Driving High: Evaluating the Incidence and Impact

Monday, July 13, 2015
4:15 p.m. to 5 p.m.

Speakers:
Diane Wigle, National Highway Safety Traffic Administration
Francine Rubin, Ontario Ministry of Transportation
Brian Ursino, American Association of Motor Vehicle Administrators
NHTSA’s Recent Research on Impaired Driving

Diane Wigle
Chief, Impaired Driving Division
Impaired Driving

• Alcohol impairs driving ability
  – A strong relationship between alcohol concentration and impairment has been established, as has the correlation between alcohol concentration and crash risk.

• Some drugs impair driving ability
  – Most psychoactive drugs are chemically complex molecules, whose absorption, action, and elimination from the body are difficult to predict, and considerable differences exist between individuals with regard to the rates with which these processes occur.
Impaired Driving - We Want to Learn About…

• The prevalence of impaired driving
  – National Roadside Surveys; Washington Roadside Survey

• The crash risk of impaired driving
  – Crash Risk Study

• Impairment due to the use of alcohol and other drugs

• Strategies to reduce impaired driving
  – Law Enforcement
  – Public Awareness and Education
  – Community Outreach
  – Coordination and Collaboration with Stakeholders (e.g., MADD, police agencies, schools)
  – Technology
Today’s Discussion

Focus on two recent research projects

2013-14 National Roadside Survey

Alcohol and Drug Crash Risk: A Case Control Study
National Roadside Survey - Overview

• Four decades of National Roadside Surveys
• Nationally-representative sample of drivers:
  – Reviewed and approved by Institutional Review Board
  – Voluntary and anonymous
  – About 10,000 drivers in 300 locations across the nation
• Nighttime weekend sample
  – Daytime comparison
• Survey Methodology well-developed for alcohol
  – In 2007, for first-time, included drug use
Data Collection

• Fridays
  – 9:30 am – 11:30 am or 1:30 pm – 3:30 pm
  – 10:00 pm – midnight
  – 1:00 am – 3:00 am

• Saturdays
  – 10:00 pm – midnight
  – 1:00 am – 3:00 am
National Roadside Survey
National Roadside Survey - Procedure

- 60 sites across the country – represent US
- Each of 60 sites has 5 locations (each time period)
- Drivers directed to survey bay
- Breath Test (PBT)
- Alcohol Use Disorder (AUD) questions ($5)
- Drug use questions
- Oral fluid collection with Quantisal ($10)
- Blood sample collection ($50)
## National Roadside Survey 2013-2014

### Number of Participants and Participation Rates in the 2013-2014 NRS

<table>
<thead>
<tr>
<th>Drivers</th>
<th>Participants</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>N</td>
<td>%</td>
</tr>
<tr>
<td>Eligible and Entered Site</td>
<td>11,100</td>
<td>100.0%</td>
</tr>
<tr>
<td>Breath Test</td>
<td>9,455</td>
<td>85.2%</td>
</tr>
<tr>
<td>Oral Fluid Test</td>
<td>7,881</td>
<td>71.0%</td>
</tr>
<tr>
<td>Blood Test</td>
<td>4,686</td>
<td>42.2%</td>
</tr>
<tr>
<td>Oral Fluid and/or Blood</td>
<td>7,898</td>
<td>71.2%</td>
</tr>
</tbody>
</table>
National Roadside Survey 2013-2014

Percentage of Weekend Nighttime Drivers by BrAC Category in the Five National Roadside Surveys

