

# **NHTSA Interlock Research**

## **Interlock Symposium**

**August 2014**

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# **NHTSA Research and Evaluation**

- **Findings and Possible Implications from Completed Interlock Studies**
  - **Evaluation of the New Mexico Ignition Interlock Program (2010)**
  - **Examination of the Feasibility of Alcohol Interlocks on Motorcycles (pending final approval)**
- **Research in Progress**

# Evaluation of New Mexico Ignition Interlock Program

U.S. Department of Transportation  
National Highway Traffic Safety Administration

**TRAFFIC TECH**  
Technology Transfer Series

Number 401 November 2010

## Evaluation of the New Mexico Ignition Interlock Program

Impaired driving is a major factor in vehicle crashes and traffic fatalities. The use of ignition interlocks is growing as a countermeasure to combat the high rate of offender recidivism for driving while intoxicated (DWI).

New Mexico currently has the highest rate of interlock installations per capita in the nation. The changes in usage, from its first interlock law in 1991 to its comprehensive interlock law passed in 2005, make it an ideal location to examine the use of interlocks. NHTSA therefore funded a series of studies to evaluate the New Mexico interlock laws, the New Mexico Ignition Interlock Program, and the impact on impaired driving.

**Study #1—Recidivism of Multiple Offenders With and Without Interlocks:** The first study compared license-revoked multiple offenders who were ordered by the courts to install interlocks (but prohibited from using those interlocked vehicles) to multiple offenders who were similarly prohibited from driving but not required to install interlocks under the early interlock law. Statistically controlling for age, gender, arrest blood alcohol concentration (BAC), and prior DWIs, there were significant differences in DWI recidivism between the two groups. Multiple offender rearrest rates were 66% lower than the rearrest rates of those without interlock devices during the portion of the study period that the interlock was actually on their vehicles, (see Fig. 1); however, after the interlocks were removed, there was no appreciable difference between the group who had used the interlocks and those who did not use them (see Fig. 2). During the full study period (1999-2002), including both the time on interlock and after interlock, the rearrest rate for those who installed the interlock was 22% less than the rearrest rate for those without the interlock.

**Study #2—Recidivism of High-BAC First Offenders With and Without Interlocks:** A second study examined first-time offenders arrested for aggravated DWI (defined as BAC of .16 g/dl or greater, refusing breath test, or causing bodily injury while driving intoxicated) between January 2003 and December 2005. High-BAC first offenders who installed an interlock under court mandate, were compared with similar high-BAC first offenders without interlocks. Statistically controlling for age, gender, arrest BAC, and prior DWIs, results revealed a strong interlock effect. The first offenders who had interlocks

installed had an overall 39% lower recidivism rate during the full study period (both during and after interlocks) than the first offenders who did not install interlocks. When comparing only the period interlocks were on their vehicles, first offenders rearrest rates were 61% lower than those of first offenders without interlocks. Once the interlocks were removed, there was still an 18% lower recidivism rate for the interlock group, but this difference was not statistically significant.

**Figure 1: Recidivism of multiple offenders with or without interlocks during the period of interlock installation, New Mexico, 1999-2002**

Time During Installation of Interlock (years)	Noninterlock	Interlock
0.00	0.00	0.00
0.25	0.05	0.02
0.50	0.10	0.04
0.75	0.15	0.06
1.00	0.20	0.08

**Figure 2: Recidivism of multiple offenders with or without interlocks during the 3-year period after interlock removal, New Mexico, 1999-2002**

Post-Interlock Time (years)	Noninterlock	Interlock
0.00	0.00	0.00
0.5	0.05	0.04
1.0	0.10	0.08
1.5	0.15	0.12
2.0	0.20	0.18
2.5	0.25	0.22
3.0	0.30	0.28

U.S. Department of Transportation  
National Highway Traffic Safety Administration

1200 New Jersey Avenue SE, Washington, DC 20590

- Conducted by PIRE
- Managed by Randy Atkins
- Published in 2010
- Eight studies

