Effects of all-offender alcohol ignition interlock laws on recidivism and alcohol-related crashes

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Study conducted with Preusser Research Group, Inc. (Trumbull, CT)
Percent of crash deaths involving BACs ≥ 0.08 g/dl
United States, by calendar year, 1982-2011

at least one driver with BAC ≥ 0.08 g/dl
at least one driver, pedestrian, or bicyclist with BAC ≥ 0.08 g/dl
Alcohol ignition interlocks

- Driver blows into a tube to test breath for alcohol
- Vehicle won’t start if certain amount of alcohol detected
- Periodic retests while vehicle is in motion
- BAC ≤ 0.025 g/dl is typical threshold for DUI offenders
Laws mandating alcohol ignition interlock orders
August 2013

judicial discretion only
repeat offenders
high-BAC first offenders
high-BAC first & repeat offenders
all offenders
Installed interlocks in United States
1986-2012
Prior studies of effects of interlocks

• Most studies compared recidivism rates of offenders who installed interlocks vs. those who did not
  – Reductions in recidivism of 60-80 percent while interlocks installed
  – Reductions found for both repeat and first offenders
  – Effects dissipate after interlocks removed
  – Difficult to adequately account for potential differences between offenders who elected to get interlocks and those who did not

• Few studies compared crash rates of offenders who installed interlocks vs. those who did not
  – Offenders who installed them had higher crash rates than those who did not, and one study found no effect
  – However, crash rates of offenders were lower after installation compared with before
Timeline of Washington state interlock laws

1987

- Courts permitted to order interlocks

Jan. 1, 1999

- Issuance of interlock orders moves from courts to Department of Licensing

1999

- Interlock available immediately after arrest in lieu of administrative license suspension

June 23, 2003

- Interlock available immediately after arrest in lieu of administrative license suspension

Jan. 1, 2009

- Courts must order interlocks for repeat offenders and first offenders with BACs ≥ 0.15% or alcohol test refusal

June 10, 2004

- Interlock orders required for first offenders with BACs < 0.15% (simple DUI)

Jan. 1, 2011

- When reasonably available in area, interlocks must photograph person giving breath sample.

Jan. 1, 2013

- Minimum 4-month interlock installment required for license reinstatement
Objectives of current study

• Examine the effects of 2003 law change moving administration to the Department of Licensing and 2004 all-offender law requiring interlock orders on conviction types, interlock installation rates, and the recidivism rate among all offenders affected by the law.

• Examine the preliminary effects of the 2009 law change making interlocks available immediately after arrest on conviction types and interlock installation rate.

• Examine the general deterrent effect of 2003 and 2004 law changes on single-vehicle late-night crashes.
Trends in conviction types and interlock installations
Counts of DUI-related convictions in Washington
By quarter of arrest, January 1999-December 2009

- court to Dept. of Licensing
- all offender law
- interlock available after arrest

By quarter of arrest, January 1999-December 2009

- 1st offense
- repeat offenses
Distribution of 1st DUI-related convictions by type
By quarter of arrest, January 1999-December 2009

- simple DUI
- high BAC
- test refusal
- negligent driving
- deferred

Interlock available after arrest

Court to Dept. of Licensing
All offender law

www.iihs.org
Percent of 1st DUI offenders who installed interlocks
By quarter of arrest and conviction type, January 1999-December 2009
Cumulative percentage of interlock installations by number of months elapsed since arrest

1st simple DUI offenders arrested after 2004 law change

Graph showing the cumulative percentage of interlock installations for first-time simple DUI offenders arrested after 2004 law change, comparing two periods: 6/10/04-12/31/08 and 1/1/09-12/31/09.
Effects of interlock law changes on recidivism
Cumulative percent of recidivism among 1st simple DUI offenders arrested after 2004 law change

By status of interlock, arrested between June 2004 and June 2006

- Installed interlock
- Ordered to install interlock but did not

Graph showing the cumulative percent of recidivism over months after arrest.
Predicted cumulative 2-year recidivism rate for 1\textsuperscript{st} simple DUI convictions with & without 2004 law change

By quarter of arrest, January 1999-June 2006
Cumulative 2-year recidivism rate and projected rate with 100 percent interlock use

Arrests April-June 2006

- 1st simple DUI offenders (34% actual interlock use rate)
- All 1st DUI offenders (24% actual interlock use rate)
Effects of interlock law changes on crashes
Percent decreases in single-vehicle, late-night crashes in Washington State
Relative to trends in Oregon and California

<table>
<thead>
<tr>
<th>Event Description</th>
<th>percent</th>
<th>p value</th>
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</thead>
<tbody>
<tr>
<td>2003 law change: issuance of interlock orders moved to Department of Licensing</td>
<td>-6.4</td>
<td>0.0792</td>
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<tr>
<td>2004 law change: interlock order requirement extended to all DUI convictions</td>
<td>-8.3</td>
<td>0.0183</td>
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Conclusions

• Installation rates increased somewhat after administration was moved to Department of Licensing in 2003 and after the interlock requirement was extended to all DUI offenders in 2004.

• Preliminary data suggest that the 2009 law change allowing immediate interlock installation after arrest, in lieu of suspension, is related to increasing and earlier installations.

• Extending interlock requirement to all first-time DUI convictions in Washington reduced recidivism by 12 percent.

• Additional gains achievable with higher installation rates.

• The all-offender law was associated with a significant 8.3 percent reduction in risk of single-vehicle nighttime crashes, suggesting a general deterrent effect.
Implications for states?

- Expand use of alcohol ignition interlocks by DUI offenders
  - Extend laws to all DUI convictions
  - Seek ways to increase interlock use rates
  - Reconsider loopholes in laws that allow reductions in DUI charges to traffic offenses without interlock requirements or other DUI penalties
- Publicize interlock laws to deter all drivers from driving impaired
Future research on alcohol-related fatal crash trends and interlock laws

• States with vs. without all-offender interlock laws
• Laws mandating interlock orders coded in each quarter during 2000-11: no law, repeat offender, high BAC, first DUI
• Dependent variable: log of seasonally adjusted percentage of fatal, single-vehicle, nighttime crashes involving alcohol
• In initial analyses, effects of laws were small and not statistically significant
• Additional analyses are underway
  – Matching law-change states with nearby states without law changes
  – Additional predictors such as quarterly rate of unemployment
Dedicated to reducing deaths, injuries, and property damage on the highway.