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URBAN TRAFFIC SAFETY
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10th Annual (Edmonton) International Conference on Urban Traffic Safety
July 9-12, 2018
Edmonton, Alberta, Canada
A Comprehensive Examination of the DUI Problem in a US Community

Presented by
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NORC at the University of Chicago
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Background

In the United States:

- 3,500,000 people have been killed in traffic crashes since 1899.
- An estimated 1,600,000 killed in crashes involving alcohol-impaired driving.
- 1,000,000 DUI arrests made in the US in 2016.
- Alcohol-related crashes cost US society an estimated $125 billion each year.
- Progress in reducing impaired driving fatal crashes has stagnated for 20 years.
DWI Enforcement in the United States

- 1,000,000 drivers arrested for DWI
- 1 DWI arrest for every 170 licensed drivers
- 1 DWI arrest for every 1016 trips taken by drivers with BACs $\geq .08$
- 1 crash for every 788 trips taken by drivers with BACs $\geq .08$
- 130-140 DWI arrests for every driver with a BAC $\geq .08$ involved in a fatal crash

Sources: FBI; FHWA; Zaloshnja, Miller, Blincoe (2013); NHTSA, FARS
Impaired Driving Enforcement Measures

- DUI arrests per 10,000 population (traditional)
- Traffic Stops per 10,000 population (overall)
- Sworn Officers per 10,000 population (presence)
- Citations (seat belt, speeding, etc.) per 10,000 population (DUI related)
- Frequency of sobriety checkpoints (weekly, monthly, less than monthly, never) (general deterrent)

[Fell, et al., 2015]
Results

DUI Arrests

Compared to drivers in communities with the highest quartile of DUI arrest activity (>38 DUI arrests per 10K), those in the lowest arrest activity quartile (<3.7 DUI arrests per 10K) had 2.7 times the odds of BAC\(\geq 0.08\) driving on the roads (OR = 0.37, p=0.02) but were not significantly different in odds of BAC\(\geq 0.05\) or BAC positive driving.
Results

- Number of DUI arrests per 10,000 population was negatively associated with the ratio of impaired driving to non-impaired driving crashes ($p=.035$).

- A 10% increase in the DUI arrest rate was associated with a 1% reduction in the impaired driving crash rate.

- Similar results were obtained for an increase in the number of sworn officers.

- There were no other significant associations between the other enforcement measures and impaired driving crash rates.

[Fell, et. al., 2014]
DUI Arrests

- Nationwide, DUI arrests have decreased from 1,440,409 in 2009 to 1,017,808 in 2016.
- In one large state, Florida, DUI arrests have decreased from 53,004 in 2009 to 35,042 in 2016.
- In Miami-Dade County, Florida, DUI arrests have decreased from 5,410 in 2009 to 1,974 in 2016.

Nationwide decrease: **29%**
Florida decrease: **34%**
Miami-Dade decrease: **64%**
<table>
<thead>
<tr>
<th>Year</th>
<th>Miami-Dade County</th>
<th>Florida</th>
<th>United States</th>
</tr>
</thead>
<tbody>
<tr>
<td>2009</td>
<td>5,410</td>
<td>53,004</td>
<td>1,440,409</td>
</tr>
<tr>
<td>2010</td>
<td>4,339</td>
<td>52,346</td>
<td>1,412,223</td>
</tr>
<tr>
<td>2011</td>
<td>3,490</td>
<td>43,784</td>
<td>1,215,077</td>
</tr>
<tr>
<td>2012</td>
<td>3,142</td>
<td>44,894</td>
<td>1,282,957</td>
</tr>
<tr>
<td>2013</td>
<td>2,656</td>
<td>41,994</td>
<td>1,166,824</td>
</tr>
<tr>
<td>2014</td>
<td>2,620</td>
<td>42,745</td>
<td>1,117,852</td>
</tr>
<tr>
<td>2015</td>
<td>2,222</td>
<td>31,783</td>
<td>1,089,171</td>
</tr>
<tr>
<td>2016</td>
<td>1,974</td>
<td>35,042</td>
<td>1,017,808</td>
</tr>
</tbody>
</table>

-64%  -34%  -29%
DUI Arrests
Reasons for Decline

- Decrease or stagnation in police resources
- Lack of training
- Attention to other law enforcement issues
- Lack of emphasis on DUI enforcement
Objective

- Due to the 64% decrease in DUI arrests in Miami-Dade County, the Miami Foundation State Attorney’s Fund for a Safer and Healthier Community sent an RFP out to research organizations to examine why it happened.

- NORC at the University of Chicago was awarded the grant.
Objective

■ Determine the reasons for the decline in DUI arrests. Are there fewer impaired drivers on Miami-Dade County roads?

