Drug-Impaired Driving: Facts, Challenges & Lessons Learned

Erin Holmes, Director of Traffic Safety
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Washington, DC; July 10, 2017
Is Canada ready to deal with stoned drivers?

As Canada prepares to legalize marijuana, it is totally unprepared to deal with the most dangerous side effect
Boy, 4, Found in SUV With Adults Who Allegedly Passed Out on Heroin; Ohio Police Post Pics
Overview

• State of DUI in America
• Magnitude of the DUID problem
• Marijuana-impaired driving
• Complexities and challenges of the issue
• DUID policy and enforcement
• Solutions and recommendations
State of DUI in America
Alcohol-Impaired Driving Fatalities 1982-2015

TOTAL ALCOHOL-IMPAIRED DRIVING FATALITIES

Drunk driving fatalities have declined 51% from 1982 to 2015.
Why have we made progress?

• Passage of laws to target multiple facets of the problem
• Sustained and high visibility enforcement efforts
• Identifying the countermeasures that work; evaluation and strengthening of programs
• Targeting high-risk offenders
• Assessment and treatment
• Public education and awareness
• Changing societal norms
Drugged Driving: Magnitude of the Problem
Limitations in crash data

• States vary considerably in how they collect DUID data:
  – How many drivers are tested?
  – What tests are used?
  – How are test results reported?

• The rate at which states test drivers involved in fatal crashes ranges from less than 10% to over 90%.

• FARS data merely reflects drug presence; it does not identify drug concentrations.
Percent of *Fatally-Injured* Drivers that Tested Positive for Drugs

- 2005: 28%
- 2009: 33%
- 2013: 40%

*Source: NHTSA / FARS, 2015*
43% of fatally-injured drivers with a known test result tested positively for drugs, more frequently than alcohol was present.

Source: 2015 Fatality Analysis Reporting System (FARS)
In 2015 nationwide, **57.0%** of fatally-injured drivers were tested for drugs.

Of those tested:

- **34.3%** A drug in the FARS list was found

- **35.6%** Marijuana

- **9.3%** Amphetamine

- **55.1%** Other

- **7.4%** Drug not in the FARS list

- **55.4%** No drugs detected

- **2.9%** Unknown

Source: 2015 Fatality Analysis Reporting System (FARS)
DRUGGED COUNTIES
Most Commonly Detected Drugs for Drivers* in Fatal Automobile Accidents From 1995-2013 by County

* Includes all drivers involved in accidents that caused the death of at least one person.
Source: http://www-fars.nhtsa.dot.gov

Source: DrugTreatment.com
Roadside data

• The most recent roadside survey data revealed an increase in drugged driving.

• Results from the NHTSA National Roadside Survey in 2013-2014 found that more than 22.5% of night-time drivers tested positive for illegal, prescription, or OTC medications.
  
  – Comparatively, only 1.5% of night-time drivers tested positive for a BAC above the legal limit of .08.
  
  – This is much higher than the 16.3% of weekend nighttime drivers who tested positive in 2007.

Roadside data

• Other key findings of the 2013-2014 NRS:
  – Illegal drugs increased from 12.4% in 2007 to 15.1% in 2013-2014
  – Medications increased from 3.9% to 4.9%

• Illegal drugs were more prevalent on weekend nights (15.2%) than weekday days (12.1%).

• The opposite was found for prescription medication – 7.3% on weekend nights and 10.3% on weekday days.

Marijuana: Roadside survey

• The drug that has shown the largest increase in weekend nighttime prevalence is THC.

• In the 2007 NRS, 8.6% of weekend nighttime drivers tested positive for THC. This number increased to 12.6% in the 2013-2014 NRS. This reflects a 48% increase.

<table>
<thead>
<tr>
<th>Test Result</th>
<th>Weekday Days</th>
<th>Weekend Nights</th>
</tr>
</thead>
<tbody>
<tr>
<td>Tested positive for some drug or medication</td>
<td>22.4%</td>
<td>22.5%</td>
</tr>
<tr>
<td>Illegal drugs, including marijuana</td>
<td>12.1%</td>
<td>15.2%</td>
</tr>
<tr>
<td>Medication</td>
<td>10.3%</td>
<td>7.3%</td>
</tr>
<tr>
<td>Marijuana</td>
<td>11.7%</td>
<td>12.6%</td>
</tr>
<tr>
<td>Alcohol</td>
<td>1.1%</td>
<td>8.3%</td>
</tr>
</tbody>
</table>

Marijuana-impaired driving: Colorado and Washington
November 2012...