# **Eight Research Studies**

- **Recidivism of Multiple Offenders**
- **Recidivism of First Offenders**
- **Voluntary Interlock Use After 3<sup>rd</sup> DWI**
- **Alternative Sentence of House Arrest**
- **Pattern of Interlocks Failures by Day/Time**
- **Predictors of Recidivism**
- **Discussions with Reps of Interlock Systems**
- **Discussions with Offenders**

# Implications of Studies

- **Interlocks reduce recidivism while in use**
  - **Study #1 - Multiple offenders:**
    - Rearrest rates 66% lower while installed
    - No appreciable difference after removal
    - 22% lower over 3 years
  - **Study #2 - First offenders (High BAC):**
    - Rearrest rates 61% lower while installed
    - 18% lower after removal; 39% lower over 3 years
  - **Impacts don't continue (or, at least, weaken) after removal**

## **SUGGESTS:**

- Install more interlocks
- Possibly for longer period of time
- Consider interventions during interlock period to extend impact after removal

# Implications of Studies

## Study #3

- **Voluntary programs yield low use rates**
  - Only 9.8% elected to use the interlocks
- **Impacts on recidivism are similar**
  - Rearrest rate was 32% lower than non-interlock offenders

**SUGGESTS:** Programs should be mandatory

# Implications of Studies

## Study #4

- **Stricter sentence alternative (e.g. house arrest) can increase interlock use**
  - Achieved 71% participation rate
  - Statewide rate was 13% at that time!
- **Recidivism Rates declined**
  - Offenders without interlocks were 2.5 times more likely to be rearrested, during the interlock period
  - Rearrest rate in Santa Fe (15%) was about half of the State's (29%) during the study period
- **Practice was Discontinued (court ruling)**
  - **SUGGESTS:** GREAT potential!
    - Must be supported by State law

# Implications of Studies

## ■ Study #5 – Pattern of Interlock Failures

- 10.1 million BAC tests were logged
- 99% of interlock uses passed
- Least common failures – Tuesday; most common – Saturday
- Spike – Early morning (weekday 6-9 am; weekend 9 am-noon)

## ■ Study #6 – Predictors of Recidivism

- Predicted recidivism: younger age, prior DWI, rate of failed tests, failed morning tests
- Did not predict recidivism: failed retest, failed to take retest, tried to circumvent

## **SUGGESTS:**

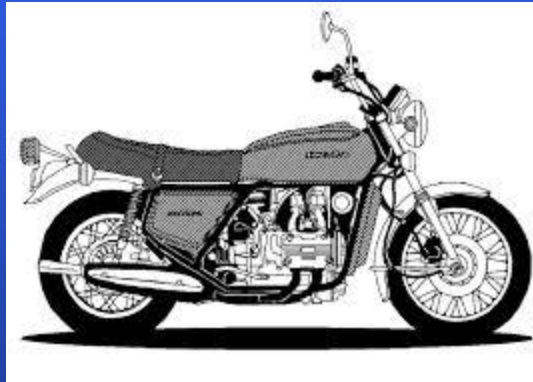
- Use data during supervision
- Consider compliance-based removal



# Implications of Studies

- **Study #7 – Representatives of interlock Systems**
  - Supportive of interlocks as a tool to reduce DWI
  - Concerns:
    - Low income offenders
    - Need for law changes (e.g., close loopholes)
    - Workload
- **Study #8 - Offenders**
  - Embarrassment (deterrence)
  - Incentive (driving legally)
  - Impact (changed the way they drink and drive)
  - Reported support from family
  - Concerns:
    - Cost; Accuracy of devices

# Examination of the Feasibility of Alcohol Interlocks on Motorcycles



- Conducted by PIRE
- Managed by Randy Atkins
- **Not yet published**
- **Preliminary results**

# Methodology – Data Sources

- **38 High Interlock Use State**
  - Laws, policies and practices
  - Prevalence
- **Interlock manufacturers and installers**
  - Experience
  - Prevalence
- **MC Interlock users**
  - Experience
- **Interlock log data**

# Research in Progress



- Joint Research with CDC and GHSA
- Use of Interlock Data
- Feasibility of Voluntary Interlocks for Teens
- Interlock System Failures and Fixes

**Thank you.**

**Questions?**

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