■ Provide a plan for improving DUI enforcement
Approach

1. Analyze DUI arrest and crash data
2. Conduct a telephone survey of driver’s reported knowledge attitudes and behaviors
3. Conduct a roadside survey of drivers on Miami-Dade County roads on Friday and Saturday nights
4. Conduct focus groups with police and prosecutors
5. Conduct a comprehensive review of the best and most effective DUI enforcement strategies
# DUI Fatal Crashes

<table>
<thead>
<tr>
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<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Fatal crashes</td>
<td>227</td>
<td>223</td>
<td>217</td>
<td>212</td>
<td>268</td>
<td>316</td>
<td>279</td>
</tr>
<tr>
<td>Fatal crashes BAC &gt;= 0.08</td>
<td>66 (29%)</td>
<td>77 (35%)</td>
<td>73 (34%)</td>
<td>63 (30%)</td>
<td>81 (30%)</td>
<td>100 (32%)</td>
<td>76 (27%)</td>
</tr>
<tr>
<td>Traffic fatalities</td>
<td>246</td>
<td>247</td>
<td>235</td>
<td>225</td>
<td>280</td>
<td>340</td>
<td>294</td>
</tr>
<tr>
<td>Traffic fatalities BAC &gt;= 0.08</td>
<td>69 (28%)</td>
<td>89 (36%)</td>
<td>82 (35%)</td>
<td>65 (29%)</td>
<td>90 (32%)</td>
<td>111 (33%)</td>
<td>80 (27%)</td>
</tr>
</tbody>
</table>
### Drivers in Roadside Surveys

<table>
<thead>
<tr>
<th></th>
<th>2007</th>
<th>2013-2014</th>
<th>2017</th>
</tr>
</thead>
<tbody>
<tr>
<td>Some Alcohol (BrAC&gt;0.01)</td>
<td>10.8%</td>
<td>15.5%</td>
<td>14.2%</td>
</tr>
<tr>
<td>Impairment (BrAC&gt;0.05)</td>
<td>3.1%</td>
<td>6.2%</td>
<td>7.6%</td>
</tr>
<tr>
<td>Illegal (BrAC&gt;0.08)</td>
<td>1.5%</td>
<td>2.3%</td>
<td>3.0%</td>
</tr>
<tr>
<td>Percent Drivers with Marijuana</td>
<td>2007</td>
<td>2013-2014</td>
<td>2017</td>
</tr>
<tr>
<td>--------------------------------</td>
<td>------</td>
<td>-----------</td>
<td>-------</td>
</tr>
<tr>
<td>2.9%</td>
<td>14.1%</td>
<td>11.5%</td>
<td></td>
</tr>
</tbody>
</table>
## Drivers in Roadside Surveys

<table>
<thead>
<tr>
<th></th>
<th>2007</th>
<th>2013-2014</th>
<th>2017 (n=183)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Percent Drivers with Marijuana only</td>
<td>4.0%</td>
<td>14.81%</td>
<td>9.29%</td>
</tr>
<tr>
<td>Percent Drivers with Stimulants only</td>
<td>3.0%</td>
<td>2.47%</td>
<td>2.73%</td>
</tr>
<tr>
<td>Percent Drivers with Opioids only</td>
<td>0.0%</td>
<td>1.2%</td>
<td>0.55%</td>
</tr>
<tr>
<td>Percent Drivers with More than One Drug</td>
<td>0.5%</td>
<td>3.7%</td>
<td>2.73%</td>
</tr>
<tr>
<td>Percent Drivers with All Other Drugs</td>
<td>0.0%</td>
<td>3.7%</td>
<td>1.64%</td>
</tr>
<tr>
<td>Percent Drivers with Antidepressants only</td>
<td>0.0%</td>
<td>1.2%</td>
<td>0.0%</td>
</tr>
<tr>
<td>Percent Drivers Testing Negative</td>
<td>93.0%</td>
<td>74.1%</td>
<td>83.06%</td>
</tr>
</tbody>
</table>
### Telephone Survey: Drivers Who Find it Important to Enforce Impaired Driving

<table>
<thead>
<tr>
<th>Category</th>
<th>N</th>
<th>Percent (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Male</td>
<td>358</td>
<td>77%</td>
</tr>
<tr>
<td>Female</td>
<td>248</td>
<td>87%</td>
</tr>
<tr>
<td>Latino</td>
<td>433</td>
<td>80%</td>
</tr>
<tr>
<td>Non-Latino</td>
<td>167</td>
<td>85%</td>
</tr>
<tr>
<td>18-24 years old</td>
<td>62</td>
<td>72%</td>
</tr>
<tr>
<td>25-34 years old</td>
<td>115</td>
<td>77%</td>
</tr>
<tr>
<td>35 to 39 years old</td>
<td>62</td>
<td>81%</td>
</tr>
<tr>
<td>40 to 49 years old</td>
<td>118</td>
<td>81%</td>
</tr>
<tr>
<td>50 to 54 years old</td>
<td>62</td>
<td>90%</td>
</tr>
<tr>
<td>55 to 64 years old</td>
<td>94</td>
<td>83%</td>
</tr>
<tr>
<td>65 years or older</td>
<td>93</td>
<td>86%</td>
</tr>
</tbody>
</table>
Focus Group Discussions
With Police