*Colorado: Amendment 64*

*Washington: Initiative 502*
DUID in Colorado: Fatalities

• Marijuana-related traffic deaths increased 48% in the 3-yr average since legalization (2013-2015) compared to the 3-yr average prior to legalization (2010-2012). During the same time periods all traffic deaths increased 11%.

• In 2009, marijuana-related traffic deaths involving operators testing positive for marijuana represented 10% of all traffic fatalities. By 2015, that number more than doubled to 21%.

• In 2015, only 49% of drivers involved in traffic deaths were tested for drugs. Of those tested, 1 in 4 tested positive for marijuana.

# DUID in Colorado: Fatalities

<table>
<thead>
<tr>
<th>Crash Year</th>
<th>Total Statewide Fatalities</th>
<th>Fatalities with Operators Testing Positive for Marijuana</th>
<th>Percentage Total Fatalities (Marijuana)</th>
</tr>
</thead>
<tbody>
<tr>
<td>2006</td>
<td>535</td>
<td>37</td>
<td>6.92%</td>
</tr>
<tr>
<td>2007</td>
<td>554</td>
<td>39</td>
<td>7.04%</td>
</tr>
<tr>
<td>2008</td>
<td>548</td>
<td>43</td>
<td>7.85%</td>
</tr>
<tr>
<td>2009</td>
<td>465</td>
<td>47</td>
<td>10.10%</td>
</tr>
<tr>
<td>2010</td>
<td>450</td>
<td>49</td>
<td>10.89%</td>
</tr>
<tr>
<td>2011</td>
<td>447</td>
<td>63</td>
<td>14.09%</td>
</tr>
<tr>
<td>2012</td>
<td>472</td>
<td>78</td>
<td>16.53%</td>
</tr>
<tr>
<td><strong>2013</strong></td>
<td><strong>481</strong></td>
<td><strong>71</strong></td>
<td><strong>14.76%</strong></td>
</tr>
<tr>
<td>2014</td>
<td>488</td>
<td>94</td>
<td>19.26%</td>
</tr>
<tr>
<td>2015</td>
<td>547</td>
<td>115</td>
<td>21.02%</td>
</tr>
</tbody>
</table>

*Fatalities Involving Operators Testing Positive for Marijuana*

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

DUID in Colorado: Arrests

DUID in Washington: Fatalities

- Washington Traffic Safety Commission examined marijuana involvement in fatal crashes from 2010-2014:
  - In 2014, the 75 THC-positive drivers comprised the highest number in any year during the five-year period studied.
  - Half of the THC-positive drivers tested above Washington’s legal 5 ng/mL legal limit in 2014.
  - THC positive drivers were most likely to be males age 16-25.
  - THC positive drivers in fatal crashes were more likely to be involved in day-time crashes.
  - Most drivers had **multiple substances** in their system (34% tested positive for the presence of alcohol only; 8% tested positive for the presence of marijuana only).
## Fatalities with presence of cannabinoids

<table>
<thead>
<tr>
<th>Marijuana Result</th>
<th>2010</th>
<th>2011</th>
<th>2012</th>
<th>2013</th>
<th>2014</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Any Cannabinoids</td>
<td>81</td>
<td>56</td>
<td>63</td>
<td>59</td>
<td>89</td>
<td>348</td>
</tr>
<tr>
<td>Carboxy-THC</td>
<td>45</td>
<td>24</td>
<td>27</td>
<td>21</td>
<td>14</td>
<td>131</td>
</tr>
<tr>
<td></td>
<td>55.6%</td>
<td>42.9%</td>
<td>42.9%</td>
<td>35.6%</td>
<td>15.7%</td>
<td>37.6%</td>
</tr>
<tr>
<td>Any THC</td>
<td>36</td>
<td>32</td>
<td>36</td>
<td>38</td>
<td>75</td>
<td>217</td>
</tr>
<tr>
<td></td>
<td>44.4%</td>
<td>57.1%</td>
<td>57.1%</td>
<td>64.4%</td>
<td>84.3%</td>
<td>62.4%</td>
</tr>
<tr>
<td>THC &lt;5 ng/ml</td>
<td>24</td>
<td>19</td>
<td>23</td>
<td>19</td>
<td>38</td>
<td>123</td>
</tr>
<tr>
<td></td>
<td>66.7%</td>
<td>59.4%</td>
<td>63.9%</td>
<td>50.0%</td>
<td>50.7%</td>
<td>56.7%</td>
</tr>
<tr>
<td>THC ≥5 ng/ml</td>
<td>12</td>
<td>13</td>
<td>12</td>
<td>18</td>
<td>37</td>
<td>92</td>
</tr>
<tr>
<td></td>
<td>33.3%</td>
<td>40.6%</td>
<td>33.3%</td>
<td>47.4%</td>
<td>49.3%</td>
<td>42.4%</td>
</tr>
<tr>
<td>THC Result Unknown</td>
<td>0</td>
<td>0</td>
<td>1</td>
<td>1</td>
<td>0</td>
<td>2</td>
</tr>
</tbody>
</table>

