

Ignition Interlock Laws: Effects on Fatal Motor Vehicle Crashes, 1982–2013

Emma E. McGinty, PhD, MS^{1,2}, Gregory Tung, PhD, MPH, Juliana Shulman-Laniel, MPH, Rose Hardy, MPH, Lainie Rutkow, JD, PhD, MPH, Shannon Frattaroli, PhD, MPH, Jon S. Vernick, JD, MPH


 DOI: <https://doi.org/10.1016/j.amepre.2016.10.043>

[Article Info](#)
[Abstract](#) | [Full Text](#) | [References](#) | [Supplemental Materials](#)

Introduction

Alcohol-involved motor vehicle crashes are a major cause of preventable mortality in the U.S., leading to more than 10,000 fatalities in 2013. Ignition interlocks, or alcohol-sensing devices connected to a vehicle's ignition to prevent it from starting if a driver has a predetermined blood alcohol content (BAC) level, are a promising avenue for preventing alcohol-involved driving. This study sought to assess the effects of laws requiring ignition interlocks for some or all drunk driving offenders on alcohol-involved fatal crashes.

Methods

A multilevel modeling approach assessed the effects of state interlock laws on alcohol-involved fatal crashes in the U.S. from 1982 to 2013. Monthly data on alcohol-involved crashes in each of the 50 states was collected in 2014 from the National Highway Traffic Safety Administration Fatality Analysis Reporting System. Random-intercept models accounted for between-state variation in alcohol-involved fatal crash rates and autocorrelation of within-state crash rates over time. Analysis was conducted in 2015.

Results

State laws requiring interlocks for all drunk driving offenders were associated with a 7% decrease in the rate of BAC >0.08 fatal crashes and an 8% decrease in the rate of BAC ≥0.15 fatal crashes, translating into an estimated 1,250 prevented BAC >0.08 fatal crashes. Laws requiring interlocks for segments of high-risk drunk driving offenders, such as repeat offenders, may reduce alcohol-involved fatal crashes after 2 years of implementation.

Conclusions

Ignition interlock laws reduce alcohol-involved fatal crashes. Increasing the spread of interlock laws that are mandatory for all offenders would have significant public health benefit.

Article Tools

[PDF \(231 KB\)](#)
[Email Article](#)
[Add to My Reading List](#)
[Export Citation](#)
[Create Citation Alert](#)
[Cited by in Scopus \(3\)](#)
[Request Permissions](#)
[Order Reprints](#)
 (100 minimum order)

Related Articles

Trends in Automobile Travel, Motor Vehicle Fatalities, and Physical Activity: 2003–2015

American Journal of Preventive Medicine, Vol. 52, Issue 5

Primary Enforcement of Mandatory Seat Belt Laws and Motor Vehicle Crash Deaths

American Journal of Preventive Medicine, Vol. 53, Issue 2

Annual Motor Vehicle Travel Distance and Incident Obesity: A Prospective Cohort Study

American Journal of Preventive Medicine, Vol. 44, Issue 3

To access this article, please choose from the options below

Log In

[Login to existing account](#)

[Forgot password?](#)

Register

[Create a new account](#)

Purchase access to this article

- [\\$35.95 USD|PDF Download and 24 Hours Online Access](#)

Claim Access

If you are a current subscriber with Society Membership or an Account Number, [claim your access now](#).

Subscribe to this title

[Purchase a subscription](#) to gain access to this and all other articles in this journal.

Institutional Access

[Visit ScienceDirect](#) to see if you have access via your institution.

Impacts of the Minimum Legal Drinking Age on Motor Vehicle Collisions in Québec,

2000–2012

American Journal of Preventive Medicine, Vol. 47, Issue 6

Deployment Experiences and Motor Vehicle Crashes Among U.S. Service Members

American Journal of Preventive Medicine, Vol. 46, Issue 4

[View All](#)

ADVERTISEMENT

© 2016 Published by Elsevier Inc. All rights reserved.

[April 2017](#) Volume 52, Issue 4, Pages 417–423

[Next Article >](#)

Copyright © 2018 [Elsevier](#) Inc. All rights reserved. | [Privacy Policy](#) | [Terms & Conditions](#) | [Use of Cookies](#) | [About Us](#) | [Help & Contact](#) | [Accessibility](#)
The content on this site is intended for health professionals.

Advertisements on this site do not constitute a guarantee or endorsement by the journal, Association, or publisher of the quality or value of such product or of the claims made for it by its manufacturer.