<table>
<thead>
<tr>
<th>Year of Survey</th>
<th>BrAC .005-.049</th>
<th>BrAC .050-.079</th>
<th>BrAC .08+</th>
</tr>
</thead>
<tbody>
<tr>
<td>1973</td>
<td>22.3</td>
<td>6.1</td>
<td>7.5</td>
</tr>
<tr>
<td>1986</td>
<td>17.6</td>
<td>3</td>
<td>5.4</td>
</tr>
<tr>
<td>1996</td>
<td>9.2</td>
<td>3.4</td>
<td>4.3</td>
</tr>
<tr>
<td>2007</td>
<td>7.9</td>
<td>2.3</td>
<td>2.2</td>
</tr>
<tr>
<td>2013-2014</td>
<td>5.2</td>
<td>1.6</td>
<td>1.5</td>
</tr>
</tbody>
</table>
## Overall Drug Prevalence by Data Collection Period and Type of Test in the 2013–2014 NRS

<table>
<thead>
<tr>
<th>Time of Day</th>
<th>% Drug-Positive Oral Fluid Test</th>
<th>% Drug-Positive Blood Test</th>
<th>% Drug-Positive Oral Fluid and/or Blood Test</th>
</tr>
</thead>
<tbody>
<tr>
<td>Weekday Daytime</td>
<td>19.0%</td>
<td>21.6%</td>
<td>22.4%</td>
</tr>
<tr>
<td>Weekend Nighttime</td>
<td>19.8%</td>
<td>21.2%</td>
<td>22.5%</td>
</tr>
</tbody>
</table>

Drug-positive = over-the-counter, prescription, and illegal. Presence does not equal impairment.
<table>
<thead>
<tr>
<th>Drug Category</th>
<th>Oral Fluid Test</th>
<th>Blood Test</th>
<th>Oral Fluid and/or Blood Test</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>N</td>
<td>%</td>
<td>N</td>
</tr>
<tr>
<td>Any Illegal Drug</td>
<td>189</td>
<td>10.6%</td>
<td>137</td>
</tr>
<tr>
<td>Only Medications Rx and OTC</td>
<td>197</td>
<td>8.4%</td>
<td>128</td>
</tr>
<tr>
<td></td>
<td>Weekday</td>
<td>Daytime</td>
<td>Weeknight</td>
</tr>
<tr>
<td>Any Illegal Drug</td>
<td>783</td>
<td>13.9%</td>
<td>423</td>
</tr>
<tr>
<td>Only Medications Rx and OTC</td>
<td>317</td>
<td>5.9%</td>
<td>216</td>
</tr>
</tbody>
</table>
## Weekend Nighttime Drug Prevalence by Drug Category and Test Type Comparing 2007 Data to 2013-2014 Comparable Data

<table>
<thead>
<tr>
<th>Drug Category</th>
<th>Oral Fluid Test</th>
<th>Blood Test</th>
<th>Oral Fluid and/or Blood Test</th>
<th>Oral Fluid Test</th>
<th>Blood Test</th>
<th>Oral Fluid and/or Blood Test</th>
</tr>
</thead>
<tbody>
<tr>
<td>Any Illegal Drug</td>
<td>635</td>
<td>297</td>
<td>699</td>
<td>779</td>
<td>422</td>
<td>849</td>
</tr>
<tr>
<td></td>
<td>11.4%</td>
<td>9.8%</td>
<td>12.4%</td>
<td>13.8%</td>
<td>14.3%</td>
<td>15.1%</td>
</tr>
<tr>
<td>Only Medications RX and OTC</td>
<td>201</td>
<td>169</td>
<td>277</td>
<td>211</td>
<td>155</td>
<td>266</td>
</tr>
<tr>
<td></td>
<td>3.0%</td>
<td>4.0%</td>
<td>3.9%</td>
<td>3.9%</td>
<td>4.9%</td>
<td>4.9%</td>
</tr>
</tbody>
</table>
# National Roadside Survey 2013-2014