Percentage of Total Driving Cases Positive for Carboxy-THC and Delta-9-THC 2009-2015*

<table>
<thead>
<tr>
<th>Year</th>
<th>Carboxy-THC</th>
<th>Delta-9-THC</th>
</tr>
</thead>
<tbody>
<tr>
<td>2009</td>
<td>26%</td>
<td>18%</td>
</tr>
<tr>
<td>2010</td>
<td>28%</td>
<td>19%</td>
</tr>
<tr>
<td>2011</td>
<td>28%</td>
<td>20%</td>
</tr>
<tr>
<td>2012</td>
<td>29%</td>
<td>19%</td>
</tr>
<tr>
<td>2013</td>
<td>40%</td>
<td>25%</td>
</tr>
<tr>
<td>2014</td>
<td>36%</td>
<td>28%</td>
</tr>
<tr>
<td>2015</td>
<td>39%</td>
<td>33%</td>
</tr>
</tbody>
</table>

Source: Washington State Patrol Toxicology Laboratory and NWHIDTA
2015*: January through April 2015

Estimated effects of recreational marijuana sales in 3 states
Change in claim frequency for vehicles up to 33 years old, 2012-16

<table>
<thead>
<tr>
<th>State</th>
<th>Change in Claim Frequency</th>
</tr>
</thead>
<tbody>
<tr>
<td>Colorado</td>
<td>14%</td>
</tr>
<tr>
<td>Washington</td>
<td>6.2%</td>
</tr>
<tr>
<td>Oregon</td>
<td>4.5%</td>
</tr>
<tr>
<td>Combined</td>
<td>3%</td>
</tr>
</tbody>
</table>

Polysubstance use

- Drug use combined with alcohol use exponentially increases traffic crash risk:
  - Low amounts of marijuana combined with low amounts of alcohol cause severe impairment.
  - Research has shown that combining substances has a multiplicative effect on collision risk.
  - Combining alcohol and marijuana is common among seriously and fatally injured drivers.
## Fatalities by substance category

<table>
<thead>
<tr>
<th>Substance Category</th>
<th>2010</th>
<th>2011</th>
<th>2012</th>
<th>2013</th>
<th>2014</th>
<th>2010-2014 Total</th>
<th>Percent Change 2010-2014</th>
</tr>
</thead>
<tbody>
<tr>
<td>No Drugs, No Alcohol</td>
<td>147</td>
<td>151</td>
<td>151</td>
<td>147</td>
<td>116</td>
<td>712</td>
<td>-21.1%</td>
</tr>
<tr>
<td>Alcohol Only (\geq 0.08)</td>
<td>67</td>
<td>67</td>
<td>60</td>
<td>69</td>
<td>51</td>
<td>314</td>
<td>-23.9%</td>
</tr>
<tr>
<td>THC Only</td>
<td>9</td>
<td>7</td>
<td>13</td>
<td>7</td>
<td>20</td>
<td>56</td>
<td>122.2%</td>
</tr>
<tr>
<td>Carboxy-THC Only</td>
<td>11</td>
<td>10</td>
<td>7</td>
<td>3</td>
<td>6</td>
<td>37</td>
<td>-45.5%</td>
</tr>
<tr>
<td>THC + Alcohol (\geq 0.08)</td>
<td>16</td>
<td>16</td>
<td>12</td>
<td>16</td>
<td>23</td>
<td>83</td>
<td>43.8%</td>
</tr>
<tr>
<td>THC + Drugs</td>
<td>6</td>
<td>3</td>
<td>8</td>
<td>5</td>
<td>17</td>
<td>39</td>
<td>183.3%</td>
</tr>
<tr>
<td>THC + Drugs + Alcohol (\geq 0.08)</td>
<td>2</td>
<td>5</td>
<td>2</td>
<td>3</td>
<td>6</td>
<td>18</td>
<td>200.0%</td>
</tr>
</tbody>
</table>

Drug Combinations for Operators Positive for Marijuana*, 2015

- Marijuana and Other Drugs (No Alcohol): 24%
- Marijuana, Other Drugs and Alcohol: 13%
- Marijuana and Alcohol: 30%
- Marijuana Only: 33%

