.5%

  o The number and proportion both doubled from 49 (8.3%) in 2013 to 106 (17.0%) in 2014

Key Findings

Figure 1. Quarterly average proportion of drivers involved in fatal crashes who were positive for THC and modeled seasonally-adjusted linear trend before and after Washington Initiative 502 took effect on 6 December 2012 legalizing recreational use of marijuana for adults aged 21 years and older, Washington, 2010 – 2014
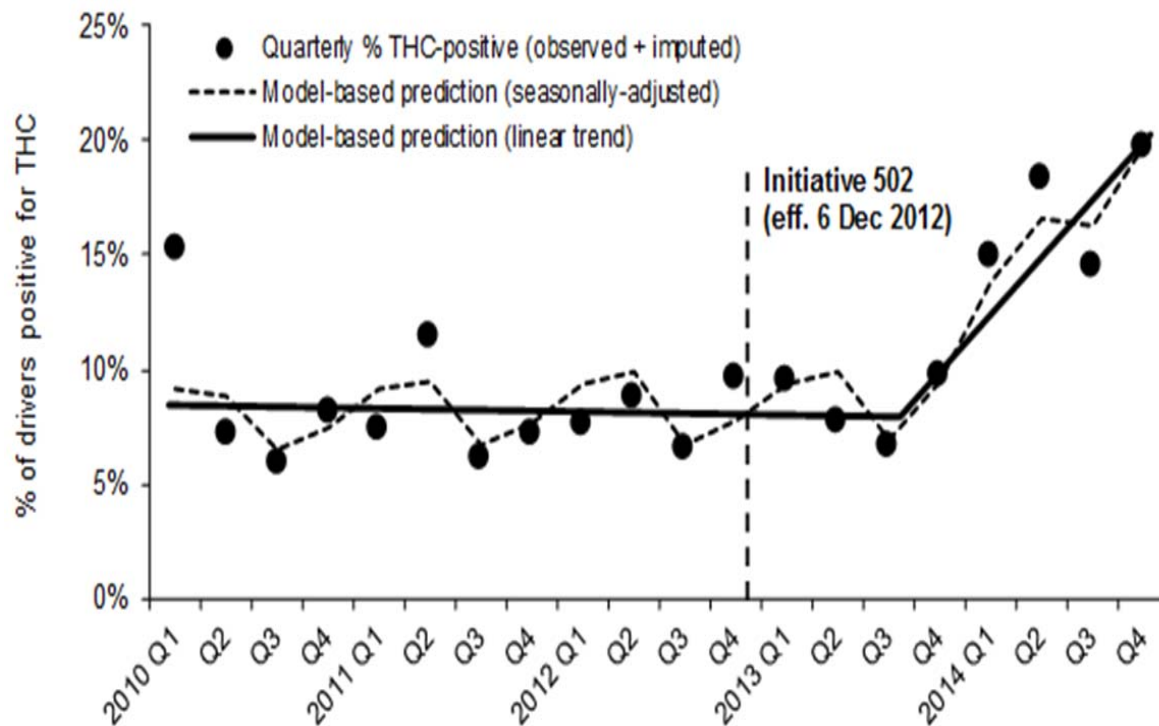
Data: Washington Traffic Safety Commission, 2010 – 2014.
Drivers positive for THC based on results of blood toxicological tests. Results imputed 10 times when driver was not tested or test results were unknown; results reflect averages from 10 imputed values for each driver. Model-based predictions are from binomial regression model with identity link function, indicator variables for seasons, and a two-part linear spline with change in slope on 5 September 2013 (39 weeks after effective date of Initiative 502)

AAA Foundation for Traffic Safety

Thank you!

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