## Weekend Nighttime Prevalence of THC in 2007 Compared to 2013-2014 Comparable Data

<table>
<thead>
<tr>
<th></th>
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<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>N</td>
<td>%</td>
<td>Oral Fluid Test</td>
<td>N</td>
<td>%</td>
<td>Oral Fluid Test</td>
<td></td>
</tr>
<tr>
<td>Oral Fluid Test</td>
<td>N</td>
<td>%</td>
<td>Oral Fluid and/or Blood Test</td>
<td>N</td>
<td>%</td>
<td>Oral Fluid Test</td>
<td>Oral Fluid and/or Blood Test</td>
</tr>
<tr>
<td>N</td>
<td>438</td>
<td>7.7%</td>
<td>N</td>
<td>597</td>
<td>11.3%</td>
<td>N</td>
<td>663</td>
</tr>
<tr>
<td></td>
<td>234</td>
<td>7.6%</td>
<td>499</td>
<td>332</td>
<td>11.7%</td>
<td>N</td>
<td>2013-2014 Comparable Data</td>
</tr>
<tr>
<td></td>
<td>499</td>
<td>8.6%</td>
<td>597</td>
<td>332</td>
<td>11.7%</td>
<td>N</td>
<td>663</td>
</tr>
<tr>
<td></td>
<td>597</td>
<td>11.3%</td>
<td>332</td>
<td>663</td>
<td>12.6%</td>
<td>N</td>
<td>663</td>
</tr>
<tr>
<td></td>
<td>332</td>
<td>11.7%</td>
<td>663</td>
<td>2013-2014</td>
<td>Comparable Data</td>
<td></td>
<td>2013-2014 Comparable Data</td>
</tr>
</tbody>
</table>

*Oral Fluid and/or Blood Test*
National Roadside Survey 2013-2014

• Alcohol use by drivers continues to decline
  – Decrease by nearly one-third since 2007
  – Decrease by more than three-quarters since 1973
  – Policies and programs are working

• Drug use increasing
  – Prescription and over-the-counter use up slightly
  – Illegal use up significantly
  – Marijuana use up by nearly 50% since 2007
Background: Crash Risk

- Borkenstein Crash Risk of Alcohol
- NHTSA Crash Risk of Alcohol (Blomberg)
- NHTSA Crash Risk of Alcohol and Drugs
- “Case-control” methodology
  - Comparison of an experimental case (driver in a crash) to a comparison control case (driver not in a crash)
  - Trusted methodology; precise design; and expensive and time-consuming
- NHTSA needed –
  - Site where enforcement, hospitals, jails, city gov would be willing to participate in ground-breaking research
Virginia Beach!

Safer Drivers. Safer Cars. Safer Roads.
Crash Risk Study - Study Design

- Sample size of 3,000 crash-involved drivers
- Sample size of 6,000 control drivers
- Matched as best we can to each –
  - Same place on same road
  - Same day of week
  - Same time of day
Crash Risk Study - Protocol

- When a crash was reported….
  - Research Team responded
    - Team = Virginia Beach Police Office; Phlebotomist/Researcher
  - Once scene secured and everyone safe, Officer asked the driver if they would be willing to talk to a Researcher
    - If yes – study began

- All these studies are
  - Voluntary
  - Anonymous
  - The driver can choose to stop at any time
Questions on driving, drinking, drinking and driving, and drug use

Researcher asked driver to provide:
- Breath sample
- Oral fluid sample ($10)
- Blood sample ($50)

One week later, went to same location.... randomly selected two drivers from traffic flow

Requested driver for a:
- Breath sample
- Oral fluid sample ($10)
- Blood sample ($50)

Statistical analysis to match crash to control cases
## Crash Risk Study - Participation

<table>
<thead>
<tr>
<th></th>
<th>Crash</th>
<th>Control</th>
</tr>
</thead>
<tbody>
<tr>
<td>Eligible Drivers</td>
<td>3,887</td>
<td>7,397</td>
</tr>
<tr>
<td>Agreed to Participate</td>
<td>3,682 (94.7%)</td>
<td>7,176 (97.0%)</td>
</tr>
<tr>
<td>Breath sample</td>
<td>3,393 (87.3%)</td>
<td>7,079 (95.7%)</td>
</tr>
<tr>
<td>Oral Fluid or Blood</td>
<td>3,196 (82.2%)</td>
<td>6,935 (93.8%)</td>
</tr>
</tbody>
</table>
Alcohol Crash Risk Adjusted for Age and Gender