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

Marijuana-impaired driving: Perceptions
Perceptions of risk

- There are many common misperceptions about drugged driving, specifically marijuana-impaired driving:
  - Drugged driving is not a serious problem.
  - Some drug use does not adversely affect driving ability.
  - Some drug use improves driving ability (due to compensation strategies).
  - Driving high is a safer alternative to driving drunk.
  - Driving high isn’t illegal.
  - The likelihood of detection and apprehension for drugged driving is low.
Perceptions of risk

- According to a recent **Gallup poll**:  

<table>
<thead>
<tr>
<th></th>
<th>Very serious %</th>
<th>Somewhat serious %</th>
<th>Not much of a problem %</th>
</tr>
</thead>
<tbody>
<tr>
<td>Alcohol</td>
<td>79</td>
<td>18</td>
<td>2</td>
</tr>
<tr>
<td>Prescription painkillers</td>
<td>41</td>
<td>42</td>
<td>15</td>
</tr>
<tr>
<td>Marijuana</td>
<td>29</td>
<td>39</td>
<td>31</td>
</tr>
<tr>
<td>Prescription antidepressants</td>
<td>28</td>
<td>36</td>
<td>33</td>
</tr>
</tbody>
</table>

*June 24-25, 2015*
Perceptions of risk

• According to a recent Gallup poll:
  – Americans aged 18 to 29 (88%) are the most likely to say drinking and driving is a very serious problem.
  – This age group is also the least likely to consider people driving while impaired by marijuana to be a very serious problem (22%).

• Another Gallup poll that asked what impact legalization will have on traffic safety:

<table>
<thead>
<tr>
<th></th>
<th>A lot less safe</th>
<th>A little less safe</th>
<th>Not make much difference</th>
</tr>
</thead>
<tbody>
<tr>
<td>June 24-25, 2015</td>
<td>30%</td>
<td>17%</td>
<td>50%</td>
</tr>
</tbody>
</table>
Washington Roadside Survey

• Survey conducted by PIRE in June 2014 (prior to start date for recreational sales).

• Voluntary participation of drivers; included THC questionnaire and oral fluid sample.

• Of the 220 drivers who stated that they had used marijuana in the past year, 44% reported using marijuana within two hours prior to driving.
  - 62% felt that their recent marijuana use did not make any difference in their driving;
  - 25% felt that recent marijuana use made their driving better;
  - Only 3% felt that recent marijuana use made their driving worse.
Drug-impaired driving: Effects
<table>
<thead>
<tr>
<th>Class of drug</th>
<th>Effects on driving</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Cannabis</strong></td>
<td>Poor attention to tasks; time and distance perception; slower reaction time/slower braking; poor lane tracking/more steering corrections; poor speed maintenance</td>
</tr>
<tr>
<td><strong>Depressants</strong></td>
<td>Slower reaction time; poor attention to task; poor lane positioning; poor speed maintenance; fail to obey traffic signs</td>
</tr>
<tr>
<td><strong>Dissociative anesthetics</strong></td>
<td>Poor attention to task; poor reaction time</td>
</tr>
<tr>
<td><strong>Hallucinogens</strong></td>
<td>Slower reaction time; perceive things that are not there and react to them</td>
</tr>
<tr>
<td><strong>Inhalants</strong></td>
<td>Slower reaction time; fall asleep at wheel</td>
</tr>
<tr>
<td><strong>Narcotic analgesics</strong></td>
<td>Slower reaction time; poor lane positioning; drive slowly; fall asleep at wheel</td>
</tr>
<tr>
<td><strong>Stimulants</strong></td>
<td>May increase reaction time; may increase erratic/aggressive driving; possible rebound effect (sleepiness)</td>
</tr>
</tbody>
</table>
Cannabis and driving

- Poor attention to tasks
- Time and distance perception
- Slower braking/reaction time
- Poor speed maintenance
- Poor lane tracking/more steering corrections
- Drivers impaired by marijuana may compensate by driving slower and increasing following distance
- Level of impairment increases with dose

Signs of cannabis impairment

- Eyelid tremors
- Side-to-side, front-to-back, circular sway
- Lowered temperature
- Dilated pupils, bloodshot, watery eyes
- Slow, deliberate speech
- Rebound dilation
- Odor of marijuana
- Increased B/P (New users)
  - May be lowered for experienced users
- Increased pulse rate
- Body/Leg tremors

Other indicators:
- Relaxed inhibitions
- Sharpened sense of humor
- Difficulty with concentration
- Disorientation
- Short-term memory problems
- Fatigue, Lethargic
- Altered time and space perception

Image source: Chuck Hayes, 2016.
Does compensation work?

• These strategies may not be sufficient to compensate for all of the impairing effects of marijuana.