Reasons for Decline in DUI Arrests:

- Law enforcement apathy
- No leadership from the top
- Lack of DUI investigation training
- The “Ferguson Effect” (reluctance to make traffic stops)
Focus Group Discussions With Police

Reasons for Decline in DUI Arrests:

- Change from proactive to reactive
- Lack of confidence in DUI arrest process
- Prosecutor Diversion Program results in weak sanctions
Conclusions

- Alcohol and Drug Impaired driving has increased, not decreased, in Miami-Dade County.
- Miami-Dade County drivers believe it is very likely they will be stopped and arrested for DUI if they drive impaired.
- Only one-half of Miami-Dade drivers believe marijuana impairs the ability to drive.
- Focus group discussions with police revealed general apathy for DUI enforcement.
Action Plan

- Meet with police chiefs of all Miami-Dade agencies and brief them on this report and the data.

- To combat the “Ferguson Effect” police agencies should join forces and conduct more sobriety checkpoints. They are safer and more effective than traffic stops.
Action Plan

- The State Attorney’s Office (SAO) should offer more DUI enforcement training sessions.
- The NHTSA “Visual Detection of DWI Motorists” should be used by all police officers.
- Establish an interagency DUI task force or team of 5 to 7 officers dedicated solely to DUI enforcement.
NHTSA Visual Detection of DWI Motorists

**DWI DETECTION GUIDE**

Weaving plus any other cue, \( p = \text{at least } .65 \)

Any two cues, \( p = \text{at least } .50 \)

**PROBLEMS MAINTAINING PROPER LANE POSITION**

- Weaving
- Weaving across lane lines
- Straddling a lane line
- Swerving
- Turning with a wide radius
- Drifting
- Almost striking a vehicle or other object

**SPEED AND BRAKING PROBLEMS**

- Stopping problems (too far, too short, or too jerky)
- Accelerating or decelerating for no apparent reason
- Varying speed
- Slow speed (10+ mph under limit)

**VIGILANCE PROBLEMS**

- Driving in opposing lanes or wrong way on one-way
- Slow response to traffic signals
- Slow or failure to respond to officer’s signals
- Stopping in lane for no apparent reason
- Driving without headlights at night
- Failure to signal or signal inconsistent with action

**JUDGMENT PROBLEMS**

- Following too closely
- Improper or unsafe lane change
- Illegal or improper turn (too fast, jerky, sharp, etc.)
- Driving on other than the designated roadway
- Stopping inappropriately in response to officer
- Inappropriate or unusual behavior (throwing, arguing, etc.)
- Appearing to be impaired

**POST STOP CUES**

- Difficulty with motor vehicle controls
- Difficulty exiting the vehicle
- Fumbling with driver’s license or registration
- Repeating questions or comments
- Swaying, unsteady, or balance problems
- Leaning on the vehicle or other object
- Slurred speech
- Slow to respond to officer/officer must repeat
- Provides incorrect information, changes answers
- Odor of alcoholic beverage from the driver

\( p \geq .85 \)

\* \( p \leq .50 \) when combined with any other cue:
- Driving without headlights at night
- Failure to signal or signal inconsistent with action

The probability of detecting DWI by random traffic enforcement stops at night has been found to be about three percent (.03).
NHTSA DWI Detection Guide

Probability Driver BAC ≥ .08

Weaving plus any other cue: \( p = \) at least .65
Any two cues: \( p = \) at least .50

Problems Maintaining Proper Lane Position

\( p = .50 - .75 \)
- Weaving, Weaving across lane lines, Straddling a lane line, Swerving, Turning with a wide radius, Drifting, Almost striking a vehicle or other object.

Speed and Braking Problems

\( p = .45 - .70 \)
- Stopping problems (too far, too short, or too jerky), Accelerating or decelerating for no apparent reason, Varying speed, Slow speed (10+ mph under limit)
Action Plan

- Accompany DUI enforcement, especially checkpoints, with publicity. Publicized enforcement is an effective deterrent.

- Develop and deliver public service announcements (PSAs) on the impairing effects of marijuana on driving.

- Support policies and programs that increase the availability, affordability and safety of transportation alternatives.
Ultimate Goal: Decrease Impaired Driving Fatal Crashes
Contact Information

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