Relative Risk (Relative to BAC = 0.00) vs BAC

- All Driver Breath Samples
- Drug Negative Drivers
- Blomberg et al
Crash Risk Study—Interpreting the Data

• Confirm consistency of alcohol risk probabilities
  – .08 BAC = 4 times risk
  – .15 BAC = 12 times risk

• As in some prior studies – marijuana users 25% more likely involved in crash

• Study design allowed further analysis
  – Age/gender accounted for elevated marijuana risk
Understanding the Limitations of Drug Test Information, Reporting, and Testing Practices in Fatal Crashes

Amy Benning & Doreece D. Smither

Since 1979, the National Highway Traffic Safety Administration (NHTSA) has collected data from all 50 States, the District of Columbia, and Puerto Rico on all police-reported fatal crashes on public roadways. NHTSA’s National Center for Statistics and Analysis (NCSA) includes data from these fatal crashes in the Fatality Analysis Reporting System (FARS). This dataset provides a wealth of information on fatal crashes, the roadways, vehicles, and drivers involved.

“Impaired driving” includes use of alcohol, or drugs, or both. Blood alcohol concentration (BAC) results are not known for all drivers in fatal crashes. For crashes with missing alcohol data, NHTSA uses a statistical model called “multiple imputation” to estimate the BAC of a driver at the time of the crash. In contrast, the variables regarding drug test information in crashes is evolving. It does not include estimates for missing data or impairment levels and therefore needs further investigation.

This paper summarizes some of the complexities related to drug-involved driving, information limitations of this data collected in FARS, and presents challenges in interpreting, reporting, and analyzing the data.

Drug Presence Versus Drug Impairment

An important distinction to make when evaluating impaired driving data is the presence of a drug in a person’s system, as compared to the person being impaired by a drug in his/her system. FARS drug data provides information about drug presence, rather than whether the driver was impaired by a drug at the time of a crash. Data identifying a driver as “drug positive” indicates only that a drug was in the body at the time of the crash. It does not indicate that a person was impaired by the drug (Compton & Benning, 2009). The presence of some drugs in the body can be detected long after any impairment. For example, traces of cannabis metabolites (urine) can be detected in blood samples weeks after use. Thus, knowing that a driver tested positive for cannabis metabolites does not necessarily indicate that the person was impaired by the drug at the time of the crash.

In addition, while the impairing effects of alcohol are well-understood, there is limited research and data on the crash risk of specific drugs, impairment, and how drugs affect driving-related skills. Current knowledge about the effects of drugs other than alcohol on driving performance is insufficient to make judgments about connections between drug use, driving performance, and crash risk (Compton, Vegh, & Simblar, 2008).

Every State has enacted a law defining drivers who are at or above .08 grams per deciliter BAC as “legally impaired,” but there are no similar, commonly accepted impairment levels for other drugs. Some State laws have established levels for some drugs at which it is illegal to operate a motor vehicle (Lacey, Brainard, & Setlow, 2012; Welsh, 2005). The alcohol laws are based on evidence concerning the decreased ability of drivers across the population to function safely at these BACs. Such evidence is not currently available for concentrations of other drugs. Additionally, not all drugs reported in FARS are illegal. Over-the-counter and prescription medications are also reported. The legal status of a drug is not a factor in determining a drug’s potential for decreasing driving performance or increasing crash risk.

Differences in Drug Testing Procedures

There is no consistent policy or set of procedures between or, sometimes even within, States for drug testing. Considerable variation exists regarding who is tested, which drug is tested for, type of test, cut-off levels, and equipment and which biological specimen (blood, urine, or oral fluid) is used. Some jurisdictions test only fatally injured drivers; others test all drivers involved in fatal crashes. Some jurisdictions test no one at all. As such, a jurisdiction that tests more drivers is likely to have a higher percentage of drivers who are known to be drug-positive.