• Attempts to compensate are at the expense of vehicle control (e.g., speed control, lane position variability, reaction time).

• It is very difficult to mitigate for deficits in attention allocation and account for unexpected events.
DUID Challenges
**Drugged driving** is more complicated than drunk driving.

<table>
<thead>
<tr>
<th>Data on Use by Drivers &amp; Crashes:</th>
<th>DRUGGED DRIVING</th>
<th>DRUNK DRIVING</th>
</tr>
</thead>
<tbody>
<tr>
<td>Use by Drivers:</td>
<td>Hundreds of drugs</td>
<td>Alcohol is alcohol</td>
</tr>
<tr>
<td>Impairment:</td>
<td>Limited</td>
<td>Abundant</td>
</tr>
<tr>
<td>Crash Risk:</td>
<td>Increasing</td>
<td>Decreasing</td>
</tr>
<tr>
<td>Beliefs &amp; Attitudes:</td>
<td>Varies by type</td>
<td>Well-documented</td>
</tr>
<tr>
<td></td>
<td>Varies by type</td>
<td>Precise</td>
</tr>
<tr>
<td></td>
<td>No strong attitudes – public indifferent</td>
<td>Socially unacceptable</td>
</tr>
</tbody>
</table>

**GHSAA**

[Responsibility.org](http://responsibility.org)
How many drugs are out there?

- There are three main categories of drugs involved in impaired driving:
  1. Illegal drugs
  2. Prescription medications
  3. Over-the-counter medications

- FARS has codes for 430 specific drugs or metabolites.

- A single drug can have different names and can take different chemical forms.
  - Cannabis is the best example as FARS has separate codes for marijuana, THC, $\Delta^9$-THC, unknown cannabinoid.
How many drugs are out there?

- There is an ever-expanding list of drugs and new substances are continually being developed.
  - Since the mid-2000s, there has been a proliferation of new psychoactive drugs.
- **Designer drugs**: a reformulation of existing chemical compounds.
  - Increase potency; prolong effects; make detection more difficult; make an illegal drug legal
- **Common types**: synthetic cannabinoids (K2/spice), synthetic cathinones (bath salts), opiate derivatives, reformulated pharmaceuticals, new hallucinogens and stimulants.
- **DUID testing implications.**
Marijuana potency

• The potency of any cannabis product depends on its concentration of cannabinoids, particularly THC.

• Potency levels are \textbf{MUCH} higher today than in the 1960s.

• In fact, potency levels have more than doubled in the last 15 years (commonly over 20%).

• Higher potency = more intense, longer-lasting high.

• \textbf{Concentrates:} contain extraordinarily high THC levels that could range from 40-80%. This form of marijuana can be up to 4x stronger in THC content than high grade or top shelf marijuana.
Marijuana concentrates

- Wax
- Shatter
- Butane hash oil
- Vaporizer
- Budder
- Hash oil capsules
Dabbing
What about this scenario?

Tobacco or THC?
Forms of marijuana - edibles
Edible servings

*Instant gratification!*
Presence vs. Impairment

- Relationship between a drug’s presence in the body and its impairing effects is complex and not well understood.

- Presence of a drug ≠ impairment
  - Some drugs/metabolites may remain in the body for days or weeks after initial impairment has dissipated.
  - Individuals differ considerably in the rate of absorption, distribution, action, and elimination of drugs.
  - Some people are more sensitive to the effects of drugs, particularly first-time or infrequent users.
  - Wide ranges of drug concentrations in different individuals produce similar levels of impairment in experimental situations.
Presence vs. Impairment: Marijuana

- Marijuana metabolites can remain in the body for 30 days or longer.
- THC concentrations fall to about 60% of their peak within 15 minutes after smoking; 20% of their peak 30 minutes after smoking; impairment can last 2-4 hours.
- There is no DUID equivalent to .08 BAC.
  - It is currently impossible to define DUID impairment with an illegal limit as drug concentration levels cannot be reliably equated with a specific degree of driver impairment.
DUID crash risk

• Any drug may increase a driver’s crash risk but effects vary greatly between drivers.

• Impairing effects do not necessarily produce increased crash risk on account of compensation strategies.

• The causal relationship between drug use and collision involvement has not been clearly established.

• The recent NHTSA crash-control study found unadjusted increases in crash risk of 21% associated with illegal drugs and 25% associated with marijuana.

## DUID crash risk

### TABLE 3. CRASH RISK ASSOCIATED WITH DRUG USE IN EUROPEAN STUDIES

<table>
<thead>
<tr>
<th>Risk level</th>
<th>Relative risk</th>
<th>Drug category</th>
</tr>
</thead>
<tbody>
<tr>
<td>Slightly increased risk</td>
<td>1-3</td>
<td>marijuana</td>
</tr>
<tr>
<td>Medium increased risk</td>
<td>2-10</td>
<td>benzodiazepines, cocaine, opioids</td>
</tr>
<tr>
<td>Highly increased risk</td>
<td>5-30</td>
<td>amphetamines, multiple drugs</td>
</tr>
<tr>
<td>Extremely increased risk</td>
<td>20-200</td>
<td>alcohol together with drugs</td>
</tr>
</tbody>
</table>

Shulze et al., 2012; Griffiths, 2014
Marijuana crash risk

• The crash risk found in the NHTSA study was no longer statistically significant after adjusting for driver age and gender.
  — Young males are more likely to engage in risky driving behavior; they are also the demographic most likely to use cannabis.

• A comprehensive review conducted by Elvik et al. (2013) found that marijuana increased crash risk by 26%.

• The DRUID project found that marijuana increases crash risk by a factor of 1 to 3 and that THC concentrations of 3.8ng causes impairment comparable to a BAC of .05.

• Other studies have found a doubling of risk of a driver being involved in a fatal or serious injury crash.
Marijuana crash risk

• **NASEM report** (2017) - contains a rigorous review of scientific research published since 1999 regarding the health impacts of cannabis/cannabis products.

• Committee explored whether there was evidence of a statistical association between cannabis use and motor vehicle crashes.

• “**Substantial evidence of a statistical association.**”

• These findings indicate a need for research to “**further specify the strength of this association and to identify any mediating factors.**”
Marijuana and DUID Policy
Why legalize?

Colorado 2016: $1 billion in sales = $200 million in tax revenue
Policy implications: DUID laws

- Drugged driving legislation is not as straightforward as other established impaired driving laws:
  - Existing technology is limited in determining drug levels and resulting impairment; there is no agreed upon limit for which impairment can be reliably demonstrated.
  - Some drugs can be detected for days or even weeks after initial consumption further complicating the issue of proving impairment.
  - There is an ever expanding number of substances (synthetic and designer drugs) being manufactured that could potentially impair driving ability.
DUID laws

- There are three main policy typologies in which drugged driving statutes can be categorized:

1. **Impairment laws:** requires law enforcement to prove impairment of the driver through the gathering/documentation of evidence. Linkages must be made to the documented behavioral evidence and recent drug use.

2. **Per se laws:** specifies a legal limit for controlled substances; a person commits an offense if they have a detectable amount of the substance that exceeds the legal limit.

3. **Zero tolerance laws:** a specific type of per se statute whereby the legal limit is set at zero. Driving with any measurable amount of a drug is classified as an offense (could include parent drug and its metabolites).
STATE LAW: MARIJUANA DRUG-IMPAIRED DRIVING LAWS

- Zero tolerance for THC only
- Zero tolerance for THC and metabolites
- Zero tolerance for THC and metabolites (applies only to drivers under age 21)
- THC per se (1 nanogram)
- THC per se (2 nanograms)
- THC per se (5 nanograms)
- Reasonable inference THC law (5 nanograms)
- No marijuana-specific drugged driving law
Marijuana DUID statutes

• Zero tolerance for THC or metabolites: 9 states
  – Arizona, Delaware, Georgia, Indiana, Illinois, Oklahoma, Rhode Island, South Dakota,* and Utah

• Zero tolerance for THC only: 3 states
  – Iowa, Michigan, and Wisconsin

• Per se limits for THC: 5 states
  – Pennsylvania (1ng); Nevada and Ohio (2ng); Montana and Washington (5ng)

• Reasonable inference THC law: Colorado (5ng)

• Marijuana exemption in zero tolerance or per se laws: 3 states
  – Minnesota, North Carolina, Virginia
Emerging trends in DUID legislation

- Increased nanogram limits
- Implied consent language
- Oral fluid/saliva testing
- Open container laws
- Enhanced penalties for poly-substance use
- ZT for under 21
DUID Enforcement & Prosecution
Traditional impaired driving enforcement

• DUI is the **ONLY** crime where the police stop investigating once they obtain a minimum amount of evidence according to standard operating procedure.

• Current protocols prevent drug testing once a suspect registers an illegal BAC limit (.08>).

• Implications of this practice:
  – Hinders the ability to measure the true magnitude of the drug-impaired driving problem is unknown.
  – Many DUI arrests are **inaccurately attributed to alcohol alone**.
Enforcement challenges

• Many officers are not trained to identify the signs and symptoms of drivers impaired by drugs.