Similarly, there is no consistency regarding the types and number of drugs for which drivers are tested. Lab tests are costly. A driver is more likely to be tested for drugs if there is infor...
Other Research

- Washington State – Roadside Survey of Alcohol and Drugs (THC)
- Examine the Effects of Inhaled Cannabis on Driving Performance
- Evaluation of the Advanced Roadside Impaired Driving Enforcement (ARIDE) Curriculum
- Evaluation of Oral Fluid Drug Testing Devices (Allere; Drager)
diane.wigle@dot.gov

NHTSA.GOV
TrafficSafetyMarketing.Gov
2014 Roadside Survey on Alcohol and Drug use by Ontario Drivers
July 13, 2015
Francine Rubin
Outline

• Why Research
• Survey Objectives
• Survey Methodology
• Survey Findings
  – Alcohol use
  – Drug use
• Current and Future Research Direction
• To inform policy and guide marketing campaigns

• Ontario’s integrated strategy to reduce alcohol and drug-impaired driving includes:
  – Legislation
  – Enforcement
  – Education

• Improves our understanding of impaired driving in Ontario
• CCMTA: drug data collection is a priority action
• Roadside surveys advance understanding of impaired driving
  – Breath and oral fluid collection
  – Conducted in other jurisdictions
• Last Ontario survey in 1986; examined alcohol use only
Survey Objectives

- Estimate prevalence of driving after drinking and drug use
- Identify substances most commonly used
- Identify characteristics of these drivers
- Provide baseline for future comparisons
Methodology

- Protocol developed by Transport Canada and CCMTA
- Conducted in 7 communities from June-Oct 2014
- Almost 2500 drivers interviewed – Over 92% response rate
- Wed. to Sat. nights, 9 pm to 3 am
Methodology

• Vehicles selected randomly

• Survey Components
  – Introduction and consent
  – Driver interview
  – Breath test for alcohol
  – Oral fluid collection

• Drivers with a BAC .05 or higher given safe drive home
Survey Findings
• 4% tested positive for alcohol
Alcohol Use at Night

- Alcohol use differs by age
  - 25 to 44 most likely to have been drinking
  - 19 to 24 and 35 to 44 most likely BAC .05 +
  - Young and Novice drivers represented
Drug use at night

- 10.2% tested positive for drugs
### Driver age and drug presence

<table>
<thead>
<tr>
<th>Driver age</th>
<th>Drivers testing positive for Drugs</th>
</tr>
</thead>
<tbody>
<tr>
<td>16-18</td>
<td>6.6%</td>
</tr>
<tr>
<td>19-24</td>
<td>21.0%</td>
</tr>
<tr>
<td>25-34</td>
<td>13.9%</td>
</tr>
<tr>
<td>35-44</td>
<td>10.0%</td>
</tr>
<tr>
<td>45-54</td>
<td>5.8%</td>
</tr>
<tr>
<td>55+</td>
<td>2.3%</td>
</tr>
</tbody>
</table>

**Graph:**

- **X-axis:** Driver age (16-18, 19-24, 25-34, 35-44, 45-54, 55+)
- **Y-axis:** Percentage of drivers testing positive for drugs
- **Data points:**
  - 16-18: 6.6%
  - 19-24: 21.0%
  - 25-34: 13.9%
  - 35-44: 10.0%
  - 45-54: 5.8%
  - 55+: 2.3%
Drug use at night