• Delays in collecting a chemical sample may allow drugs to metabolize; the driver’s concentration levels may not reflect levels at the time of arrest.
  – Warrant requirements for blood draws.

• Drug testing is expensive and time-consuming (lab backlogs).
DUID detection training

• A variety of different detection strategies are available to law enforcement to identify drug-impaired drivers.

• It all begins with training:
  – SFST academy and refresher training
  – Advanced Roadside Impaired Driving Enforcement (ARIDE) program
  – Drug Evaluation and Classification Program (DEC)
Drug Recognition Experts (DREs)

- The DEC program was established in 1980 by the LAPD.
- Officers are required to go through three phases of training totaling more than 100hrs before they are eligible to receive DRE field certification.
  - DRE Pre-School: 16hrs of classroom training
  - DRE School: 56hrs of classroom training
  - DRE Field Certification: approximately 80hrs
  - A total of 152 hours of training
- DREs must be recertified every two years (they must perform a minimum of four evaluations and attend eight hours of training in the process)
Drug Recognition Experts (DREs)

• DREs use a standardized 12-step protocol that allows them to determine whether a suspect:
  – is impaired;
  – if that impairment is caused by drugs or can be attributed to a medical condition; and,
  – the category of drug(s) that are the cause of the impairment (seven categories).

• Today, all 50 states, Canada, and the United Kingdom participate in the DEC program.
  – But not every jurisdiction in the country has an officer trained as a DRE; often an issue of resources.

• For more information, visit www.decp.org
You can’t hide driving under the influence of cannabis.

Drug Recognition Experts are trained to spot the signs.

DRUGGED DRIVING IS IMPAIRED DRIVING.

www.HeatsOnColorado.com
ARIDE

• ARIDE was created in an effort to increase education and training among patrol officers more broadly.

• Designed to bridge the gap between SFST and the DEC program in that it is an additional 16 hours of training but does not amount to the level of knowledge and training that DREs receive.

• The program trains officers to observe and identify signs of drug-related impairment.

• Can be delivered in-person or online (free of cost to interested agencies).
<table>
<thead>
<tr>
<th>Testing method</th>
<th>Location</th>
<th>Pros</th>
<th>Cons</th>
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<tbody>
<tr>
<td>Oral fluid/saliva</td>
<td>Roadside (screening)</td>
<td>- Identifies presence of recent use</td>
<td>- Quality of kits varies</td>
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<td>- Easy to administer</td>
<td>- Not overly sensitive, especially for cannabis</td>
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<td></td>
<td>- Inexpensive</td>
<td>- Not specific; generally test for drug classes</td>
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<td>- Results in less than five minutes</td>
<td>- Short window of detection</td>
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<tr>
<td>Blood</td>
<td>Laboratory (evidentiary)</td>
<td>- ‘Gold standard’</td>
<td>- Short window of detection</td>
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<td></td>
<td>- Conclusive, sensitive, and specific</td>
<td>- Expensive (e.g., $300 in CO)</td>
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<td>- Requires trained individual to conduct blood draw</td>
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<td>Urine</td>
<td>Laboratory (evidentiary)</td>
<td>- Long window of detection</td>
<td>- Officers must observe suspects</td>
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<td></td>
<td></td>
<td>- Conclusive, sensitive, and specific</td>
<td>- Expensive</td>
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<tr>
<td>Oral fluid/saliva</td>
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<td>- Very expensive</td>
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<td>- Few qualified labs</td>
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Oral fluid

• Would provide objective data to justify a DUID arrest and to require a blood or urine sample for an evidential test.
• Pilot testing of roadside oral fluid screening is ongoing throughout the country (e.g., CA, KY, OK).
• Several states have introduced legislation to either add oral fluid/saliva language to implied consent statutes or to establish their own pilots (e.g., MI, MD).
Future testing methods

Cannabis breathalyzers

Intelligent fingerprinting
Prosecution issues

• Many prosecutors and judges are not familiar with drugged driving cases.

• Due to laboratory backlogs, drug test results may not be available when a DUID case goes to trial.

• Prosecution can be difficult because judges expect a specific drug concentration; they may not accept DRE evidence of impairment.

• Need to overcome jury perceptions with respect to marijuana harm and performance on SFSTs.
SOLUTIONS
Legislatures, law enforcement, and highway safety offices in many states are urged to 

“DO SOMETHING” about drug-impaired driving, but what to do is far from clear.
Report authored by Dr. Jim Hedlund

Recommendations formed by an expert panel consisting of representatives from:

- NHTSA
- ONDCP
- GHSA
- National Traffic Law Center
- AAMVA
- Colorado HSO
- WTSC
- Institute for Behavior and Health
- Responsibility.org
What can states do?

**Planning**

- Assess your state’s drugged driving issues
- Build broad partnerships
- Create a drugged driving strategic plan

**Education**

- Survey public opinions and attitudes
- Develop and implement a campaign
- Develop targeted messaging for high-risk groups
Colorado: *Drive High, Get A DUI*
HITS LEAD TO HITS
DON'T DRIVE HIGH
CONSUMING CAN CAUSE CRASHING.

It takes up to two hours for an edible to affect you. Don’t be behind the wheel when your high hits.

IF YOU’RE HIGH, DON’T DRIVE.
Colorado: *Drive High, Get A DUI*
What can states do?

**Laws and sanctions**

- Zero tolerance for illegal drugs
- Zero tolerance for drivers under 21 for all drugs
- Enhanced penalties for polysubstance use
- ALR for drugged drivers
- Mandatory screening/assessment and treatment
- Separate DUI and DUID charges
- Modify implied consent language
- Appropriations for law enforcement training
Policymakers have many options to address DUID, including:

**Establish a state task force to address DUID.**
Include every facet of the DUI system, including advocacy groups and other interested parties, to create a strategic plan to prevent and reduce DUID.

**Provide more tools to law enforcement.**
- Provide funding to train officers (DRE/ARIDE).
- Launch an oral fluid pilot program to identify DUID drivers effectively and efficiently.

**Establish enhanced penalties for polysubstance-impaired driving.**
Drugs used in combination or with alcohol cause greater impairment and heighten crash risk. This justifies tougher sanctions similar to those in place with drivers who have high blood alcohol concentrations (BACs of .15+).

**Require treatment if indicated by an assessment.**
Tie treatment completion to re-licensing as a condition of probation.

**Increase the number of DUI or hybrid DUI/Drug Courts.**
Increase the number of DUI or hybrid DUI/Drug Courts in your state to deal with the highest-risk offenders (e.g., repeat offenders). These programs are highly effective in reducing recidivism and saving costs.

**Improve your state’s DUID data collection.**
- Mandate alcohol and drug testing of all fatally-injured drivers.
- Encourage alcohol and drugs testing for surviving drivers in fatal and serious-injury crashes.
Create parity in sanctions between DUI and DUID where appropriate.

Many states have unequal penalties for DUI and DUID.

Mandate screening and assessment.

All impaired drivers need substance use and mental health disorder screening/assessment to identify underlying causes of offending and to reduce recidivism.

Establish a zero tolerance law for all drugs, including marijuana, for drivers under the age of 21.

Impairment plus inexperience increases youth crash risk relative to other age groups. This law establishes parity with existing zero tolerance laws for alcohol for drivers under the age of 21.

Separate DUI and DUID statutes.

It is important to accurately quantify alcohol, drug, and polysubstance-impaired driving and not report all three as a single behavior.

Ensure that the language in your DUID statute is broad enough.

Ensure that the language in your DUID statute is broad enough to include inhalants and emerging synthetic/designer drugs.

Additional Sources

For more information about DUID, refer to Drug-Impaired Driving: A Guide for What States Can Do, produced by the Governors Highway Safety Association (GHSA) with funding from Responsibility.org. It summarizes the state of knowledge on DUID and identifies state actions to address the problem.
What can states do?

**Train practitioners**

- Law enforcement (ARIDE and DEC)
- Prosecutors (NTLC, TSRPs)
- Judges (JOLs, National Judicial College)
- Probation (NHTSA/APPA Probation Fellow)

**Testing**

- Test all fatally-injured drivers for drugs
- Test all DUI arrestees for drugs
- Develop accurate, inexpensive, and convenient roadside testing devices (e.g., oral fluid)
What can states do?

Prosecution and adjudication

- Screen and assess all DUI/DUID offenders to identify substance use disorders and mental health issues (CARS: [www.carstrainingcenter.org](http://www.carstrainingcenter.org))
- *Place high-risk, high-need DUID offenders in a DUI Court setting*
- Utilize intensive supervision and treatment interventions as appropriate
- Alcohol and drug testing
What can states do?

Data collection

• Track DUID and DUI separately in crash, arrest, court data
• Use surveys to track public knowledge and attitudes

Research

• Evaluate the effectiveness of drugged driving laws and education/awareness campaigns
• Continue research on establishing the impairment produced by different concentrations of the most widely-used drugs
Why have we made progress?

• Passage of laws to target multiple facets of the problem
• Sustained and high visibility enforcement efforts
• Identifying the countermeasures that work; evaluation and strengthening of programs
• Targeting high-risk offenders
• Assessment and treatment
• Public education and awareness
• Changing societal norms
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