- Driver age and drug presence

<table>
<thead>
<tr>
<th>Driver age</th>
<th>Cannabis</th>
<th>Stimulants</th>
<th>Opioids</th>
<th>Sedatives</th>
<th>Multiple drugs</th>
</tr>
</thead>
<tbody>
<tr>
<td>16 to 18</td>
<td>100%</td>
<td>0%</td>
<td>0%</td>
<td>0%</td>
<td>0%</td>
</tr>
<tr>
<td>19 to 24</td>
<td>93%</td>
<td>18%</td>
<td>3%</td>
<td>0%</td>
<td>13%</td>
</tr>
<tr>
<td>25 to 34</td>
<td>78%</td>
<td>24%</td>
<td>13%</td>
<td>0%</td>
<td>16%</td>
</tr>
<tr>
<td>35 to 44</td>
<td>56%</td>
<td>28%</td>
<td>19%</td>
<td>3%</td>
<td>9%</td>
</tr>
<tr>
<td>45 to 54</td>
<td>60%</td>
<td>20%</td>
<td>38%</td>
<td>0%</td>
<td>10%</td>
</tr>
<tr>
<td>55+</td>
<td>30%</td>
<td>33%</td>
<td>33%</td>
<td>11%</td>
<td>10%</td>
</tr>
</tbody>
</table>
Drug/Alcohol Use

- Driver age and drug/alcohol use

![Graph showing drug and alcohol use by driver age]

- Drivers testing positive:
  - 16-18: 6.6%
  - 19-24: 21.0%
  - 25-34: 13.9%
  - 35-44: 6.6%
  - 45-54: 6.5%
  - 55+: 2.3%
• Alcohol use over time

<table>
<thead>
<tr>
<th>Blood alcohol content</th>
<th>1986</th>
<th>2014</th>
</tr>
</thead>
<tbody>
<tr>
<td>Alcohol positive</td>
<td>19.6%</td>
<td>4.0%</td>
</tr>
<tr>
<td>0 to .05</td>
<td>10.9%</td>
<td>2.7%</td>
</tr>
<tr>
<td>.05 to .08</td>
<td>3.2%</td>
<td>1.0%</td>
</tr>
<tr>
<td>over .08</td>
<td>5.5%</td>
<td>0.3%</td>
</tr>
</tbody>
</table>
14.5% of drivers tested positive for alcohol and/or drugs
  - 4% positive for alcohol
  - 10.2% positive for drugs
Young and novice drivers had been drinking
  - 1.2% and 1.8% respectively
Cannabis most commonly used drug of drivers who tested positive for drugs
  - almost 70% had been using cannabis
  - younger drivers more likely
Opioids and stimulants more common among older drivers
Research Direction

- Road Side Drug & Alcohol Survey
  - Completed Fall 2014
- Validation of Oral Screening Devices
  - Underway, to be completed winter 2015-2016
- Evaluation of Standard Field Sobriety Test for Drug Impairment
  - Literature review underway
  - Looking to create an Advisory Group
- Launched Road Safety Research Partnership Program
- MVAR Review
thank you!

Francine.Rubin@Ontario.ca
Driving High: Evaluating the Incidence and Impact

July 13, 2015

Brian Ursino, AAMVA, Director of Law Enforcement
Mother’s Against Drunk Driving

• New Strategic Plan – Effective January 1, 2015

• Updated VISION Statement:
  – A nation without drunk and drugged driving

• Updated MISSION Statement:
  – The mission of Mother's Against Drunk Driving is to end drunk driving, help fight drugged driving, support the victims of these violent crimes, and prevent underage drinking.
The Washington State Experience

Medical Legalized in 1998, then Recreational in 2012

- I-502, Nov. 6, 2012
- Not a Home Grown Campaign
  - (ACLU, Rick Steves)
- $6 million

Voters approve I-502 legalizing marijuana

Washington state voters made history Tuesday by legalizing the recreational use of marijuana.

By Jonathan Martin
Seattle Times staff reporter

Washington enthusiastically leapt into history Tuesday, becoming the first state, with Colorado, to reject federal drug-control policy and legalize recreational marijuana use.

Initiative 502 was winning 55 to 45 percent, with support from more than half of Washington’s counties, rural and urban.

The vote puts Washington and Colorado to the left of the Netherlands on marijuana law, and makes them the nexus of a new social experiment with uncertain consequences. National and international media watched as vote counts rolled into I-502’s election-night party in Seattle amid

ERIK SCHULTZ / THE SEATTLE TIMES
A 30-year-old female smokes marijuana in a street party...
Today’s marijuana potency: “Not Your Daddy’s Woodstock Weed”

1973
3%

2008
10%

2014 marijuana being sold in stores
20% - 30%
IT’S NOT REALLY "WORKING IN WASHINGTON"

HASH OIL EXPLOSIONS

MEDICAL & TREATMENT ADMISSIONS

MARIJUANA-INVOLVED DUIs
PER SE LEVELS: Double-edged sword

- 5 nanograms per se
- ≠ impairment
- Limited studies
- Too many factors
  - Potency
  - Dosage
  - Frequency of Use
  - Combination with other items
2013 WSP Lab Samples:

- 5,468 samples
- 25% MJ positive – Up from 19% in 2012
- THC levels higher
- 1 in 4 THC cases involved driver under age 21

WSP lab did not test all samples for MJ until 2013
Edibles

Dabs – highly concentrated THC

E-cigs – hard to spot in schools (no smell)

Drop in IQ, affects brain development

Increased access by youth

Edible marijuana labels often have potency wrong, study says: An analysis of 75 edible marijuana products sold to patients in Seattle, San Francisco and Los Angeles found that labels on just 17 percent accurately described their levels of THC, the main psychoactive ingredient.
Husband ate marijuana candy and started hallucinating. He told his wife to shoot him. Kristene called 9-1-1. While on the phone with 9-1-1, he killed her.
Data collection: June, 2014; Nov. 2014 and June, 2015

Statewide sample -- Six counties (Spokane, Yakima, King, Whatcom, Snohomish, Kitsap)

Alcohol and drugs (75 types, with levels)
• 926 drivers
• 97% (917) provided breath samples
• 96% (902) saliva
• 74% (711) blood

Male drivers age 20 – 34 over-represented:
  * 21% population
  * 45% survey sample
Drivers were asked: "How likely do you think it is that marijuana impairs a person’s ability to drive safely if used within two hours of driving?"

<table>
<thead>
<tr>
<th>Likelihood</th>
<th>Percentage</th>
<th>Number of Respondents</th>
<th>T= 877 Answered</th>
</tr>
</thead>
<tbody>
<tr>
<td>Very likely</td>
<td>47%</td>
<td>409</td>
<td></td>
</tr>
<tr>
<td>Likely</td>
<td>19%</td>
<td>162</td>
<td></td>
</tr>
<tr>
<td>Somewhat likely</td>
<td>22%</td>
<td>197</td>
<td></td>
</tr>
<tr>
<td>Not at all likely</td>
<td>12%</td>
<td>109</td>
<td></td>
</tr>
</tbody>
</table>
Of the drivers who said they’d used marijuana within two hours of driving were asked: *When you used marijuana and drove, how do you think it affected your driving?*

<table>
<thead>
<tr>
<th></th>
<th>Percentage of drivers:</th>
<th>Total number:</th>
<th>T= 97 Answered</th>
</tr>
</thead>
<tbody>
<tr>
<td>Did not make any difference in my driving:</td>
<td>62%</td>
<td>60</td>
<td></td>
</tr>
<tr>
<td>Made me a better driver:</td>
<td>25%</td>
<td>24</td>
<td></td>
</tr>
<tr>
<td>I don’t know:</td>
<td>10%</td>
<td>10</td>
<td></td>
</tr>
<tr>
<td>Made my driving worse:</td>
<td>3%</td>
<td>3</td>
<td></td>
</tr>
</tbody>
</table>
Contact Information:

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703-350-5103